



# AIDS 2024

## abstract book

AIDS 2024, the 25th International AIDS Conference

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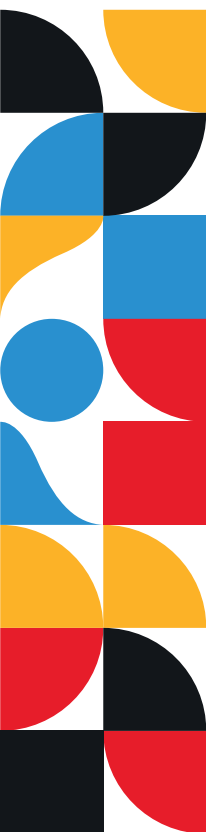
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# Abstract submission

Over 7200 abstracts were submitted to the 25th International AIDS Conference.

The Organizing Committee (OC) is very grateful for all the abstract submissions received. While the OC found many very high-quality abstracts among the submissions, due to limitations in the conference programme, more abstracts were rejected than accepted – with an overall acceptance rate of 38% (which includes the late breaker abstracts).

All abstracts went through a blind peer-review process completed by over 830 abstract reviewers. These reviewers are international experts in the field of HIV, including members of the OC and track committees.

Each abstract was reviewed by three to four reviewers. The abstracts were reviewed for the quality and original-

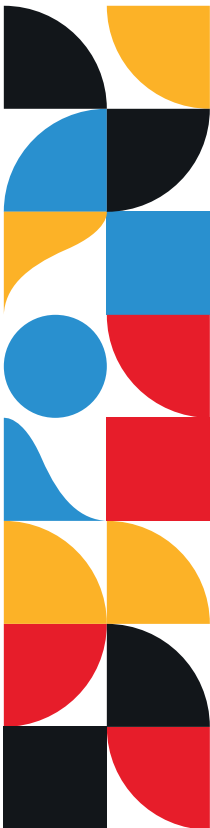
ity of the work. Late-breaking abstract reviews included an additional assessment of the late-breaking nature of the research.

All reviewers were instructed to abstain from scoring any abstract on which they were an author or co-author, had a financial or personal conflict of interest, or did not have the appropriate expertise to evaluate.

Each abstract was scored numerically against five pre-determined criteria, which were equally weighted to get a final score. The final score ranged from one (the lowest) to six (the highest). Any abstracts that received less than two reviews or where there was a scoring discrepancy between reviewers were additionally reviewed by the track committees.

## Statistics for abstracts

6,679	Regular abstracts submitted
2,663	Regular abstracts accepted
160	Oral abstracts
2,237	Poster exhibition abstracts
236	E-poster abstracts
581	Late-breaking abstracts submitted
109	Late-breaking abstracts accepted
37	Late-breaking oral abstracts
72	Late-breaking poster exhibition abstracts
7,260	Total abstracts submitted
2,772	Total abstract accepted



AIDS 2024, the 25th International AIDS Conference received more than 6,670 abstract submissions, which went through a blind, peer-reviewed process carried out by an international panel of reviewers who play a critical role in designing a strong scientific programme.

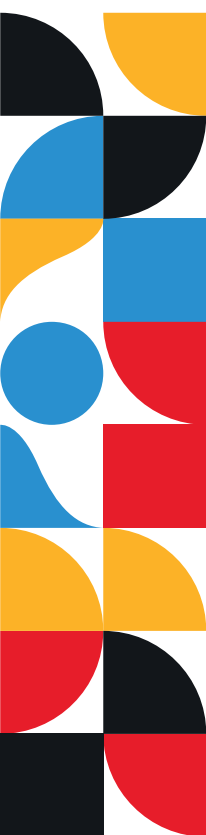
More than 830 specialists from around the world volunteered their time and expertise to serve as peer reviewers, helping to ensure that the abstracts presented were selected on the basis of rigorous review and were of the highest scientific quality.

We extend our special thanks to the large pool of abstract reviewers for the time they dedicated to the success of the conference.

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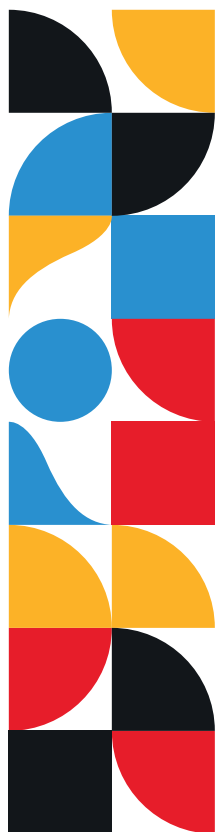




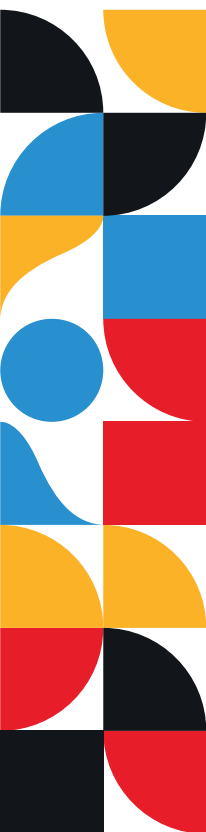
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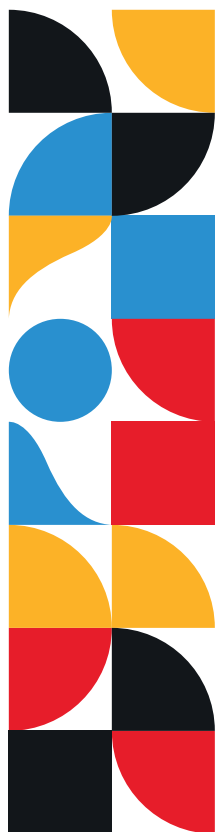
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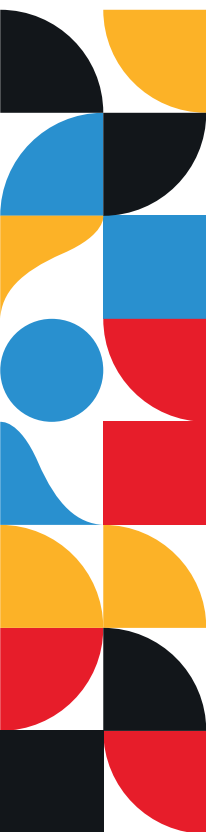
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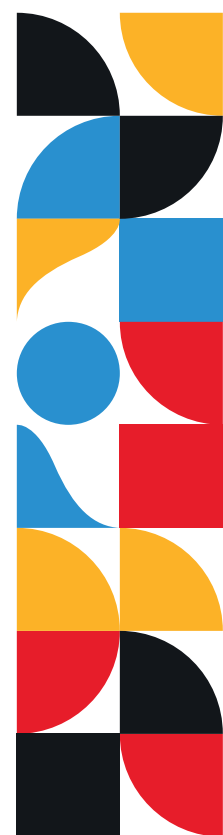


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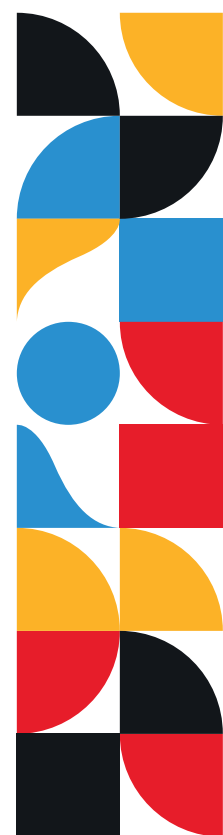


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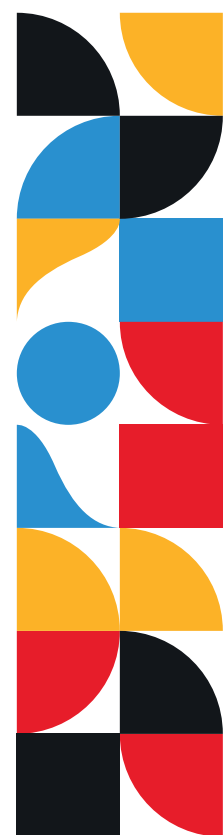
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## Oral abstract sessions

### OAA02 It's about timing: When to start, when to stop

#### OAA0202

##### Consecutive analytical treatment interruption enhances CD8 T-cell functionality during virological control

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**Background:** The PULSE clinical trial is one of the first studies where 68 people living with HIV underwent three consecutive analytical treatment interruptions (ATIs). During this trial we observed that 10% of the participants transiently controlled HIV rebound after the 2<sup>nd</sup> and/or 3<sup>rd</sup> ATI. In this study, we investigated whether consecutive ATIs result in an improved antiviral CD8 T-cell immune response during delayed viral rebound.

**Methods:** We obtained peripheral blood mononuclear cells from four participants enrolled in the PULSE clinical trial: two non-controllers (NCs) who experienced rapid viral rebound during all ATIs and two transient controllers (TCs) who exhibited virological control for up to six months during the 2<sup>nd</sup> and/or 3<sup>rd</sup> ATI. To evaluate CD8 T-cell functionality during the consecutive ATIs, CD8 T-cells were stimulated with Gag/Pol/Nef peptides to assess cytokine production (IFN- $\gamma$  and TNF- $\alpha$ ) and stained with CellTrace Far Red to quantify proliferation by flow cytometry. To compare the CD8 T-cell cytolytic capacity across the ATIs, participant-derived CD4 T-cells were infected with HIV-NL4-3 and cocultured with autologous CD8 T-cells from each ATI timepoint. At day three of coculture, the levels of p24 were measured by ELISA.

**Results:** For TC participants, we observed an increase in both CD8 T-cell proliferation and cytokine production (3-34 fold) during the transient viral control timepoints. In contrast, the capacity for CD8 T-cells to proliferate and produce cytokines did not increase across the ATI timepoints for the NCs. Moreover, TC-derived CD8 T-cells from the 3<sup>rd</sup> ATI, where viral rebound is delayed, eliminated HIV-infected CD4 T-cells more efficiently, as reflected by a 2-5 fold decrease in p24, when compared to CD8 T-cells from earlier ATI timepoints. In contrast, within NCs, we did not observe a consistent enhancement of CD8 T-cell cytolytic response across the ATI timepoints.

**Conclusions:** Our findings indicate that in some participants from the PULSE study, repeated exposure to viral antigens during consecutive ATIs results in a potential

"vaccinal effect" improving CD8 T-cell proliferation, cytokine production and cytotoxicity. Importantly, these results provide insight into the immunological mechanisms contributing to viral control indicating that enhanced host immunity is pivotal for achieving viral remission after an ATI.

#### OAA0203

##### HIV reservoir characteristics in spontaneous viral controllers and individuals treated during both acute and chronic HIV-1 infection in South Africa

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**Background:** The HIV reservoir is the main barrier to cure efforts. Individuals who control the virus without antiretroviral therapy (ART) represent a model of functional cure, but few studies have characterized reservoir dynamics and mechanisms of persistence in these individuals. In this study, we measured and characterized the reservoir size and genetic landscape before and after ART in spontaneous controllers versus viremic individuals who initiated ART in acute or chronic phases of infection.

**Methods:** Participants were from a natural controller and the FRESH acute infection cohorts in Durban, South Africa. At enrolment, all participants were ART-naïve and included 16 elite controllers (EC, viral load [VL] <100 copies/ml); 9 viremic controllers (VC, VL <2000 copies/ml); 12 with viremic chronic HIV infection (CHI, VL >2000 copies/ml) and 35 with acute HIV infection (AHI, median of 1 (1-3) day post detection). A subset from each group initiated ART during follow up and were assessed prior to treatment; one, three- and five-years after treatment. HIV DNA was measured in PBMCs by droplet digital PCR (ddPCR). Pro-viral genome characteristics were analysed by near full-length individual proviral sequencing (FLIP-Seq).

**Results:** In untreated infection, there was no significant difference in total HIV-1 DNA between the study groups. Notably, elite controllers showed a lower proportion (9.68%) of intact genomes in comparison to both individuals with untreated AHI (62.04%) and CHI (31.18%). ECs and individuals treated in AHI showed a significant reduction in proviral load ( $p=0.035$  and  $<0.0001$  respectively) in contrast to VCs and CHI-treated participants who showed no significant change after 5 years of ART. Additionally, after one year of treatment, no intact genomes were



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detectable in AHI-treated individuals whereas in ECs and CHI-treated individuals, 14.06 and 3.85% of genomes were intact.

**Conclusions:** In untreated HIV-1 subtype C infection, proviral load is similar between spontaneous controllers and individuals with AHI or CHI. ECs and individuals initiating treatment in AHI showed a significant reduction in reservoir size after treatment.

Our results suggest that reservoir quality and not size may, in part, explain ART-free viral control and that the timing of ART initiation might play a key role in a potential post-treatment functional cure.

## OAA0204

### Characterization of the HIV-1 reservoir in early treated individuals from the Zurich Primary HIV Infection Study with low-level viremia

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**Background:** In most people living with HIV (PWH), antiretroviral therapy (ART) reduces viral loads to undetectable levels. However, in some individuals, viremia remains detectable despite very early initiation of ART during primary HIV infection, adherence to drug regimens and absence of drug resistance mutations. The causes of such residual viremia remain unclear. We conducted a longitudinal analysis of the HIV-1 reservoir in early treated individuals with low-level viremia to investigate potential HIV-1 evolution.

**Methods:** Near full-length HIV-1 proviral NGS in bulk was applied to three longitudinal PBMC samples from well characterized participants enrolled in the Zurich Primary HIV Infection study with low-level viremia between 50 – 500 copies/ml plasma (n=7) for at least four years and matched controls with viral loads <50 copies/ml plasma (n=14). All individuals initiated ART during primary HIV-1 infection and reported highest levels of adherence. We included a baseline sample prior to, and a sample two years and four years after ART initiation. After removing hypermutated reads, genetic distances and diversities were calculated and drug resistance mutations were assessed. Total, intact and unintegrated HIV-1 DNA and HIV-1 transcript were quantified using digital PCR.

**Results:** We observed similar frequencies of intact HIV-1 proviruses in individuals with and without low-level viremia. While the numbers of unspliced HIV-1 RNA in PBMCs of individuals with low-level viremia was higher than of those without, numbers of HIV-1 multiply spliced RNA and 2-LTR circles showed no significant differences between individuals with and without low-level viremia.

After removing hypermutated reads, no increase in genetic distance or diversity of proviral sequences over time was detected in individuals with low-level viremia. While minor variants of proviral drug resistance mutations with frequencies <15% appeared and vanished over time, major drug resistance mutations with frequencies >15% were not detected in proviral DNA in any individual with low-level viremia.

**Conclusions:** Our results show no evidence of evolution of the HIV-1 reservoir or drug resistance development, despite years of low-level viremia. Thus, treatment intensification of individuals with low-level viremia may not be needed in PWH who initiated ART with a high resistance barrier during primary HIV-1 infection, given optimal adherence and frequent monitoring.

## OAA0205

### Experimental macaque model of post-treatment SIV control presents distinct features of viral reservoirs in blood and tissues, the pVISCNTI study

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**Background:** The pVISCNTI study confirmed in a non-human primate model of Simian Immunodeficiency Virus (SIV) infection that post-treatment control is favored by antiretroviral treatment (ART) initiation at day (D)28 (ET) vs 6 months post-infection (LT) (Passaes *et al.* Nat Com 2024).

However, intrinsic viral features of reservoirs in such control remain elusive. We performed a large analysis of tissue and blood reservoirs in the cynomolgus macaques (CyMs) of this study.

**Methods:** SIVmac251-infected CyMs were classified as post-treatment controllers (PTCs, n=11) or non-PTCs (n=11) depending on their capacity to control viremia <400 copies/ml for >6 months after analytical treatment interruption (ATI) after 24 months of ART. Necropsy was performed 6-12 months after ATI. From antemortem serial blood and lymph nodes (LN) specimens and postmortem tissues from 12 anatomical sites, we quantified total SIV-DNA, cell-associated SIV-RNA (caRNA) and evaluated reservoir

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integrity by Intact Provirus DNA Assay. Near-full-length SIV genome nanopore sequencing was performed in 5 PTCs (3ET, 2LT) and 5 non-PTCs (2ET, 3LT).

**Results:** SIV-DNA was lower in PTCs vs non-PTCs from D14 post-ATI in circulating CD4+T cells ( $p=0.009$ ). caRNA in PB-MCs was lower in PTCs than non-PTCs from D28 post-ATI ( $p=0.004$ ). No difference was noticed before ATI. At necropsy, SIV-DNA and caRNA were lower in PTCs than non-PTCs in thymus, LN, spleen, ileum, colon, rectum and PB-MCs ( $p<0.05$ ).

Intact proviruses were less abundant in PTCs vs non-PTCs in LN before ATI ( $p<0.001$ ) and in LN, spleen and colon at necropsy ( $p<0.015$ ); investigation in other tissues is ongoing.

Regardless time of treatment initiation, post-mortem tissue proviruses showed:

- Individual-related evolution in non-PTCs in contrast to sequences intermingled between PTCs;
- Lower pairwise genetic distance to the inoculum in PTCs vs non-PTCs ( $p=0.008$ ).

In non-PTCs, but not in PTCs, tissue proviruses at necropsy were genetically closer to circulating viruses at the time of ART initiation than to those at primary infection ( $p=0.014$ ).

**Conclusions:** PTC status was associated with lower levels of intact proviruses in LN before ATI and with limited reservoir size, transcriptional activity and viral evolution. This study might help to better understand which factors in addition to early treatment initiation are important for post-treatment control.

**Methods:** In this study, we comprehensively profiled humoral immune responses in breastmilk of cohorts from the Zambia Exclusive Breastfeeding Study. All 34 mother/child dyads included in our analysis (17 without and 17 with HIV breastfeeding-associated transmission) were ART naïve. We applied our System's Serology platform, an approach that interrogates subclass/isotype/Fc-receptor binding across different antigen-specificities and functional assays to measure antibody effector functions in parallel; all linked to systems biology/machine learning algorithms.

**Results:** We demonstrated that antibody responses in the breastmilk of transmitting mothers are higher after HIV transmission compared to non-transmitting women, despite similar viral loads in plasma and breastmilk as well as CD4 T-cell counts between the two groups. Particularly, higher IgG levels and FcγR2A binding against gp41 and gp140 were detected in the transmitting group ( $p < 0.05$ ), in addition to higher FcγR2B and ADCD against gp41 ( $p < 0.05$ ). We also observed an increase in humoral response over time in transmitting mothers, while antibody response progressively decreased in non-transmitting mothers.

**Conclusions:** This study suggests that a strong immune activation in the milk of HIV-infected mothers is seen with breastfeeding associated HIV transmission and highlights particular antibody Fc-effector profiles that might be involved in this transmission. These data contribute to a more comprehensive understanding of Fc-mediated antibody response in the breastmilk, which is crucial for advancing therapeutic strategies aimed at eliminating this route of mother-to-child transmission.

## OAA06 HIV in children: What are the challenges?

### OAA0602

#### Antibody signatures associated with HIV transmission during breastfeeding

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**Background:** In the absence of antiretroviral therapy, up to 15% of mothers living with HIV transmit the virus to their children during pregnancy, delivery and breastfeeding. Antibodies have largely been studied for their impact on HIV transmission to children *in utero*, but their presence in the milk and the mechanisms by which they might affect HIV transmission to the newborn during breastfeeding is less well understood.

### OAA0603

#### Increased cardiovascular risk in perinatally HIV-acquired adolescents (PHIV) may linked to proinflammatory NK cells

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**Background:** Our initial findings and literature suggest a potential reprogramming of innate immune cells in adolescents acquiring HIV perinatally and undergoing antiretroviral therapy. This reprogramming may accelerate aging, increasing the risk of future complications, particularly cardiovascular disease (CVD). Natural killer (NK) cells, with diverse functions, play a crucial role in HIV







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pathogenesis and are implicated in comorbidities like CVD through immune crosstalk. Despite this understanding, the specific involvement of NK cells in HIV-related cardiovascular risks remains unclear. Here, we studied NK cell subsets and their potential role in cardiovascular risk in adolescents with and without HIV.

**Methods:** In this cross-sectional study, using high-dimensional flow cytometry, plasma biomarker profiling, and transcriptomics, we compared cardiovascular risk factors and immune signatures in cryopreserved peripheral blood mononuclear cells, as well as cardiovascular biomarkers (carotid intima-media thickness and pulse wave velocity-PWV) in Ugandan adolescents with perinatally acquired HIV on antiretroviral therapy and virally suppressed (n=18) and age/sex-matched HIV-unexposed and uninfected adolescents, (n=20). At baseline, the median age was 14 years, and 50% were females.

**Results:** In the PHIV, we found elevated activation, maturation, memory, and pro-inflammatory/migration markers in most NK subsets compared to HIV- (p<0.05). Oxidized LDL levels were significantly lower in the plasma of PHIVs (p<0.05). Further, negative correlations were found between all activated CCR5+NK subsets and plasma ox-LDL among PHIVs. This was confirmed by in vitro studies which revealed increased uptake of oxLDL by macrophages in the presence of activated NK cells (p<0.05). Bulk-RNA sequencing data revealed differential expression of genes associated with immune cell migration, cholesterol uptake into tissue, and vascular remodeling, and enrichment of pathways associated with NK activation and epigenetic regulation in the PHIV group (p<0.05). Interestingly, the dysregulated NK subsets showed significant correlations with carotid intima-media thickness and pulse wave velocity (PWV).

**Conclusions:** Our data, for the first time, reveal an increase in several activated, mature NK subsets capable of homing to vascular tissue. This correlates with increased plasma oxLDL uptake by macrophages. Dysregulated NK subsets exhibit significant correlations with carotid intima-media thickness and PWV, suggesting a potential link between NK cells and cardiovascular risk in adolescents with PHIV.

## OAA0604

### Comparative analysis of the HIV reservoir localisation and cellular function in paediatric and adult tonsillar tissues

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**Background:** Anti-retroviral treatment in paediatric HIV infection is challenging with low ART adherence throughout childhood and adolescence, particularly in under resourced populations. Therefore, non-ART strategies are important to achieve HIV remission during paediatric HIV. Viral reservoir seeding occurs rapidly within lymphoid tissues after transmission and remains the major source of viral rebound following ART cessation. However, the size, localisation and mechanisms of viral silencing and reactivation within viral reservoirs in lymphoid tissues from children born with HIV remain unknown.

**Methods:** We hypothesise that differences in CD4+ T-follicular helper cell (TFH) frequencies within germinal centres (GCs) in children and adults contribute to variations in the viral reservoir landscape. To study the paediatric HIV lymphoid tissue reservoir, we used flow cytometry, single-cell RNA sequencing (scRNAseq), and fluorescent microscopy to study the viral reservoirs from resected tonsils from children (<12 years) born with HIV from our larger cohort of adult and paediatric participants within South Africa.

**Results:** We found higher frequencies of TFH (PD-1<sup>++</sup>/CXCR5<sup>+</sup>) in paediatric participants compared to adults (P=0.004) suggesting elevated levels of HIV susceptible cells in paediatric lymphoid tissues. Immunofluorescent microscopy showed that HIV-p24 antigen were localised within both GC and extrafollicular localisation in viremic paediatric samples, whereas plasma viral suppressed individuals overall showed lower frequencies of GC HIV localisation. scRNAseq (10X Genomics) and HIV sequencing from tonsils of people living with HIV is underway to determine the transcriptional profiles, viral diversity and frequency of intact virus between paediatric and adult participants.

**Conclusions:** This study presents a unique opportunity to investigate the viral reservoir location in paediatric lymphoid tissues that is important to tailor HIV cure strategies for children born with HIV.

## OAA0605

### Altered immune response to tetanus pediatric vaccines among HIV exposed uninfected infants

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**Background:** Evidence suggests that the developing immune system of HIV-exposed but uninfected (HEU) infants early in life, differs from their HIV-unexposed (HU) peers. More so, reports show that HEU infants do not respond optimally to pediatric vaccinations, thereby increasing their vulnerability to infectious diseases and raising the potential for elevated rates of morbidity and mortality. This study documented the impact of HIV exposure on how infants respond to a pediatric vaccination.

**Methods:** We documented the immune responses in HEU and HU infants and their moms by quantifying the total IgG antibodies against Tetanus toxoid (TT), one of the prescribed pediatric vaccines, in a Nigerian birth cohort. Plasma samples collected from each mother-infant pair at Birth (mother and infant) and Week 15 (infants only), were tested to quantify specific anti-TT IgG titers.

**Results:** A total of 200 pregnant women were enrolled with their infants, 140 living with HIV and 60 living without HIV. Mean maternal age was similar for both groups ( $p=0.24$ ) as were the number of pregnancies, number of live births, and mode of delivery ( $p=0.19$ ,  $p=0.38$  and  $p=0.77$ ). A total of 205 infants were enrolled at birth with 144 HEU infants and 61 HU infants with significant differences in weight ( $p=0.00$ ), height( $p=0.03$ ), and head circumference ( $p=0.016$ ). There was also a 12% decrease in the median transfer of anti-TT IgG antibodies in mothers living with HIV ( $p=0.02$ ). HU infants maintained significantly higher anti-TT IgG titers at Week 15 compared to HEU infants at birth ( $p=0.018$ ) and Week 15 ( $p=0.001$ ).

**Conclusions:** Our data shows that HEU infants present with altered immune responses compared to HU infants. Exposure to HIV in these infants may alter the responses to infectious diseases and how well they respond to childhood immunization highlighting the need for focused strategies to improve responses to vaccine-preventable diseases and the possibility of including additional booster shots.

## OAA13 The quest for HIV vaccines

### OAA1303

#### The HIV-1 Tat-based therapeutic vaccine to intensify or replace antiretroviral therapy: results of extended (8-years) follow-up of Phase-II clinical trials in Italy and South Africa

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**Background:** Although antiretroviral therapy (cART) effectively suppresses HIV replication, it is unable to eradicate the virus, which persists in cART-resistant reservoirs. New therapeutic interventions are, therefore, needed to improve cART effectiveness, and, possibly, to eradicate HIV. Preclinical and observational studies indicated that naturally-occurring anti-Tat antibodies block HIV replication, and are associated with slower progression to AIDS and better response to therapy (Bellino, Retrovirology 2014; Tripiciano, Ebiomed 2021; Ensoli, Expert Rev Vaccines 2022).

**Methods:** One phase-I (ISS T-001) and 2 phase-II (ISS T-002 and ISS T-003) Tat-based therapeutic vaccine trials, were conducted in naïve and cART-treated persons living with HIV (PLWH) in Italy and South Africa (SA) (395 volunteers). Each trial was followed by an extended observational study (up to 8 years) to evaluate persistence of anti-Tat immune responses and to monitor immunological and virological parameters.

**Results:** The Tat vaccine is safe in PLWH and promotes a long-lasting anti-Tat immunity, associated with significant improvements of immune system functions, even after long-term cART (median of 6 years). These include increases of CD4<sup>+</sup> T cells and CD4<sup>+</sup>/CD8<sup>+</sup> T cell ratios, re-equilibration of CD4<sup>+</sup> and CD8<sup>+</sup> T cell memory subsets with reduction of effector cells, improvement of T cell responses, and B cell and NK cell gains (Longo, Vaccine 2009; Ensoli B, PLoS ONE 2010; Ensoli F, Retrovirology 2015; Ensoli B, Retrovirology 2016).

This suggests a return to immune homeostasis that cART alone fails to restore. Strikingly, this was accompanied by a sustained proviral DNA decay, with a drastic reduction of the virus reservoirs (up to 90%) in blood after 8 years from vaccination with an average speed 4-7 times greater than observed in PLWH treated with cART alone (Sgadari, Front Immunol 2019; Ensoli et al, in preparation). We are now investigating correlates of protection (functional anti-Tat antibodies) and the long-term effects of vaccination.

**Conclusions:** Results indicate that Tat is a key virulence factor, which plays a pivotal role in virus spreading and persistence, and that the induction of anti-Tat immune responses represents a pathogenetic intervention to in-



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tensify cART efficacy, and to attack the ART-resistant virus reservoir. Phase III studies are planned for vaccine registration.

## OAA1304

### V2-specific responses rescues SIV vaccine efficacy decreased by mucosal immunization with nanoparticles

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**Background:** Deletion of Env-V1 region of the DNA/ALVAC/gp120/alum vaccine regimen improves efficacy compared to envelope-replete immunogens and efficacy is linked to antibody responses to the envelope V2 region.

We hypothesized that mucosal vaccination with V2-peptide CKFNMTGLKRDKTKEYNETWYSTDLVCEQGNSTDNESR-CYMNHC scaffolded as pentamers with Typhoid Toxin B subunit(V2-TTB) might further improve efficacy, and used poly(DL-lactic-co-glycolic-acid) (PLGA) nanoparticles (NPs) (<100nm) was administered orally to deliver V2-TTB-NPs to the colon.

**Methods:** Rhesus macaques(n=44) were immunized intramuscularly with the systemic ΔV1/DNA/ALVAC/gp120/alum vaccine regimen at weeks 0, 4, 8 and 12. At weeks 0, 4, and 16, one group (n=12), also received oral immunizations with V2-TTB-NPs, while other groups(n=9) received TTB-NPs or empty-NPs(n=9). All animals were given 11 weekly intrarectal challenges with SIV<sub>mac251</sub>. Virological and immunological responses were analyzed to understand their role in vaccine efficacy.

**Results:** Addition of V2-TTB-NP to the vaccine did not significantly reduce acquisition risk compared to the systemic vaccine, although the peak viral load (VL) and area-under-curve VL(AUC) were both significantly reduced in animals that acquire SIV.

Surprisingly, no vaccine efficacy was observed in animals vaccinated with the systemic vaccine plus either TTB-NPs or empty NPs. V2-TTB-NP group exhibited higher

ADCC titers, deltaV1-specific IgA rectal plasmablasts and plasmacytes, and IgG in rectal secretions after the last boost.

Conversely, TTB-NP or empty-NP-treated animals showed increased plasmacytoid dendritic cells (pDC) ( $p=0.056$  and  $p<0.0001$ , respectively) and IFN- $\gamma$ <sup>+</sup>NKp44<sup>+</sup>NKG2A<sup>+</sup> cells ( $p<0.0001$  and  $p<0.0001$ , respectively) compared to that of V2-TTB-NP group. These cells were associated with increased acquisition in TTB NP group.

On the other hand, V2-specific ADCC ( $p=0.01$  and  $p=0.01$ , respectively), mucosal CD14<sup>+</sup> cells ( $p=0.02$  and  $p<0.0001$ , respectively) and NKp44<sup>+</sup> cells ( $p=0.004$  and  $p<0.0001$ , respectively) were decreased in the TTB-NP or empty-NP groups versus V2-TTB-NP group and correlating with protection from acquisition in V2-TTB-NP group.

**Conclusions:** Collectively the data indicate that despite some stronger mucosal V2- or deltaV1-specific immune responses in V2-TTB-NP group, empty-NPs and TTB-NPs shifted innate mucosal immunity toward a 'non-protective' immune environment for ALVAC-based HIV vaccine. Furthermore, presence of V2 increases the "protective" responses compared to Nanoparticle alone groups.

These data underscore the importance of both quality of innate responses and antibodies to V2 in protection against SIV/HIV acquisition.





## OAA1305

## Safety and immunogenicity of a polyvalent DNA/polyvalent protein HIV vaccine with matched Env immunogens delivered as a prime-boost regimen or co-administered in adults without HIV

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**Background:** An effective HIV vaccine will need to exhibit potent immunogenicity and broad cross-subtype coverage. HVTN 124 evaluated the safety and immunogenicity of a unique polyvalent DNA-protein HIV vaccine regimen with matching envelope (Env) immunogens.

**Methods:** HVTN 124 (NCT03409276) was a randomized, phase 1, placebo-controlled, double-blind study, including participants without HIV aged 18-50 years with low likelihood for HIV acquisition. The DNA vaccine comprised five plasmids: four copies expressing Env gp120 (clades A/B/C/AE) and one *gag* p55 (clade C). The protein vaccine included four DNA vaccine-matched gp120 proteins adjuvanted with GLA-SE. Participants were randomized to placebo or

one of two vaccine groups (prime-boost or co-administration). Vaccines were delivered via intramuscular injection. Part A (N=12) evaluated the safety of the protein/adjuvant vaccine. Part B (N=48) evaluated the safety and immunogenicity of two regimens: DNA prime (Months 0/1/3) with protein boost (Months 6/8), and DNA/protein co-administration (Months 0/1/3/6/8). Part B per-protocol participants were included in the immunogenicity analysis using samples collected two weeks after the last injection. All participants (intent-to-treat) were included in the safety analysis.

**Results:** Sixty participants (26 male, 34 female) were enrolled. Both vaccines were safe. Both regimens in Part B elicited IgG response rates >90% of high titer against a panel of heterologous gp120/gp140 antigens from diverse viral subtypes (Figure 1). High-titer IgG responses were observed in 67-100% of participants against gp70-V1V2 antigens from subtypes A, B, C, and AE. Neutralizing antibody activity was detected against Tier 1A and Tier 1B viruses (clades B, C, AE and AG). Antibody-dependent cellular cytotoxicity was detected in all of participants against AE CM235 and in ≥80% of prime-boost recipients against other subtypes. Response rates and magnitudes for antibody-mediated responses in the prime-boost arm were similar to or exceeded those in the co-administration arm. The prime-boost regimen elicited Env-specific CD4+ T-cell responses in 15/15 participants vs 5/13 for co-administration ( $p=0.0002$ ). IgG/IgG3 responses against gp70 V1V2, an established correlate of protection, were higher in the HVTN124 prime-boost regimen than comparable regimens in the RV144, HVTN702, and HVTN705 trials.

**Conclusions:** This vaccine regimen was safe and highly immunogenic against multiple HIV clades, warranting evaluation in larger trials.



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## OAA1308

TCR repertoire diversity allows for expansion of HIV-specific CD8 T-cells following anti-PD1 in people with HIV and cancer on ART

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**Background:** In people living with HIV (PWH), immune dysfunction persists with elevated expression of the exhaustion marker programmed death (PD1) despite suppressive antiretroviral therapy (ART). Anti-PD1 therapy in people with cancer can enhance tumor-specific T-cell responses through the proliferative burst of exhausted effector T-cells ( $T_{EX}$ ). We aimed to determine the effects of anti-PD1 in vivo on the T-cell receptor (TCR) repertoire of HIV-specific CD8 T-cells.

**Methods:** As part of a prospective longitudinal clinical trial of PWH on ART with cancer (AIDS Malignancy Consortium-095 Study), participants received anti-PD1 (nivolumab) every 3 weeks. Blood was collected prior to and following the first, fourth and subsequent infusions. We sorted HIV-tetramer+ CD8 T-cells from six participants and performed single cell RNA sequencing and TCR repertoire computational analysis. We used a data-based frequency cut-off and considered a clonotype as expanded when a particular TCR sequence constituted > 2% of the overall TCR sequences.

**Results:** Out of 1828 TCR clonotypes, 55 expanded, totalling 913 cells, with 78.2% identified as  $T_{EM}$  or  $T_{EX}$  cells. All cells with expanded clonotypes showed differentially expressed genes upregulated for effector functions and

antigen recognition. Baseline TCR diversity positively correlated with expanded clonotypes after a single anti-PD1 dose ( $r=0.57$ ). In 3 participants, high diversity in HIV tetramer+ CD8 T-cells led to rapid expansion and subsequent contraction with additional doses. In the other 3 participants, lower diversity also resulted in clonotype expansion, but only after multiple anti-PD1 doses. Pair-wise TCR distance analysis demonstrated that expanded clones were biochemically diverse and therefore likely recognise a diverse range of HIV epitopes.

**Conclusions:** PWH on ART and cancer with a diverse HIV-specific TCR repertoire at baseline exhibit rapid clonotype expansion after a single anti-PD1 dose, while a less diverse TCR repertoire requires multiple doses of anti-PD1 for expansion. Whether these expanded clonotypes can control HIV replication once ART is stopped remains to be determined in future clinical trials of anti-PD1 in PWH on ART.

## OAA28 Cracking the code of the tissue reservoir

### OAA2802

Association of T resident memory and other CD4+ T cell subsets with HIV persistence across diverse tissue compartments from ART-suppressed people with HIV

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**Background:** Memory CD4+ T cells are important long-lived reservoirs for HIV. Yet, the phenotypic and functional features of these cells within tissue compartments of people with HIV (PWH) remain poorly characterized. Furthermore, the association of these features with HIV persistence remains unexplored.

**Methods:** We developed and applied a 40-parameter CyTOF panel to deeply phenotype and quantitate subsets of memory CD4+ T cells from 26 different tissue specimens (including ileum, colon, rectum, para-tracheal and aortic lymph nodes, spleen, liver, kidney, prostate, testes, and bone marrow) from 6 ART-suppressed PWH. Specimens were also analyzed by digital droplet PCR for levels of cell-associated total HIV DNA and unspliced RNA, which were associated with subset distribution using linear re-



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gression models. All participants were enrolled in the Last Gift Study, comprised of altruistic PWH who donate their bodies post-mortem for research.

**Results:** Across tissue compartments, HIV DNA levels significantly associated with the frequencies of T resident memory (Trm, CD45RA-CD45RO+CD69+) CD4+ T cells ( $P=0.022$ ), while a positive trend ( $P=0.069$ ) was observed for T follicular helper (Tfh) (CD45RA-CD45RO+PD1+CXCR5+) CD4+ T cells. By contrast, HIV DNA levels trended negatively with the frequencies of T central memory (Tcm, CD45RA-CD45RO+CCR7+CD27+) CD4+ T cells ( $P=0.160$ ). HIV RNA was more frequently detectable (Wilcoxon t-test,  $P=0.07$ ) in tissue specimens with lower frequencies of Trm cells. Memory CD4+ T cells from distinct tissue compartments varied in expression of activation (HLADR, CD38), differentiation (CD127, CD57), and homing (CCR5, CCR6) markers.

**Conclusions:** Although Tcm from blood have previously been reported as a preferential reservoir for HIV, our data suggest that this may not be the case in tissues where Tcm frequencies negatively associated with HIV DNA levels. Instead, our data suggest that Tfh and especially Trm may be preferential tissue-based reservoir cells among CD4+ T cells given their positive association with HIV DNA levels.

Our observation that Trm frequencies associate positively with overall HIV DNA but negatively with detectable HIV gene expression (RNA) suggests that these cells may be a preferential latent tissue reservoir of HIV. Our data also revealed phenotypic features of memory CD4+ T cells specific to various tissue compartments.

## OAA2803

Concurrent depletion and dysfunction of tissue-resident memory-like CD4+ T cells in the small intestine coinciding with intestinal epithelial cell hyperproliferation in people living with HIV (PLWH)

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**Background:** HIV infection impacts gut-resident CD4+ T-cells and gut homeostasis, both of which are central to the overall HIV-associated pathology. Gut resident CD4+ T-cells support epithelial cell renewal and differentiation in the intestinal crypt base. However, the differential im-

pacts of HIV infection on CD4+ T-cell levels and function in the small intestine versus the large intestine, as well as their effects on epithelial hyperproliferation, remain unknown.

**Methods:** Here, we studied the frequency and function of remaining tissue-resident CD4+ T-cells in the small and large intestine of people living with HIV (PLWH) in South Africa. Biopsies from >250 clinically indicated individuals from HIV endemic regions in South Africa were analyzed for CD4+ T-cell levels, and phenotyped by flow and mass cytometry and transcriptionally profiled after *ex vivo* live sorting. We used spatial profiling to identify HIV infection levels, CD4 T-cell location and epithelial hyperproliferation by fluorescent microscopy.

**Results:** Tissue resident memory-like (TRM-like) CD69<sup>+</sup>CD103<sup>+</sup>CD4<sup>+</sup>T-cells expressed the HIV co-receptor CCR5 and were enriched in the duodenum compared to the colon. In PLWH, these cells were preferentially depleted in the duodenum, but not in the colon. RNA sequencing of remaining duodenal CD4<sup>+</sup> TRM-like cells showed transcriptional downregulation of genes involved in proinflammatory cytokine signaling (IL-8, IL-6, IL-2, GM-CSF) and upregulation of genes involved in the IL-17 and Th2 pathway in PLWH. In addition, integrin signaling was downregulated in the duodenum and consistent with loss of duodenal integrin CD103<sup>+</sup> CD4<sup>+</sup> T-cells. In contrast, limited gene regulation was observed in the colon with limited CD4<sup>+</sup> T-cell depletion. In the non-hemopoietic epithelial compartment within the same cohort, we found increased proliferation (Ki-67) of duodenal crypt-based cells colocalizing with OLFM4 expressing Intestinal stem cells (ISCs) suggesting a direct link between CD4 TRM loss in the upper small intestine and ISC hyperproliferation.

**Conclusions:** HIV infection preferentially depletes TRM-like CD4<sup>+</sup> T-cells in the small intestine, while the remaining cells show dysfunctional profiles. This may have implications for cytokine signaling to intestinal stem cells, a critical process for epithelial cell differentiation and gut barrier integrity in PLWH.





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## OAA2804

### Study of the transcriptional microenvironment and associated viral dynamics of the SIV tissue reservoirs during ART and post-ATI

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**Background:** Despite effective antiretroviral therapy (ART), HIV-1 persistence is the major obstacle to a functional cure. To eliminate this viral reservoir, it is key to characterize reservoirs tissue microenvironment and associated viral population dynamics during ART, and after analytical treatment interruption (ATI).

**Methods:** We have developed immunoPET/CT-guided bulk and spatial transcriptomics pipelines, combined with immunofluorescence detection of viral proteins and whole genome long-read deep viral sequencing using the SIV/rhesus macaque model.

For this study, rhesus macaques were intra-venously challenged with SIVmac239, ART initiated at week 10 after infection, and maintained for 54 weeks, followed by PET/CT-guided necropsy after early ATI (4-7 days post-ATI). <sup>64</sup>Copper-labelled probe against viral envelope efficiently detected infection sites as early as 4-days post-ATI and immunoPET/CT-guided transcriptomics allowed the characterization of these PET/CT+ "hot" areas. Additionally, we performed viral long-read deep sequencing and population dynamics analysis in the same tissue sections.

**Results:** SIV presence in early post-ATI tissue reservoirs is associated with higher overall transcriptional levels and specific activation of genes associated to metabolic processes, cell localization, and cytokine immune signaling. Moreover, we detect specific transcriptional clusters that are highly associated with active SIV rebounding foci. These foci are characterized by higher estimated presence of immune cells and upregulation of immune cell migration and immune activation.

Analysis of intra-host viral population dynamics from the same "hot" areas of the tissues indicates highly complex dynamics during ART and after ATI. Early after ATI, we observe similar viral quasispecies structure between different anatomical compartments indicating possible viral recirculation during ART or immediately after ATI.

However, we observe significantly dissimilar patterns of

viral diversification in different tissue reservoirs. Interestingly, the highest viral diversity levels are consistently detected in GALT reservoirs where our spatial transcriptomics show activation of genes associated with viral production and immune activation pathways.

**Conclusions:** Overall, we have demonstrated the extreme sensitivity of our newly developed methods to study the SIV reservoirs. We have identified various possible biomarkers of such reservoirs. The combination of these methods is providing a unique view of the virus-host system that leads to viral persistence during ART and fast recovery of the viral populations immediately after ATI.

## OAA2805

### Development of a novel approach to treat HIV reservoirs in gut associated lymphoid tissues using nanoformulation of cART drugs

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**Background:** Combination antiretroviral therapy (cART) has effectively controlled the viral load below the detection level and significantly extended the life of people with HIV (PWH). However, cART does not eliminate the virus from the host and certain cART drugs do not efficiently reach the HIV reservoirs of organs such as gut-associated lymphoid tissue (GALT). Considering GALT is one of the major reservoirs of HIV, reducing the viral load within the tissue is important for a better outcome of the treatment. We propose that a formulation of three clinically available cART drugs, Emtricitabine (FTC), Tenofovir (TFV), and Dolutegravir (DTG) into polymer-based nanoparticles would significantly improve their accumulation in the GALT and increase drug therapeutic efficacy. Self-assembling polymer micelles consisting of two block copolymers, Pluronic F127 and Pluronic L61 were used as nanocontainers for cART drugs. Specifically, we hypothesized that cART nanoformulation targeted to Microfold cells (M-Cells) of the intestine would efficiently penetrate towards HIV reservoirs in GALT.

**Methods:** Various cART nanoformulations were manufactured and their accumulation in M-cells was examined in *in vitro* and *in vivo* mouse models. The pharmacokinetics and therapeutic efficacy study in BALB/c mice and humanized mice have determined the targeted drug delivery and anti-HIV activity of current formulations.

**Results:** The selected nanoformulations showed sustained drug release with no significant toxicity in different immune cells and *in vitro* M-cell models. A single dose of





cART nanoformulation had significantly higher retention in plasma compared to free drugs, showing a sustained release for 14 days.

Finally, the selected nanoformulation of the cART combination was highly effective against HIV in GALT tissue.

**Conclusions:** Loading cART drugs into polymer-based micelles provided significantly higher therapeutic efficacy against HIV in *in vitro* and *in vivo* models compared to free drugs. Thus, this approach may provide the next-generation anti-HIV medicine with targeted delivery to the GALT and better therapeutic efficacy with much fewer side effects with a once-a-week dosing schedule.

## OAA35 Immune dysfunction and residual viremia

### OAA3502

Daily variations of CD4<sup>+</sup> T cell counts and phenotype in relationship with residual viral transcription in the blood of people with HIV-1 receiving antiretroviral therapy

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**Background:** Biological functions exhibit circadian rhythms to align with day/night environmental changes. The circadian clock master regulators CLOCK/BMAL1 bind on E-boxes in the promoters of clock-regulated genes, including HIV-1. Circadian variations in residual viral transcription were reported in people with HIV-1 (PWH) receiving antiretroviral therapy (ART).

Here, we investigated quantitative, phenotypic and transcriptional features of CD4<sup>+</sup> T-cells in relationship with daily variations in residual HIV-1 transcription during ART.

**Methods:** Eleven male ART-treated PWH were admitted at the CHUM Unit for Innovative Therapies for 36 hours. Blood was collected every 4 hours, before food intake, for 24 hours. Plasma levels of cortisol/melatonin and markers of intestinal permeability (FABP2, LBP) were measured by ELISA. Flow cytometry allowed the quantification/char-

acterization of leukocytes. Sorted CD4<sup>+</sup> T-cells were used for cell-associated integrated HIV-DNA and Gag HIV-RNA quantification by nested PCR/RT-PCR and RNA-Sequencing by Illumina technology. The impact of time on immunological/virological parameters was investigated using Cosinor and linear mixed models.

**Results:** Typical peaks in melatonin and cortisol levels were observed at 4:00 and 8:00, respectively. The highest FABP2 and lowest LBP levels were observed at 4:00. CD4<sup>+</sup> T-cell counts were at nadir levels in the morning, but significantly increased at 20:00.

This increase coincided with a superior expression of HIV-1 co-receptors CCR5/CXCR4, Th17 marker CCR6, gut-homing ITGB7; follicular helper (CXCR5<sup>+</sup>PD-1<sup>+</sup>) and effector memory (CD45RA<sup>+</sup>CCR7<sup>+</sup>) phenotype on memory CD4<sup>+</sup> T-cells; and robust changes in differential gene expression at 20:00 and 4:00 *versus* other time points.

While integrated HIV-DNA levels *per* million CD4<sup>+</sup> T-cells were stable, the proviral load normalized *per* ml of blood varied in a time-dependent manner with the highest abundance at 20:00.

The HIV-RNA/DNA ratio (surrogate marker of HIV transcription) peaked at 4:00 and negatively correlated with levels of cortisol and LBP. Peak HIV-RNA/DNA ratios coincided with unique transcriptional profiles encoding for regulators of T-cell functions and viral transcription (SP6, Jun, BCL6, BCL3, SOCS3).

**Conclusions:** Our results reveal a massive influx of CD4<sup>+</sup> T-cells carrying proviral HIV-DNA in the blood at 20:00, a peak in residual HIV-1 transcription at 4:00, and a transcriptional signature associated with these daily immune/viral variations in ART-treated PWH.

### OAA3503

Failure to achieve undetectable viral load caused by HIV expression from defective proviruses and large reservoir size

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**Background:** Antiretroviral therapy (ART) halts viral replication and reduces plasma HIV RNA to undetectable levels in weeks to months in most people living with HIV (PLWH). However, ART is not curative due to HIV persistence in memory CD4<sup>+</sup> T cells. Some individuals experience nonsuppressible viremia (NSV) despite adherence to ART, usually after years of undetectable viral load.

Here, we characterized the source of NSV and reservoir composition in two PLWH who never reached undetectable viral load despite adherence and CD4 recovery.

**Methods:** We longitudinally sequenced plasma HIV RNA and proviral DNA in CD4<sup>+</sup> T cells. We measured infected cell frequency using the IPDA and viral outgrowth assay. Additionally, we developed custom digital PCR assays to



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quantify lineage-specific deletions, which we introduced into NL4-3 to assess their impact on virion production and infectivity.

**Results:** Viral sequences contributing to NSV exhibited no known drug resistance mutations and showed no evolution. They were remarkably polyclonal, in contrast to previous reports of NSV.

Furthermore, after two years on ART, total HIV DNA (29,000 and 11,000 proviruses/ $10^6$  CD4<sup>+</sup> T cells; for P1 and P2, respectively) was >100-fold greater than the median value from 400 ART-suppressed PLWH (755 proviruses/ $10^6$  CD4<sup>+</sup> T cells). For each participant, >90% of proviruses shared an identical deletion despite being diverse elsewhere in the genome, an unexpected finding given the lethal nature of the deletions.

In Participant 1, we found two deletions affecting the open reading frames of *vif*, *vpr*, *tat*, *rev*, *vpu*, and *env*; in participant 2, we found a 270-nucleotide deletion in the first exon of *tat*. Proviruses with these deletions contributed between 40-70% to the NSV. These proviruses could be induced to make virions *ex vivo* but did not give rise to exponential outgrowth by qVOA.

Finally, introducing these deletions into NL4-3 resulted in >5-log reduction in viral titer relative to the wild-type.

**Conclusions:** Failure to achieve undetectable HIV RNA on ART can be caused by a large population of infected cells, including those carrying defective proviruses with deletions. We hypothesize that the expression, dissemination, and diversification of these defective genomes is due to pre-ART superinfection with intact proviruses.

## OAA3504

### Modeling of ALT flares and liver inflammation in chronically SHIV/HBV co-infected rhesus macaques

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**Background:** 20% of individuals living with HIV also acquire HBV in their lifetime primarily due to common transmission routes. Rhesus macaques (RMs) have served as a model for HIV research for decades, but they have never been used to study HIV/HBV co-infection. Our group has shown that RMs infected with SHIV<sub>DH12 Clone 7</sub> and HBV<sub>genotype D</sub> support chronic HIV/HBV co-infection.

A major advantage of the RM model is that we can obtain longitudinal biopsies and constantly monitor immune cell phenotyping and ALT changes during the various stages of co-infection; something that is impossible to obtain in clinical patients to understand co-infection-associated pathogenesis.

**Methods:** We infected RM intravenously with SHIV<sub>DH12 Clone 7</sub> ( $5 \times 10^3$  TCID<sub>50</sub>) followed by HBV (genotype D,  $1 \times 10^9$  virions, i.v) three weeks later. We next subcutaneously administered

co-infected RM with combination ART (cART) approximately eleven weeks post-infection; consisting of Tenofovir (5.1 mg/kg), Emtricitabine (40 mg/kg) and Dolutegravir (2.5 mg/kg).

Once the HBV viral loads went down to  $10^2$  copies/ml, we replaced cART with Dolutegravir monotherapy (10 mg/kg). We collected weekly blood draws to monitor HBV/SHIV infection, and track CD4<sup>+</sup> and CD8<sup>+</sup> T cells, HBV surface antigens (HBsAg) and monitor ALT levels.

We obtained longitudinal liver biopsies to monitor changes in liver immune cell population and investigate signs of fibrosis by immunohistochemistry.

**Results:** One RM from our pilot study exhibited co-infection for >76 weeks making it the first ever animal to exhibit chronic HIV/HBV co-infection. cART-treated SHIV/HBV co-infected RM suppressed HBV and SHIV viremia with no effect on HBsAg levels. However, Dolutegravir monotherapy led to the rebound of HBV viremia only.

A major finding was the spike in ALT level during ART that was associated temporally with an increase in CD4<sup>+</sup> T cells. Immunohistochemistry analysis is ongoing to detect signs of fibrosis in the chronically infected RM.

**Conclusions:** Thus, we present here the first ever RM model to exhibit long-term SHIV/HBV co-infection that exhibited similar outcomes of ART as observed in clinically co-infected patients undergoing ART. Our data also shows that we can model ALT flares during ART which would be crucial in understanding immune cell dynamics across the stages of co-infection.

## OAA3505

### Characterization of adipose tissue B cell antibodies in persons with diabetes and HIV

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**Background:** Persons living with HIV (PLWH) experience a 1.5–2-fold higher incidence of cardiovascular disease (CVD) not solely attributable to traditional risk factors. Changes in subcutaneous adipose tissue (SAT) immune cells contribute to inflammation and proatherogenic dyslipidemia. B cells have been associated with cardiometabolic disease in the general population and are present in SAT. However, the role of B cells in cardiometabolic disease has not been studied in PLWH. We leveraged an existing cohort to investigate the changes in SAT B cells with cardiometabolic disease among PLWH.

**Methods:** SAT from PLWH with varying metabolic states and HIV-negative participants with diabetes were obtained via liposuction. Single-cell sequencing using cellular indexing of transcriptomes and epitopes (CITE-seq)



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was employed to analyze immune and non-immune cells in SAT. B cell receptor (BCR) sequences were analyzed using the 10X/enclon genomics analysis. The top 20 clonal BCRs were synthesized as IgG isotypes, and enzyme-linked immunosorbent assay (ELISA) against CMV antigens determined CMV specificity. Statistical analyses utilized Graph-Pad Prism software.

**Results:** We identified distinct B cell subsets, plasmablasts, naïve and memory B cells in SAT through CITE-seq using well-defined markers CD19, CD20, CD38, and CD27. Plasmablasts were significantly higher in prediabetic/diabetic PWH (Median 60 [IQR 20.3-88.9],  $P=0.01$ ), and diabetic HIV-negative persons (50 [20.6-77.1],  $P=0.003$ ) compared to non-diabetic PLWH (11.9 [5.3-33.3]).

There was no difference in the proportion of memory B cells based on HIV or diabetes, while naïve cells were higher in non-diabetic PWH (42.9 [21.9-63.4]) compared to diabetic PLWH (50 [0-28.6],  $P=0.008$ ) and trending towards significant in HIV-negative with diabetes (15.48 [0-44.5],  $P=0.06$ ).

BCR sequencing revealed that B cells expressing all four immunoglobulin isotypes (IgD, IgM, IgA, and IgG) were present in SAT. Clonal B cells were more prevalent in the SAT of diabetic PWH compared with non-diabetic PWH and diabetic HIV-negative, suggesting differences in antigen-driven responses within the SAT. Of the 20 clonal BCRs, only one clone among HIV-positive individuals bound weakly to CMV.

**Conclusions:** Clonal B cells that accumulate in the SAT with diabetes, irrespective of HIV status, may be important in the pathogenesis of cardiometabolic disease.

## OAB01 STick-it

### OAB0102

The effectiveness of different anal cancer screening strategies for people living with HIV/AIDS

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**Background:** People living with HIV/AIDS (PLWHA) have the highest incidence of HPV-associated anal cancer. The new anal cancer screening guidelines, published in 2024 by the International Anal Neoplasia Society, outline five screening strategies in high-resource settings: anal cytology alone, high-risk HPV (hrHPV) testing alone, cytology with hrHPV triage, hrHPV testing with cytology triage, or cotesting.

We aim to compare the effectiveness of these strategies in detecting anal cancer/precancer within a large cohort of PLWHA undergoing primary screening.

**Methods:** The study included 1,620 PLWHA who underwent anal cytology, hrHPV testing, and high-resolution anoscopy (HRA)-guided biopsy at our institution between 2012 - 2019. Using biopsy-proven anal HSIL as an endpoint, we calculated sensitivity, specificity, positive predictive value (PPV), negative predictive value (NPV), and the number of HRA referrals triggered by each screening strategy.

**Results:** The median age was 45 years (range: 34-54), with 90% of the participants being men who have sex with men living with HIV/AIDS. Anal HSIL rate was 42%. The performance of each screening strategy is summarized in **Table 1**. All strategies showed comparable performance metrics. HrHPV testing alone demonstrated the highest sensitivity (96%), while hrHPV with cytology triage showed the highest specificity (48%). The approach of hrHPV with cytology triage, or vice versa, yielded the highest PPV (54%) and while hrHPV alone had the highest NPV (92%). The number of HRA referrals triggered by screening was highest for hrHPV alone (83%) followed by cytology alone (77%) and lowest for hrHPV with cytology triage (66%).

Screening Strategy	Results triggering HRA referral	Sensitivity (95% CI)	Specificity (95% CI)	PPV (95% CI)	NPV (95% CI)	# HRAs
Cytology alone	ASCUS or worse	88 (85-90)	30 (27-33)	48 (45-51)	77 (72-81)	1,252 (77%)
hrHPV alone	hrHPV+	96 (95-97)	27 (25-30)	49 (47-52)	92 (88-95)	1,341 (83%)
Cytology with hrHPV triage	ASCUS/hrHPV+ LSIL/hrHPV+ ASC-H/HSIL All HPV16+	85 (82-88)	47 (44-50)	54 (51-57)	81 (78-84)	1,080 (67%)
hrHPV with cytology triage	hrHPV+/ASCUS or worse All HPV16+	85 (82-88)	48 (44-51)	54 (51-57)	81 (78-84)	1,073 (66%)
Cotesting	NILM/hrHPV+ ASCUS/hrHPV+ LSIL/hrHPV+ ASC-H/HSIL All HPV16+	89 (86-91)	40 (37-44)	52 (49-55)	83 (80-87)	1,167 (72%)

**Conclusions:** All screening strategies outlined in the new guidelines demonstrate comparable effectiveness in detecting anal cancer and precancer among PLWHA. Nevertheless, the combined approach of cytology and hrHPV testing, whether utilized as cotesting or triage, proves more effective than cytology or hrHPV testing alone. Significantly, the incorporation of hrHPV testing increases specificity and results in a reduced number of HRA referrals, a critical consideration given the limited HRA capacity, even in high-resource settings.



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## OAB0103

### Prevalence of high risk penile human papillomavirus in men who have sex with men (MSM) and transgender women (TGW)

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**Background:** High-risk HPV in anogenital locations, can lead to preneoplastic and neoplastic lesions. HPV transmission occurs through genital-genital or oral-genital contact and penile HPV represents a potential reservoir. This study aims to evaluate the prevalence of penile HPV among MSM and TGW populations.

**Methods:** A study on penile HPV was conducted at a Buenos Aires research center, involving MSM and TGW, some participating in an ongoing anal and oral HPV study. Epidemiological and clinical data were collected and penile samples were obtained using a 600-grit emery paper and a saline water-imbibed Dacron swab. DNA was purified using the Biocomma Universal Genomic DNA Purification kit, and HPV was detected with ATILA (Genotyping High-Risk HPV Real Time Fluorescent Detection).

**Results:** Between June 2022-August 2023, 200 participants were enrolled. Median age: 33(IQR 28-40); 98.5%(197) hispanic-latino ethnicity; 13.5%(27) circumcised; 85%(171) had at least one previous sexually transmitted infection (STI): syphilis (63%), gonorrhea (27.5%), chlamydia (21.5%), 36.5% (73) had HIV, median CD4 count: 417 cel/mL (IQR 315-664); 44% (88) had a history of anal or penile warts and 59% (69/113) anal intraepithelial lesions; 14.5% (29) had complete HPV vaccination. Baseline characteristics by group are shown in the table.

	MSM (n=164)	TGW (n=36)	P value
Tertiary education level	141 (86%)	10 (28%)	<0.001
History of STIs	137 (84%)	34 (94%)	0.092
HIV diagnosis	51 (31%)	22 (61%)	<0.001
Sexual work	31 (19%)	31 (86%)	<0.001
Lifetime insertive vaginal sex	89 (54%)	13 (36%)	0.048
Condom use in anal/vaginal insertive sex (more than 50%)	70 (47%)	21 (68%)	0.035
Condom use in oral insertive sex (less than 50%)	156 (97%)	26 (77%)	<0.001

Penile HPV was detected in 69 participants (34.5%), with no differences between groups (MSM/TGW 33.5/38.9%). HPV genotypes distribution were: HPV-33(26%), HPV-59(17%), HPV-35,HPV-43,HPV-45(16%), HPV-16(15%), HPV-56(14%), HPV-18,HPV-31,HPV-39(10%), HPV-52,HPV-68(9%),

HPV-58(7%), HPV-51(4%), HPV-66(3%). 19 penile samples (10%) showed 3 or more concomitant genotypes. Among those with anal (n=99) and oral (n=103) samples, the HPV prevalence was 79% and 22% respectively. HPV-33 was the most frequent genotype in penile and anal samples. Participants with penile HPV had a higher frequency of anal infection (p=0.02). No other statistically significant association was found.

**Conclusions:** One third of participants presented high-risk HPV penile infection. An association between penile and anal HPV was found. These facts reinforce the potential role of the penis as a reservoir. Prevention strategies such as gender-neutral vaccination and circumcision should be considered.

## OAB0104

### Dynamic interplay of high-risk human papillomavirus in women living with HIV: persistence, clearance, incidence and synergies with human T-lymphotropic virus-1 infections in a Kenyan teaching referral hospital

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**Background:** Cervical cancer (CC) is a major global health threat, especially in low- and middle-income countries like Kenya. Women living with HIV (WLHIV) are more susceptible to high-risk HPV (HR-HPV) infections, increasing their risk of cervical cancer and co-infections like HTLV-1. Our study at Kenyatta National Hospital (KNH) explored HR-HPV persistence, clearance, and incidence, examining their interaction with HTLV-1 in WLHIV on antiretroviral therapy (ART).

**Methods:** We conducted a prospective cohort study with 152 WLHIV, including 17 with HTLV-1 co-infections at KNH. After 12 months, cervical samples were retested for HR-HPV using Gene Xpert® and HPV Genotypes 14 Real-TM Quant. Data were analyzed using SPSS 23.0, presenting outcomes as proportions, stratified by HR-HPV genotypes and synergy with HTLV-1. Descriptive comparisons and statistical tests assessed associations, with odds ratios reported for risk estimation.



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**Results:** This prospective cohort study included 152 WLHIV who had initial HR-HPV infections, among whom 17 were co-infected with HTLV-1 and provided consent. Participants had a mean age of 41.3 years (SD 8.7) and 29.6% had predictable virological failure (HIV 1 RNA  $\geq 1000$  copies/mL of plasma).

The study revealed an overall HR-HPV persistence rate of 89.5%, with a clearance rate of 10.5%. Notably, HR-HPV 52 exhibited the highest persistence rate at 29.6%, followed by type 16 (22.4%) and 18 (19.1%) respectively.

Statistical analysis demonstrated a significant association between age and HR-HPV persistence, with rates of 86.8% and 13.2% for older and younger individuals, respectively ( $p < 0.001$ ). HIV diagnosis at an older age ( $\geq 35$  years) and a shorter duration of ART ( $< 5$  years) use were associated with HR-HPV persistence, with rates of 60.3% versus 39.7% ( $p = 0.002$ ) and 64.7% versus 35.3% ( $p = 0.004$ ), respectively. Furthermore, co-infection with HTLV-1 was associated with a 100% HR-HPV persistence rate, compared to an 88.8% rate among participants with HR-HPV infections only.

**Conclusions:** The study revealed a significant 89.5% HR-HPV persistence rate among WLHIV, with HR-HPV 52, 16, and 18 showing elevated persistence.

These findings underscore the importance of implementing the 9-valent HPV vaccine in Kenya, particularly for WLHIV, and highlight a 100% type-specific HR-HPV persistence rate in the presence of HTLV-1 co-infection.

## OAB0105

Detection of *Treponema pallidum* DNA for diagnosis, resistance identification, and treatment outcome prediction in early syphilis among men who have sex with men

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**Background:** The study aimed to investigate the use of *Treponema pallidum* DNA (TP-DNA) for diagnosis, resistance identification, and treatment outcome prediction in early syphilis among men who have sex with men (MSM).

**Methods:** Adult MSM seeking care for sexually transmitted infections were prospectively enrolled from September 2021 to September 2023. The diagnosis of syphilis was made based on serologic testing and clinical presentations. Collected clinical samples, including oral rinse, rec-

tal swab, and urethral swab, were tested for TP-DNA with the use of PCR assay targeting the 47 kDa gene. The cycle threshold (Ct) value of PCR assay was determined and the result was considered positive with a Ct value  $< 38$ .

Resistance-associated mutations (RAMs) to macrolides and tetracyclines were identified. Serologic responses were compared between individuals with detected TP-DNA and those without.

**Results:** During the study period, 570 MSM were enrolled, contributing to 386 tests for early syphilis, 169 treated syphilis, and 87 without syphilis. TP-DNA was detected in at least 1 clinical sample in 48.4% (187/386) of participants with early syphilis and 1.1% (1/87) of those without syphilis, resulting in a specificity of 98.9% and sensitivity 48.4%. TP-DNA was most frequently detected in participants with secondary syphilis (71.8%), followed by those with primary and early latent syphilis (51.6% and 34.4%, respectively). The detection rate of TP-DNA was higher in participants with rapid plasma regain (RPR) titers  $\geq 1:32$  compared with those with lower titers (54.0% vs 19.4%,  $P < 0.001$ ). The rate of *T. pallidum* harboring RAMs to macrolides (A2058G, A2058T, and A2059G) was 55.6% (109/196), while the rate of RAMs to tetracyclines (G966T, C967T and C1192G) was 0.6% (1/156). Regardless of RPR titers and syphilis staging, participants with detected TP-DNA had higher serologic responses compared to those without, with rates of 50.3% vs 35.2% at month 3 and 80.5% vs 66.5% at month 6.

**Conclusions:** Among MSM, the detection of TP-DNA showed high specificity for early syphilis, which correlated with the stage of syphilis, RPR titers and treatment response. The prevalence of *T. pallidum* strains with RAMs to macrolides was  $> 50\%$ , warranting further close monitoring.



## OAB1702

Pharmacokinetics and HIV viral load suppression of one month-daily rifapentine and isoniazid (1HP) for tuberculosis preventive therapy among adults with HIV taking standard dolutegravir based regimens

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**Background:** Ultrashort 1-month of daily rifapentine 600/isoniazid 300 mg (1HP) is an effective and attractive Tuberculosis Preventive Therapy (TPT) regimen. However, co-administration of 1 HP and Dolutegravir (DTG) based ART is limited due mainly to potential suboptimal DTG concentrations.

Recent findings from A5372 and Taiwanese HIV cohort suggest the potential concomitant use of 1 HP with standard dose DTG in Asian people with HIV (PWH). We therefore assessed safety, pharmacokinetics and HIV viral load suppression of once daily tenofovir disoproxil fumarate/lamivudine/DTG (TLD) when co-administration with 1HP in ARV naïve and ARV experienced PWH.

**Methods:** We analyzed data from an ongoing Phase 3 multicenter, randomized trial comparing 1HP and 3 HP (weekly isoniazid 900 mg/ rifapentine 900 mg for 12 weeks) among adult PWH (≥18 years) without evidence of active TB from 14 HIV clinics in Thailand. 1HP was initiated 2-4 weeks after starting TLD. Dolutegravir concentrations were collected at Day 0 (before 1HP) and day 28. Dolute-

gravir concentrations were analyzed at Center for Personalized Precision Medicine of Tuberculosis, Inje University College of Medicine, South Korea.

**Results:** 252 PWH (81% male, median age 32 (IQR: 26-41) years, BW 64.9 (IQR: 56.5-73.8) kg) on TLD and 1HP were analyzed. Median CD4 cell count was 451 (IQR: 287-682) cells/mm<sup>3</sup>, 202 (80%) were ARV naïve (no baseline VL) and 20% participants were ARV experienced with pre- 1HP HIV VL < 50 copies/ml. A total of 99.2% participants completed the 1HP; 2 (0.8%) permanently discontinued treatment due to possible 1HP related adverse events.

Hypersensitivity reaction occurred in 0.8%. Grade 3 and 4 asymptomatic hepatitis developed in 0.4%, and 1.2% SAEs were reported. HIV RNA < 50 copies/ml at 24 weeks and 48 weeks were 95.2% and 97.7%, respectively.

The geometric mean (95%CI) dolutegravir trough concentrations were 0.56 mg/dL (0.27-1.16) on day 0 vs 0.15 mg/dL (0.09-0.24) on day 28. Almost 92.6% had DTG Ctrough > 0.064 mg/dL.

**Conclusions:** Although there were substantial reductions in DTG Ctrough, almost 93% of participants had DTG Ctrough concentration above the protein-binding -adjusted IC<sub>90</sub>. Co-administration of 1HP and TLD were well tolerated, with robust high rates of HIV virological suppression. These findings highlight potential co-administration of 1HP with standard dose TLD.

## OAB1703

High incidence of tuberculosis in young children living with HIV in the Western Cape, South Africa

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**Background:** We examined tuberculosis (TB) trends among children living with HIV (CLHIV), age ≤5 years, in Western Cape, South Africa. Early infant HIV testing and early antiretroviral therapy (ART) initiation is implemented in this high HIV and TB setting.

**Methods:** We analysed routinely-collected healthcare data for CLHIV born May 2018-October 2022 (database closure mid-2023). We examined factors associated with



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TB diagnosis using Fine-Gray competing risk models (death and loss to follow-up as competing events), adjusted for sex, birth year and previous TB.

**Results:** We included 2219 CLHIV; 30% diagnosed with HIV at age  $\leq 7$  days, 41% at age 8-365 days and 29% at age  $>1$  year. Median follow-up from birth was 38 months (IQR 24-50); 90% of CLHIV started ART. TB was diagnosed in 28% of CLHIV ( $n=626/2219$ ); 62% first diagnosed before/within 3 months of ART start (TB before ART) and 38%  $>3$  months after ART start (TB after ART).

Of those with 'TB before ART' ( $n=390$ ), median age at HIV diagnosis was 13 months (IQR 6-22) and median time from HIV diagnosis to TB diagnosis was 5 days (IQR 0-31). 'TB before ART' was significantly associated with older age at HIV diagnosis and advanced/severe immunodeficiency.

Of those with 'TB after ART' ( $n=258$ ), median age at HIV diagnosis was 2 months (IQR 0-8) and median time from ART start to TB diagnosis was 12 months (IQR 7-21). 'TB after ART' was associated with increased viral load and advanced/severe immunosuppression (time-updated) but not age at ART start.

Even low-level viraemia (500-999 vs  $<100$  copies/ml) was associated with 'TB after ART' (aSHR 2.75; 95%CI 1.05-7.18). Overall, 5% ( $n=112/2219$ ) of CLHIV died, 36% of whom were diagnosed with TB (median time from TB diagnosis to death: 58 days; IQR 17-191).

**Conclusions:** Young CLHIV in this setting have high TB-associated morbidity and mortality. Susceptible groups include: CLHIV diagnosed with HIV and TB concurrently at an older age, associated with advanced/severe immunodeficiency; and CLHIV who, despite starting ART in early infancy, develop TB later, associated with advanced/severe immunodeficiency and elevated viral load. Efforts to improve early HIV diagnosis, viral suppression and TB preventive therapy are needed.

## OAB1704

### Single-dose liposomal amphotericin to prevent meningitis in HIV-associated cryptococcal antigenemia with low serum CrAg titers

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**Background:** Cryptococcal meningitis is a leading cause of AIDS-related mortality. Cryptococcal antigen (CrAg) predicts development of meningitis. Historically, despite standard-of-care fluconazole, 25-30% of asymptomatic CrAg-positive persons develop breakthrough meningitis or death. Recently single-dose liposomal amphotericin (10mg/kg) was recommended as first-line therapy for the treatment of cryptococcal meningitis by the World Health Organization.

We evaluated whether a single high dose of liposomal amphotericin could prevent cryptococcal meningitis and death in persons with asymptomatic cryptococcal antigenemia.

**Methods:** Participants with HIV and asymptomatic cryptococcal antigenemia in Uganda were randomized to one dose of liposomal amphotericin (10mg/kg) with fluconazole or fluconazole alone through 24 weeks (clinicaltrials.gov NCT03945448).

Participants were enrolled from two sites in Uganda from April 2019 to April 2022. Twenty-four week meningitis-free survival was compared between treatment groups using a log-rank test. Hazard ratio was estimated using a univariate Cox proportional hazard model.

Upon review of the interim data, the data safety and monitoring board (DSMB) recommended no further enrollment of participants with low serum CrAg titers ( $\leq 1:80$ ). Herein, we present results among participants with a low serum CrAg titer.

**Results:** We enrolled 251 of 593 CrAg-positive participants screened, of whom 168 had a low CrAg titer ( $\leq 1:80$ ). Median CrAg titer and baseline characteristics were comparable between the two groups. During 24-weeks of follow up, clinical events occurred in 14.5% (12/83) of participants randomized to liposomal amphotericin with fluconazole versus 10.6% (9/85) assigned to fluconazole alone (ARR = 3.9%; 95% CI, -6.13% to 13.9%;  $p=0.45$ ) with a hazard ratio of 1.42 (95% CI, 0.60 to 3.36;  $p=0.43$ ). Clinical adverse events were more common in the intervention group, however,



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no specific adverse event was more notable in one group or the other. There was no difference between the occurrence of grade 3 and 4 laboratory adverse events across the two groups (liposomal amphotericin 24% (20) versus standard-of-care 24% (20);  $p=0.93$ )

**Conclusions:** Among CrAg-positive persons with low titers ( $\leq 1:80$ ), the addition of single-dose liposomal amphotericin to fluconazole as preemptive therapy provided no additional clinical benefit.

## OAB1705

Prevalence of isolated cryptococcal antigenemia and efficacy of preemptive fluconazole treatment in people living with HIV (PLWH) in China

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**Background:** Studies have shown that Isolated cryptococcal antigenemia (ICA) is a risk factor for death or cryptococcal meningitis (CM) in PLWH, and that preemptive antifungal treatment for ICA is vital for prevention of CM or death in this population. However, there is a dearth of published studies concerning the prevalence of ICA and preemptive fluconazole utilization in PLWH in China.

**Methods:** This was a multicenter, retrospective study at eight hospitals in China. Data from Jan 2019 to Dec 2022 were retrospectively analyzed. CrAg positive PLWH received extensive laboratory and radiological examinations to evaluate the presence of underlying cryptococcal disease. Those with CM, pulmonary cryptococcosis (PC), or cryptococcemia, and those having less than one year of follow-up were excluded from the analysis. Only PLWH with ICA were enrolled in our study.

**Results:** A total of 14678 PLWH underwent serum CrAg testing. Of these, 369 with CM, 101 with PC, and 67 with cryptococcemia were excluded, and of the remaining 10649 PLWH, the data of 433 with ICA were pooled and analyzed. In our cohort, the overall prevalence of ICA was observed to be 4.1%, and the prevalence of ICA in patients with CD4+ T-cell counts of  $<200$  cells/ $\mu$ L was 5.2%. Additionally, the prevalence of ICA in patients with CD4+ T-cell counts of  $<100$  cells/ $\mu$ L was 6.6%. Interestingly, we observed five further PLWH with ICA in a subset of 1260 individuals having CD4+ T-cell counts ranging from 200 cells/ $\mu$ L to 500 cells/ $\mu$ L.

When comparing one group without preemptive fluconazole treatment and the other with preemptive fluconazole treatment, we found that the cumulative incidence of CM and/or death in these groups was lower in the preemptive fluconazole treatment group (8.6% vs. 19.0%,  $p=0.144$ ), and patients who did not receive preemptive fluconazole treatment had a significantly higher risk of CM and/or death (aHR: 3.035, 95%CI, 1.067–8.635;  $p=0.037$ ).

**Conclusions:** Our results demonstrate that overall ICA prevalence in our PLWH cohort exceeded the threshold of 3%, indicative of a high endemic rate of cryptococcal infection in PLWH in China. Preemptive fluconazole treatment is an effective strategy for reducing the risk of CM and death in China.

## OAB21 Young people age too!

### OAB2102

Randomised placebo-controlled trial of high-dose vitamin D and low-dose calcium supplementation to improve bone density in adolescents with perinatally-acquired HIV in Southern Africa

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**Background:** HIV adversely affects skeletal development in children despite antiretroviral therapy (ART). Vitamin D deficiency, highly prevalent among children with HIV in Africa, has a further adverse impact on bone health. We investigated whether adjuvant vitamin D<sub>3</sub> and calcium carbonate supplementation improves bone density among adolescents with HIV.

**Methods:** We conducted a multi-country individually randomised, double-blinded placebo-controlled trial of weekly high-dose (20,000IU) vitamin D<sub>3</sub> plus daily calcium carbonate (500mg) supplementation for 48 weeks. Adolescents with HIV aged 11-19 years taking ART for  $\geq 6$  months were recruited from HIV clinics in Zimbabwe and Zambia.

The primary outcome was total body less-head bone mineral density (TBLH-BMD) Z-score using a UK reference population, measured by dual-energy X-ray absorptiometry (DXA). Lumbar spine bone mineral apparent density (LS-BMAD) Z-score was a secondary outcome. Linear regression was used to compare arms adjusting for site and baseline value of the measure. Pre-specified subgroup analyses by age-group, sex, pubertal stage and baseline vitamin D insufficiency (defined as 25(OH)D level  $<75$ nmol/l) were performed.





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**Results:** 842 participants, 448 (53.21%) female, were enrolled. 75.9% were vitamin D insufficient. Baseline characteristics were balanced between arms; at 48 weeks DXA outcomes were available for 751 (89.2%) participants. There was no difference by arm in the primary outcome (mean 48-week TBLH-BMD Z-score -1.56 (SD 1.12) in intervention arm vs -1.53 (1.18) in the control arm, adjusted mean difference [AMD] -0.03 (95% CI -0.08,0.02)). Results were similar for LS-BMAD Z-score (mean -0.71 (1.16) vs -0.64 (1.19; AMD -0.04 (95%CI -0.11,0.02)). However, among participants with vitamin D insufficiency, there was a significant difference by arm in both TBLH-BMD- and LS-BMAD- Z-scores (Table 1). There was no evidence of effect in other subgroups. No drug-related severe adverse events were observed.

TBLH-BMD Z-score					LS-BMAD Z-score				
Baseline 25(OH) D level	N	Control arm mean (SD)	Intervention arm mean (SD)	Adjusted Mean Difference (95% CI)	P-value	Control arm mean (SD)	Intervention arm mean (SD)	Adjusted Mean Difference (95% CI)	P-value
<75 nmol/L	562	-1.53 (1.22)	-1.61 (1.13)	-0.06 (-0.11, -0.01)	0.027	-0.67 (1.19)	-0.72 (1.13)	-0.09 (-0.17, -0.02)	0.016
≥75 nmol/L	189	-1.52 (1.03)	-1.45 (1.12)	0.05 (-0.07, 0.16)	0.44	-0.51 (1.08)	-0.70 (1.24)	0.10 (-0.03, 0.23)	0.13

Table 1: Outcomes by baseline Vitamin D<sub>3</sub> level.

**Conclusions:** High-dose vitamin D<sub>3</sub> and low-dose calcium supplementation, a safe, easily available and cheap intervention, during adolescence (a period of rapid growth) may promote bone accrual and mineralization towards maximizing peak bone mass, which may reduce the risk of fractures among children growing up with HIV.

## OAB2103

### Neurocognitive trajectories among a young adult cohort from four African countries: associations with HIV and food insecurity

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**Background:** HIV and food insecurity (FI) compound cognitive impairment in adulthood. It is unclear how HIV and FI may impact neurodevelopment in young adults.

**Methods:** The African Cohort Study (AFRICOS) prospectively enrolls people with (LWH) and without (LWoH) HIV, aged ≥15 years, in care at 12 PEPFAR-supported facilities in Kenya, Nigeria, Tanzania, and Uganda. Participants were administered neuropsychological tests annually including the WHO/NIMH Auditory-Verbal Learning (AVLT) total recall (verbal memory), Trail Making (TMT) time (processing speed), and Grooved Pegboard (GP) time (motor speed and dexterity). FI was self-reported as not enough to eat or <3 meals per day.

We restricted the sample to participants <26 years old at first neuropsychological test and on antiretroviral therapy ≥6 months if LWH. Linear mixed models (LMMs) assessed baseline HIV status and time-varying FI on cognition longitudinally across age. Interactions included: FI\*HIV, gender\*FI, gender\*HIV, FI\*age, HIV\*age. Age interactions assessed differences in rate of cognitive score change. All models controlled for gender, household income, education, and prior tuberculosis infection.

**Results:** Young adults (n=902) were primarily female (56%), LWH (74%), and 29% were FI, with 4 visits on average. Overall, increasing age was associated with better scores. Longitudinally, those LWoH scored better than those LWH (total recall  $\beta$ =1.03; TMT time  $\beta$ = -5.55; GP time  $\beta$ = -0.12; all  $p$ ≤0.05). Females scored better than males LWH on total recall longitudinally (interaction  $p$ <0.01), with no gender difference for those LWoH. For FI\*age, FI was associated with a greater positive rate of change in total recall (interaction  $p$ =0.002) (Figure). No FI\*HIV interactions were significant and rates of change for TMT and GP was not different by FI or HIV status.



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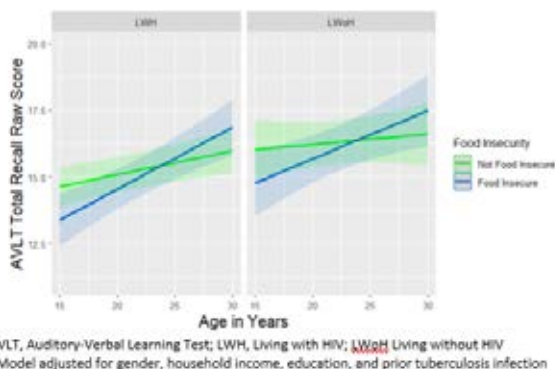


Figure. AVLT total recall score across time (age) stratified by HIV status and food insecurity status.

**Conclusions:** FI was associated with a greater positive rate of change in total recall among both treatment-experienced young adults LWH and LWoH, possibly reflecting developmental catch-up resulting from clinical care.

## OAB2104

Increased biomarkers of cardiovascular disease in a long-term survivor cohort of young adults living with perinatal HIV with virologic non-suppression or metabolic syndrome

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**Background:** With age and duration of antiretroviral therapy (ART), young adults with perinatally acquired HIV (YA-PHIV) are at risk for cardiovascular disease. Inflammatory biomarkers including high sensitivity C-reactive protein (hs-CRP), interleukin (IL)-18, and soluble CD163 (sCD163) have been associated with increased cardiovascular morbidity and mortality. We assessed biomarker levels and their association with HIV viremia and metabolic syndrome in a long-term cohort of YA-PHIV.

**Methods:** YA-PHIV, who started ART in pediatric clinics at five sites in Thailand aged 18-25 years, were recruited from November 2020 to July 2021. Clinical assessments and blood sampling for hs-CRP, IL-18, and sCD163 levels were performed. Metabolic syndrome was defined using National Cholesterol Education Program-Adult Treatment Panel III criteria. The hs-CRP levels between 1.0 to < 3.0 and  $\geq 3$  mg/L were defined as intermediate and high risk for cardiovascular disease, respectively. Biomarker association with HIV viremia and metabolic syndrome were assessed using Mood's median non-parametric test.

**Results:** Of the total 347 YA-PHIV, 187 (54%) were biological females. At enrolment, median age and duration on ART were 21.8 years (interquartile range, IQR 20.1-23.5) and 16.7 years (IQR 13.4-18.4), respectively. Their median CD4 was 564 cells/mm<sup>3</sup> (IQR 356-753), 14% had CD4 count <200 cells/mm<sup>3</sup>, 19% had HIV-RNA >1,000 copies/mL, and 7.8% had metabolic syndrome.

Overall, 25% had hs-CRP levels associated with intermediate and 26% with high risk for cardiovascular disease; levels were similar (24% and 23%) in those with HIV-RNA <1,000 copies/mL. The median serum IL-18 was 82.4 pg/mL (IQR 33.8-151.9) and sCD163 was 53.6 ng/mL (IQR 31.1-90.1). YA-PHIV with HIV-RNA >1,000 had significantly higher hs-CRP ( $p=0.001$ ), IL-18 ( $p<0.001$ ), and sCD-163 ( $p=0.003$ ) than those with HIV-RNA <1,000 copies/ml. YA-PHIV with metabolic syndrome were more likely to have higher median hs-CRP ( $p=0.008$ ) and a trend toward higher sCD163 ( $p=0.07$ ) than those without, but there was no difference in IL-18 levels. Higher median IL-18 was observed in males than females.

**Conclusions:** YA-PHIV with HIV-RNA >1,000 copies/ml had increased biomarkers of cardiovascular disease, and those with metabolic syndrome had increased hs-CRP and sCD163. Further research on the predictive value of these biomarkers on cardiovascular outcomes in aging YA-PHIV is warranted.

## OAB2105

### Biomarker-confirmed, unhealthy alcohol use among adolescents and young adults with HIV is associated with viral non-suppression in Uganda and Kenya in the SEARCH-Youth study

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**Background:** We previously demonstrated in a clinic-cluster randomized trial that the multilevel SEARCH-Youth intervention, which included life-stage assessments, person-centered care, and rapid viral load feedback, improved HIV outcomes among adolescents and young adults with HIV (AYAH) aged 15-24 in Uganda and Kenya. In a cross-sectional study, we evaluated whether alcohol use predicted viral non-suppression.

**Methods:** We conducted a survey on alcohol use and tested for phosphatidylethanol (PEth), a blood-based biomarker of prior month alcohol consumption, among intervention participants. We defined unhealthy alcohol use as Alcohol Use Disorders Identification Test - Consumption (AUDIT-C, prior 3 months) positive ( $\geq 3$  for women,  $\geq 4$  for men) OR PEth  $\geq 50$  ng/mL, and explored the association between unhealthy alcohol use and viral non-suppression ( $\geq 400$  copies/mL) using logistic regression, adjusting for gender, age, and country.

**Results:** Unhealthy alcohol use was assessed in 718 AYAH: 409 (57%) in Uganda and 309 (43%) in Kenya. Eighty percent were female, median age 24 years, and 95% were virally suppressed at the time of the survey and PEth measures, 30-36 months after enrollment.

The prevalence of unhealthy alcohol use was 24.8% and more common among males, older AYAH, and participants in Uganda (Table).

Participants with unhealthy alcohol use had 2.8 times higher odds of viral non-suppression (adjusted odds ratio = 2.80, 95%CI: 1.19-6.58,  $p=0.02$ ).

	No or low-risk alcohol use, n (row %)	Unhealthy alcohol use*, n (row %)
All	538 (75.2)	177 (24.8)
Male	92 (64.3)	51 (35.7)
Female	446 (78.0)	126 (22.0)
Aged 15-19	98 (94.2)	6 (5.8)
Aged 20-24	245 (75.6)	79 (24.4)
Aged 25-29	139 (68.4)	60 (31.6)
Ugandan	251 (62.2)	155 (38.2)
Kenyan	287 (92.9)	22 (7.1)

\*Alcohol Use Disorders Identification Test - Consumption (AUDIT-C, prior 3 months) positive ( $\geq 3$  for women,  $\geq 4$  for men) OR PEth  $\geq 50$  ng/mL

Table.

**Conclusions:** Unhealthy alcohol use, was more common in males and increased with age, suggesting there may be a window for intervention. After adjusting for gender, age, and country, unhealthy alcohol use was highly predictive of non-suppression among AYAH receiving the intensive, multi-level SEARCH Youth intervention, suggesting alcohol use may play a role in ongoing HIV transmission among AYAH.

## OAB26 ART nouveau

## OAB2602

### Efficacy and safety of bictegravir plus lenacapavir: 48-week outcomes in virologically suppressed people with HIV-1 on complex antiretroviral regimens at baseline

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**Background:** The combination of bictegravir (BIC), an integrase strand transfer inhibitor, and lenacapavir (LEN), a first-in-class capsid inhibitor, could consolidate treatment in virologically suppressed (VS) people with HIV-1 (PWH) who are otherwise unable to take a single-tablet regimen (STR). The 24-week primary efficacy and safety outcomes for BIC + LEN in VS PWH on a complex regimen have been presented; here we report longer-term data through Week 48.

**Methods:** In this Phase 2, randomized, open-label, multicenter study (ARTISTRY-1, NCT05502341), PWH on a stable baseline regimen (SBR) ( $\geq 6$  months prior to screening)



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were randomized 2:2:1 to receive once-daily oral BIC 75 mg + LEN 25 mg, oral BIC 75 mg + LEN 50 mg, or to continue SBR. The proportion of participants with HIV-1 RNA <50 copies/mL (missing=excluded), change in CD4 cell count and treatment-emergent adverse events (TEAEs) were assessed.

**Results:** At baseline (N=128), 19% of participants were female, 31% were Black and 16% were Hispanic/Latinx; median (Q1, Q3) age was 60 (56, 65) years and participants were taking a median (range) of 3 (2-9) tablets per day. 121 participants completed the Week 48 visit (BIC 75 mg + LEN 25 mg: N=49; BIC 75 mg + LEN 50 mg: N=47; SBR: N=25). At Week 48, all participants in the BIC 75 mg + LEN 50 mg group had HIV-1 RNA <50 copies/mL; changes in CD4 counts were comparable among groups (*Table*). One participant on BIC 75 mg + LEN 50 mg had HIV-1 RNA ≥50 copies/mL at Week 36 and resuppressed after switching treatment. BIC + LEN was well tolerated, with few TEAEs leading to premature treatment discontinuation (*Table*).

	BIC 75 mg + L5M 25 mg N=49	BIC 75 mg + L5M 50 mg N=48	SBR N=28
Mean ± SD, ±SD (coefficient of variation) in %	47 (95.3)	48 (100.3)	25 (90.3)
Change from baseline in CD4 count, cells/μL, mean (SD)	35 (105.3)	43 (157.2)	43 (200.4)
≥1 TEAE up to Week 48, n (%)	42 (85.7)	40 (83.3)	19 (67.9)
≥1 TEAE of Grade 3 or higher up to Week 48, n (%)	5 (10.2)	4 (8.3)	1 (3.6)
≥1 TEAE leading to premature treatment discontinuation up to Week 48, n (%)	1 (2.0)	1(1.3)	0
≥1 treatment-related TEAE up to Week 48, n (%)	3 (6.1)	3 (6.3)	0
≥1 serious TEAE up to Week 48, n (%)	4 <sup>a</sup> (8.2)	3 <sup>a</sup> (6.3)	2 <sup>a</sup> (7.1)
Deaths up to Week 48, n (%)	0	1 <sup>a</sup> (2.1)	0

\*One participant had a study visit during the Week 48 analysis window, but had not completed the Week 48 visit. †Missing-excluded analysis includes all available HIV-1 RNA data regardless of being on or off study treatment. ‡Percentages were based on: BIC 75 mg + LEN 25 mg, N=51; BIC 75 mg + LEN 50 mg, N=52; Nausea, Vomiting, †Unrelated to study treatment. BIC, bictegravir; LEN, lenvatinib; SD, standard deviation; TTR, treatment-emergent adverse event.

*Table. Summary of efficacy and safety outcomes at week 48 (Phase 2).*

**Conclusions:** These findings support continued evaluation of the combination of BIC and LEN to simplify treatment in VS PWH who are receiving complex regimens. A BIC/LEN STR will be assessed in Phase 3.

## OAB2603

Phase 1 study of VH4524184 (VH-184), a new third-generation integrase strand transfer inhibitor (INSTI) with a unique resistance profile

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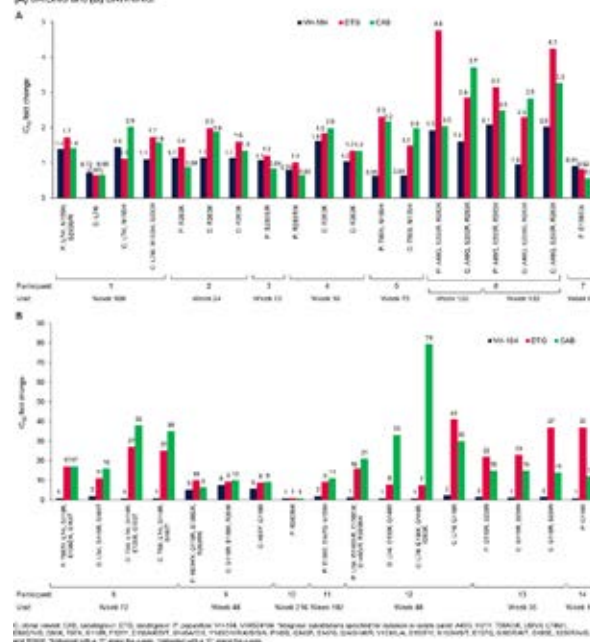
**Background:** Due to widespread use, new INSTIs that can overcome second-generation INSTI-related resistance may be needed. VH4524184 (VH-184) is a third-generation INSTI in development for HIV-1 treatment. We present the pharmacokinetics, safety, and in vitro resistance profile of VH-184.

**Methods:** A double-blind, randomized, placebo-controlled, phase 1, first-time-in-human (FTIH) study evaluated oral VH-184 in healthy adults administered as single ascending doses (10–460 mg; part 1), multiple ascending doses (160–480 mg) for 14 days with concomitant midazolam (part 2), and as a single dose (100 mg) under fasted and fed conditions (part 3).

Additionally, resistance to VH-184 was evaluated in vitro against a panel of HIV-1 clinical isolates from the phase 3 SAILING and DAWNING studies.

**Results:** In the FTIH study, 84 participants were included (placebo, n=21; VH-184, n=63; 5 female, 34 Black, 28 Hispanic). Geometric mean VH-184 plasma concentrations increased in a dose-proportional manner after single doses of 10 to 300 mg, without further increase after 460-mg single or 480-mg multiple doses; geometric mean half-life was ~24 hours. Accumulation in exposures ranging from 1.3- to 1.9-fold was observed after repeat VH-184 dosing of 480 and 160 mg, respectively. Results suggested VH-184 had minimal impact on the pharmacokinetics of CYP3A substrates and a moderate positive food effect. Generally, adverse events (AEs) were mild (n=44 in 29 participants); none were serious. Laboratory AEs were asymptomatic and unrelated to VH-184. VH-184 demonstrated potent in vitro antiviral activity against dolutegravir-selected INSTI-resistant isolates (Figure).

Figure. Antiviral activity of Vb-184 against a panel of HIV-1 clinical isolate populations<sup>††</sup> and clonal variants<sup>††</sup> from the phase 3 studies (A) SAILING and (B) DAWNING.



*Figure.*

**Conclusions:** FTIH study results helped characterize VH-184 pharmacokinetics and indicate that VH-184 does not inhibit or induce CYP3A4 and has a moderate positive food effect. The in vitro resistance profile of VH-184 is distinct from prior INSTIs, retaining antiviral activity against second-generation INSTI-resistant clinical isolates. Early data support the safety and further development of VH-184 as a third-generation INSTI for HIV-1 treatment.



## OAB2604

### Subcutaneous injections of cabotegravir + rilpivirine in virally suppressed adults with HIV-1: a substudy of the Phase 3 FLAIR study

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**Background:** Cabotegravir+rilpivirine (CAB+RPV) administered via intramuscular gluteal (IM) injections is approved for maintaining HIV-1 virologic suppression. Subcutaneous (SC) injection may enable self-administration at home.

We present outcomes from the Phase 3 FLAIR (NCT02938520) substudy evaluating SC anterior abdominal injections of CAB+RPV in participants with >3 years' experience with IM injections.

**Methods:** FLAIR participants who consented for the substudy received IM injections during screening, 3 SC injections from Day 1 to Week (W) 8, and IM injections at W12. All injections were administered by study staff using the FLAIR study regimen and schedule (Q4W, CAB+RPV [400 mg/600 mg]). Outcomes assessed included pharmacokinetics, safety, tolerability, efficacy, and PROs.

**Results:** 93 participants enrolled into the substudy and received SC injections; 19% were female sex at birth, 23% were ≥50 years, and 20% were Black. CAB and RPV plasma exposures were generally comparable between SC and IM injections, with 90% CIs of geometric LSM ratios all within 0.80–1.25 bioequivalence limits (Table).

Pain, nodules, and erythema were the most commonly reported SC-related injection site reactions (ISRs), occurring with 48%, 34%, and 26% of injections. Median ISR duration was 10 days; however, median induration and nodule durations were longer with SC vs. IM administration (33 vs. 26 days and 39 vs. 9 days, respectively).

Five (5%) participants withdrew due to an SC-related ISR. At W12, 90% (n=84/93) of participants maintained HIV-1 RNA <50 copies/mL, and 2% (n=2/93) had HIV-1 RNA ≥50 copies/mL; no participants had confirmed virologic failure during the substudy.

At W9, most participants preferred IM injections (59%; n=50/85), most commonly citing less injection site swelling (58%; n=29/50) and fewer nodules (58%); 34% (n=29/85) preferred SC, most commonly citing convenience (86%; n=25/29). 59% (n=51/87) of participants were "extremely" or "very" interested in self-administration.

Analyte	Parameter	SC Injection 1	SC Injection 2	SC Injection 3	Return to Gluteal (assessed post hoc)
CAB	Cmax	0.942 (0.897, 0.990) (n=89)	0.911 (0.860, 0.965) (n=86)	0.910 (0.857, 0.966) (n=83)	1.003 (0.938, 1.074) (n=82)
	Ctau	0.948 (0.901, 0.998) (n=63)	0.935 (0.877, 0.995) (n=74)	0.934 (0.872, 1.000) (n=70)	0.999 (0.943, 1.059) (n=76)
RPV	Cmax	0.938 (0.895, 0.982) (n=88)	0.918 (0.876, 0.963) (n=85)	0.905 (0.861, 0.952) (n=82)	0.937 (0.891, 0.986) (n=80)
	Ctau	1.002 (0.952, 1.056) (n=63)	0.961 (0.921, 1.002) (n=73)	0.928 (0.885, 0.973) (n=68)	1.003 (0.955, 1.053) (n=74)

Values displayed are geometric LSM ratios (90% CI) between each injection vs. the IM gluteal injection immediately prior to the first SC injection. Return to gluteal: the IM gluteal injection immediately following the third (final) SC injection vs. the IM gluteal injection immediately prior to the first SC injection.

CAB, cabotegravir; CI, confidence interval; Cmax, plasma concentration approximately one week post injection; Ctau, plasma concentration at end of dosing interval; IM, intramuscular; LSM, least squares mean;

PK, pharmacokinetics; RPV, rilpivirine; SC, subcutaneous.

**Table. Geometric LSM ratios and 90% CIs for CAB and RPV PK parameters following SC (test) and gluteal (reference) administration by injection interval (paired data).**

**Conclusions:** Equivalent pharmacokinetics and similar efficacy were established for CAB+RPV at the SC administration site. Most participants favored IM, but a majority were still interested in the option of self-administration.

## OAB2605

### PedMAB1 clinical trial: safety assessment of CAP256V2LS and VRC07-523LS to prevent breastmilk HIV transmission in HIV-1 exposed and negative neonates

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**Background:** Breastmilk transmission of HIV-1 contributes to residual vertical HIV transmission. PedMAB1 aims to define the optimal doses, ideal combination and timing of subcutaneous (SC) administration of two broadly neutralizing antibodies, VRC07-523LS and CAP256V2LS, to prevent vertical HIV transmission.

Here we first report on reactogenicity and safety of CAP256V2LS, for the first time in infants, and VRC07-523LS.



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**Methods:** Since study start on 1st September 2022 eight eligible HIV-exposed uninfected infants in each study arm received 5, 10 or 20 mg/kg CAP256V2LS (arms 1-3) or 20 or 30 mg/kg VRC07-523LS (arms 4 and 5), SC within 96 hours of birth. All infants were observed for 4 hours post-dose, and followed up face-to-face at days 3, 14 and 28, then monthly until 6 months for safety and pharmacokinetic assessments. In a pictorial study diary mothers documented reactogenicity and early adverse events (AEs). An internal study safety committee reviewed safety data two-weekly. Here we report on reactogenicity and AEs until 19 January 2024. The Division of AIDS Table, version 2.1. July 2017, was used to grade AEs.

**Results:** Reactogenicity grade 1 events observed at 4 hours or over the first 3 days post-dose were recorded in 3/8 and 2/8 infants receiving CAP256V2LS at 10 and 20mg/kg, respectively; and in 4/8 and 3/8 infants receiving VRC07-523LS at 20 and 30 mg/kg, respectively. AEs were mostly common illnesses (except for low absolute neutrophils, a palatal cyst and an uncomplicated umbilical hernia). 99 AEs were reported in 24 infants receiving CAP256V2LS, but only two (grade 1), one infant with raised AST and one with irritability in the 10 and 20 mg/kg arms, respectively, were related to study product. 61 AEs were reported in 16 infants receiving VRC07-523LS, and only two (raised AST and ALT) grade 1 and 2, in one infant were related to the 20mg/kg administration. All related AEs were asymptomatic and resolved within two weeks.

**Conclusions:** CAP256V2LS and VRC07-523LS at the doses here administered SC to infants within max 96 hours of birth are safe and showed overall low reactogenicity. Reported product related AEs were rare and expected. Analysis of the pharmacokinetics of the study products is ongoing.

## OAB34 Co-morbidities: The heart of the matter

### OAB3402

Detailed modelling of viremia exposure does not independently predict cardiovascular disease in people with HIV

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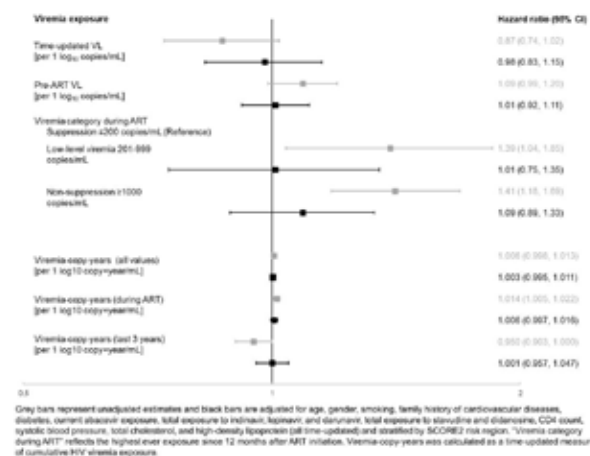
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**Background:** People with HIV have increased risk of cardiovascular disease (CVD), and prolonged viremia has been considered a CVD risk factor. Still, many previous studies have had insufficient data on potential confounders. We explored the association between viremia and CVD after adjusting for established risk factors.

**Methods:** Adults from RESPOND (data from 2012–2021) without prior CVD were followed from the first date with complete data until the first of CVD (myocardial infarction, stroke, or invasive cardiovascular procedures), loss to follow-up, or death. We fitted Cox models including the variables in the D:A:D score (age, gender, smoking, family history, diabetes, current abacavir, CD4 count, blood pressure, cholesterol, high-density lipoprotein, stavudine, didanosine, indinavir, lopinavir, and darunavir; all time-updated).

We analyzed the associations between six measures of viremia (detection limit, 200 copies/mL) and CVD after adjusting for the D:A:D variables. We compared model performance with and without viremia with Harrell's C in 5-fold internal cross-validation.

**Results:** 547 events (39% myocardial infarctions and 31% strokes) were observed in 17,497 persons (median follow-up, 6.8 years). Median age at inclusion was 45 years, 76% were male, and median total viremia-copy-years was 2.7 log<sub>10</sub> copy-years/mL. While several viremia variables were associated with CVD in univariable analyses, there were no statistically significant associations when adjusting for the D:A:D variables, neither for measures of current or pre-ART viral load, highest viremia category during ART, or cumulative viremia. None of the viremia variables improved prediction capacity (weighted mean, 0.70 for D:A:D variables without viremia and 0.70 for all models combining D:A:D and viremia variables).



**Conclusions:** In this large cohort, HIV viremia was not associated with CVD after adjusting for established risk factors. Although we are unable to analyze the impact of viremia before HIV diagnosis, our results provide evidence against a role for viral load in predicting CVD among people with HIV.

## OAB3403

### Risk of major cardiovascular events with dolutegravir versus efavirenz-based antiretroviral therapy: retrospective cohort analyses using routine, de-identified data from South Africa

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**Background:** Integrase inhibitors such as dolutegravir may be associated with increased cardiovascular disease (CVD) but there are few data from low-and middle-income countries (LMICs), where dolutegravir has largely replaced efavirenz.

**Methods:** We used de-identified, routinely collected data from a South African managed healthcare organisation to conduct a retrospective cohort study among people with HIV (PWH) ≥18 years old, without known CVD, and initiating tenofovir disoproxil fumarate, emtricitabine and efavirenz (TEE), or tenofovir disoproxil fumarate, lamivudine and dolutegravir (TLD). We used a multivariable Cox regression to evaluate associations between TLD and the primary outcome of CVD admissions/deaths, adjusted for baseline characteristics. In a sensitivity, 'as-treated' analysis, we censored people if they changed their ART regimen during follow-up.

**Results:** Between April 2020 and December 2022, 5107 PWH initiated TLD (n=2204) and TEE (n=2903). Median (IQR) age was 37 (32-44) years, 56.8% were female, and 9.8% had a risk factor for CVD at baseline (Table).

Variable	Levels	TLD n, %	Total
Age (years)	Median (IQR)	37.0 (32.0 to 44.0)	38.0 (32.0 to 44.0)
Gender	Female	1733 (59.9)	2903 (56.8)
TB at ART initiation	Yes	86 (3.0)	160 (3.1)
Hypercholesterolaemia	Yes	45 (1.6)	85 (1.7)
Hypertension	Yes	231 (8.0)	439 (8.6)
Diabetes mellitus	Yes	80 (2.8)	124 (2.4)
CVD risk factor	Yes	269 (9.3)	503 (9.8)
Statin use	Yes	85 (2.9)	164 (3.2)

Median follow-up was 535 days (IQR 308-582). There were 33 CVD events after a median 487 (IQR 245-844) days. 25 occurred in the TEE group (observed rate 4.91/1000 person-years, 95%CI 3.17-7.24) and 8 in the TLD group (2.49/1000 person-years, 95%CI 1.08-4.91). In the multivariable Cox regression model, there was no evidence of a higher risk of

CVD events with TLD versus TEE (hazard ratio 0.49, 95% CI 0.22-1.09, p = 0.080). In the TLD group, 3.4% PWH changed their ART regimen after a median 268 days, and in the TEE group 13.1% changed ART after median 314 days, and were censored in the 'as-treated' analysis with similar results to the main model.

**Conclusions:** We found no evidence of increased risk of CVD in people who initiated TLD versus TEE in this large South African cohort with medium term follow-up, supporting the decision to replace TEE with TLD at ART initiation in South Africa.

## OAB3404

### Dolutegravir-containing antiretroviral therapy and incident hypertension: findings from a prospective cohort in Kenya, Nigeria, Tanzania, and Uganda

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**Background:** Randomized trials in African countries have suggested that people with HIV (PWH) initiating antiretroviral therapy (ART) with dolutegravir may have increased risk of hypertension compared with efavirenz. This risk needs to be assessed in real-world populations.

**Methods:** The ongoing African Cohort Study enrolls PWH and people without HIV (PWoH) aged ≥15 years in care at 12 PEPFAR-supported facilities in Kenya, Nigeria, Tanzania, and Uganda. For these analyses, observation time began at ART initiation or cohort enrollment (whichever later) for PWH and at cohort enrollment for PWoH.



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We defined hypertension as blood pressure  $\geq 140/90$  mmHg at  $\geq 2$  consecutive 6-monthly visits or receipt of any anti-hypertensive medication. We excluded participants who met this definition prior to the start of observation time (i.e., prevalent hypertension) and study visits with pregnancy. We used Cox proportional hazards models to examine associations between time-varying ART anchor drug (or PWoH) and incident hypertension, changing reference groups to allow for all comparisons with dolutegravir. We ran an unadjusted model, a model adjusted for sociodemographic characteristics only, and a model additionally adjusted for time-varying body mass index (BMI).

**Results:** Between 01/2013–08/2023, 2935 participants meeting inclusion criteria for these analyses were enrolled and followed for a median of 5.4 years; 2477 (84%) were PWH, 1691 (58%) were female, and mean (SD) age was 36 (12) years. During of follow-up, 423 (14%) participants had incident hypertension. In unadjusted and adjusted models (Figure), dolutegravir was not significantly associated with incident hypertension compared with efavirenz, protease inhibitors, and PWoH. Dolutegravir was associated with significantly reduced hazards of incident hypertension compared with nevirapine (adjusted hazard ratio 0.45, 95% CI: 0.32–0.63). Adjusting for time-varying BMI did not have a major impact on comparisons.

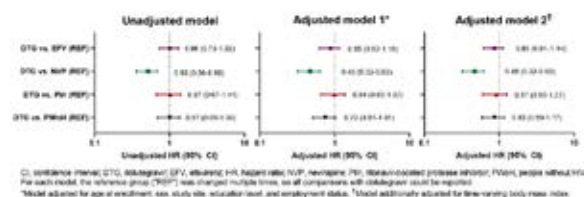


Figure. Adjusted and unadjusted time-varying Cox proportional hazard models examining the associations between time-varying antiretroviral therapy anchor drug and incident hypertension.

**Conclusions:** Dolutegravir was not associated with any significant deleterious impact on incident hypertension compared with other ART anchor drugs.

## OAB3405

### Integrating non-communicable disease screening and treatment in antiretroviral clinics: insights from Malawi

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**Background:** Increased access to antiretroviral therapy (ART) has improved the life expectancy of people living with HIV (PLHIV), resulting in an aging cohort at high risk of developing non-communicable diseases (NCDs). Integrating NCD care within HIV clinics is pivotal for comprehensive health care. We share the outcomes of integrating NCD screening with ART services in Malawi.

**Description:** The initiative by the Elizabeth Glaser Pediatric AIDS Foundation involved using lay health workers (LHW) to implement hypertension (HTN) and diabetes mellitus (DM) screening among PLHIV aged  $> 30$  and  $> 40$  years, respectively, across 46 health facilities.

We analyzed routinely collected data from screening registers for all ART clients screened for HTN or DM between January and September 2023. We used descriptive analysis and logistic regression based on two outcome variables: HTN, defined as at least two blood pressure readings of  $> 140/90$  mmHg, and DM, defined as a random blood sugar level of  $\geq 200$  mg/dl or fasting blood sugar level of  $\geq 163$  mg/dl.

**Lessons learned:** A total of 106,880 PLHIV on ART were eligible for HTN screening, while 60,572 were eligible for DM screening. Of those eligible, 23,841 (22%) underwent HTN screening, and 9,835 (16%) DM screening. The screening cohorts predominantly consisted of women (67% and 63% within the HTN and DM cohorts, respectively). The prevalence of HTN and DM was 3,815 (16%) and 197 (2%), respectively.

The prevalence of HTN was higher in males (16.8%) than females (15.5%) ( $p = 0.013$ ). Individuals aged  $> 60$  years were more likely to have HTN (Adjusted Odds ratio (AOR) = 2.84, 95% CI: 2.50 – 3.21) or DM (AOR = 2.04, 95% CI: 1.43 – 2.9,  $p < 0.001$ ) than those aged 40 – 60 years. A high percentage diagnosed with HTN (91.7%), and DM (89%) were treated within the HIV clinic. Severe HTN requiring hospitalization was noted in 9 PLHIV.

**Conclusions/Next steps:** The findings show the significance of addressing the healthcare needs of patients on ART, particularly in integrating NCD care into HIV services. Enhancing NCD screening rates and optimizing treatment within ART clinics can better manage HIV comorbidities.



### OAB3602

Time is of the essence: clinical frailty among a cohort of Indigenous peoples aging with HIV in Ontario, Canada

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**Background:** As the cohort of people living with HIV (PLHIV) grows older on average, geriatric and HIV care must co-evolve. Within this cohort, Indigenous Peoples remain overrepresented. The aging experience for Indigenous older adults living with HIV (IOALWH) involves the intersecting effects of systemic colonial oppression, inter-generational trauma, continued racist violence, service inaccessibility, and socioeconomic disadvantage. These factors have contributed to increasing health disparities within Indigenous communities, translating to higher co-morbidity burden and worse health outcomes. Owing to both their HIV status and Indigenous identity, IOALWH may face disproportionate burdens while aging. This study aims to characterize clinical frailty in a cohort of IOALWH.

**Methods:** The OHTN Cohort Study (OCS) is an open longitudinal cohort of PLHIV at 15 clinical sites in Ontario, Canada, with currently over 5000 people under active follow-up. The study includes data abstraction from clinical records, laboratory reports, and an annually administered questionnaire. We assessed clinical frailty using the modified frailty index (mFI), approximated with aggregations of ICD-10 codes from diagnostic records. Presentation of a frailty related condition contributes to a frailty score. A score of 0 represents no clinical frailty, 1-2 is pre-frailty, and  $\geq 3$  is clinical frailty.

**Results:** Data from 6582 participants (n=330 Indigenous) and diagnostic reports from 1940-2018 were included. IOALWH faced greater rates of pre-frailty (49.7% vs. 41.1%) and clinical frailty (8.8% vs. 5.8%). IOALWH acquired all clinical indicators at earlier median ages, including HIV (31 vs. 34), AIDS (36 vs. 40), pre-frailty (40 vs. 44), and clinical frailty (51 vs. 56). Certain frailty indicators were overrepresented among IOALWH compared to non-Indigenous OALWH, including impaired sensorium (+21.1% greater

prevalence), COPD/pneumonia (+7.6%), diabetes (+2.3%), and non-independent functional status (+2.3%). In a multivariate logistic model, intravenous drug use (IVDU; OR 1.97, p<.0001), AIDS (OR 1.57, p<.0001), and Indigenous identity (OR 1.57, p<.0001) were found to be independent predictors of pre-frailty and clinical frailty.

**Conclusions:** IOALWH face disproportionate burdens of aging-related co-morbidities and acquire clinical frailty at earlier ages compared to non-Indigenous OALWH, independent of IVDU and AIDS. Healthcare delivery must address underlying inequities by co-evolving HIV and geriatric care to respond to earlier and more complex care needs.

### OAB3603

Association of PNPLA3 rs738409 genotype with hepatic steatosis among non-obese people living with HIV

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**Background:** In addition to the well-established association of obesity, there is a growing recognition of genetic influences on susceptibility to liver diseases. We investigated genetic determinants of steatotic liver disease (SLD) among Thai people with HIV (PWH).

**Methods:** A cross-sectional study was conducted at the HIV Netherlands Australia Thailand (HIV-NAT), Bangkok, Thailand. PWH aged  $\geq 18$  years without excessive alcohol consumption who underwent controlled attenuation parameter (CAP) between July 2013 and June 2023 and had tested with single nucleotide polymorphism (SNPs) including PNPLA3 rs738409 and HSD178B rs6834314 were analysed. SLD was defined as CAP  $\geq 248$  dB/m.

Multivariable logistic regression investigated associations between SNPs and SLD, and interactions between genotypes and obesity (BMI $>25$  kg/mm<sup>2</sup>).

**Results:** Of 764 PWH (35% female, median age 45 (IQR 36-52) years) analysed, SLD was observed in 270 (35.3%) participants and 136 (50%) were not obese. The median duration of ART and median CD4 count was 11 (5-18) years and 581 (422-753) cells/mm<sup>3</sup>, respectively. Seventy-four (35%) were on integrase integrase strand transfer inhibitors. Participants with SLD had higher BMI (24.9 [22.8-28.1] vs 22.1 [IQR 20.3-23.9] kg/m<sup>2</sup>) and a higher



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proportion diabetes mellitus (25% vs. 16%), hypertension (83% vs. 60%), dyslipidemia (88% vs. 76%) and liver fibrosis (LSM $\geq$ 7.5 kPa, 22% vs. 12%), compared to those without SLD. Overall, PNPLA3 rs738409 CC, CG and GG genotypes were present in 50%, 39% and 11%, and HSD178B rs6834314 AA, AG and GG genotypes in 36%, 51% and 13%, respectively. In the multivariable model, the male sex ( $\alpha$ OR=1.98, 95% CI 1.23-3.18,  $p=0.005$ ), higher BMI ( $\alpha$ OR=1.32, 95% CI 1.24-1.41,  $p<0.001$ ) and PNPLA3 rs738409 G allele ( $\alpha$ OR=1.49, 95% CI 1.003-2.22,  $p=0.049$ ) were associated with an increased risk of SLD. There was a significant interaction between PNPLA3 rs738409 genotype and BMI ( $p=0.014$ ). After subgroup analysis using BMI, PNPLA3 rs738409 G allele was significantly associated among non-obese individuals ( $\alpha$ OR=1.79, 95% CI 1.18-2.72,  $p=0.006$ ).

**Conclusions:** Nearly half of the participants with SLD in our cohort were not obese. PNPLA3 rs738409 genotype was associated with SLD among non-obese Thai individuals. This underscores that genetic factors can influence liver disease susceptibility in PWH, independent of established risk factors.

## OAB3604

### Additional time post-integrase inhibitor to protease inhibitor switch shows trend to weight loss: DEFINE 48-week results

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**Background:** Integrase inhibitor (INI)-based antiretroviral (ARV) therapies are associated with greater weight gain than non-nucleoside reverse transcriptase inhibitor- or boosted protease inhibitor (PI)-based regimens. The primary analysis of DEFINE found no significant difference in percent body weight change from baseline to Week 24 when switching to darunavir/cobicistat/emtricitabine/tenofovir alafenamide (D/C/F/TAF) vs continuing INI+TAF/emtricitabine (FTC). Longer-term weight/metabolic data through Week 48 post-ARV switch are reported here.

**Methods:** DEFINE (ClinicalTrials.gov: NCT04442737) is a randomized (1:1), prospective, 48-week, active-controlled, open-label, multicenter phase 4 study evaluating a switch to D/C/F/TAF (immediate switch [IS]) vs continuance of INI+TAF/FTC (for Weeks 0-24, then delayed switch [DS] to D/C/F/TAF for Weeks 24-48) in virologically-suppressed adults with HIV-1 acquisition and  $\geq 10\%$  weight gain within the preceding 36-month period on the INI-based regi-

men. Percent weight change from baseline was analyzed in the intent-to-treat (ITT) population. Outcomes are reported in the IS arm (with no comparator).

**Results:** 103 adults were randomized (IS arm:  $n=53$ ; DS arm:  $n=50$ ); 61% were Black/African American and 30% were female. Versus 24-weeks, weight loss and DEXA changes were observed at Week 48 (median [IQR] percent change,  $-0.84\%$  [ $-4.10, 1.69$ ]; *Table*). Participants were increasingly likely to experience any weight loss (63.0% vs 44.9%) and achieve  $\geq 3\%$  weight loss (30.4% vs 14.3%) at Week 48 vs 24, respectively. With extended time post-switch, minor improvements in BMI (57.1% with BMI  $\geq 30$  kg/m<sup>2</sup> at Week 24 vs 50.0% at Week 48) and waist circumference were also seen. D/C/F/TAF was safe and well-tolerated, with high levels of virologic suppression.

	Week 24	Week 48
Weight change, %, median (interquartile range; [IQR])	0.52 ( $-1.80, 2.91$ ) [ $n=49$ ]	$-0.84$ ( $-4.10, 1.69$ ) [ $n=46$ ]
Experienced $\geq 3\%$ weight loss, $n$ (%)	7 (14.3) [ $n=49$ ]	14 (30.4) [ $n=46$ ]
Weight change, %, Black/African American subgroup, median (IQR)	$-0.15$ ( $-2.39, 2.91$ ) [ $n=30$ ]	$-1.11$ ( $-5.60, 1.70$ ) [ $n=28$ ]
Weight change, %, female subgroup, median (IQR)	0.73 ( $-2.18, 3.49$ ) [ $n=14$ ]	$-1.75$ ( $-4.05, 1.70$ ) [ $n=12$ ]
Weight change, %, Black/African American female subgroup, median (IQR)	0.03 ( $-2.29, 3.32$ ) [ $n=12$ ]	$-2.81$ ( $-5.19, 2.17$ ) [ $n=11$ ]
Weight change, %, baseline body mass index [BMI] $\geq 30$ kg/m <sup>2</sup> subgroup, median (IQR)	$-0.34$ ( $-1.77, 2.43$ ) [ $n=26$ ]	$-1.07$ ( $-3.55, 1.80$ ) [ $n=24$ ]
Weight change, %, baseline BMI $\geq 40$ kg/m <sup>2</sup> subgroup, median (IQR)	$-0.58$ ( $-2.39, 1.38$ ) [ $n=11$ ]	$-2.81$ ( $-2.91, 0.96$ ) [ $n=9$ ]

*Table.*

**Conclusions:** The trajectory of weight change after INI to PI switch appeared different in the first 24 weeks post-switch (no weight loss observed) vs Weeks 24-48, where a trend to weight loss emerged.

Secondary metabolic endpoints remained stable or paralleled weight loss. Longer time post-ARV switch suggests medication management may be an important component to address this issue.

## OAB3605

### A pilot study assessing changes in cerebral function parameters in persons with insomnia switching integrase inhibitors

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**Background:** Sleep disturbances are frequently reported in persons with HIV and have been associated with the use of integrase strand transfer inhibitors (INSTIs). This exploratory study assessed changes in cerebral function parameters in individuals with insomnia switching INSTIs.

**Methods:** Individuals with an insomnia severity index (ISI) above 8 and virologically suppressed on a dolutegravir-containing ART regimen (DTG-ART) were randomised 1:1 to either continue DTG-ART or switch to tenofovir-alafenamide/emtricitabine/bictegravir (BIC-ART) for 120 days.

Cerebral function parameters were measured at baseline and day 120 and included patient-reported outcomes (PROs) assessing sleep (ISI, Epworth Sleepiness Scale (ESS)) and quality of life (QoL) (Short Form 36-Physical Function (SF36-PF)), resting-state functional cerebral MRI (RS fMRI) examining functional connectivity (FC) networks previously associated with DTG use, and plasma soluble inflammatory biomarkers (sCD14, IL-6 and IP-10).

Between group analyses of PRO change scores and the impact of covariates were analysed using Mann-Whitney U and linear regression modelling. RS fMRI were examined by independent component analysis using Matlab's CONN toolbox.



Figure. Enhanced RS-fMRI functional connectivity in the default mode network (DMN) in those switched to BIC-ART from DTG-ART. Yellow: areas of enhanced DMN connectivity at 120 days compared to baseline.

**Results:** Of 19 individuals (12 DTG-ART, 7 BIC-ART), median age was 55 years (range 28-83), all were male and 17 of white ethnicity. Over 120 days, improvements in sleep and QoL in those randomised to BIC-ART vs DTG-ART were observed. Median change in ISI score -9 (-14 to -2) vs -1 (-10

to -4),  $p=0.0247$ , ESS -3.0 (-6 to -1) vs 2 (-3 to 6),  $p=0.005$  and SF36-PF -5 (-40 to 5) vs 0 (-5 to 15),  $p=0.025$ , respectively. BIC-ART was also associated with increased FC in the Default Mode Network ( $p<0.005$ ), most pronounced in the middle temporal and superior frontal gyri. No significant changes in soluble biomarkers were observed.

**Conclusions:** In this exploratory study individuals with insomnia who switched to BIC-ART had improvements in self-reported sleep, QoL and RS networks associated with sleep, when compared to those continued on DTG-ART.

## OAB38 An INSTIgrated tale

### OAB3802

#### Analysis of dolutegravir scaleup and HIV-1 treatment outcomes in Uganda from 2021-2023

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**Background:** As the rapid DTG scale-up in sub-Saharan Africa nears completion, assessment on the impact of this major transition is necessary. Critically, little is known about the suppression rates of DTG-based regimens in sub-Saharan Africa following mass implementation. The Joint Clinical Research Centre (JCRC) is headquartered in Kampala, Uganda, and houses one of the largest HIV clinics and research facilities in Africa. Together with its regional facilities, the JCRC provides care to over one million HIV clients yearly. Here, we report on the clinical outcomes of DTG and NNRTI-based regimens seen in clients receiving care at the JCRC between January 2021 and September 2023.

**Methods:** The treatment regimen and outcome (suppression or failure) was recorded for clients treated at the JCRC in Kampala, Uganda, between 2021-2023. Frequency and suppression/failure rates of each regimen were determined.

**Results:** The clinic provided care for 1,258,368 clients (95.2% viral suppression) in January-September 2023 (2023n), up from 975,622 clients in 2021 (95.9% suppression). Use of DTG-based regimens increased from 876,872 (89.9%) in 2021 to 1,250,188 (99.4%) in 2023n. This corresponded with an increase in DTG failure rate from 3.5% (30,944 clients) in 2021 to 4.8% (59,677 clients) in 2023n. The two most common DTG-based cocktails were TDF/3TC/DTG (TLD) and ABC/3TC/DTG (1,195,722 and 41,761 clients in 2023n, respectively). Strikingly, virologic failure was 3.4-fold higher for ABC/3TC/DTG compared to TLD (0.14% vs 0.04%) in



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2023n. The most common DTG-based salvage therapy was DRV/RTV/TDF/3TC/DTG (417 clients in 2023n), with a virologic suppression of 78.9% (329/417 clients) in 2023n. The highest rate of suppression among DTG-based salvage therapies (>10 clients) was observed for DRV/RTV/DTG/ETV (28/34 clients, 82.4%) in 2023n. NNRTI-based regimen use decreased from 98,746 clients in 2021 to <10,000 clients in 2023n. Average virologic failure on an NNRTI-based regimen was 8.9% from 2021-2023

**Conclusions:** Thus, in one of the largest reports on the clinical outcomes of the DTG scale-up to date, our findings support the continued widespread use of TLD in sub-Saharan Africa to achieve UNAIDS' 95% suppression target. However, as a consequence of observed rates of virologic failure >5%, we emphasize continued caution in the use of ABC/3TC/DTG and NNRTI-based regimens.

## OAB3803

### Viral suppression, viral failure and safety outcomes in children and adolescents on dolutegravir (DTG) in Europe and Thailand

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**Background:** There are limited data on DTG safety and effectiveness in children and adolescents living with HIV(-CALWHIV) in routine-care settings.

**Methods:** Data on CALWHIV aged <18years at DTG start were pooled from 15 cohorts in the European Pregnancy and Paediatric Infections Cohort Collaboration. Effectiveness outcomes were proportion virally suppressed<50copies/mL at 24/48/96/144/192 (±12) weeks after DTG start; and cumulative incidence of viral failure (≥2 viral load(VL) ≥400c/mL or 1 VL≥400c/mL followed by DTG discontinuation), overall and by age, ART/VL status and weight-band at DTG start. Safety outcomes were frequency of clinical adverse events(AEs) and serious AEs(-SAEs) causally associated with DTG, incidence of laboratory abnormalities and DTG discontinuation.



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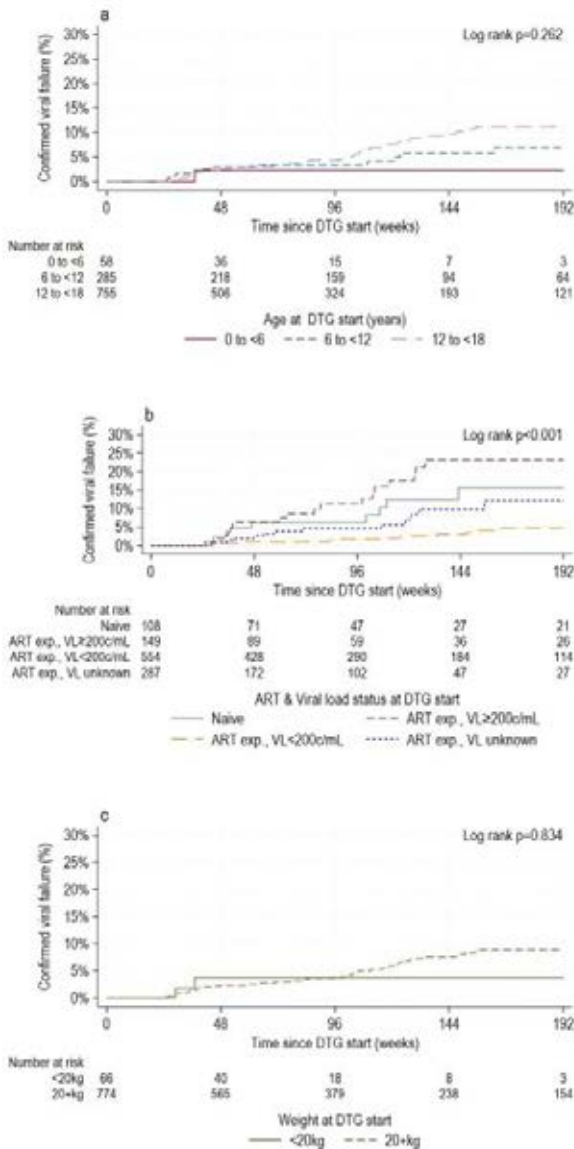


Figure: Time to viral failure on DTG stratified by (a) age-group, (b) ART and viral status and (c) weight-band at DTG start.

**Results:** Of 1231 CALWHIV ever on DTG, characteristics at DTG start were: median[IQR] age 14[11,16] years, 50% male, 95% perinatal HIV, 42% black ethnicity; 10% ART-naïve, 49% ART-experienced/suppressed (VL<200c/mL), 13% ART-experienced/viraemic (VL≥200c/mL), and 28% ART-experienced/unknown VL. Median duration on DTG was 93[49,163] weeks. Viral suppression was 88-91% throughout time on DTG; highest among those ART-experienced/suppressed at DTG start(92-94%), lowest among ART-experienced/viraemic at DTG start(72-83%). Overall cumulative incidence (95% CI) of viral failure by 96 and 144-weeks was 4%(3-6) and 8%(6-11), respectively. Incidence varied by ART/VL status at DTG start: lowest in ART-experienced/suppressed and highest among ART-experienced/viraemic ( $p<0.001$ , Figure). Of 1146/1231(93%) with clinical data, 26(2%) experienced 52 AEs causally related to DTG, including 5 SAEs (no deaths). Among 936/1231(76%) with laboratory data, 49(5%) experienced 57 DAIDS grade ≥3 events; a rate of <1 per 100

person-years. Overall, 95(8%) discontinued DTG at median 90[36,138] weeks: 5(5%) due to viral failure, 17(18%) toxicity, and 73(77%) treatment simplification/other reasons. Cumulative incidence of discontinuation was 5%(4-7) and 10%(8-12) by 96 and 144-weeks, respectively. Follow up was censored at earliest of last viral load or discontinuation of DTG in patients who did not fail. Analysis was restricted to patients with at least 24 weeks follow up after DTG start.

**Conclusions:** DTG was generally well tolerated with high viral suppression; overall incidence of viral failure was low but significantly higher among those ART-experienced/viraemic at DTG start.

## OAB3804

Extended efficacy and safety of dolutegravir and darunavir containing regimens at week 96 in the international randomised clinical trial: D<sup>2</sup>EFT

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**Background:** D<sup>2</sup>EFT is an international randomised trial comparing dolutegravir (DTG) with ritonavir boosted darunavir (DRV/r) versus DTG with fixed tenofovir and lamivudine or emtricitabine (TDF/XTC) versus standard of care (SOC:DRV/r+2NRTIs with a rotation of nucleosides or adaptation to HIV genotype) in adult people living with HIV-1 whose first-line NNRTI-based therapy has failed. At the 48-week primary endpoint both intervention arms demonstrated non-inferiority to SOC in terms of HIV-RNA<50 copies/mL with the DRV/r+DTG arm also showing superiority.

**Methods:** Week 96 data are here presented as modified intent to treat analysis including all available data.

**Results:** 826 participants from 14 resource-constrained countries were randomised: DTG+DRV/r (n=271), DTG+TDF/XTC (n=294), SOC:DRV/r+2NRTIs (n=261). Median age 39 years, 55% female and 69%, 25% and 2% of Black, Asian and White ethnicity respectively. Median CD4 was 206 cells/mm<sup>3</sup> and median HIV-RNA was 15,400 copies/mL. Median BMI was 23 kg/m<sup>2</sup>.

By week 96 proportions remaining on original randomised regimen were 98%, 97% and 91% for DTG+DRV/r, DTG+TDF/XTC and DRV/r+2NRTIs respectively. At 96 weeks when compared to the SOC, the percentage with HIV-RNA<50 copies/mL was significantly higher for both DTG+DRV/r (85.6% vs 76.0%, [difference 9.6% (95% CI:2.7-16.4),  $p=0.01$ ] and DTG+TDF/XTC (81.6 vs 72.6% [difference 9.0% (95%CI 1.4, 16.6),  $p=0.02$ ).

In a snapshot analysis in which response at week 96 was defined as remaining on randomised regimen and HIV-RNA <50 copies/mL, the proportions were 68.6% SOC, 77.9% DTG+DRV/r and 76.5% DTG+TDF/XTC ( $p<0.05$  for both intervention arms against SOC).





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Overall mean CD4 gain to week 48 was 156 cells/mm<sup>3</sup> and by week 96 was 204 cells/mm<sup>3</sup>. At week 96 CD4 count gain was on average 53 cells greater in the DTG+DRV/r arm and 35 cells greater in the DTG+TDF/XTC arm compared to SOC ( $p<0.003$  and  $0.06$  respectively).

Mean weight gain over 96 weeks was 4.1kg (SD7.2), 7.4kg (SD7.9) and 5.8kg (SD8.1) in SOC, DTG+DRV/r and DTG+TDF/XTC arms respectively. Trajectory of weight gain in DTG+TDF/XTC versus SOC plateaued after week 48 but continued in DTG+DRV/r.

**Conclusions:** Extended week 96 analysis in the D<sup>2</sup>EFT study confirms the efficacy and tolerability of DTG-containing regimens with both arms reaching superiority against DRV/r+2NRTI for virologic suppression to <50 copies/mL.

## OAB3805

Switching from a second-line ritonavir-boosted protease inhibitor (PI/r)-based regimen to bictegravir/emtricitabine/tenofovir alafenamide (B/F/TAF): results of a randomized clinical trial

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**Background:** Patients on PI/r-based regimens in resource-limited settings have high rates of NRTI resistance, but testing is rarely available. This study compared continuing PI/r + NRTIs vs. B/F/TAF in PWH on second-line ART with no prior drug resistance testing.

**Methods:** This prospective, open-label trial conducted at GHEKIO in Haiti, randomized adults ( $\geq 18$  years) with viral suppression on second-line PI/r-based ART to continue current regimen vs. switch to B/F/TAF.

The primary endpoint was the proportion of participants with HIV-1 RNA  $\geq 200$  copies/mL at week 48 using the FDA snapshot algorithm; difference between groups was assessed with non-inferiority margin of 4%.

**Results:** Between October 2020 and March 2023, 310 participants were randomized and treated (B/F/TAF: 153; PI/r: 148). Median age was 50 years (IQR 42, 58) and 173 (57%) were women. At enrollment, 180 (59.8%) were taking lopinavir/r and 121 (40.2%) atazanavir/r; 234 (77.7%) were taking TDF, 54 (17.9%) zidovudine, and 13 (4.34%) abacavir; all were taking lamivudine or emtricitabine. Median time on PI/r was 3.7 years (IQR 2.2, 5.7). At week 48, the proportion with HIV-1 RNA  $\geq 200$  copies/mL was 0.7% (1/153) and 3.4% (5/148) in the B/F/TAF and PI/r groups, respectively; difference -2.7 (95% CI: -6.7 to 1.2), meeting non-inferiority

for B/F/TAF compared to PI/r (Table 1). 144 (94.1%) and 135 (91.2%), respectively had 48-week HIV-1 RNA <200 copies/mL. There were no drug discontinuations due to adverse events in either group. Baseline archived proviral DNA (B/F/TAF group) and genotypic resistance testing for virologic failures (both groups) are pending. This study was conducted during both COVID-19 and severe civil unrest and gang-related violence in Haiti. Follow-up was enabled by community health workers and neighborhood drug distribution.

Week 48 Outcome	B/F/TAF (n=153)	Boosted PI (n=148)
Primary end point: HIV-1 RNA $\geq 200$ copies/mL	1 (0.7%)	5 (3.4%)
HIV-1 RNA $\geq 200$ copies/mL in 48-week window	0	3
Treatment discontinued before week 48 owing to lack of efficacy	0	0
Died or LTFU with last available HIV-1 RNA value of $\geq 200$ copies/mL	1	2
HIV-1 RNA <200 copies/mL in 48-week window	144 (94.1%)	135 (91.2%)
No data for final outcome (censored)	8 (5.2%)	8 (5.2%)

Table 1. Primary End Point – Virologic Outcomes at Week 48.

**Conclusions:** Switching virally suppressed adults on a second-line PI/r regimen to B/F/TAF is non-inferior to continuing PI/r-based ART. Rates of viral suppression were high in both groups.



# OAC08 HIV and STI prevention: Understanding preferences and perceptions

## OAC0802

### Understanding barriers and facilitators to doxycycline post-exposure prophylaxis adherence among young women in Western Kenya: a qualitative study

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**Background:** Sexually transmitted disease rates are high among women using PrEP in sub-Saharan Africa. Doxycycline post-exposure prophylaxis (dPEP) effectively prevented STIs in trials among cisgender men and transgender women but not among cisgender women because use of dPEP was low.

Understanding the barriers to dPEP adherence in women is essential to interpreting trial results and to inform implementation.

**Methods:** We conducted a qualitative analysis nested in the dPEP Kenya Study, an open-label randomized controlled trial of dPEP (200mg of doxycycline taken within 72 hours of exposure) among 449 cisgender women, aged 18-30 and taking HIV PrEP in Kisumu, Kenya.

We completed serial, in-depth interviews (n=40) and four FGDs (n=29) among women purposively sampled from 224 participants assigned to dPEP group between June 2021 and August 2023. IDs and FGDs were audio-recorded, transcribed, and translated from preferred language to English for coding and analysis. An inductive content analysis approach was used to identify themes (De-doose).

**Results:** Five main themes on barriers to dPEP adherence emerged (**Table 1**). We found that side effects, such as nausea from medication on an empty stomach, challenges in interpreting dosage instructions, and pill burden were major barriers to dPEP adherence. Stigma associated with taking dPEP and fear of partner reaction also discouraged use of dPEP. Three key themes emerged as facilitators to use of dPEP in women, the perceived value of dPEP in preventing STI, familiarity with doxycycline, and use of a discrete pill case motivated some women to take dPEP.

Factors	Themes	Category	Exemplary Quotes
Barriers to dPEP use	Side effects (e.g., nausea/vomiting, fatigue, headache, photosensitivity, increased libido, smell of urine, taste in mouth, weight loss, and interaction with menstrual cycle)	Challenges of taking dPEP on empty stomach.	"I am not used to doxy, so if I take it, I don't feel well. The first week I was given, I took them 6 times. Since it was giving me side effects like nausea, the following week I took it 4 times, so the following week I didn't use because of the side effects. I don't know how you will help me for the side effects"
	Challenges in interpreting post-exposure dosage instructions	Knowledge gap, trusting main partner	"What I didn't know is to use doxy when I have sex with my boyfriend because he is someone I trust, and I can also say that he trusts me(laughter) its only that he doesn't know that I have other sex partners"
	Pill burden	Challenges of taking dPEP with PrEP or other medication	"This might discourage me if the number of pills that I am taking are many, if you think of adding dPEP on top of those you will feel discouraged. Let's say I am on anti-malarial medication; I will have to finish this dose first in order for me to continue with the dPEP. If I am sick and I have been issued with medication from the hospital, this might make me discontinue the use of dPEP for a while."
	Fear of partner's reaction	Partner influence on decision to take dPEP and dosing time	"There is main partner, and when he is around it is hard to take dPEP because I don't know what he will think of me."
	Stigma	Stigma associated with dPEP medication	"The people I used to live with had no issues with me taking PrEP since they were also using it. But when it came to dPEP, I was the only one using it in that living space. So, they asked me if I intended to become more of a prostitute than them. They asked why I was using dPEP and said that it would make me increase sexual partners, which was somehow true. They felt that using dPEP made me a prostitute; a prostitute more than them. That was the challenge I had. Their words made me sit down at times and wonder whether I should keep taking the drug if my friends could tell me such things"
	Discrete pill case	AGYW desire private and concealed environment to take medication – at home and while traveling	"What I do when traveling, there is a container that looks like that one for nail polish that I was given with dPEP. Whenever I remove it, nobody realizes that it is medicine because it may lead someone into thinking that I want to apply it, so that gives me an easy time"
Facilitators to dPEP use	STI risk awareness	Role of dPEP in STI prevention to continue with routine activities is valued	"It's not hard for me to take it, for me to protect my life I must use it. With the way the situation is as at now, if you were to get an STI you will have to stay at home and your children will end up struggling. You have to leave your house and hustle"
	Doxycycline familiarity	Perception of diverse uses of doxycycline as a motivation to take dPEP	"I like doxycycline because it is not like PrEP. Some people will assume that you are using ARVs when they see PrEP. But with doxycycline, they may think that you are experiencing some stomach upset. They will not be able to understand why you are using it. That is why"

Table 1: facilitators and barriers to dPEP adherence.

**Conclusions:** Adherence to doxycycline prophylaxis could be better supported in this population by decreasing frequency of dosing and urgency of dosing to allow for optimal location and timing of dosing. These findings are critical in contextualizing the null results of the dPEP Kenya Study and informing future biomedical prevention interventions.



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## OAC0803

### Doxycycline PrEP prevents STIs without affecting vaginal bacterial flora in female sex workers

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**Background:** The efficacy and potential harm of Doxycycline prophylaxis in women remain controversial. We investigated the impact of Doxycycline Pre-exposure Prophylaxis (DoxyPrEP) on reducing sexually transmitted infections (STIs) and its effect on the vaginal microbiome in female sex workers (FSWs).

**Methods:** Daily doxycycline (100mg) was initiated in October 2022 at a private STI clinic in Tokyo, based on shared decision-making. This analysis comprised a retrospective cohort study and a survey. Targeted STIs included Chlamydia trachomatis, Neisseria gonorrhoeae, and Syphilis. Routine clinical practice involved microscopic examination of vaginal smears every 1-3 months to monitor the vaginal microbiome.

We compared incidence rates (per 100 person-years) before and during DoxyPrEP, using Incidence Rate Ratios (IRRs) with conditional fixed-effects Poisson regression. Perturbations of the vaginal microbiome, defined by microscopic abnormalities and antimicrobial treatment, were also examined. Adherence to the regimen, adverse events, and user satisfaction were monitored through surveys.

**Results:** Forty FSWs with a median age of 29 years (interquartile range 26-33.5) were analyzed. Before DoxyPrEP, the overall STI incidence rate was 232.3 per 100 person-years. After initiating DoxyPrEP, the overall STI incidence rate declined to 79.2 per 100 person-years. There was a significant reduction in overall STIs (IRR=0.33, P=0.020) and a marginally significant reduction in Chlamydia trachomatis (IRR=0.35, P=0.056). The incidence of syphilis was reduced to zero.

	Before DoxyPrEP			After starting DoxyPrEP			IRR*** (95%CI) p-value
	Number of Diagnosis	PYs*	IR** (/100 PYs)	Number of Diagnosis	PYs*	IR** (/100 PYs)	
C. Trachomatis (N=40)	74	46.5	159.2	13	22.7	57.2	0.35(0.12-1.03) p-value=0.056
N. Gonorrhoeae (N=40)	26	46.5	55.9	5	22.7	22.0	0.45(0.15-1.29) p-value=0.136
Syphilis (N=40)	8	46.5	17.2	0	22.7	0	—
Overall STIs (N=40)	108	46.5	232.3	18	22.7	79.2	0.33(0.13-0.84) p-value=0.020
Bacteria Vaginosis (N=27)	36	34.2	105.2	23	16.7	137.4	1.19(0.72-1.94) p-value=0.499
Candida Vaginitis (N=27)	18	34.2	52.6	12	16.7	71.7	1.52(0.62-3.70) p-value=0.358

\*PYs: Person-Years \*\*IR: Incidence Rates \*\*\*IRR: Incidence Rate Ratio

Table. Incidence for each infection before and after starting DoxyPrEP.

However, there was no significant change in Neisseria gonorrhoeae (IRR=0.45, p=0.136). Incidences of bacterial vaginosis and Candida vaginitis did not significantly increase (IRR=1.19, P=0.499 and IRR=1.52, P=0.358, respective-

ly). Of the 40 participants, 22 completed surveys, almost all participants adhered strictly to DoxyPrEP. No severe doxycycline-related adverse events were reported. Condom use remained constant in 95.4% of participants. Regarding satisfaction, 72.7% of participants reported reduced anxiety about acquiring STIs.

**Conclusions:** DoxyPrEP significantly reduced STI rates in FSWs without significantly increasing other vaginal infections. This supports the introduction of DoxyPrEP in high-risk populations.

## OAC0804

### Sex workers' challenges with condom use and their perspectives on HIV PrEP - lessons from a participatory qualitative study of sex workers' health needs in Germany

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**Background:** Sex workers (SW) are at increased risk of acquiring HIV globally. However, there is little data on the situation in Germany. In order to improve the understanding of the health needs of SW in Germany, we conducted a participatory qualitative study. One aim was to assess the potential of HIV pre-exposure prophylaxis (PrEP) for SW. This topic highlighted an important interaction with condom use.

**Methods:** Between 10/2022 and 04/2023, 10 peer researchers conducted 11 focus group interviews across Germany in 5 languages. The 80 participants were female, trans and male sex workers in various fields of sex work (street, escort, brothels) from 23 countries. The sample was characterized by high diversity through the large proportion of SW with vulnerabilities such as illegal residence status or drug addiction. The data was analyzed using Qualitative Content Analysis.

**Results:** More than half of the participants had never heard of PrEP. Identified barriers to PrEP knowledge include the belief that PrEP is only suitable for people who practice condomless sex. Female SW who were interested in PrEP described fear of stigmatization due to the association of PrEP with condomless sex.

Many participants reported frequent clients' demands for condomless sex and perceived this as a growing trend. Some described how this trend, combined with exacerbated financial precariousness, pressure them to offer condomless sex. Some female and trans SW mentioned the fear that widespread PrEP use intensifies this pressure.



For most participants, PrEP seems an attractive HIV prevention method, whether because they practice condomless sex or as an additional strategy in case of condom breakage or stealthing.

**Conclusions:** PrEP education for SW needs to be expanded in Germany, especially for non-MSM. To prevent stigmatization and pressure on SW to offer condomless sex, the association "PrEP = condomless sex" must be countered. Study participants suggested that PrEP should not be presented as an alternative to condoms, but as a combined protection method. SW need support in negotiating condom use and prices of sexual services. Support could be peer-to-peer empowerment, professionalization measures and information for clients.

## OAC0805

### PrEP perception and PrEP initiation among adolescent men who have sex with men and transgender women in Brazil

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**Background:** Perceptions about PrEP are multifaceted, shaped by influences from friends, family, and social networks. These perceptions can impact the decision to start PrEP. We aimed to describe patterns of PrEP perceptions and their association with PrEP initiation among adolescent men who have sex with men (AMSM) and transgender women (ATGW).

**Methods:** PrEP1519 constituted a single arm, multicentric demonstration cohort study focusing on daily oral PrEP among AMSM and ATGW aged 15-19 years, in three Brazilian cities. Our analysis encompassed baseline data collected from February/2019-February/2023. Latent class analysis (LCA) was used to identify patterns of PrEP perception based on eight observable binary indicators (agree or disagree). Logistic regression was conducted to estimate adjusted odds ratios (aOR) of the association between PrEP perception and the outcome PrEP initiation (PrEP dispensing within 30 days of starting in the cohort vs not initiation PrEP).

**Results:** 1,477 adolescents enrolled in the study, with 91.0% identified as MSM, 74.5% falling within the 18-19 age group, 72.0% self-reported Black/Brown skin color and the majority, 81.4% initiated PrEP. The prevalence of PrEP perception

indicators were: 33.2% considered PrEP to be the same medication for treating HIV, 26.0% believed it had many side effects, 14.0% thought it was exclusively for MSM or TGW, 11.0% believed it was only for those with numerous partners, 9.0% were concerned about interactions with other medications like hormones, 24.6% thought it could negatively impact one's image, 8.0% found it inconvenient that PrEP was the same as HIV treatment, and 10.0% perceived it as a hassle to take preventive medication. Classes were distinguished by "positive PrEP perception" (N =1,350; 93.2%), described by very low probabilities of agreement with specific indicators, and "negative PrEP perception" (N=98; 6.8%), represented by higher prevalences for the indicators. Adolescents with a positive PrEP perception were more likely to initiate PrEP (aOR: 2.46: 1.37-4.41) adjusted by potential confounders

**Conclusions:** Our findings underscore the significance of the initiation decision for PrEP and highlight the influential role of perception in this process among adolescents. Moreover, it is crucial to foster a positive perception of this preventive strategy to enhance its adoption among adolescents.

## OAC10 Paving the way to safety: Harm reduction successes in challenging settings

## OAC1002

### Multi-level community-based HIV prevention intervention for people who inject drugs (PWID) on the US-Mexico border: an effectiveness evaluation

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**Background:** Prevalence of injection drug use on the US-Mexico border is three times the national average. Border communities are places where the risk of drug use harms and HIV acquisition is augmented due to the confluence of factors operating across the physical, social, economic and policy environment. A theory informed multilevel, community based, behavioral intervention was implemented to promote engagement in harm reduction behaviors among PWID.



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**Methods:** The behavioral intervention consisted of 3 components aimed at ameliorating the negative influence of factors operating at the structural, interpersonal, and individual levels:

1. Rapid HIV testing at community sites;
2. Peer led multi-session psychoeducational harm reduction sessions to promote self-efficacy among small networks of PWID; and,
3. Community wide events to reduce HIV stigma.

A quasi-experimental design was employed consisting of time repeated survey assessments administered at 6 and 12 months after the roll out of intervention components. Participants were recruited through respondent driven-sampling.

**Results:** Three hundred and fifty five PWID (70% male) with a mean age of 39.53 years (SD = 10.93) were recruited to participate in the cross-sectional assessment surveys. Participants reported a mean of initiating injection drug use of 21 years and injecting a mean of 5.6 times daily. Three generalized estimating equations testing the influence of exposure to intervention components controlling for assessment time indicated that exposure to the three intervention components compared to exposure to no intervention components increased safe-injection ( $M = 3.6$  vs  $M = 2.5$ ),  $\beta = .65$ ,  $p < .01$ ), engagement in a greater number of preventative behaviors ( $M = 4.06$  vs  $M = 2.4$ ,  $\beta = 1.65$ ,  $p < .01$ ), reduction in the number of condomless sex ( $M = 29.04$  vs  $M = 65.04$ ,  $\beta = -.76$ ,  $p < .05$ ), and reduction in HIV stigma ( $M = 2.29$  vs  $M = 2.68$ ,  $\beta = -.30$ ,  $p < .05$ ).

**Conclusions:** Findings suggest that the intervention was effective in reducing drug use harms and risk of HIV acquisition by promoting engagement in preventative behaviors and reducing stigma. Future directions include testing which combination of components is most effective under resource constraints to promote scalability.

## OAC1003

### Leading the way: indigenous communities successfully advancing HIV care outcomes post-pandemic

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**Background:** The COVID-19 pandemic significantly affected timely access to healthcare, including access to HIV care in rural parts of Saskatchewan, Canada. In the southeast region, Indigenous people living with HIV (PLWH) have shared personal stories about encountering stigma and discrimination within the healthcare system. In response to these challenges, Indigenous leadership took a proactive role, focusing on improving testing and diagnosis for sexually transmitted and blood-borne infections (STBBIs) and achieving notable milestones in HIV care since the region declared an HIV outbreak in 2016.

**Description:** Local Indigenous leaders made pivotal commitments to cultural approaches that emphasize trust-building and normalized access to HIV prevention and care among equity-denied populations. These strategies encompassed establishing convenient testing locations with culturally grounded, respectful, trauma-informed and compassionate prevention and care services that provide comprehensive support, including transportation, family support, food incentives, and land-based therapies.

**Lessons learned:** Between 2018 and 2022, the area achieved a 100% timely linkage to care for new HIV cases and ensured treatment for all diagnosed individuals within 12 months. In 2022, 81% of the PLWH in the area achieved viral suppression. From 2018 to 2022, HIV and HCV screenings increased by 403% and 448%, respectively. During the same period, over 532,000 new syringes and 2,700 safer inhalation kits were distributed. New HCV diagnosis decreased by 57% during this period, and new HIV diagnosis decreased from the rates of 45 cases per 100,000 population to zero cases. Timely care prevented mother-to-child transmission, resulting in seven HIV-negative births among pregnant PLWH since 2020.

**Conclusions/Next steps:** These initiatives resulted in a significant rise in testing uptake, the establishment of on-site infectious disease care clinics, prompt prescription linkages and pharmacy support. Active harm reduction and wellness outreach, along with rural-to urban pre-



natal referrals, contributed to a decline in HCV and HIV cases. In addition, the measures resulted in achieving viral suppression for the majority of PWLH, and the adoption of "U=U" (Undetectable equals Untransmittable) by health professionals impacted and improved the STBBI outcomes in the area. The consistent and frequent support from local leadership, coupled with cultural approaches, played a crucial role in rebuilding trust and optimizing health outcomes among PLWH.

## OAC1004

### Addressing substance use: decreased problematic substance use among young transgender women in Brazil - findings from a peer-led intervention study

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**Background:** Substance use linked to challenging social conditions may increase HIV risk among young trans women (YTGW) in Brazil. This study aimed to evaluate substance use among Brazilian YTGW and identify factors associated with a high risk of problematic substance use (PSU).

**Methods:** Data from BeT, a 48-week status-neutral peer-led HIV systems navigation intervention study in Rio de Janeiro, Brazil (February 2022-August 2023), targeting YTGW (18-24 years old). to improve HIV prevention/care outcomes were analyzed. Baseline to follow-up visits data (48-week) were compared to assess changes in lower (0-10 for alcohol, 0-3 for others), moderate (11-26 for alcohol and 4-26 for others) and high risk PSU (27+) using ASSIST. Anxiety/depression screenings used PHQ4 (moderate/severe >5). Factors associated with moderate/high risk of any PSU (except tobacco/alcohol/marijuana) were identified using adjusted logistic regression models.

**Results:** Among 164 participants (most were aged 20-24 years (74%), identified as Black/Pardo (66%), higher than secondary education (66%), and 49% reported transactional sex. Substance use prevalence at baseline included alcohol (82%), binge drinking (74%), marijuana (66%), tobacco (65%), cocaine/crack (12%), inhalants (9%), and amphetamines (8%). Moderate/high-risk of PSU decreased significantly from baseline to follow-up for all substances, especially tobacco (57.7%-39.7%), alcohol (22.5%-0.9%), marijuana (62.9%-50.9%), crack/cocaine (8.6%-4.3%), amphetamines (3.4%-0.9%), inhalants (8.6%-0.9%) (see Figure). No participant had high risk of PSU at follow-up. High risk of any PSU (except tobacco/

alcohol/marijuana) at baseline was associated with lower education ( $\alpha$ OR:4.12[95%CI:1.02-17.02]; p-value=0,046), binge drinking ( $\alpha$ OR:5.92[95%CI:1.55-39.36];p-value=0.024), and moderate/severe anxiety/depression score ( $\alpha$ OR:4.13[95%CI:1.22-17.23];p-value=0.032).

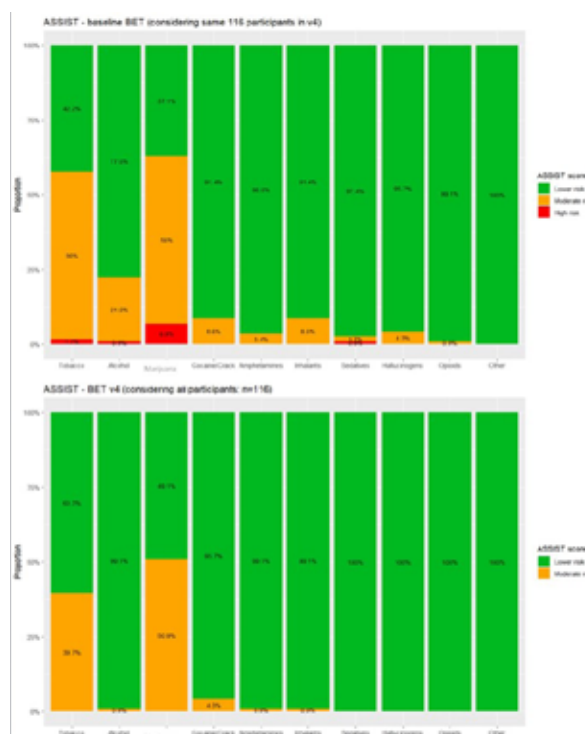


Figure. Risk of problematic substance use according to ASSIST among young transgender women in BeT, Rio de Janeiro, Brazil, 2022-2023.

**Conclusions:** An unanticipated outcome of the intervention was a significant decrease in problematic substance use among YTGW in Brazil, indicating the relevance of intervention components beyond HIV. PSU was highly correlated with lower education, binge drinking, and mental distress among YTGW in our intervention. Intensive peer-led systems navigation interventions may serve as models for substance use reduction with YTGW.



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## OAC1005

Effect of training and clinical mentoring on prevention, linkage and retention to HIV care among key populations in Zambézia Province, Mozambique

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**Background:** Key populations (KP), i.e., sex workers, men who have sex with men, transgender people, people who inject drugs, and people in prisons and other closed settings, experience stigma, discrimination, and structural barriers when accessing services for HIV prevention and care.

We describe the effect of interventions implemented to strengthen provision of KP-friendly services at 128 health facilities (HF) in Zambézia Province, Mozambique.

**Description:** We used a quality improvement conceptual framework to understand barriers to provision of KP-friendly services, design and implement interventions. Lack of appropriate provider training was the main barrier identified. Evaluation occurred over two years, including pre-intervention (October 2021-September 2022) and during-intervention (October 2022-September 2023) periods. Interventions included:

1. Training 85 clinicians and 103 lay staff, some of whom self-identify as KP, on providing KP-friendly services;
2. Performing 2,245 one-on-one mentoring sessions to clinicians and lay staff from 128 HF (average six sessions per HF) on KP-related skills using standardized tools; and
3. A monitoring strategy including data triangulation. Aggregated clinical data on pre-exposure prophylaxis (PrEP), antiretroviral therapy (ART) linkage and uptake, viral load (VL) coverage, and suppression were used to assess trends.

**Lessons learned:** Results show an increase in PrEP initiation among KP by 171%, with 5,772 individuals initiating PrEP during-implementation compared to 2,130 pre-implementation. Linkage to ART services increased 22.6% from 62% pre- to 76% during-implementation.

The number of individuals currently receiving ART increased by 39% from 5,191 pre-implementation to 7,189 during-implementation.

Testing for VL coverage (77%) during-implementation remained the same as in the pre-implementation period (Table), while VL suppression (91%) increased compared to pre-implementation (87%).

	Pre-implementation	During-implementation	Percentage Change
Tested for HIV <sup>a</sup> (n)	10417	10999	5.6%
Negative test result (n)	8331	8994	8.0%
Initiated PrEP (n)	2130	5772	170.9%
Positive test result (n, %)	2086 (20%)	2005 (18%)	-3.9%
Linkage to ART <sup>b</sup> (%)	62%	76%	22.6%
Initiated ART (n)	1975	2091	5.9%
Currently receiving ART (n)	5191	7189	38.5%
Tested for VL in last 12 months (n)	3177	4720	48.6%
VL coverage <sup>c</sup> (%)	77%	77%	0%
VL suppression <sup>d</sup> (n, %)	2777 (87%)	4282 (91%)	54.2%

<sup>a</sup>Some persons could have been tested several times, as guidelines recommend HIV testing for KP 4x/year (in 2021/2022) or 2x/year (as of 2023); <sup>b</sup>Linkage to care is calculated by dividing the total number of persons initiating ART with the total number of persons living with HIV identified during the specific period (may include individuals tested by other institutions/partners); <sup>c</sup>VL coverage is a proxy indicator calculated by dividing the number individuals with one VL result registered within the last 12 months and the number of individuals on ART 6 months prior; <sup>d</sup>Viral suppression is calculated by dividing the number of individuals with a VL result less than 1000 copies/ml and the total number of individuals with a VL result registered.

Table. HIV services for key populations, pre- and during-implementation in Zambézia Province.

**Conclusions/Next steps:** These findings highlight the favorable effect of training and clinical mentoring on key HIV prevention and care outcomes in the HF context in resource-constrained settings. Use of clinical quality improvement methods can be a meaningful tool to identify barriers and develop solutions to improve provision of KP-friendly services.

## OAC15 Meeting people where they are: Interventions to support testing

### OAC1502

Unveiling a new path of HIV services in prison setting in Bangladesh

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**Background:** Bangladesh faced challenges in achieving the first 95 target for HIV, with a current standing at 73%. The AIDS/STD Programme (ASP) took a proactive role in enhancing HIV testing services, focusing on overlooked areas like prisons. Unfortunately, progress was hindered by the absence of established testing and prevention facilities, influenced by restrictive policies. Across the nation's 68 prisons living 90,000 inmates. Program data revealed 1,110 People Who Inject Drugs (PWID) in jail between 2018 and 2020, with 169 on Opioid Substitution Therapy (OST) and 114 HIV positive. The lack of HIV services in prisons resulted in the discontinuation of OST and Antiretroviral Therapy (ART). In response, ASP launched a project in 2021 aiming to integrate HIV services within prison hospital settings.

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**Description:** In June 2021, ASP engaged in advocacy with the prison directorate, conducting workshops to present data and evidence for approval from the Ministry of Home Affairs. On September 21, 2022, an MoU was signed, enabling ASP to intervene in nine selected prisons prioritized based on HIV prevalence districts. Human resources were deployed, prison staff were trained to identify and test inmates, especially Key Populations (KPs). Testing began in October 2022, with 7,976 HIV and 5,596 Syphilis tests conducted by December 2023, identifying 5 new HIV and 140 Syphilis cases, all enrolled in HIV and STI treatment. In three prisons, 144 PWID were identified, including 12 persons who were HIV positive, having entered jail for a short time. The project ensured Antiretroviral Drugs (ARVs) for short-term cases, although 39 persons were OST recipients, but OST remained unavailable.

**Lessons learned:** Successful lessons included the establishment of testing facilities in high-prevalence districts, with inmates showing willingness to undergo testing. Three ARV dispensing centers within prison hospitals improved access for HIV-positive inmates.

**Conclusions/Next steps:** The imperative next step is to expand HIV services to all 68 prisons, as motivated by the Directorate of Prisons. While the pilot phase from 2021-2023 didn't initiate OST in selected prisons, efforts are underway to introduce this service in districts where NGO facilities offer it. Valuable insights from the end-of-grant cycle survey results in February 2024 will guide future planning and improvements.

## OAC1503

Breaking the barriers: opportunities for integrating HIV testing with other services for incarcerated population. Results from Plan India's Prison and OCS intervention funded by GFATM in 13 Indian states

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**Background:** Though estimated national adult prevalence remained low in India 0.20% (0.17-0.25%) in 2022, the observed HIV prevalence among inmates in jails remained very high. 1.93% (95% CI: 1.75-2.12). Complementing Govt. of India's effort to end AIDS by 2030, Plan India is implementing Prison and Other Close Settings (OCS) intervention in 13 priority Indian states through an integrated HIV prevention project funded by The Global Fund.

**Description:** Plan India in collaboration with state and central Govt., has introduced an Integrated HIV prevention service along with STI, Hep-B, Hep-C and TB for the incarcerated population in 357 prisons and 218 Other Closed Settings since September, 22 with a focus to undertriads.

The project targeted to:

A. Mapping all the prison and OCS in project states,

B. Expand and strengthen HIV and priority disease screening facility in the prison set up, and

C. Capacitate Prison Peer Volunteers (PPVs) among prison inmates towards sustainability.

**Lessons learned:** Eighty seven percent (n= 320,825) of the incarcerated population those received HIV testing during the period of September, 22 to September, 23 were undertrial inmates. 1,479 inmates identified as HIV positive while positivity varied widely within the project states 0.44% (0.1-4.97). 77% have been linked with ART treatment within 30 days. 80% of newly identified HIV positive inmates (n=1479) are from injecting drug use background. Out of the inmates tested for TB 1.93% (n=240,780) were identified as Symptomatic and 0.91% (n=4,487) were diagnosed with TB.

STI screening resulted 0.57% (n=38642) cases diagnosed, and 1.19% (n=78,642) inmates were identified as Hep-C positive. Around 6,000 Prison Peer Volunteers has been identified and trained to carry out community-based HIV screening and providing ART adherence support to HIV positive inmates.

**Conclusions/Next steps:** The result suggests a significant impact created within the prison setting with the integrated HIV and other priority disease screening among incarcerated population.

Advocacy with Govt. departments and collaboration with prison officials has resulted in ensuring increase identification and early linkage of HIV positive inmates.

Plan India's Prison intervention shows the pathways to expand and saturate the incarcerated population with integrated package of screening services and beyond.

## OAC1504

AEGLIDA: an intervention to support uptake of HIV self-testing and PrEP among women who exchange sex and/or use substances in Kazakhstan

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**Background:** Women who exchange sex and/or use substances (WESUS) face stigma-related barriers to HIV testing, the gateway to PrEP/PEP and ART. In Kazakhstan, HIV self-testing (HST), a user-controlled method, may increase consistent HIV testing, but it is a new option for WESUS and interventions are needed to promote and increase uptake.





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**Methods:** AEGIDA is a 4-session intervention designed for WESUS to support consistent HIV testing via HST training and PrEP awareness. To create AEGIDA, we conducted formative research (30 interviews/4 focus groups) identifying preferences/barriers/facilitators of HST and applied modified intervention mapping to adapt an evidence-based intervention (TRUST).

To evaluate AEGIDA, we screened 305 women (47% eligible) and enrolled 90 women (6 transgender women), who completed baseline self-interviews and were randomized in a 2:1 assignment to active (AEGIDA) vs. a time-attention control (didactic self-screening) conditions with 6-month follow-ups.

AEGIDA's theoretically-based intervention sessions include evidence-based techniques (motivational interviewing, peer education, harm reduction, cognitive reframing, and self-compassion) to reduce internalized stigma and build HST skills (via videos created by sex worker advocates and hands-on practice with facilitator) to increase consistent HIV testing. Sessions were delivered face-to-face and via videoconference, with a closed Instagram page for active condition participants.

**Results:** At baseline, average participant age was 39 (SD=8.8); 37% completed 9<sup>th</sup> grade or less. Nearly half were homeless and two-thirds were food insecure in the 3 months before enrollment. STIs were common (13 syphilis; 4 gonorrhea; 17 trichomonas; 5 chlamydia).

About half reported not using condoms with paying partners and getting extra money for it in the past 3 months. Just half had HIV tested in 6 months before enrollment. Preliminary analyses find that AEGIDA is acceptable and feasible to deliver.

Session attendance was 100%, 92%, 87% and 80%; median number of days to complete all 4 sessions was 18.3 (4-63 days).

**Conclusions:** AEGIDA has the potential to promote HST and PrEP uptake by addressing key stigma-related barriers to testing and prevention access among WESUS in Kazakhstan. When 6-month follow-up is complete in March 2024, we will calculate preliminary efficacy and analyze exit interview data, and disseminate our findings in collaboration with our community and governmental partners.

## OAC1505

**Innovations in HIV testing. A story of how we utilized a failed grasshopper harvesting season to conduct moonlight HIV testing and counselling among young men in Uganda**

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**Background:** Today, young people (15-24) account for 40% of all new adult HIV infections. We utilized a failed business venture to mobilize youth to know their status. Grasshoppers are a delicacy and a very lucrative source of income in Uganda. The seasonal swarms are trapped only in the night using very bright lights and water drums. During the season, most young people employed in the informal sector usually co-opt this business as an extra income. This business is accompanied with reckless lifestyle of drinking, partying and buying sex workers especially after receiving huge sums of money. This year, the anticipated grasshoppers did not come in time due to changes in weather. This rendered the business men idle and open to listening.

**Description:** Pill Power Uganda (PPU) utilized this opportunity to conduct HIV campaigns in the town centers where the business men had set up. YSU utilized projectors and screens to showcase testimonies from those living with HIV. The counsellors also discussed condom use, PrEP and PEP and routine testing and counseling. The team then welcomed a Q&A session, followed by a free testing and counselling session.

**Lessons learned:** A total of 2809 young people (2630 Males, 179 Females) were reached in the with HIV counseling and testing services with 32 (21 Males, 11 Females) testing HIV positive giving a positive rate of 1%. More men (94%) were reached with HIV testing services compared to females at 6%. The moonlight campaigns contributed 35% of the total number of individuals who received HIV testing services in Kyegegwa district. The business men after knowing their status made resolutions to change their behavior. The unexpected good outcome is that 411 of the MARPs e.g commercial sex workers, long distance truck drivers and bar workers were also attracted by the testimonies.

**Conclusions/Next steps:** Innovation of cost-efficient approaches with massive reach are essential for continuity of HIV knowledge dissemination programs. utilization of 'cover of darkness' events to offer HIV services reaches many young men particularly in the urban settings. YSU intends to research and utilize more of the moonlight business opportunities to conduct HIV awareness campaigns and testing.

# OAC18 Communities taking charge: Overcoming prevention challenges through peer-led interventions

## OAC1802

Let communities lead the HIV response: sharing experiences from key population civil society organisations in Uganda, 2022-2023

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**Background:** Community-led solutions are necessary to mitigate public health threats, including HIV. PEPFAR funded the Infectious Diseases Institute (IDI) to support civil society organisations (CSOs) to create safe spaces in the community for delivery of person-centered differentiated services to key populations (KPs).

We assessed the contribution of seventeen CSO safe spaces to HIV service delivery in Kampala and Wakiso districts of Uganda.

**Description:** We identified indigenous KP-led CSOs and capacitated them into safe spaces, known as drop-in centres (DICs). DICs were empowered to provide a package of comprehensive stigma-free health HIV services to KPs using the PEPFAR KP service layering table.

We trained, mentored, and linked frontline DIC leaders and facility staff to deliver targeted HIV prevention strategies including HIV self-testing in KP hotspots, linking HIV-negative KPs to pre-exposure prophylaxis (PrEP) or KPs with HIV to counselling for initiation or re-engagement into antiretroviral therapy (ART) and care. All service data are routinely entered in a centralised data system known as the KP Tracker.

We analysed data in the KP Tracker to compute the contribution of DICs as proportions to overall KP service provision performance for the period October 2022-September 2023.



Figure. Civil society organisation drop-in center contributions to key population service delivery in Kampala and Wakiso districts, Uganda, October 2022 - September 2023.

**Lessons learned:** A total of 99,014 KPs received a package of at least three HIV services, including (95,229, 96%) who received an HIV test. Of these, only 14% (13,206) tested at CSO DICs. Among KPs identified as living with HIV, nearly half (603/1,271, 47%) were tested at CSO DICs, of whom 599/603 (99%) initiated ART. DICs also contributed nearly half (7,470/15,526, 48%) of KPs initiating PrEP.

**Conclusions/Next steps:** CSO DICs performed HIV case-finding and initiated KPs on PrEP more efficiently compared to facility-based KP programs in Kampala and Wakiso districts. Well-supported CSOs can successfully implement peer-led solutions at community DICs to improve delivery of HIV prevention and treatment services to KPs.

## OAC1803

HIV testing – community-based peer-led strategies; HIV testing to support case-finding

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**Background:** Zambia has made significant progress (89:96:97) towards reaching the 95-95-95 targets. However, with 28,000 new HIV acquisition being reported annually, identifying and implementing effective HIV case-finding strategies has become more imperative. We compare the effectiveness of three different strategies - social network strategy (SNS), mass mobilisation, and index testing - for case-finding among key populations in seven (7) districts of Zambia.

**Description:** The USAID-funded Controlling HIV Epidemic for Key and Underserved Populations (CHEKUP) I is implementing a key populations (KP) program in seven (7) districts of two (2) provinces of Zambia, targeting female sex workers (FSW), men who have sex with men (MSM), transgender persons (TGs), and people who inject drugs (PWID). Community-based KP Wellness Centers linked to government health facilities have been established, run by key populations civil society organizations (KP CSOs), who conduct community outreach, social network testing, and index testing through their peer promoters and HIV counsellors.

**Lessons learned:** Utilisation of a combination of HIV testing modalities is crucial to mobilising KP for HIV services. Between December 2021 and September 2023, 25,709 KP were reached: 22,805 through community outreach, 1,590 through SNS, and 1,314 through index testing.



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Overall, 23% tested HIV-positive. Comparing the HIV testing modalities, index testing generated the highest positivity, at 41%, followed by SNS at 31%, with mass mobilisation generating a comparatively low HIV positivity, at 20%.

Further analysis of KP tested through the three different testing modalities indicated that treatment continuity was highest among those reached through SNS and index testing, at 77% and 70%, respectively, compared to those reached through mass mobilisation, at 62%. Treatment continuity among KP reached through SNS and index testing was comparatively higher due to the utility of social networks for tracking and reaching KP.

**Conclusions/Next steps:** While HIV positivity was highest using SNS and index testing, mass mobilisation was, by comparison, very effective in reaching a high number of KP, which is also crucial for combination HIV prevention. Therefore, as countries strive to achieve epidemic control, utilisation of a combination of HIV testing modalities is crucial to reaching hard-to-reach population groups, such as KP, for HIV services.

## OAC1804

Exploring pre-exposure prophylaxis (PrEP) uptake and continuation among gender and sexually diverse populations in Bangladesh: a pilot program analysis

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**Background:** Pre-exposure Prophylaxis (PrEP) has emerged as a ground-breaking biomedical intervention in the fight against HIV. The efficacy of PrEP relies on strict adherence to the prescribed medication regimen, as consistent and correct use is crucial for optimal protection, and suboptimal adherence can diminish its effectiveness. In Bangladesh, there is a growing HIV epidemic, disproportionately affecting men who have sex with men (MSM), male sex workers (MSW), and transgender women (locally known as hijra).

This pilot program analysis aims to investigate the patterns of PrEP uptake and continuation within these populations (KPs) in Bangladesh.

**Description:** The pilot intervention took place at two drop-in centers (DICs) located in Dhaka city. From February 2022 to December 2022, a total of 208 participants (70 MSM, 100 MSW, and 38 hijra) were enrolled in the PrEP intervention program.

Adhering to the World Health Organization's six-step cascade, PrEP services were provided. PrEP continuation was prioritized through peer-led navigation and digital platforms, including text messaging, social media (WhatsApp,

Messenger), and audio-visual counselling. Baseline data on HIV and STIs were collected, with follow-up assessments at the third and sixth-month intervals.

**Lessons learned:** At the 3rd-month follow-up, 96.2% of participants continued with PrEP, while 3.8% discontinued. By the 6th month, 87.5% of participants completed PrEP follow-up services, with 12.5% unable to sustain PrEP usage. Prominent reasons for discontinuation included going abroad for job or study purposes (53.84%), relocation from intervention sites (15.38%), and being in a monogamous relationship (11.54%). Regarding STIs, the overall incidence among participants at baseline was 22.6%. From the 3rd to the 6th-month follow-up, the incidence of STIs decreased to 16.0% and 5.49%, respectively. No HIV-positive cases were detected at the 3rd and 6th-month follow-up visits.

**Conclusions/Next steps:** The high retention rate at PrEP at the 3rd-month follow-up suggests initial success in PrEP uptake, highlighting its potential to curb HIV transmission. However, discontinuation was observed between 3rd to 6th months, emphasizing the need for targeted support and intense PrEP adherence counselling to maintain a good retention rate.

## OAC1805

"I am Manu, your virtual sexual health advisor": using chatbot technology for innovative approaches and managing demand for HIV prevention among key populations in Central America

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**Background:** In 2023 and under the Prevention Services against HIV project implemented by the Pan American Social Marketing Organization (PASMO) with funds from the United States Agency for International Development (USAID), PASMO developed and launched "Manu", the first HIV/STI-related chatbot in Central America. Leveraging chatbot technology, "Manu" was designed to help manage the high online demand for HIV/STI prevention services and information generated under PASMO's cyber-education and social media outreach strategies targeted to key populations (KP), especially men who have sex with men (MSM), given that, from October 2022 to September 2023 alone, these strategies helped PASMO reach more than 18,000 at-risk KPs through online channels and new technologies were needed to help respond to user needs for information and referrals to the project's prevention services.

**Description:** PASMO worked with an external development team to design a comprehensive chatbot decision tree that would allow "Manu" to address information about HIV and STI risks and automatically generate re-



ferral coupons to PASMO's free prevention services such as HIV testing, HIV self-tests, and PrEP. The chatbot was designed to operate within one of PASMO's Facebook Fan Page's Messenger apps 24 hours a day, 7 days a week, yet users can also request "human" to interact with a PASMO online outreach worker / "cyber-educator". Since its April 2023 launch, Manu reports more than 5,000 entries from KPs seeking HIV/STI prevention information and services and more than 700 clients have been referred to project services.

**Lessons learned:** PASMO used audience insight collection tools and innovative eye-tracking and heat map research to give a name and face to the chatbot which was illustrated in 3D to better interact with users. Chatbot tracking data shows that more than 50% of KPs who access "Manu" do so outside of working hours (6pm to 6am), evidencing the importance of 24/7 technology to manage demand and maintain user access to information and referrals.

**Conclusions/Next steps:** The "Manu" chatbot is proving to be an important tool to maintain the access of young and at-risk KPs to HIV/STI information and services referrals at all times of the day and on weekends.

## OAC22 Progress towards safe motherhood: Preventing vertical transmission

### OAC2202

Differences in risk factors between high and low vertical HIV transmission settings: implications for elimination of pediatric HIV

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**Background:** Roughly 1.3 million infants are exposed and 150,000 newly diagnosed with HIV annually. Estimates of Vertical HIV transmission (VHT) vary by setting. We assessed risk factors for VHT among infants born to women living with HIV (WLWH) in Tanzania and Mozambique.

**Methods:** Between October 2019 and August 2021, we collected data from pregnant WLWH who participated in the EDCTP-funded LIFE study at 28 primary health facilities in Tanzania and Mozambique. VHT was assessed up to month 3 for all infants and up to month 18 for a subset of infants. Demographics and clinical characteristics were collected to assess risk factors for VHT, including maternal HIV viral load measurements at baseline and month 3. Additionally, facility-level programmatic factors including number of staff and annual HIV-positive deliveries were collected. We used mixed effects models adjusted for health facility clustering to calculate odds ratios (OR) for VHT.

**Results:** In total, 6505 WLWH and their 6602 infants were included in the study with 1296 infants participating in the month 18 subset. VHT up to month 18 was 2.92% (95% CI: 2.42-3.49) in Mozambique, significantly higher than the 0.82% (95% CI: 0.51-1.24) observed in Tanzania (OR: 3.66, 95% CI: 2.31-6.12). On average, Mozambican mothers were



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significantly younger, attended antenatal care less frequently, and had been on antiretroviral treatment for a shorter period. Maternity staff per 100 HIV-positive deliveries was 9.9 (SD 5.0) in Tanzania and 2.3 (SD 1.0) in Mozambique ( $p < 0.0001$ ).

After adjusting for these factors, virologic non-suppression ( $>1000$  copies/ml) at delivery was the principal risk factor for transmission (adjusted OR: 28.3, 95% CI: 15.7-50.9). In Mozambique, 31.0% of mothers were not suppressed at delivery compared to 8.1% in Tanzania; only 10.4% infants who acquired HIV had mothers who were virally suppressed at delivery.

**Conclusions:** We observed a striking difference in VHT between countries. Lack of viral suppression in the early postpartum period was the main risk factor for VHT, and we observed differences in programmatic factors between countries.

These results highlight the need for a better understanding of the individual, community, and health system factors associated with lack of viral suppression in pregnant and lactating WLWH.

## OAC2203

[Eliminating mother-to-child-transmission of syphilis through the introduction of HIV/ syphilis dual tests amongst pregnant women in Liberia, a national roll-out success story](#)

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**Background:** The WHO recommends the use of Dual HIV/ Syphilis rapid diagnostic tests for screening pregnant women during antenatal care (ANC). Furthermore, women with HIV-and-syphilis-co-infection are 2.5-times more likely to transmit HIV to their children. Despite over 95% of pregnant women attending at least one ANC visit - of which 80% are screened for HIV, less than 8% of all pregnant women have been tested for syphilis.

In September 2021, the National AIDS and STI Control Program (NACP) began to scale dual-tests across Liberia to address this gap.

**Description:** Syphilis screening and treatment outcomes were estimated utilizing results from a survey administered across 67 facilities randomly sampled from 567 trained sites in 15 counties.

We utilized a triangulation-approach to estimate screening coverage combining the rates of commodity availability, provider knowledge and adherence to clinical guidelines, and patient consent. Using data from Jan-

uary-August 2023 we estimate 77% (92,298/ 120,559) of pregnant women attending first ANC were screened for syphilis and that 2.7% (2,529/ 92,298) were positive of whom 88% (2,232/2,529) received treatment.

**Lessons learned:** Introduction of dual-testing increased syphilis screening by nearly ten times (77%) almost mirroring that of HIV screening (80%), demonstrating that dual-testing can be easily integrated in national HIV programs. Empowering local county and district health teams with effective tools and training to lead on-site training and supervision allows providers to offer quality services that put clients first.

Furthermore, high screening paired with high treatment rates improves overall point of care services and health outcomes for pregnant women and their unborn children in a cost effective and sustainable manner.

**Conclusions/Next steps:** Other low-and-middle-income-countries (LMIC), looking to roll-out dual-tests or new HIV-testing guidelines should borrow successes from Liberia's national roll-out. Investment in county and district health teams reduce the need for repetitive capacity building at facilities and build upon existing structures to support future HIV-programs, ensuring that clients receive high quality, comprehensive services. Liberia's ability to achieve significant improvements in syphilis screening and treatment rates demonstrates dual-testing in ANC settings is feasible and readily adopted by healthcare providers and clients.

## OAC2204

[Monitoring Malawi's national integrated testing rates for HIV, syphilis, and hepatitis B and the co-infection prevalence for pregnant women using routine individual data captured through artificial intelligence technology](#)

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**Background:** Malawi's 2023 HIV testing program guidelines has integrated testing for three diseases of HIV, syphilis, and Hepatitis B Virus (HBV) to align with the WHO's triple elimination goal by 2030 among pregnant women. The program used ScanForm, an innovative tool that captures data from paper registers using Optical Character Recognition (OCR) via a simple smartphone, and further digitizes this information using Artificial Intelligence (AI). This enhances the granular monitoring of testing rates and co-infection prevalence for high-risk groups such as pregnant women. This study aimed to estimate both the testing rates of the three diseases and the co-infection prevalence rates among pregnant women.

**Methods:** This study analyzed testing rates for HIV, syphilis, and HBV among pregnant women attending Antenatal Care (ANC) at 456 out of 657 ANC sites across Malawi, from December 2022 to December 2023. Data was collected via ScanForm, and analysis included computing testing and co-infection rates, using descriptive statistics and chi-square tests for age group associations

**Results:** Among 425,496 women, testing rates were 96.56% for HIV, 81.24% for syphilis, and 57.93% for HBV. The highest co-infection rate (0.2%) was for HIV-syphilis among 331,683 tested women, particularly in the 25-39 age group. Syphilis-Hepatitis B coinfection was found in 0.1% (298) of 215,897 tested women, mostly in the 30-39 age group. The HIV-Hepatitis B combination had a <1% prevalence, with a higher rate in the 25-39 age group. Triple infections were rare, with only 12 cases found.

Age group	HIV-Syphilis n = 331,683	HIV-HepB N = 236,092	Syphilis-HepB N = 215,897	HIV-Syphilis-HepB N = 207,302
	No (%) Yes (%)	No (%) Yes (%)	No (%) Yes (%)	No (%) Yes (%)
15-19	90,006 (99.9) 50 (0.1)	65,617 (>99) 5 (<1)	58,341 (>99) 18 (<1)	57,660 (>99) 1 (<1)
20-24	110,707 (99.8) 260 (0.2)	78,522 (>99) 21 (<1)	70,630 (99.9) 85 (0.1)	68,959 (>99) 5 (<1)
25-29	65,758 (99.6) 235 (0.4)	46,292 (99.9) 29 (<1)	42,595 (99.8) 71 (0.2)	40,578 (>99) 2 (<1)
30-34	38,924 (99.6) 138 (0.4)	27,741 (99.9) 16 (<1)	26,260 (99.7) 68 (0.3)	24,325 (>99) 3 (<1)
35-39	20,563 (99.6) 73 (0.4)	14,412 (99.9) 17 (<1)	14,262 (99.7) 37 (0.3)	12,727 (>99) 1 (<1)
40+	4,892 (99.7) 17 (0.3)	3,419 (>99) 1 (<1)	3,511 (99.5) 19 (0.5)	3,041 (100) 0 (0)
Total	330,910 (99.8) 773 (0.2)	236,003 (>99) 89 (<1)	215,599 (99.9) 298 (0.1)	207,290 (>99) 12 (<1)
$\chi^2$ P-value	0.000*	0.000*	0.000*	0.548

\*Significant at the 95% significance level

Table. Co-infection rates among ANC women.

**Conclusions:** Malawi's integrated testing program effectively tracks and monitors STI testing and co-infection rates, crucial for evaluating program impact and enhancing maternal and child health outcomes. Further analysis on the scanform data will focus on multivariate analysis of factors affecting the prevalence of the co-infections rates.

## OAC2205

### The impact of intimate partner violence on mother-to-child HIV transmission in 2022: a modelling analysis of 42 countries in sub-Saharan Africa

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**Background:** The 2022 *Global Alliance to End AIDS in Children* highlights addressing gender inequities as key to eliminating mother-to-child HIV transmission (MTCT). Women experiencing intimate partner violence (IPV) may be at an increased risk of MTCT due to vulnerability to HIV acquisition and barriers to accessing care. Burden of IPV and new paediatric HIV acquisitions are among the highest in sub-Saharan Africa. However, the proportion of MTCT attributable to IPV is unknown.

**Methods:** We created a probability tree model for MTCT among women (15-49 years) in 42 sub-Saharan African countries in 2022. We estimated the proportion of MTCT attributable to past-year physical and/or sexual IPV, as an age-standardized population attributable fraction (PAF). We accounted for perinatal and postnatal MTCT among women who acquired HIV before pregnancy, during pregnancy, and during breastfeeding. Model parameters included: fertility, HIV prevalence/incidence, ART uptake/retention and breastfeeding duration from UNAIDS' 2023 Spectrum model; IPV prevalence from the WHO Global Database on Violence Against Women; and effect measures for IPV's impact on model parameters from literature reviews. We derived uncertainty intervals (95%UI) through 1,000 Monte Carlo simulations.



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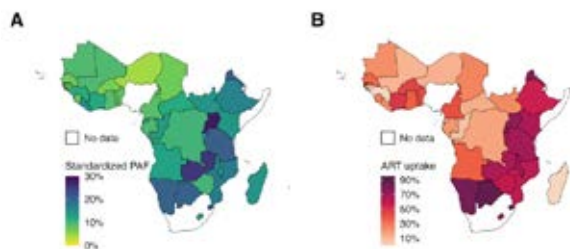


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**Results:** Across 42 countries, 15% (95%UI:7-23%) of paediatric HIV acquisitions were attributed to IPV in 2022. PAF ranged from 4% (95%UI:2-7%) in Niger to 28% (95%UI:13-42%) in Uganda. PAF was highest among 15-19-year-olds (23%;95%UI:9-36%) and lowest among 40-45-year-olds (7%;95%UI:4-11%). ART uptake was most correlated with PAF ( $R^2=0.6$ ; Figure 1). In high ART uptake settings, IPV could lead to a large drop in ART use and subsequent rise in MTCT. Where ART uptake is low, reducing IPV has a smaller impact on preventing MTCT.



**Figure 1.** A) Age-standardized population attributable fraction of post-year physical and/or sexual intimate partner violence in sub-Saharan Africa in 2022 in each country. B) Overall (non-IPV stratified) antiretroviral treatment uptake prior to pregnancy among women in sub-Saharan Africa in 2022 in each country. South Africa does not use Spectrum to make HIV incidence and prevalence projections. Djibouti, Mauritius, Nigeria, and Somalia had no publicly available Spectrum files in 2022. PAF=population attributable fraction; ART=antiretroviral treatment

**Conclusions:** 1 in 7 new paediatric HIV acquisitions in sub-Saharan Africa may be due to IPV, rising to 1 in 5 among adolescent girls. Ending IPV could accelerate MTCT elimination, especially among young women with highest IPV prevalence and HIV incidence.

## OAC29 Weather, wealth and war: Political, environmental and social determinants of HIV outcomes

### OAC2902

Food insecurity directly impacts adherence to antiretroviral therapy and to pre-exposure prophylaxis among sexual and gender minorities in Brazil

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**Background:** Brazil offers free-of-charge antiretroviral therapy (ART) for people living with HIV (PLHIV) as well as pre-exposure prophylaxis (PrEP) to eligible individuals through its national health system. Adherence to ART and to PrEP is essential to achieving the expected benefits of virologic suppression and prevention of HIV acquisition. We explored whether food insecurity had direct effects on nonadherence to ART/PrEP.

**Methods:** Cross-sectional web-based survey targeting adult sexual and gender minorities living in Brazil (May-September/2021) recruited through dating apps

and social media. PLHIV reporting ART use and HIV-negative individuals reporting daily oral PrEP use were eligible for this analysis. Self-report of ART adherence was measured by the WebAd-Q instrument (3-items/past 7 days) plus a slider question regarding missed doses in the past month (latent outcome).

Self-report of PrEP adherence was measured by the number of days the person took PrEP in the past week (binary outcome: <daily vs. daily). The 7-item Brazilian Scale of Food Insecurity (EBIA) was used to measure food insecurity (higher scores=more severe food insecurity).

We used structural equation modeling (SEM) to assess the direct and indirect effects of variables on ART/PrEP non-adherence.

**Results:** In total, 1,230 PLHIV were using ART, and 991 HIV-negative individuals were using daily oral PrEP. Median age of PLHIV was 37 years (HIV-negative: 34 years), most were cisgender (97%). More PLHIV reported moderate/severe food insecurity 21% (HIV-negative: 12%). Self-report of ART nonadherence (WebAd-Q) was 45% (PrEP nonadherence: 7%).

Higher socioeconomic status (latent variable measured by income, education, and sex work) had a strong negative effect on food insecurity. Among PLHIV, food insecurity (standardized coefficient [SC]:0.30, standard error [SE]:0.07,  $p<0.01$ ), in addition to substance use and binge drinking in the past 6 months had direct effects on ART nonadherence. Among HIV-negative individuals, only food insecurity (SC:0.31, SE:0.13,  $p=0.02$ ) had direct effect on PrEP nonadherence.

**Conclusions:** Brazil has experienced worsening social inequalities, exacerbated by the COVID-19 pandemic, leading to increases in food insecurity especially among vulnerable populations.

Our findings suggest that providing socio-economic support could directly help PLHIV by improving their quality of life, vulnerable HIV-negative individuals by preventing HIV acquisition, and ultimately populations through decreased HIV transmissions.

### OAC2903

The nexus between climate change and HIV/AIDS: a Kenyan perspective

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**Background:** Climate change and HIV/AIDS are among the most significant public health challenges in Sub-Saharan Africa in the 21st century. However, there is a limited understanding of the complex relationship between these two challenges, which hinders progress in HIV/AIDS prevention and management within the context of the climate crisis.



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**Description:** The framework employed in this systemic review identified five pivotal pathways interlinking climate change and HIV/AIDS, drawing insights from an analysis of 50 studies comprising varied designs, geographical locations, and focus areas. The identified pathways included extreme weather events, food insecurity, the spread of infectious diseases, increased migration, and pressure on health services, forming the investigation's foundation.

**Lessons learned:** The review's findings provided insights into the dynamics between climate change and HIV/AIDS, with specific regional nuances. Notably, food insecurity emerged as a catalytic factor, intensifying the prevalence of transactional sex with about 60% involving women.. Lessons gleaned from regions around Lake Victoria, Mankindu, Taita Taveta and Turkana County underscored the vulnerability of established practices among young girls and women who were previously cabbage farmers but are now reliant on handouts to meet their basic needs in the face of climate-induced disruptions, especially drought.

Moreover, the review highlighted the amplifying effect of extreme weather events on the spread of vector-borne infectious diseases among individuals living with HIV (PLHIV). Climate-induced migration in northern Kenya, for example, Turkana, emerged as a destabilizing force, exacerbating economic instability and rendering communities susceptible to transactional sex, sexual violence, and exploitation.

Furthermore, the review shed light on the adverse consequences of migration on the accessibility of HIV and sexual health services, as demonstrated by Turkana County with its significant HIV burden. The strain exerted by extreme weather conditions on healthcare systems, including HIV services, acted as a hindrance to the advancement of Universal Health Coverage.

**Conclusions/Next steps:** Collaboration between stakeholders in the fight against HIV/AIDS and the climate emergency is crucial. By deepening our understanding of the complex relationship between climate change and HIV/AIDS, we can develop sustainable strategies and interventions to address these challenges. This knowledge will inform the development of programs and policies to control the spread of HIV in Kenya.

## OAC2904

### HIV risks among Ukrainian women during the war: national survey results

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**Background:** Before the full-scale Russian invasion, non-key population women represented 22.2% of new HIV acquisitions and 35.8% of those living with HIV in Ukraine.

The war may worsen HIV transmission, affecting women and young girls. We sought to understand HIV risks among Ukrainian women during the war to improve current interventions and develop new ones that meet the women's needs.

**Methods:** In August 2023, we surveyed 1,000 women aged 15-49 in Kyiv City and 24 regions of Ukraine (government-controlled territories) using Computer-Assisted Telephone Interviews (CATI). The survey covered war-related experiences, healthcare and HIV-service experiences, behaviors, self-perceived HIV risk, and needs. Data were weighted by age, settlements, and region, and correlation analysis was conducted.

**Results:** Among 1,000 women, 53.1% reported 'war-related experiences', and 19.1% stayed in active fighting areas. Due to the war unprotected contact with blood had 3.0%; 1.0% faced medical procedures without sterile instruments; and 5.0% of post-war pregnancies skipped national protocol tests. About 0.2% engaged in drug use, sex work, or faced sexual violence, and 45.3% never used condoms during the war. Self-declared HIV prevalence was 0.2%; 7.0% and 1.4% perceived medium or high HIV risk, and it was higher among those with war-related blood contacts – 25.8% ( $p \leq 0.001$ ). HIV testing experience before the war was reported by 60.9%, dropping to 19.1% during the war.

Compared to the adults, girls aged 15-17 were less aware of HIV testing locations (55.6% vs 69.7%,  $p \leq 0.001$ ), free testing (64.2% vs 70.0%,  $p < 0.05$ ), and free treatment (31.3% vs 48.4%,  $p \leq 0.001$ ). Among internally displaced persons (IDPs), 25.9% lacked medical care due to war-related reasons compared to 2.2% of those without displacement ( $p \leq 0.001$ ).

**Conclusions:** The results emphasize the need to enhance HIV programs for women with personal war-related experiences, focusing on prevention and testing. Additional efforts are required to educate girls (15-17) about HIV and available services and to expand healthcare access for IDPs.

Future research should concentrate on targeted HIV risk assessment among women, considering potential sensitivity issues with CATI. Given the assumption of high sexual exploitation in temporarily occupied territories, further investigation is crucial for understanding HIV risks in those regions.





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## OAC2905

Examining community factors associated with interruption in treatment (IIT) among key population accessing HIV care in Southern Nigeria

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**Background:** Interruption in Treatment (IIT) has been associated with an increase in new infection and high viral load among Key population living with HIV. Interruptions in treatment (IIT) for these populations can lead to poor health outcomes and increased transmission risk. This study aims to identify community factors that contribute to IIT among KPs in this region.

**Methods:** A mixed-methods approach was employed, combining quantitative data from KP-CARE 1 data from medical records to identify rates and patterns of IIT, with qualitative client exit and satisfaction form to explore the experiences and challenges faced by KPs in accessing and adhering to HIV treatment. Data were collected from 14 Heartland Alliance HIV treatment One-Stop-Shop across Southern Nigeria.

**Results:** Among the 74,733 clients extracted for this study, 9% of clients were recorded as been interrupted in treatment. Among the clients investigated, 38% were Female Sex Workers, 33% Men who have sex with Men, 28% People who inject drugs and 1% transgender. The FSW clients had the highest IIT of 51% followed by MSM with 25%, PWID with 23% and transgender with 1% respectively. 64% of the clients on IIT were aged 25-39 as at the last ART pickup date with MMD of 6months. Analysis indicates that factors such as transportation barriers ( $\alpha\text{OR} = 0.01$ ), economic hardship ( $\alpha\text{OR} = 0.06$ ), Pill burden ( $\alpha\text{OR} = 0.03$ ), self stigma ( $\alpha\text{OR} = 0.09$ ) and harassment by enforcement ( $\alpha\text{OR} = 0.09$ ) significantly correlate with higher rates of IIT. Notably, high mobility of KPs from one location to another specifically for FSW community emerged as a critical barrier to consistent treatment.

**Conclusions:** The study highlights the complex interplay of community factors leading to IIT among KPs in Southern Nigeria. Addressing these factors requires multifaceted interventions, including stakeholders engagement, Income generating program, stigma reduction programs, reduction on MMD, and continuous providing behaviour change intervention. The findings underscore the need for targeted strategies to support the continuity of HIV care for KPs in the region.

## OAC33 The long and winding road: Trends in HIV diagnosis, treatment and mortality

### OAC3302

30 years of advancement and challenges in early HIV diagnosis in Jamaica

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**Background:** The first case of HIV in Jamaica was reported in 1982 and antiretrovirals (ARV) became available at public treatment sites in 2004. This study examines the epidemiology of HIV among persons living with HIV (PLHIV) from 1990 to 2020.

**Methods:** We analysed data from PLHIV first enrolled at HIV treatment sites in Jamaica between January 1990 to December 2020 to identify changes in client demographics, clinical stage, and location. The data span three periods: 1990-2003 (P1) pre-ARV access; 2004-2017 (P2) - Public ARV for PLHIV with CD4 <350; and 2018-2020 (P3) - Universal Test and Treat in Jamaica. We used chi-square and Kruskal-Wallis H tests to analyze changes across the periods.

**Results:** 25,953 PLHIV registered at treatment sites: 731 were in P1, 21,024 in P2, and 4,201 in P3, Significant differences emerged in sex distribution ( $\chi^2(4)=34.18$ ,  $p < 0.001$ ), age ( $\chi^2(6)=1091.95$ ,  $p < 0.001$ ), area of residence ( $\chi^2(4)=144.054$ ,  $p < 0.001$ ), and WHO HIV stage at registration ( $\chi^2(6)=302.28$ ,  $p < 0.001$ ).

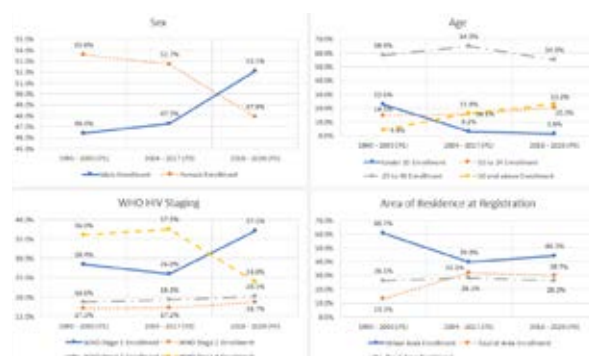


Figure 1. Changes in i) age, ii) sex, iii) HIV stage at diagnosis, and iv) area of residence among PLHIV enrolling in care in Jamaica, 1990-2020, N=25,953.

Median age at registration increased from 29 in P1 to 36 in P3; ( $H(2)=263.68$ ,  $p\text{-value} < 0.001$ ). Baseline CD4 counts increased from P1 to P3 ( $H(2)=343.024$ ;  $p < 0.001$ ). Stage 4 diagnoses decreased in PLHIV ages under 15, 15-24, and 25-49, but not among PLHIV 50 years and older. Similarly, Stage 1 diagnosis increased across all age groups, except those in the 50 and over cohort.

**Conclusions:** The decline in pediatric HIV cases and overall increase in early-stage diagnoses are notable public health achievements. However, Jamaica has an aging cohort of PLHIV entering treatment and targeted testing strategies and behavioural research are needed to reduce HIV transmission and late-stage diagnoses in older adults.

## OAC3303

The trend for HIV test and treatment and retention on antiretroviral therapy among people living with HIV in Sudan from 2012 to 2020

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<sup>1</sup>University of California San Francisco, Institute for Global Health Sciences, San Francisco, United States, <sup>2</sup>University of California San Francisco, Department of Epidemiology and Biostatistics, San Francisco, United States, <sup>3</sup>The Joint United Nations Program on HIV/AIDS (UNAIDS), Khartoum, Sudan, the, <sup>4</sup>Federal Ministry of Health, Sudan National HIV Control Program, Khartoum, Sudan, the, <sup>5</sup>United States Agency for International Development, Gauteng, South Africa, <sup>6</sup>World Health Organization Regional Office for the Eastern Mediterranean, HIV, Hepatitis and STIs, Cairo, Egypt

**Background:** With timely diagnosis of HIV infection, rapid antiretroviral therapy (ART) initiation, and good retention on treatment, many countries made significant progress in preventing deaths and further transmission of HIV. We analyzed multi-year data from identified persons living with HIV to assess the timing of diagnosis, ART initiation, and retention of treatment in Sudan.

**Methods:** We conducted a retrospective analysis data of 3,974 people diagnosed with HIV between 2012 and 2020 in Omdurman ART center. We reported the distribution of age, sex, stage of disease at diagnosis, and geographical locations of residence. We assessed the lag times between HIV diagnosis, ART initiation, and last clinical visit, and tested for trends over time.

**Results:** Most people were 30 to 49 years old (54.9%), male (56.5%), lived in Omdurman (53.8%), and had clinical stage 3 at diagnosis (51.6%) (Table 1). The proportion of people in clinical stage 1 increased from 7.9% in 2012-14 to 17.4% in 2018-2020 (p-value <0.001). The proportion of people who started ART within 3 months from diagnosis increased from 25.4% in 2012-14 to 92.3% in 2018-2020 (p-value <0.001).

However, among those who started treatment, the proportion who lost to follow-up after starting ART increased from 55.4% in 2012-14 to 96.0% in 2018-2020 (p-value <0.001).

**Conclusions:** Our data showed some improvement in early diagnosis of people living with HIV and a significant improvement in timely and rapid ART initiation in Sudan,

however late diagnosis remains predominant. Furthermore, almost all people who started ART had been lost to follow-up.

The late diagnosis and poor retention in treatment threaten losing all the gains made in improving the HIV response in Sudan. Urgent action is needed to remedy those weaknesses.

Characteristics	Overall (N=3974)	Year of HIV diagnosis			p value
		2012-14 (N=1545)	2015-17 (N=1252)	2018-20 (N=1177)	
Age (mean (SD))	36.19 (12.26)	34.70 (12.07)	37.06 (11.37)	37.38 (11.76)	<0.001
Age group (%)					<0.001
Under 18y	187 (4.7)	133 (8.6)	25 (2.0)	29 (2.7)	
18-29y	829 (20.9)	332 (21.5)	279 (22.3)	217 (18.9)	
30-49y	2190 (54.9)	818 (53.2)	709 (56.4)	666 (56.9)	
50y and older	961 (24.1)	222 (14.3)	175 (13.9)	154 (13.2)	
Unknown	229 (5.8)	158 (10.1)	85 (6.8)	40 (3.4)	
Sex (%)					0.004
Male	2247 (56.5)	921 (59.6)	720 (57.7)	568 (48.2)	
Female	1714 (43.1)	703 (45.2)	533 (42.2)	479 (40.6)	
Unknown	13 (0.3)	12 (0.7)	1 (0.1)	0 (0.0)	
Clinical stage at diagnosis (%)					<0.001
Stage 1	481 (12.1)	130 (8.4)	165 (13.1)	186 (15.7)	
Stage 2	219 (5.5)	84 (5.4)	38 (3.0)	37 (3.1)	
Stage 3	2050 (51.6)	718 (46.4)	614 (49.1)	518 (44.0)	
Stage 4	340 (8.6)	179 (11.5)	52 (4.1)	49 (4.1)	
Unknown	884 (22.2)	545 (35.1)	153 (12.1)	136 (11.6)	
Geographical location (%)					<0.001
Omdurman	2135 (53.8)	766 (49.5)	603 (48.3)	563 (47.8)	
Khartoum	548 (13.8)	272 (17.6)	168 (13.3)	148 (12.6)	
Other	290 (7.3)	101 (6.5)	99 (7.9)	53 (4.5)	
Other	961 (24.1)	330 (21.4)	209 (16.6)	136 (11.6)	
Unknown	290 (7.3)	172 (11.1)	53 (4.2)	21 (1.8)	
Study Outcomes					
Time between HIV diagnosis and treatment (%)					<0.001
% of people diagnosed with HIV	3974	1545	1252	1177	
Started ART in 3 months from Dx	2472 (62.2)	418 (27.1)	1071 (85.3)	964 (82.0)	
Started ART in more than 3 months from Dx	575 (14.5)	146 (9.5)	186 (14.8)	40 (3.4)	
Never started ART	1126 (28.3)	1079 (69.5)	85 (6.8)	42 (3.6)	
Retention on ART (%)					<0.001
% of people who started HIV treatment	2648	967	1267	1024	
Remained on ART for 12 months or more	706 (26.6)	196 (20.3)	494 (39.0)	22 (2.1)	
Remained on ART for less than 12 months	188 (6.9)	43 (4.5)	103 (8.2)	19 (1.9)	
Lost after starting ART	1857 (69.7)	728 (75.2)	670 (52.8)	983 (96.0)	

Table 1. Participants characteristics and study outcomes overall and in subgroups defined by the year of diagnosis, Sudan.

## OAC3304

Changes in early HIV/AIDS mortality rate in people starting antiretroviral treatment between 2013 and 2023: a multicenter survival study in Senegal

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**Background:** Studies conducted after the 1996 antiretroviral treatment (ART) access program in Senegal showed mortality peaks shortly after ART initiation. Considering the national adoption of TATARSEN strategy (Test All, Treat All, and Retain) in 2016 and the scale up of dolutegravir-based regimens in 2020, we aimed to assess changes in early (6-month and 1-year) mortality hazard in Senegalese people starting ART in 2020-23 and 2017-19 compared to 2013-16.



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**Methods:** This 10-year multicenter survival study in Senegal analyzed five HIV-cohorts from three regions (Dakar, Kaolack, Ziguinchor). Adults ( $\geq 18$  years) having initiated ART between 2013 and 2023 were considered. Cumulative incidences of death were estimated using the Kalbfleisch-Prentice method. Loss to follow up was accounted as a competing risk.

Shared frailty-based models for competing risk were used to estimate adjusted (for age, sex, WHO stages and CD4 cell count) early mortality hazard ratios (HRs) in participants who started ART in 2013–16 (comparator), 2017–19, and 2020–23.

**Results:** We enrolled 4,006 persons, of whom 2,281 (56.9%) were female, and 635 (15.9%) were at WHO-stage IV. Median age and CD4 cell count at ART initiation were 40 years (IQR: 31–50) and 188 cells/mm<sup>3</sup> (IQR: 57–410) respectively. Median follow-up was 80.4 months (IQR: 48.6–106.7). A total of 463 participants died (4.37 deaths per 100 person-years), 227 at 6 months and 296 at one year, yielding cumulative incidences of 5.7% (95% CI: 5.0–6.4) and 7.4% (95% CI: 6.6–8.2), respectively.

Initiation of ART in 2020–23 was associated with a 38% (adjusted HR [aHR]:0.62, 95% CI:0.40–0.96) and 40% (aHR:0.60, 95% CI:0.41–0.48) reduction in 6-month and 1-year mortality hazards, respectively, compared to the 2013–16 period.

Predictors of 1-year mortality were: Male sex (aHR: 1.54, 95% CI: 1.20–1.97), Age  $\geq 55$  years (aHR: 1.98, 95% CI: 1.50–2.60), first CD4 cell count  $< 200$  cell/mm<sup>3</sup> (aHR:1.45, 95% CI:1.09–1.93), WHO stage IV (aHR:2.34, 95% CI:1.77–3.09).

**Conclusions:** Early mortality risk has significantly decreased over time in Senegal. However, AIDS conditions remain significant predictors of mortality. Continued efforts to ensure early diagnosis and prompt linkage to care are needed to further reduce preventable deaths.

## OAC3305

### HIV mortality trends and spatial distribution among persons living with HIV, Thailand, 2008–2022

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**Background:** Despite notable advancements in health-care, challenges in health equity remain, specifically in HIV-related mortality. We compared age-sex adjusted all-cause mortality trends among persons living with HIV (PLHIV) registered in the National AIDS Program from 2008 to 2022 in Thailand.

**Methods:** We conducted a retrospective analysis of all reported PLHIV from over 1,000 facilities registered in the National AIDS Program (NAP) as of 31 January 2023. Demographics and all cause death data were classified according to Thai HIV case surveillance definitions and WHO HIV clinical staging guidelines to calculate age-sex adjusted mortality rate and standardized mortality ratio (SMR). The average Thai population age and sex structure during 2008–2022 was used as the standard population. Age-sex adjusted rates were calculated by dividing the number of observed deaths by the population standard and multiplying by 100,000. Standardized mortality ratio was calculated by dividing the number of observed deaths by the number of expected deaths and multiplying by 100. Spatial autocorrelation of SMR was measured by the Moran's  $I$  coefficient using SAS v 9.4.

**Results:** Of 666,157 diagnosed PLHIV registered in NAP, 157,319 (23.6%) died from all causes. The age-sex adjusted mortality rate increased from 14.9 per 100,000 in 2008 to 16.8 per 100,000 in 2015 to 18.9 per 100,000 in 2022. Moran's  $I$  revealed positive values, indicating spatial clustering of high SMR. In 2022, SMR remained high in Bangkok and central provinces near Bangkok, northern Myanmar and Laos border, and eastern seaboard industrial provinces.

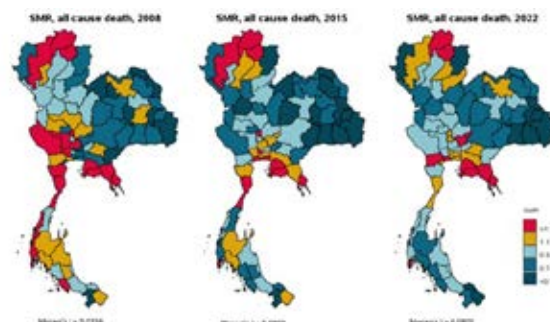


Figure. Geographical distribution of all cause HIV mortality among PLHIV registered in the National AIDS Program, Thailand, 2008–2022.

**Conclusions:** Increase in age-sex adjusted mortality rates and geographic disparities in SMR emphasize the need to identify risk factors for death among PLHIV to address gaps. Our findings underscore the importance of ongoing monitoring and a comprehensive approach to address both individual risk factors and regional disparities to reduce mortality among PLHIV in Thailand.

## OAC4002

Transforming cervical cancer screening for women living with HIV using a digital health application: experiences from Tanzania

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**Background:** Cervical cancer is a leading cause of cancer morbidity and mortality among women in Tanzania. The World Health Organization recommends visual inspection with acetic acid (VIA) for cervical cancer screening in lower-resource settings. However, it is a user-dependent technique vary widely in ascertaining cervical lesions. The Elizabeth Glaser Pediatric AIDS Foundation (EGPAF) rolled out a digital health platform, the smartphone-enhanced VIA (SEVIA) application, for secured sharing of cervical images, enabling remote supportive supervision of providers and expert verification of diagnosis.

**Methods:** Cross-sectional analysis of routine program data from 45 facilities providing cervical cancer screening with SEVIA application services across five supported regions was conducted. Aggregate-level data were extracted from DHIS2 and the SkyConnect server from April 2022 - October 2023. were summarized as proportions using Excel software

**Results:** A total of 33,058 women living with HIV (WLHIV) were screened for cervical cancer; 1,057 (3.2%) were found VIA positive. Out of those, 6,766 WLHIV (20%) were screened using the SEVIA application and verified by expert. The mismatch of VIA results between the provider and expert decreased from 21% in April-June 2022 to 4% in July-September 2023 (see figure).

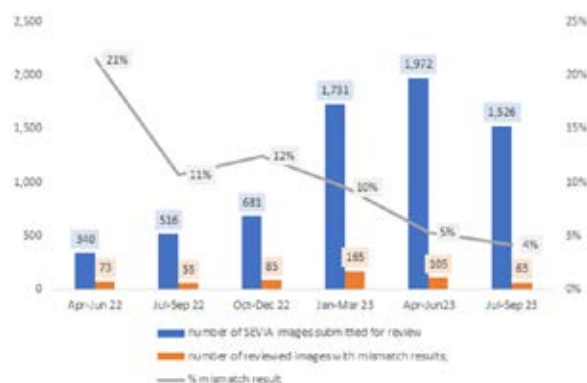


Figure: Quarterly Trend of Cervical Cancer Screening and Outcome using the SEVIA App.

Among the 546 mismatch images, 245 images (45%) were reported VIA negative by providers, but as per experts, 176 (72%) were found VIA positive, 24 (10%) were suspected cancer, and 45 (18%) had other conditions like polyps and cervicitis.

Also 191 images (35%) were reported VIA positive by providers, but reviewers assessed 185 (97%) of them were VIA negative, four had precancerous lesions, and two cervicitis

**Conclusions:** The use of digital health platform enabled virtual support to providers, enhancing the quality of cervical cancer screening provided to WLHIV and reducing misdiagnoses. Digital platform will likely improve screening and care of cervical cancer among WLHIV.

## OAC4003

Pilot evaluation of a package of evidence-based interventions and implementation strategies based on WHO PEN for a cohort of people living with HIV and cardio-metabolic non-communicable diseases in Lusaka, Zambia

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**Background:** With increasing life expectancy for people living with HIV (PLHIV), HIV treatment programs globally must evolve to address non-communicable diseases (NCDs). We developed a package of evidence-based interventions following the WHO package of essential non-communicable disease (PEN) interventions called "TASKPEN".

TASKPEN includes a one-stop shop for managing HIV and cardiometabolic NCDs, delivered by a multi-faceted implementation strategy involving HIV-NCD service integration, practice facilitation, and task-sharing. We report here the preliminary effects of the 'TASKPEN' package



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on 'dual control' of HIV and hypertension for a cohort of PLHIV with co-morbid cardio-metabolic NCDs followed prospectively within a pilot stepped-wedge trial.

**Methods:** PLHIV  $\geq 18$  years with a cardiometabolic NCD/risk factor—including hypertension, dyslipidemia, diabetes mellitus, and/or tobacco smoking—identified through a participant screening survey administered at the study clinics from 1 March 2022 to 21 April 2022. For this analysis, we estimated the proportion of participants with suppressed viral load (i.e.,  $<1,000$  copies/ml) and controlled systolic ( $<140$ mmHg) and diastolic ( $<90$ mmHg) blood pressure before (baseline) and after (follow-up) TASKPEN introduction using mixed effects regression. Additionally, we described participants' blood pressure change during the pilot.

**Results:** We enrolled 191 participants, of whom 133 (69.6%) were female, with a median age of 49 years (interquartile range[IQR]: 41-54 years). After a median follow-up of 231 days (IQR:221-238 days), the proportion of participants with dual HIV and blood pressure control was statistically significant, increasing from 30.9% (95% CI: 24.4%, 38.0%) at baseline to 53.6% (95% confidence interval[CI]: 46.0, 53.6%) at follow-up (Table). Average systolic and diastolic blood pressure reduced for participants at follow-up (Figure).

Variable	Baseline Proportion (95% CI)	Follow-up Proportion (95% CI)
Blood pressure[BP] control (i.e., systolic BP $<140$ mmHg and diastolic BP $<90$ mmHg)	36.1% (29.3, 43.4%)	57.3% (49.7, 64.7%)
Suppressed HIV-1 viral load ( $<1000$ copies/mL)	84.8% (78.9, 89.6%)	95.3% (91.2, 97.8%)
Dual Control (i.e., proportion with both viral suppression and BP control)	30.9% (24.4, 38.0%)	53.6% (46.0, 61.6%)

Table.

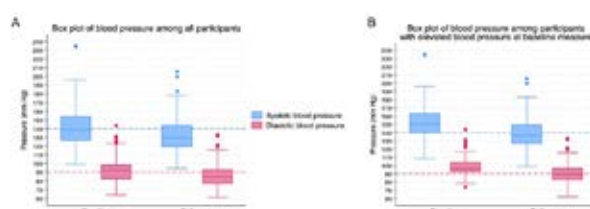


Figure. (A) Box plot for systolic and diastolic blood pressure among all participants by intervention status, (B) box plot of systolic and diastolic blood pressure among those with an elevated blood pressure at baseline by intervention status.

**Conclusions:** An integrated, WHO-aligned package of NCDs services can achieve blood pressure control while sustaining, and perhaps improving, viral suppression for PLHIV with co-morbid cardiometabolic NCDs.

## OAC4004

### Persistence of symptoms of depression, anxiety, and PTSD among people with HIV aged $\geq 40$ years in low- and middle-income countries in the Sentinel Research Network of IeDEA

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**Background:** Persistence of symptoms of depression, anxiety, and PTSD among people with HIV aged  $>40$  years in low- and middle-income countries in the Sentinel Research Network of IeDEA.

**Methods:** We analyzed longitudinal data collected between 2020-2023 from the International epidemiology Databases to Evaluate AIDS (IeDEA) Sentinel Research Network (SRN) cohort of PWH aged  $\geq 40$  on ART at 11 sentinel sites in the Asia-Pacific, Caribbean, Central and South America, and Central, East, Southern, and West Africa IeDEA regions. We documented the prevalence of symptoms of depression (PHQ-9  $\geq 10$ ), anxiety (GAD-7  $\geq 10$ ), and post-traumatic stress disorder (PTSD) (PCL-5  $\geq 33$ ) at enrollment, and 6 and 12 months. Mutually exclusive symptom patterns included:

1. No or mild at all time points,
2. Persistent or worsening,
3. Improved, or;
4. Both worsening and improved.



**Results:** Among 2,521 participants, the median age was 51 and 57% were female. The prevalence of depression was 15%, 9%, and 9% at enrollment, 6- and 12-months, respectively. For depression, 77% reported no or mild symptoms, 7% reported persistent or worsening symptoms, 11% reported improved symptoms, and 5% reported worsening and improved symptoms. The prevalence of anxiety was 10%, 6%, and 7% at enrollment, 6-, and 12-months, respectively. For anxiety, 83% of participants reported no or mild symptoms, 6% reported persistent or worsening symptoms, 7% reported improved symptoms and 4% reported worsening and improved symptoms. The prevalence of PTSD was 6%, 4%, and 4% at enrollment, 6-, and 12-months, respectively. For PTSD, 90% reported no or mild symptoms, 3% reported persistent or worsening symptoms, 5% reported improved symptoms, and 2% reported worsening and improved symptoms. The persistence of symptoms of depression, anxiety, and PTSD varied by sex (Table). Females were more likely to report improved symptoms of depression and anxiety.

Symptom Pattern N (%)	Depression			Anxiety			PTSD		
	Total (n=2330)	Male (n=997)	Female (n=1333)	Total (n=2334)	Male (n=1002)	Female (n=1332)	Total (n=2336)	Male (n=1,002)	Female (N=1334)
None or mild	1786 (77)	794 (80)	992 (74)	1937 (83)	838 (84)	1099 (82)	2095 (90)	897 (89)	1198 (90)
Persistent or worsening	172 (7)	83 (8)	89 (7)	140 (6)	62 (6)	78 (6)	69 (3)	35 (4)	34 (2)
Improved	252 (11)	71 (7)	181 (14)	160 (7)	57 (6)	103 (8)	118 (5)	46 (5)	72 (5)
Worsening & improved	120 (5)	49 (5)	71 (5)	97 (4)	45 (4)	52 (4)	54 (2)	24 (2)	30 (2)

Table: Persistence of symptoms of depression, anxiety, and PTSD among PWH in the leDEA SRN.

**Conclusions:** Symptoms of depression, anxiety, and PTSD were common among this cohort of PWH aged >40. Future research should examine pathways to improve mental health symptoms and differences by sex.

## OAC4005

Unmet need for HPV vaccination among men who have sex with men living with and without HIV in San Francisco, 2023

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**Background:** Men who have sex with men (MSM) are at higher risk for HPV and resulting anal cancer than non-MSM, with rates highest among older MSM and those living with HIV. Unfortunately, guidelines for adult HPV

vaccination are unclear. The objective of our study was to measure the history of HPV vaccination in a community sample of MSM in 2023 in San Francisco, USA.

**Methods:** Data originate from the CDC-led National HIV Behavioral Surveillance study. Participants are recruited by time-location sampling wherein participants are intercepted at venues where MSM congregate during randomly selected dates and times. Face-to-face interviews collect demographic characteristics, sexual behaviors, sexual health history, access to healthcare, and HIV status.

**Results:** Of 497 MSM respondents, 44.9% reported a history of HPV vaccination. The average age of the first HPV vaccine was 29 years (Median=26, SD=13). Disparities of HPV vaccination were found by age group (74.2% for 18-29 year-olds vs. 22.6% for 50+ year-olds,  $p<0.001$ ), educational level (51.0% for postgraduate level vs. 34.3% for some college,  $p=0.012$ ), seeing a healthcare provider in the past 12 months (47.4% vs. 20.0% among those not seeing a provider,  $p<0.001$ ), having disclosed they have sex with men to their provider (46.2% vs. 23.8%,  $p=0.047$ ), gender identity (68.8% non-binary vs. 42.9% for cis-male vs. 62.5% for or transmasculine,  $p=0.009$ ), and consistent condom use with anal intercourse in the past 12 months (34.6% consistent vs. 48.8% inconsistent,  $p=0.005$ ). MSM who used PrEP were more likely to be vaccinated (63% vs 21.5% not using  $p<0.005$ ). Among MSM living with HIV, the majority (56.3%) were unvaccinated.

**Conclusions:** Despite high risk for HPV and resulting anal cancer, fewer than half of MSM in San Francisco were vaccinated, even among MSM living with HIV. To close the gap, we recommend healthcare providers verify past vaccination history and offer HPV vaccination to unvaccinated men, particularly those who disclose being MSM, who are older and not vaccinated as children, and those who are living with HIV. US and worldwide HPV vaccination policies that specifically address MSM are needed, such as recommending vaccination for MSM at any age.



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## OAD0502

### AIDS-orphaned or COVID-orphaned? Mental health and suicidality across two pandemics\*

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**Background:** Parental/caregiver death dramatically affects children directly and indirectly. These are lifelong, and care provided can impact on the future mental health, achievements and behaviour. This study examines the differences and similarities between AIDS orphanhood and COVID orphanhood on children in South Africa with a focus on mental health, suicidal behaviours and psychosocial and environmental risks.

**Methods:** A total of 611 South African children were assessed by trained researchers with ethical approval. Three groups were studied - 190 had experience parental/caregiver loss through AIDS, 211 through COVID, and a comparison group (n=210) with no loss. Data gathered included demographic variables, mental health, suicidality (mini mental health examination), behaviour, risk behaviours in relation to HIV acquisition, alcohol use, violence, parenting and stigma. Validated scales and established cut off points were used for the analysis including analysis of variance and multivariate regression modelling as appropriate.

**Results:** Comparisons between groups showed similar levels of exposure to poverty and turbulent home environments. Orphanhood from HIV/AIDS was most likely to be stigmatized and had the highest levels of suicidality. One in ten children wished they were dead, with AIDS orphanhood five times and COVID orphanhood 3 times the control group (16.8%;9%;3.8% p<.001). This pattern held true for self-harm (12.6%,9.5%,3.6% p=.006), contemplation of suicide (10.5%,9%,4.3% p=.05) and suicide attempts (9%,2.4%;1.4% p=.001).

The AIDS affected children were most vulnerable to negative developmental outcomes, but were followed closely by COVID orphanhood children. Sexual risks, however, were more pronounced among the COVID orphanhood group.

Multivariate regression results support the existence of a link between poverty, parenting quality, mental health, and social risk behaviours as a pathway to cumulative disadvantage. Increasing age of the child was positively associated with every mental health measure.

**Conclusions:** The mental health burden of orphanhood is high and persists as children age. Little appears to have been learned from the AIDS-pandemic to inform the COVID-pandemic which is following closely in terms of mental health burden, stigma, poverty, violence and social risk. The COVID pandemic may have overshadowed the AIDS pandemic with attention and funding diversions, despite a high level of ongoing support needed and little integrated vision.

## OAD0503

### Adapting and evaluating a mindfulness and acceptance-based mental health support program for adolescents with HIV in a resource-constrained setting. Evidence from Uganda

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**Background:** Adolescents with HIV (AWH) report the highest mental health burden in Uganda. The dual challenge of living with HIV and negotiating life stage changes compromises AWH's mental health and related clinical outcomes. While several psychosocial strategies are used with AWH, the persistent mental health gap warrants alternative and innovative approaches to complement existing care services. Mindfulness and Acceptance-based Interventions (MABI), show promise when used to support the mental health of young people.

However, their effectiveness has only been tested in high-income contexts and not with adolescents living with a stigmatized condition such as HIV. We aimed to adapt and test effectiveness of a MABI as an alternative mental health support strategy for AWH in Uganda.

**Methods:** Following two adaptation frameworks (the ecological validity model and the formative method for adapting psychotherapy), we engaged n=30 stakeholders involved in the HIV care cascade to culturally translate a MABI for use in Uganda. Through an open-label randomized trial (NCT05010317), we further tested the effectiveness of the adapted MABI in reducing depression symptoms, internalized AIDS stigma and anxiety among a sample of 122 older AWH (15-19 years) recruited from an urban clinic in Kampala and used paired sample t-tests and multiple linear regression to compare groups pre-post.

**Results:** Key adaptations to MABI included: simplifying the language of the manual, adding local practices and slang into therapy, introducing racially congruent visuals and cards representing emotions and reducing therapy sessions from six to four. Furthermore, preliminary results showed that the intervention was associated with a re-

duction in symptoms of depression (pre-test= 21.64; post-test= 12.07,  $p = <0.001$ ), anxiety (pre-test= 35.47; post-test= 27.41,  $p = <0.001$ ), and stigma (pre-test= 3.09; post-test= 2.07,  $p = 0.002$ ).

**Conclusions:** Results suggest that MABIs have the potential to improve the mental health of AWH in low-resource settings. Large-scale trials building on these preliminary results are needed to generate additional evidence to support advocacy inclusion of MABIs into care for adolescents with HIV.

## OAD0504

Nishikilie (Hold on me): providing responsive community centred mental health interventions for LGBTIQ communities in anti-LGBTIQ polarized contexts

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**Background:** HAPA-Kenya, a key population-led organization in Mombasa, offers comprehensive health services to 3,022 participants, including 140 PLHIV, through community outreach, support groups, drop-in centers, and advocacy. Evidence shows that pervasive violence, stigma, and discrimination impact key populations' mental health, hindering healthcare access. In 2023, the LGBTIQ community faced cycles of anti-LGBTIQ campaigns, violence, and security polarization, exacerbating these challenges.

**Description:** In 2023, a surge in anti-LGBTIQ campaigns and violence prompted an increased demand for mental health care. To address this, a program was implemented, focusing on mental health screening, psychoeducation, lifeskills building, and group therapy referral. Capacity building included training peer educators and healthcare providers in basic counseling skills and integrated mental health screening. Weekly online check-ins, a monthly alcohol and substance recovery support group, and KPLHIV support groups were introduced to meet the high demand. The program emphasized referrals and linkage to psychiatric and social services, with monthly peer educator supervision, microplanning, and data review.

**Lessons learned:** In 2023, amid heightened mental health care demand due to community-wide traumatic events, 2,010 LGBTIQ individuals engaged in therapist-guided online check-ins. Mental health screening of 3,094 MSM and transgender persons identified 491 with needs, including 140 PLHIV. Notably, 28% received psychological first aid, 43% underwent individual therapy, and 68% participated in group therapy. Ten individuals were referred to Port Riez Hospital in Mombasa for psychiatric treatment, addressing issues like depression (6 cases) and

psychosis (4 cases). This proactive approach, responding to a myriad of challenges, showcases the program's dedication to supporting diverse mental health needs within the community.



Figure 1. The graph shows the number of program participants screened for mental health (purple bars) and those with indication for psychological interventions (blue bars) in the year 2023. The orange bars show the number of participants checking-in for the weekly debrief sessions.

**Conclusions/Next steps:** Anti-LGBTIQ campaigns and violence contribute to a high prevalence of mental health issues in key populations. This emphasizes the urgency to integrate mental health services into key population programs, with a focus on community-level screening, healthcare worker training in CETA, and the expansion of online support services.

## OAD0505

Peer-led interventions: exploring the peer group leader experience of delivering a group-based mental health intervention for adolescents living with HIV in Tanzania

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**Background:** Adolescents living with HIV (ALWH) face mental health challenges which negatively influence their adherence to antiretroviral medication and HIV outcomes. In Africa, where the majority of ALWH reside, there are few mental health professionals. Task-sharing to lay peer leaders may be an effective strategy for delivering mental health care. A peer-led, group-based mental health intervention called *Sauti ya Vijana* (SYV) was found to be a feasible and acceptable to ALWH in Tanzania. This study aims to understand and evaluate peer group leaders' experiences with SYV.



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**Methods:** Twenty-five peer group leaders (PGLs) aged 23 to 29 years and living with HIV were trained to deliver SYV which includes 10 group-based sessions (2 with caregivers), and 2 individual sessions. SYV incorporates three evidence-based components: cognitive-behavioral therapy, interpersonal therapy, and motivational interviewing, to discuss coping, relationships, stigma, disclosure, and value-guided goal pursuit. In-depth interviews (IDIs) were conducted with PGLs after training and their experience delivering SYV in the pilot study leading into a larger, ongoing clinical trial. IDIs were audio-recorded, translated from Swahili to English, and analyzed using NVivo and 28 deductive codes. Excel was used to summarize and display data for the US-Tanzania team-based qualitative data interpretation and identification of themes. Results were presented back to participants for input.

**Results:** PGLs reported a range of motivators and perceived benefits, including a desire to help youth, increased confidence, a sense of shared benefit with the youth, and newfound hope for the future. Challenges included concerns about compensation, navigating exposure to difficult life events from the youth that trigger past trauma experience by PGL, maintaining boundaries with the youth, and a need for more in-person supervision. PGLs expressed concerns about job security, particularly around aging out of the peer role. Recommendations for intervention expansion and sustainability included defining key qualities of future PGLs, continuous training, opportunities for career growth, and integrating male and female youth during sessions.

**Conclusions:** Taking the factors mentioned by PGL into consideration can help enhance the SYV PGL experience and position SYV for sustainability as Tanzania navigates scaling mental health care for ALWH.

pilot project using the Web-outreach model has provided services to NPS users, encouraging self-testing for HIV and serving as a bridge to the HIV center upon positive results.

**Description:** Operating in high-drug-use regions (Bishkek, Osh, Chui), the project studied existing online engagement approaches, trained web-outreach workers, and developed a web-outreach guide. We reached 1,754 NPS users (PWUD 78%, PWID 6%, MSM 11%, TG 2%, SW 3%). Among 6% PWID 46% used also heroin (72% using sterile equipment). 100% were tested for HIV (27% self-testing, 73% assisted testing) and received harm reduction kit. Five HIV cases were identified, three confirmed and started ARV treatment. 68% of NPS users stated that their sexual activity increased after use of NPS, 50.5% of beneficiaries had three or more sexual partners in the past month. 25% used condom during the last sexual encounter.

**Lessons learned:** Of all beneficiaries, 37% were reached online because of their fear and distrust. Therefore, it is important to combine online and offline outreach. NPS users as web-outreachers are vital for building trust. Continuous training is essential, given different dynamics in offline and online service provision, requiring skills in communication technologies. Consistent input is essential due to the high rotation/attrition rate among peer web-outreachers. The low detection rate (0.02%) may be an indicator that HIV is just beginning to spread in this group.

**Conclusions/Next steps:** Interim results demonstrate sexual and injection drug use. Without sustained interventions for NPS users, there may be an increase in HIV. The growing interest in NPS among key populations; as well as the shift to injection use of NPS, underscores the urgency of continued interventions to mitigate the potential public health impact.

## OAD07 Emerging patterns: Exploring trends and shifts in drug use

### OAD0702

Piloting online services for people using new psychoactive substances to assess the prevalence of HIV

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**Background:** People who use new psychoactive substances (NPS users) are at a significant risk of HIV transmission due to injection and unsafe sex practices. Despite this, harm reduction in Kyrgyzstan primarily target opioid users, neglecting the diverse groups using NPS. In 2023, a

### OAD0703

"Bluetoothing": knowledge, attitudes and behaviour on unsafe drug injection behaviour and its risks to HIV transmission among adolescents and young people in Zimbabwe

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**Background:** Drug and substance abuse (DSA) is one of the most pressing public health issues in young Zimbabwe populations, and 57% of youths were reported to engage in substance use in 2019. Within various DSA patterns, injection accounts for the second riskiest behaviour for HIV acquisition globally.

As DSA becomes more prevalent in high HIV-burden communities like Zimbabwe, it is important to understand contexts around injection drug use and HIV transmission among adolescents and young people (AYP).



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**Methods:** We employed a mixed-method study in two metropolitan provinces in Zimbabwe from February to March 2023. We administered a questionnaire to randomly selected AYP and 24 in-depth interviews with purposively selected community- and national-level key stakeholders to assess their knowledge, attitude, and behaviours on adolescent DSA and subsequent HIV risks.

We collected quantitative data with KoBo Toolbox and analysed using SPSS Statistics, and we utilised an inductive approach and thematic coding for qualitative analysis.

**Results:** We recruited 770 AYP (410 male, 358 female, and two transgender) for the survey. 50.5% of males and 36.6% of females responded that they had engaged in DSA within the past three months. 3.8% of them had previously used injection as method, and all of them indicated the experience of sharing unsterilised injection equipment with others. Only 26.2% and 10.1% of AYP who use drugs had knowledge of HIV transmission risk through sharing and using non-sterilised injection equipment, respectively, whereas 97.6% were aware of the risk of unprotected sex. From IDIs, we identified a rise of a new drug injection behaviour called 'bluetoothing' among AYP, a direct person-to-person injection of blood drawn from an individual who is already intoxicated, mainly due to a lack of financial resources to purchase safe injection supplies and substances.

**Conclusions:** Findings show an intricate dynamic between DSA and potential HIV transmission through a new unsafe drug injection behaviour in Zimbabwe. Lack of resources and attention towards 'bluetoothing' facilitates AYP's easier access to substance use and increases their chances of HIV acquisition. As we move to the status neutral approach, it is necessary to develop targeted solutions for unsafe injection behaviours to prevent transmission among AYP.

## OAD0704

Synergistic effects of exposure to multiple types of violence on non-fatal drug overdose among women who inject drugs in Indonesia: Implications for broadening the scope of harm reduction services

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**Background:** While research has demonstrated associations between violence from intimate and non-intimate partners and drug overdose among women who inject drugs, existing research focuses predominantly on the

Global North and is methodologically limited. Guided by syndemics theory and the risk environment framework, this study examined whether different experiences of gender-based violence exert independent and interactive effects on non-fatal drug overdose among women who inject drugs in Indonesia. Findings have implications for broadening the scope and gender-responsiveness of harm reduction services in Indonesia, which are presently HIV-focused, to address violence- and overdose-related harms.

**Methods:** We recruited 731 cisgender adult women who injected drugs in the preceding year via respondent-driven sampling. Multivariate logistic regressions examined associations between intimate partner violence (IPV), police sexual violence, and police bribery, and non-fatal drug overdose, with covariance adjustment for theory-informed demographic and social factors. To assess whether victimization with multiple types of violence exerts a synergistic effect on overdose, we tested for interaction effects among violence measures by calculating metrics for attributable proportion, relative excess risk due to interaction, and synergy index.

**Results:** Lifetime prevalence of non-fatal overdose was 31.4% (95% CI 27.6, 35.5). Experiencing IPV (AOR 2.38; 95% CI 1.17, 4.83;  $p=0.016$ ), police bribery (AOR 2.12; 95% CI 1.45, 3.10;  $p<0.001$ ), and police sexual violence (AOR 3.70; 95% CI 1.47, 9.28;  $p=0.005$ ) each independently predicted overdose. A significant positive interaction on the additive scale was detected between IPV and police sexual violence on overdose (AP=0.64,  $p=0.001$ ; S=3.76,  $p=0.015$ ), such that these factors' joint effect was associated with a fourfold increase in overdose risk.

**Conclusions:** This is the first study to show that women who inject drugs exposed to IPV, police sexual violence, and police bribery are significantly more likely to experience overdose, with concurrent experiences of IPV and police sexual violence exerting an amplifying effect on overdose beyond the additive effects of each exposure. Results suggest that eliminating one form of violence when multiple forms of violence are present could magnify the expected reduction in overdose. Expanding HIV-focused harm reduction services in Indonesia to address concurrent violence and overdose would support more comprehensive and gender-responsive harm reduction provision.







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## OAD0705

Transforming risky behaviors among people who use drugs: a blend of community sexual and reproductive health and harm reduction interventions in Dominican Republic

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**Background:** The PRINCIPE project was implemented from 2020 to 2023 in Haiti and Dominican Republic with the aim of strengthening innovative, community-based HIV services tailored to the needs of Key Populations. In the Dominican Republic, the focus was on combined prevention and harm reduction interventions integrated into a sexual health offering for people who use drugs (PWUD). PWUD in the Dominican Republic have a higher HIV prevalence than the general population (3.2% Vs 0.9 %). The lack of harm reduction interventions, discrimination, violence, and criminalization put PWUD at higher risk of contracting HIV.

**Description:** The project featured two main strategies. A comprehensive community approach and the empowerment of PWUD through the strengthening of their activism via a PWUD-led group called Resiliencia Comunitaria (RC). Outreach was conducted by peer educators (PE). Each PE was assigned an intervention area to find PWUD, established a mutual trust relationship, and accompanied them in risk reduction by providing education, harm reduction (HR) kits, and inviting them to RC. Health services, including medical, nursing, psychological services, HIV and hepatitis C testing, were provided through a mobile unit positioned near sales or consumption areas. People who tested positive or required additional services were referred to the organization's clinic, on-site and offered accompaniment by a PE.

**Lessons learned:** Over 600 PWUDs were reached. Using PE for delivering HR and sexual, and reproductive health services to the communities proved effective in promoting behavior change. 62% of PWUD reported that they had changed their behavior to reduce the risk of acquiring HIV. 42% reduced the frequency of sharing consumption equipment. Additionally, 57% increased the frequency of condom use, and 71% improved their access to health services. Moreover, the empowerment and advocacy process led by RC enhanced PE's effectiveness in outreach, and authorities increased receptiveness to harm reduction interventions.

**Conclusions/Next steps:** Harm reduction services are more effective when paired with empowerment initiatives, further support to RC and the scale-up of harm reduction are needed. Also, significant gaps were identified in access to tuberculosis services for crack users.

Tailored community strategies implemented through a Civil Society Organization-Government alliance are required to address and tackle this problem.

## OAD14 Opportunities and vulnerabilities in the digital age

### OAD1402

Using smartphones and GPS technology in public health and HIV/AIDS research for young men who have sex with men (YMSM) residing in small cities and towns in the United States

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**Background:** In 2021, 67% (24,107) of HIV incidence in the US were attributable to male-to-male sexual contact, and 39% were among young men. The social-spatial environments of YMSM shape their HIV risk. Yet, studies primarily use static residential locations on HIV acquisition risk; missing data capturing YMSM's co-opted social spaces (e.g., bars, parties, clubs).

We highlight the innovative opportunities GPS methods and data provide to understanding the social-spatial influences on YMSM's sexual health.

**Description:** Through the Men's Voices on Mapping, Neighborhoods, and Technology (#MVMNT) study, our app collects individual GPS data continuously, creates heat maps of usage (daily, weekly, monthly levels), movement patterns, and facilitates experience sampling (surveys external triggers). To demonstrate the research possibilities, we will show examples of this methodology using our sample of YMSM (18-34) located in non-metropolitan areas. We used GPS activity space assessments, qualitative interviews, and experience sampling to examine influences of social-spatial environments on HIV-related behaviors, and to assess areas in need of structural interventions.

**Lessons learned:** From June 2019 to March 2023, 396 YMSM have completed the #MVMNT study. Use of time and place-based experience sampling provided novel or nu-



anced insight on MSM's sociocultural and environmental interactions. High acceptability, usability, feasibility, and overall positive user experiences were shared by YMSM who completed the study. Smartphone usage and participatory mapping of MSM's locations helped examine real-time objective and subjective neighborhood experiences, and physical and virtual contexts of YMSM's substance use and sexual behaviors.

Our study found high geospatial data validity in trends in YMSM's social and geographic experiences, and these trends shaped HIV risk behaviors. Place-based sampling ensured real-time sampling of multiple contextual factors related to substance use and sexual behaviors among YMSM, and risk for HIV acquisition.

**Conclusions/Next steps:** These findings reveal significant gaps in YMSM's interactions within their social-spatial environments and patterns in sexual behaviors and substance use. Utilizing real-time data and storytelling provides groundbreaking advantages over previous studies on HIV risk among YMSM. Successful user-experience supplies critical data for ecological momentary methods utility in future research. Geospatial data can inform needed structural interventions to reduce HIV acquisition risk among YMSM.

## OAD1403

### Digitally viral sex-positive content that targets HIV stigma among MSM in Aotearoa New Zealand (NZ)

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**Background:** It is common on sexual networking apps (e.g. Grindr) for men who have sex with men (MSM) to use the word "clean" to describe someone's HIV status. However, this perpetuates the stigmatising idea that people living with HIV are 'dirty', leading to social exclusion and isolation. HIV stigma also creates barriers to accessing testing and treatment, which can lead to late diagnoses and AIDS.

**Description:** Burnett Foundation Aotearoa created a sex-positive, fun animation and song that allows MSM to recognise that they may be using "clean" to refer to

HIV status, perpetuating stigma on HIV. Titled "Don't be a Dick Getting Dick", the song features colloquialisms and tongue-in-check references, with lyrics explaining why "clean" should not be used. Designed for TikTok, the bright and bold animation is a musical style that features in TikTok trends. The content appeared on other digital platforms including YouTube, Instagram, Radio, and Podcast platforms, and we used targeted digital advertising placements on Grindr and PornHub.

The audience were also directed to our website with resources to change their behaviours. Posters and condom wallets enhanced the content message in physical spaces relevant to MSM.

**Lessons learned:** The campaign was a success with significant reach. Instagram outperformed TikTok with 51602 plays and a total reach of 39514. Our targeted digital advertisement on Grindr had 131227 views, performing well above average industry benchmarks. The virality of the digital performance, delivered the content to MSM and wider support networks, ensuring greater reach of anti-stigma messaging. Community also fed back that they would be reinforcing this messaging with their wider networks. TikTok's strict community guidelines created significant barriers to uploading content, indicating censorship of sexual health promotion is a challenge to dismantling HIV stigma. Verification on TikTok supported and legitimised our ongoing work on the platform. Instagram earned over 240% engagement compared to our recent content.

**Conclusions/Next steps:** We will continue to create content underpinned by sound public health theory, whilst being responsive to community need and seeking further opportunities to deliver content through meaningfully involving people living with HIV to ensure that we dismantle HIV stigma in NZ

## OAD1404

### New forms of sex work and prostitution in Senegal: emerging vulnerabilities in the digital age

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**Background:** In Senegal, HIV prevalence among femal sex workers (FSWs) remains high (18.5% in 2010 to 5.8% in 2022). This study focuses on the vulnerabilities generated by the emergence of new forms of sex work, strongly influenced by digital technologies.

**Methods:** The study, supervised by the Conseil National de Lutte contre le Sida and financed by the Global Fund, adopted a qualitative approach with 32 individual interviews and 17 focus groups conducted between February and June 2022 in eight Senegalese regions. A total of 156



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FSWs and 25 health agents were interviewed, and the data were analyzed using an inductive approach and the Dedoose application. The study was approved by the Senegalese Health Research Ethics Committee.

**Results:** The FSWs surveyed, mostly divorced or widowed women aged between 20 and 50, have abandoned traditional solicitation in favor of new methods of contacting customers, mainly via social networks. The emergence of these new practices has led to peer groupings to rent dedicated spaces, often assisted by brokers facilitating interactions with customers online. The adaptation of FSWs to strategies of concealment, normalization and even professionalization is reflected in their reduced visibility in traditional spaces, commonplace dress, and reduced consumption of drugs and alcohol. However, these changes have also created new vulnerabilities. FSWs are now exposed to online risks, such as blackmail from website managers, non-consensual video capture, and the threat of public disclosure. These new forms of prostitution, facilitated by digital technologies, increase the clandestinity of practices, making access to HIV prevention interventions and regular medical care difficult.

**Conclusions:** This study makes a valuable contribution to the HIV program by highlighting the need to adapt HIV prevention interventions to take account of new forms of prostitution and the vulnerabilities they entail. It is imperative to rethink prevention approaches, increase access to medical care and raise awareness among SWs of the increased risks associated with these developments.

## OAD1405

**Tough Talks virtual simulation HIV disclosure intervention for young men who have sex with men living with HIV: results from a randomized controlled trial**

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**Background:** Disclosing one's HIV serostatus can improve adherence to care or medications and reduce transmission risk behaviors among young men who have sex with men (YMSM) with HIV. *Tough Talks*, a digital health intervention, was designed to build decision-making skills for HIV status disclosure using artificial intelligence (AI)-facilitated role-playing scenarios with digital avatars.

**Methods:** We enrolled 156 YMSM (ages 16-29) into a three-arm, parallel-group randomized controlled trial (NCT03414372) from May 2019 to April 2022 and followed

each participant for six months. Participants were randomized 1:1:1 to either the:

1. *Tough Talks* Participant-Driven intervention, in which each participant had unlimited digital access to intervention features;
2. *Tough Talks* Staff-Driven intervention, in which study staff scheduled two in-person or online meetings for participant intervention use within a 30-day window, and unlimited self-directed digital access thereafter; or
3. Standard of care (SOC).

We conducted binomial regression analyses with inverse probability of treatment weighting (IPTW) to estimate weighted probability differences (PDs) in six-month viral suppression (HIV RNA <20 copies/ml), and weighted risk differences (RD) in six-month condomless anal intercourse (CAI) with a potentially susceptible partner, defined as ≥1 act of CAI with a partner who was not known to have HIV, comparing each of the intervention arms with the SOC arm.

**Results:** Of the 156 participants, 129 (83%) completed their six-month survey, and 119 (76%) had a viral load measured at six months. The probability of viral suppression at six months was higher among those randomized to the staff-driven arm vs. SOC (PD=0.072; 95% CI=0.022, 0.122) and lower in the participant-driven arm vs. SOC (PD=-0.044; 95% CI=-0.094, 0.005). Similarly, six-month risk of CAI with a susceptible partner was lower in the staff-driven arm vs. SOC (RD=-0.277; 95% CI=-0.334, -0.220) and higher in the participant-driven arm vs. SOC (RD=0.077; 95% CI=0.022, 0.131).

**Conclusions:** *Tough Talks* may work most effectively as a hybrid intervention that allows for human interaction to help improve decision-making capacity for HIV status disclosure. Recent advances in AI chatbots may also enhance similar interventions by increasing conversational complexity, facilitating greater rapport, and increasing intervention efficacy.

## OAD1602

Red Umbrella Academy: empowering sex workers in HIV prevention in Europe - lessons, challenges, and advocacy for PrEP access through community-based participatory research (CBPR)

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**Background:** Numerous reports highlight the scarcity of consistent data on health services' access for sex workers (ESWA, 2021; ECDC, 2015). In alignment with the Sex Workers Implementation Tool (SWIT), developed by WHO, UNAIDS, and other stakeholders, the European Sex Workers' Alliance (ESWA) implemented the second edition of the Red Umbrella Academy (RUA) from May 2023 to January 2024. This initiative aimed to enhance sex workers' knowledge of HIV and combination prevention, document Pre-Exposure Prophylaxis (PrEP) access, identify challenges in access to combination prevention, and emphasize the role of peer-workers and community leadership in HIV prevention.

**Description:** RUA engaged 24 sex workers' rights activists (SWRA) from Armenia, Austria, France, Germany, Netherlands, Poland, Sweden, and Turkey, and employed Community-Based Participatory Research (CBPR) to comprehensively analyze the situation of HIV prevention access by sex workers (SW), particularly to PrEP. Facilitated by SW, the academy activities focused on advocacy, quality of life, community leadership, and discrimination. SWRA also facilitated a exploratory research on sex workers' PrEP access, consisted of in-depth interviews with 44 respondents. Findings will be disseminated by RUA trainees utilizing methodologies acquired during the program.

**Lessons learned:** The training and the research not only augmented comprehension regarding PrEP but also elucidated the distinct challenges encountered by disparate countries in the implementation of effective HIV prevention services for sex workers. Disparities in PrEP availability, affordability, and acceptability underscored the necessity for integrated services, data collection on adherence, SW empowerment, and acknowledgment of their specific needs and constraints. Overall, PrEP is not only a source of prevention but is seen as a source of confidence, an opportunity to ensure adherence to health services, educate the community about HIV prevention and treatment and the opportunity to empower the community to educate their surroundings.

**Conclusions/Next steps:** The Red Umbrella Academy serves as a model for CBPR efficacy, addressing data gaps, and empowering sex workers as key advocates. The

findings stress the importance of sex workers as advocates, establishing a foundation for impactful community outreach and research programs.

## OAD1603

Co-design of national information campaign: unveiling Australia's community-led HIV Treatment for All campaign

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(NAPWHA), Sydney, Australia, <sup>4</sup>peer-led Community

Advisory Group member, Brisbane, Australia, <sup>5</sup>peer-led

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**Background:** This abstract provides a dual perspective on Australia's ground-breaking "HIV Treatment for All" awareness campaign, shedding light on both the campaign's transformative policy shift and the collaborative efforts of key stakeholders propelling it forward.

The campaign informs about Australia's pivotal transition from an industry-sponsored antiretroviral treatment (ART) compassionate access scheme to the Federation Funding Agreement (FFA) model. This shift ensures free HIV testing and treatment for all residents, regardless of eligibility for Medicare, which is Australia's subsidized public health care. The policy change was initially announced on World AIDS Day 2021 and came into effect in mid-2023.

**Description:** The campaign emphasizes timely testing and treatment, particularly for people in Australia without Medicare, who are often people on student, travel, and temporary work visas. The campaign explains implementation details across states and territories, such as where the scheme covers medication costs, and in jurisdictions where additional expenses related to care or treatment side effects are not included. A peer-led community advisory group guided the process throughout and people living with HIV were also involved within the campaign's collaborative project team.

**Lessons learned:** Spearheaded by the National Association of People with HIV Australia (NAPWHA), the campaign models an example of community leadership in co-designing a national public health promotion campaign. NAPWHA's national influence and expertise in championing the rights of people living with HIV serve as the campaign's driving force. Diverse and inclusive community leadership at every stage ensured authenticity and relevance, supported by expertise in health, community



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engagement, and advocacy. The collaborative effort incorporated insights from community advisory group members in Australia and New Zealand.

**Conclusions/Next steps:** The success of the "HIV Treatment for All" campaign lies in the seamless integration of diverse roles, emphasizing the importance of inclusive, community-driven initiatives. This multidisciplinary approach paves the way for equitable access to HIV testing and treatment for all in Australia. Interested parties are invited to explore the campaign's implementation details on the website:

<https://napwha.org.au/hiv-treatment-for-all/>  
promoting transparency, awareness, and community engagement.

## OAD1604

More attention is needed by young girl who sells sex in eastern Indonesia: analysis of regular HIV program monitoring data

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**Background:** Young people who sell sex are one of the most vulnerable groups in HIV settings due to the lack of programs that address their specific needs, legal and economic barriers. However, currently, there is no sufficient data related to this group in Indonesia. The programs available related to sex work only reach female sex workers (FSW) with limitations. This study aims to analyse data of young girl who sell sex in Eastern Indonesia in 2023.

**Methods:** The study analysed regular 2023 programmatic data from HIV prevention program for FSW in Eastern Indonesia. Monthly data were collected and reported by outreach workers from 55 districts spread in Kalimantan, East Java, Sulawesi, Bali, West Nusa Tenggara, East Nusa Tenggara, Maluku, Papua and West Papua. Data collected consist of date of birth, HIV tests, HIV tests result, Initiation of ARV and 3 months retention of ARV. Data then segregated by age categorization 15-19, 20-24 and ≥25 years old.

**Results:** Through 2023, the program reached 51,539 FSW and 27% (13,670) of all FSW reached were young girl aged 15-24 years old and among them, 15% were aged < 19 years old. 28% tested in health services, 29% through mobile HIV testing and 26% referred to do confirmatory test after reactive in HIV screening using oral fluid test. Young girl who sells sex accounted for 22% of all new HIV cases finding which among them, 15% were age <19 years old. Only 54% of HIV-positive young girl who sell sex continue to Antiretroviral treatment and only 34% fulfil 3 months of ARV retention.

**Conclusions:** Almost a quarter of new HIV case findings among the female sex workers population is contributed by young girls aged 15-24 years old and among them 15%

considered children (age<19 years old), additionally only half of them receive ARV treatment with poor adherence. Indonesian government needs to pay more attention to these vulnerable young groups, ensuring they can receive proper support and access to sexual and reproductive health information and services tailored based on their specific needs.

## OAD1605

Community HIV index testing: a case for revitalizing primary health care in improving uptake of same day/fast-track ART initiation of newly diagnosed PLHIV in Botswana

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**Background:** Botswana is implementing layered HIV prevention programs targeting those most-at-risk of acquiring HIV. Approaches include community index testing, same-day initiation of ART (SDART) for all persons diagnosed with HIV and ready to start treatment, and fast-track initiation within two weeks of HIV diagnosis. The purpose of this study was to assess the extent to which community-based HIV index testing contributes to same-day and fast-track initiation.

**Description:** HPP Botswana (HPPB), a local NGO, provides community-based HIV index testing and linkage services in eight health districts in Botswana. This study describes routine HIV testing services (HTS) data (March 2021-September 2023) collected by trained HPP community health workers (CHWs). Using a health facility HIV client list, HPPB CHWs engaged PLHIV as index clients and elicited their sexual contacts for HIV testing, following Botswana's National HTS guidelines. At community-level, CHWs screened contacts for HIV using HIV self-testing kits and confirmed HIV status through diagnostic HIV rapid test kits. Positive clients were offered same-day initiation (SDART) or fast-track options.

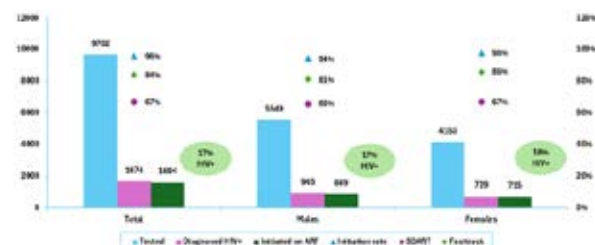


Figure. HPP Community index partner testing results and ART initiation by sex, March 2021 - Sept 2023

**Lessons learned:** HPPB tested 9,702 sexual contacts of index clients for HIV, yielding a 17% positivity rate, 67% SDART rate, 84% fast-track initiation rate, and a 96% over-





all initiation rate. Men comprised 57% of the index clients tested. Although there were no noticeable differences in positivity rates and same-day initiation (SDART) between the sexes, women had slightly higher fast-track (86%) and overall initiation (98%) rate as compared to their male counterparts (81% and 94% respectively).

**Conclusions/Next steps:** Community-based HIV index partner testing is effective in HIV case-finding and timely ART initiation amongst both men and women. Synchronisation of community index partner testing with same day and fast track ART initiation is an important treatment as prevention (TasP) intervention in supporting Botswana's goal of ending AIDS by 2030 and may be effective in reaching hidden pockets of unknown HIV cases.

## OAD19 Navigating adversities: HIV response in conflict zones and migration pathways

### OAD1902

Comprehensive support and rehabilitation for women and children affected by conflict: a holistic approach to HIV in Ukraine

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**Background:** The prolonged conflict in Ukraine has led to significant challenges for women and children, including displacement, violence, and social disintegration, as well as over 12,200 HIV cases in 2022. In response, a holistic program has been implemented to provide comprehensive support to women and children affected by or at high risk for HIV. This initiative includes the establishment of three Day Centers and three Halfway Houses. The program utilizes various support strategies and the innovative @TakeCareUA\_bot for health education.

**Description:** Our project aimed to address the multifaceted challenges faced by clients affected by conflict, particularly those with HIV. Our comprehensive approach included psychological counseling vocational training for practical skills, and legal support to protect beneficiaries' rights. The holistic services aimed to foster resilience and empower individuals towards recovery and self-sufficiency. A robust referral process ensured seamless access to medical care, with 33 clients referred to healthcare facilities, including 17 initiating antiretroviral therapy. In total, 2,425 clients received comprehensive care, with a focus on HIV services. Testing services identified 5 syphilis cases, 10 hepatitis C cases, and 36 HIV cases. The project's commitment to a seamless referral system reinforced its client-centered and comprehensive approach.

**Lessons learned:** Our project's success is evident not just in numbers but in the integrated approach and collaboration between Day Centers and Halfway Houses aligned with UN standards for Women and Girls Safe Spaces. This approach ensures comprehensive services, such as group and individual counseling, medical service coordination, document restoration assistance, and facilitating children's enrollment in kindergartens. Technology, specifically the @TakeCareUA\_bot chatbot, has significantly improved service accessibility and efficiency by providing information, emotional support, and directing clients to appropriate services.

**Conclusions/Next steps:** A holistic approach, integrating physical shelter, psychological support, medical care, legal assistance, and technological innovation, proves impactful. This not only addresses immediate needs but also fosters long-term resilience and empowerment for women and children affected by HIV in conflict regions. The success of this model emphasizes the significance of a comprehensive service continuum in tackling multifaceted challenges in such contexts.

### OAD1903

Exploring the impact of digital platforms in increasing access to PREP and mental health support

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**Background:** The enactment of the anti-homosexuality act, 2023 in Uganda created significant obstacles for the provision of essential health services to the LGBTIQ community. Access to crucial services like PREP and mental health support has become increasingly challenging. The law imposed heightened scrutiny and constraints on LGBTIQ drop-in centers, which previously served as safe spaces for healthcare provision. The immediate impact of the law, registered the number of young MSM on PREP dropping from 106 to 12 within a month. Access to mental health services for young MSM plummeted from 95 to zero.

**Description:** Spectrum Uganda Initiatives developed an online application that facilitates virtual meetings between young MSM aged 15 to 24 years and healthcare workers. The application has a directory of anonymous friendly health workers operating across the country. The main objective was for the digital platform to allow clinicians to enroll individuals in virtual adherence clubs, where they can freely access comprehensive information on PREP adherence and mental health support.

**Lessons learned:** 26 virtual adherence clubs comprising of 10 to 12 members were formed. Each member was given a unique referral code which was used for linkage to a key populations' clinic. The numbers adhering to PREP



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skyrocketed to 268 young MSM within 6 months. 150 young MSM embraced the opportunity to access mental health support through the digital platform.

**Conclusions/Next steps:** This innovative digital solution has proved instrumental in overcoming the challenges imposed by the hostile legal environment in Uganda. By providing a virtual space for healthcare services, the application has effectively bridged the gap in access to essential HIV information, PREP adherence, and mental health support for young MSM.

## OAD1904

HIV pre-exposure prophylaxis (PrEP) awareness, and willingness to use among migrants in transit through Central American countries

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**Background:** The global movement of people has reached unprecedented levels in recent years, presenting challenges and uncertainties for migrants. One particular risk that migrants in transit often encounter is an increased vulnerability of HIV transmission, emphasizing the necessity for targeted prevention strategies. This study focuses on PrEP awareness and willingness to use it among migrants across five Central American countries.

**Methods:** As part of USAID's Prevention Services against HIV project in Central America, we conducted a study between September 2022 and September 2023, involving 2,513 international migrants in transit through Mexico, Guatemala, El Salvador, Honduras, and Panama.

The study assessed PrEP awareness and willingness to use among the general sample and key populations (i.e., LGBTQ+ migrants, MSM, transgender individuals, and sex workers). PrEP eligibility was defined as either having engaged in condomless sex with more than one sexual partner, having had a previous STI diagnosis, or having engaged in sex under the influence of drugs during transit. Multivariate logistic regression models were utilized to explore predictors of PrEP awareness and willingness to use.

**Results:** Among key populations, 38.7% of migrants met the eligibility criteria for PrEP, compared to only 6.8% among the general population. PrEP awareness was 29% among key populations versus 8% among the general population. Willingness to use daily (70% vs. 56%), injectable (50% vs. 41%), and implant (48% vs. 36%) PrEP was significantly higher among key populations. Engaging in sex during transit was positively and significantly associated with willingness to use all PrEP schemes. Compared with women, men were less likely to be willing to use injectable

(OR=0.72; 95% CI 0.61-0.96) and implant (0.57; 95% CI 0.48-0.68) PrEP. Having an HIV test in the past 12 months was significantly associated with higher odds of PrEP awareness (OR=1.64; 95% CI 1.29-2.23).

**Conclusions:** The heightened HIV risk faced by migrants in transit underscores the urgent need for targeted prevention strategies. The high willingness to use in our sample suggests that preventive PrEP should be considered as part of preventive measures offered to migrants, especially among key populations, given their high eligibility rate.

## OAD1905

Exploring uncharted territories: understanding adolescent sexuality, gender, and HIV risk among refugee girls in Southwestern Uganda

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**Background:** This groundbreaking research delves into unexplored terrain, seeking to unravel the intricate dynamics of adolescent sexuality, gender, and HIV risk among refugee girls in Southwestern Uganda. Distinct from previous studies, this research pioneers an in-depth examination of this vulnerable demographic that is faced with unique challenges, such as displacement, cultural adaptation, and limited access to resources shedding light on nuanced factors that remain understudied.

By addressing gaps in existing literature, this study contributes significantly to the high-level scientific discourse on HIV prevention in marginalized populations.

**Methods:** Conducted over 18 months, this study included a meticulously selected sample of 500 adolescent refugee girls, aged 13 to 18, from diverse camps in Southwestern Uganda. Employing a mixed-methods approach, quantitative data were collected through structured surveys, while qualitative insights were gathered through in-depth interviews and focus group discussions. Rigorous statistical analyses, including regression models and chi-square tests, were employed to elucidate patterns and associations.

**Results:** The research reveals compelling statistics: 35% of participants reported early marriages, with a staggering 45% lacking comprehensive knowledge of HIV prevention methods. Gender disparities were evident, with 60% of girls facing limited access to healthcare resources. Notably, older adolescents (16-18 years) exhibited a 25% higher vulnerability to HIV risk factors compared to their younger counterparts. These findings underscore the urgency for tailored interventions.

**Conclusions:** The statistically significant disparities underscore the urgency for targeted interventions. Age differentials highlight the need for age-specific strategies,

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while gender disparities necessitate tailored healthcare and educational initiatives. The 35% prevalence of early marriages emphasizes the critical role of empowering adolescent girls to make informed decisions. The 45% knowledge gap in HIV prevention mandates a comprehensive and accessible education strategy. The 25% increased vulnerability among older adolescents underscores the need for transition-focused interventions. This research, with its high-level statistical insights, not only unveils the complexities of HIV risk among adolescent refugee girls but also provides a roadmap for evidence-based interventions and policy initiatives, setting a new standard for scientific inquiry in this critical field.

## OAD24 Climates' double burden: Tackling HIV most-affected regions

### OAD2402

Exploring the impact of climate-induced migration on HIV vulnerability in Africa

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**Background:** Rising global temperatures and environmental changes have prompted unprecedented migration patterns in Africa, with profound implications for public health. This study delves into the relationship between climate-induced migration and the heightened vulnerability of populations to HIV infection in Africa. As the number of environmental migrants continues to rise, understanding the intersectionality of climate-induced migration and HIV risk becomes imperative for targeted intervention strategies.

This research seeks to identify the specific factors linking climate-induced migration to increased susceptibility to HIV, considering the socio-economic, geographical, and demographic dimensions of affected populations.

**Methods:** A comprehensive literature review was conducted, synthesizing findings from epidemiological studies, migration reports, and public health databases. The analysis focused on identifying patterns and trends relat-

ed to climate-induced migration and HIV vulnerability in Africa. Peer-reviewed articles, reports from international organizations, and demographic health surveys were systematically reviewed to extract relevant data on the prevalence of HIV among climate-induced migrants and the specific factors contributing to heightened vulnerability.

The research also examined the impact of climate-induced migration on healthcare infrastructure, access to prevention programs, and the social determinants influencing HIV transmission dynamics.

**Results:** The review identified a limited number of studies specifically addressing the intersection of climate-induced migration and HIV vulnerability in Africa. Preliminary analysis of available data revealed that regions experiencing climate-related stressors, such as droughts and floods, often witness increased migration rates. However, the impact of these migrations on HIV prevalence and vulnerability is complex and varies across different contexts. Socio-economic factors, including access to healthcare and HIV prevention resources, play a crucial role in shaping the overall risk landscape for migrants.

**Conclusions:** The findings highlight the urgent need for more targeted research on the relationship between climate-induced migration and HIV vulnerability in Africa. Addressing this gap will require interdisciplinary collaborations between environmental scientists, healthcare professionals, and policymakers to develop comprehensive strategies that integrate HIV prevention and treatment services into climate-related migration policies. By understanding the nuanced dynamics at play, interventions can be tailored to mitigate HIV risk among migrant populations, contributing to both public health and climate adaptation efforts.

### OAD2403

Climate change-related factors and HIV vulnerabilities among very young adolescents in Kenya: multi-method qualitative findings

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**Background:** There is growing evidence of linkages between climate change-related factors, such as water insecurity, and HIV vulnerabilities. Yet knowledge gaps persist regarding climate change and HIV prevention needs, and climate experiences among very young adolescents (VYA) ages 10-14.





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We conducted a multi-method study to explore climate change-related factors and linkages with HIV vulnerabilities among VYA in climate-affected Kenyan regions.

**Methods:** This multi-method study in 6 sites (Nairobi, Nairobi, Kisumu, Isiolo, Kilifi, Kalobeyei refugee settlement) involved: n=12 focus groups (FG) with elders, n=60 VYA walk-along interviews, and n=12 two-day VYA participatory mapping workshops.

We conducted thematic analysis informed by the resource insecurity framework, and integration with a mixed-methods matrix.

**Results:** Participants (N=297) included: elders (n=119; mean age: 60.6 years, standard deviation [SD]: 7.9; men: 48.7%, women: 51.3%), youth walk-along interviewees (n=60; mean age: 13.4, SD: 1.5; boys: 51.4%, girls: 48.6%), and youth participatory mapping participants (n=118; mean age: 12.1, SD: 1.33; boys: 50.8%, girls: 49.2%).

Participant narratives revealed climate-related changes increased food insecurity, water insecurity, and sanitation insecurity. Each resource insecurity was linked with unique and overlapping HIV vulnerabilities.

Food insecurity was associated with youth running away, and transactional sex and exploitative relationships for food, which contributed to early pregnancy. Water insecurity was associated with: menstruation hygiene management challenges; sexual violence risks travelling far/at night for water; and transactional sex and exploitative relationships for water.

Sanitation insecurity was associated with: sexual violence risks accessing showers, toilets, and garbage disposal sites; and transactional sex for menstruation products, which elevated early pregnancy risks. Heavy rains and floods were raised as particularly dangerous for young women/girls due to infrastructure damage and subsequent sexual violence exposure.

While sanitation insecurity was common across sites, water and food insecurity were raised most frequently in Kalobeyei (refugee settlement) and Isiolo (nomadic and pastoralist community).

**Conclusions:** Together findings signal water, food, and sanitation insecurity are social drivers of HIV vulnerability among VYA in Kenya. Climate-informed interventions can consider seasonality influences, contextual differences, and target mechanistic pathways at interpersonal (e.g., transactional sex/exploitative relationships), community (e.g., gender inequitable norms), and structural (e.g., sanitation infrastructure, poverty) levels to advance HIV prevention with VYA in Kenya.

## OAD2404

### HIV and general health status of displaced populations receiving medical care at mobile clinics after severe flooding in Mulanje district, Malawi

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**Background:** Due to the rising impact of climate change, Malawi has experienced increased extreme weather events. These include devastating floods and mudslides that resulted in large-scale displacement of vulnerable populations.

In response, Ministry of Health and partners have conducted outreach clinics close to camps for displaced persons. However, little is known about health status and needs of the affected populations.

**Methods:** In November 2023, Partners in Hope (PIH) conducted a cross-sectional survey of individuals aged ≥18 years utilizing health services at mobile outreach clinics conducted at 7 campsites in Mulanje district, set up after flooding caused by Tropical Cyclone Freddy.

We describe demographic characteristics, prevalence of self-reported acute and chronic conditions, depression (PHQ score 1-6) and intimate partner violence (IPV) and health service satisfaction, stratified by residence status (displaced/non-displaced).

**Results:** Of 341 participants surveyed, median age was 32 years (IQR 23-47 years), and 80% were female. Fifty-eight percent (197/341) were displaced persons, the rest resided close to the camps (non-displaced). Displaced participants more frequently had: no formal education (32.5% vs. 15.3%; p<0.001), worse self-reported health (41.6% vs. 23.6%; p<0.001), respiratory illness (23.8% vs. 13.4%; p=0.02), COVID-19 symptoms (19.6% vs. 11.2%; p=0.04), HIV testing need (23.4% vs. 14.6%; p=0.04) and under-5 service need (14.7% vs. 7.6%; p=0.04). The displaced had similar chronic disease prevalence (42% vs. 38%; p=0.389) and unknown HIV status prevalence (1.0% vs. 4.2%; p=0.163) as residents. All PLHIV in both groups were engaged in HIV care (registered on ART 18.8% vs. 18.8%; p=0.300).

Rating of mobile services as good was near-universal in both groups (98%). Similar proportions in both groups screened positive for depression (53.5% vs. 56.3%, p=0.598; 91% was minimal/mild depression overall) and IPV (47.2% vs 54.6%, p=0.289). Overall prevalence of physical IPV was 16.3% and sexual IPV 15.3%, similar between groups.

**Conclusions:** After severe flooding, mobile outreach clinics were frequented by displaced persons in camps and nearby residents, unable to reach their regular health facility. Given high rates of acute illnesses, chronic con-



ditions (including HIV), depression and IPV, mobile clinics in these settings require multidisciplinary teams with diverse skills to meet the health needs of the attending client population.

## OAD2405

### Climate change vulnerability assessment (CCVA) for Orphaned and Vulnerable Children (OVC): results from FACT Zimbabwe and Pact. Manicaland and Masvingo provinces, Zimbabwe

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**Background:** FACT Zimbabwe is conducting its Orphans and Vulnerable Children (OVC) program in nine districts within the provinces of Manicaland and Masvingo, with funding from PERPFAR/USAID. The project aims to contribute to the HIV epidemic by providing support to children who are HIV-positive and their caregivers. Climate change (CC) is one of the cross-cutting components covered in the OVC for 0 -17 years. Zimbabwe has recently seen several natural disasters, such as cyclones and droughts and children's health, development, nutrition, education, and access to healthcare services are negatively impacted. FACT Zimbabwe from March-April 2023 conducted a CC vulnerability assessment to establish the extent at which OVC and their caregivers were affected by CC.

**Description:** Pact's Community-Based Adaptation Framework was used in Manicaland and Masvingo, selected through bio-climate clustering to represent all five agroecological zones and urban and rural contexts. Data was collected from daily clocks, vulnerability matrices, impact chains, adaptation pathways and historical timelines. A participatory and qualitative approach was used with primary data obtained from focus group discussions (n=585 and secondary data from Key Informant Interviews (n=51), targeting OVC and community leaders in March - April 2023.

**Lessons learned:** The thoughts of rainy seasons caused mental health disorders among caregivers, adolescents, and youths. Hunger due to crop/ livestock failure exposed OVC to malnutrition/delayed milestones. Adolescent girls/young women were pushed into transactional sex, teen pregnancy/ early marriages, especially those close to transport hubs and borders.

Floods affected access to clinics, hindering ART refill/adherence. Innovations included multi-month ART dispensing, scale-up of indigenous chicken, and planting small grains. With water scarcity, diminishing forests, and the destruction of schools, OVC walking longer distances to fetch water and firewood and to school exposed themselves to emotional, physical/sexual abuse. The use of solar-powered boreholes and stoves, improved transportation such as – bicycles for OVC and psychosocial support were sustainable strategies. Substance abuse was a challenge as youths tried to cope with stress, and OVC were not spared. Community-led OVC safety nets were said to be a necessity for stability.

**Conclusions/Next steps:** CC impacts OVC disproportionately because of their vulnerability/exposure to climate stresses/shocks. Exploration of adaptive capacity is required in communities at risk.

## OAD32 Unveiling layers: Exploring intersectionality and addressing HIV stigma and discrimination

### OAD3202

#### Major intersectional discrimination associated with increased HIV and bacterial STIs among gay, bisexual and other men who have sex with men in the U.S.

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**Background:** Intersectional discrimination is a critical determinant of health for marginalized communities. We sought to characterize intersectional discrimination as a potential driver of HIV and bacterial STIs among cisgender gay, bisexual, and other men who have sex with men (MSM).

**Methods:** A US nationwide online survey of MSM (October 2022-June 2023) assessed social systems exclusion and interpersonal violence, identified via factor analysis as two domains of the Intersectional Discrimination Index (Figure). We assessed prevalences of each form of discrimination and differences by race/ethnicity and HIV status, us-



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ing modified Poisson regression with robust variance estimation to calculate prevalence ratios (PR) for associations between each form of discrimination and self-reported HIV status and past-year bacterial STI diagnoses.

**Results:** Of 4,348 MSM, 1,322 (27.8%) reported lifetime experiences of major discrimination, 679 in the last year. Past-year exclusion was twice as prevalent among MSM of color (i.e., non-white;  $p<0.001$ ) and 67% more prevalent among MSM with HIV ( $p=0.01$ ), and past-year violence was 30% more prevalent among MSM with HIV ( $p<0.01$ ). MSM reporting past-year exclusion had 51% higher HIV prevalence and 42% higher bacterial STI prevalence, including 55% and 72% higher prevalences of gonorrhea and syphilis, respectively, than MSM reporting no past-year exclusion (Figure).

Effects were stronger among MSM of color. Men reporting past-year violence exposure had 39% higher HIV prevalence, 23% higher bacterial STI prevalence, and over 30% higher prevalences of gonorrhea, chlamydia, and syphilis than those without past-year violence exposure; effects were more pronounced among MSM of color for HIV and chlamydia.

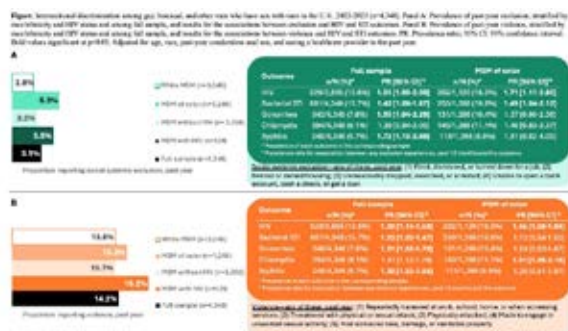


Figure.

**Conclusions:** Intersectional discrimination via social systems exclusion and violence disproportionately affects men living with HIV and is associated with elevated prevalence of HIV and bacterial STIs, disproportionately so among MSM of color. Structural interventions are critical to minimizing harms of systemic exclusion and mitigating the health effects of violence among MSM.

## OAD3203

### Relationship between discrimination, sexual decision-making and behaviours that increase the HIV/STI risk among trans and non-binary people in Germany, a cross-sectional study

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**Background:** Discrimination against trans and non-binary people has been linked to negative health outcomes, including sexual health. We explored the relationship between discrimination based on gender identity among trans and non-binary people in Germany and their perceived ability to make decisions to feel as protected as desired from HIV and sexually transmitted infections (STI).

We further assessed whether feeling unable of making decisions to feel protected from HIV/STI was associated with past 12-month behaviours that increase the HIV/STI risk.

**Methods:** We conducted a cross-sectional study using data from the TASG online survey, performed using a participatory approach during March-July 2022 among trans and/or non-binary people aged 18 years and older living in Germany. We described participants characteristics and the frequency of experiencing discrimination based on their gender identity. We calculated prevalence ratios (PR) with 95% confidence intervals (95%CI) for the associations between frequent discrimination and feeling unable of making decisions to feel protected from HIV/STIs, and between feeling unable of making these decisions and past 12-month sex while under drug influence and condomless penetrative sex with multiple partners without using PrEP.

**Results:** Among 3,077 participants, 22.0% identified as female, 21.8% as male, 12.4% as non-binary female, 12.7% as non-binary male, 27.0% as non-binary and 4.0% used other terms. Overall, 22.1% (505/2287) reported frequent discrimination based on their gender identity, and proportions varied across the gender spectrum, with 31.8% (190/597) in non-binary, 29.3% (76/259) in non-binary females, 22.0% (69/314) in non-binary males, 15.9% (79/497) in females and 11.2% (61/547) in males.

Participants experiencing frequent discrimination felt more often unable to make decisions to feel protected from HIV/STI (PR 1.4, 95%CI 1.1-1.8). Feeling unable of making decisions to feel protected from HIV/STI was associated with increased prevalence of past 12-month sex un-

der drug influence (PR 2.9, 95%CI 2.3-3.7) and condomless penetrative sex with multiple partners without PrEP (PR 2.1, 95%CI 1.5-3.0).

**Conclusions:** Feeling unable to make decisions to feel protected from HIV/STI among trans and non-binary people was associated with both frequent discrimination and behaviours that increase the HIV/STI risk. Strategies for empowering trans and non-binary people to assert their sexual decision-making needs should be explored.

## OAD3204

### HIV criminalization and enacted stigmas among people living with HIV in countries across Eastern Europe and Central Asia

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**Background:** HIV criminalization includes laws and policies that unjustly penalize people living with HIV (PLHIV). Convictions from HIV criminalization have increased in Eastern Europe and Central Asia (EECA), reinforcing discrimination towards PLHIV and threatening individual health and wellbeing. We examined the relationship between HIV-related conviction rates and individual experiences of stigma in the legal system, workplace, and healthcare across eight countries in EECA.

**Methods:** Country-level implementation of HIV-related conviction rates was approximated by the number of people convicted on HIV-related charges per capita through 2022 per the HIV Justice Network. We measured enacted stigma (Table) using Stigma Index 2.0 cross-sectional data, collected by networks of PLHIV in Belarus, Georgia, Kazakhstan, Kyrgyzstan, Moldova, Russia, Tajikistan, and Ukraine (2020-2023). Multilevel logistic models, clustered at the country level, were used to estimate adjusted odds ratios (aOR) and 95% confidence intervals (CI) for the associations between country-level HIV-related conviction rates and enacted legal system, workplace, and healthcare stigma.

**Results:** Among 8,128 respondents, 50.4% (n=4121) had ever experienced enacted stigma. HIV-related conviction rates were lower in Kazakhstan, Ukraine, Georgia, and Kyrgyzstan; high in Russia and Moldova; and highest in Belarus and Tajikistan. Compared to PLHIV in countries with lower rates of HIV-related convictions, those in coun-

tries with the highest rates of HIV-related convictions had higher odds of experiencing enacted stigma in the legal system (aOR:4.88, 95%CI:2.18-10.95) and the workplace (aOR:2.12, 95%CI:1.57-2.86). While not associated with HIV criminalization, almost half of the participants (46.1%, n=3,772) reported enacted stigma in the healthcare setting.

**Conclusions:** The relationship between HIV criminalization and enacted stigma among PLHIV reinforces the potentially harmful impact of structural stigma. Changing the trajectory of HIV epidemics in Eastern Europe and Central Asia necessitates community-led and comprehensive policy and programmatic approaches including addressing punitive laws limiting the impact of HIV services.

## OAD3205

### Addressing self-stigma for young people living with HIV through football in Kampala, Uganda

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**Background:** 84.8% of PHIV surveyed showed signs of self-stigma (People Living with HIV Stigma Index Global Report 2023) affecting their lives negatively. We report the results of a youth-led, football-based intervention where learning happens through play, reducing self-stigma, increasing adherence to ART and improving overall health outcomes for YPLHIV.

**Description:** Over 18 months, 501 (m=174, f=327) participants engaged in self-stigma reduction sessions, delivered by 29 football coaches trained to deliver scenario-based football games designed to discussed stigma, both through play and during post-match debriefs. Topics covered during the sessions included identification of self-stigma, self-care techniques, U=U, where to find further support for adherence and mental wellbeing, and the importance of speaking about your status and your challenges.

Additionally, 2 football tournaments reached 608 participants where health services were offered alongside football. Sessions took place at ART clinics, health facilities, peer groups meets and community hubs. Focus was placed on qualitative data collection. Internalised stigma questions were based on ViiV's self-stigma index survey.

**Lessons learned:** The program's endline self-stigma index surveys (n=335) showed an increase from 54% to 62% willingness to disclose their positive status after the sessions. Those who felt guilty they are HIV positive reduced from 28% to 20%. Feelings of worthlessness due to positive status reduced from 30% to 20%. Those hiding their status reduced from 49% to 45%. Those uncomfortable disclosing their status reduced from 40% to 29%.



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Qualitative data collection from 33 YPLHIV showed the camaraderie and sense of belonging from playing in a football team, coupled with the fun elements of sport allowed them to relax and open up about their lives to their peer group, seek further support where before they had not, and this led to reduced self-stigma.

**Conclusions/Next steps:** Tailored, football-based interventions are an effective mechanism to reduce self-stigma for YPLHIV, particularly for opening up necessary conversations around identifying self-stigma, self-care techniques to reduce it and ART adherence. However, data suggest more work is needed to shift societal attitudes even as internalized feelings improve.

## OAD37 Exploring the kaleidoscope of experiences among people living with HIV

### OAD3702

**Empowering older adults living with HIV: a social support intervention boosts adherence and viral suppression**

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**Background:** As the population ages with HIV, older people living with HIV (OPLHIV) face a unique intersection of vulnerabilities. Age-related stigma, co-morbidities, and inadequate social support can compromise their health and HIV treatment outcomes. Existing research links stronger social networks to improved HIV control, highlighting the need for targeted interventions.

**Description:** Recognizing the dearth of social support among OPLHIV in Uganda, we implemented a 6-month social support program for 60 individuals with poor adherence. Our multi-pronged approach delivered emotional support through counseling and facilitated family disclosure, informational guidance for informed decision-making, and nutritional support via counseling, kitchen gardens, and food supplements.

**Lessons learned:** The intervention yielded significant improvements in treatment adherence and viral and other key vitals such as weight. Nearly half (46%) of initially unsuppressed individuals achieved viral suppression, while another 54% showed improved viral load control. Additionally, 67% reported enhanced treatment adherence, signifying the program's effectiveness in addressing critical challenges faced by OPLHIV.

Notably, 80% of participants also experienced weight gain, highlighting the program's impact on overall health and well-being.

**Conclusions/Next steps:** Our findings provide compelling evidence for the positive impact of comprehensive social support on OPLHIV outcomes. This model presents a promising, replicable approach for other communities and HIV/AIDS networks seeking to improve OPLHIV's well-being and treatment success. Future research should explore the long-term sustainability of such interventions and their broader applicability in diverse settings.

### OAD3703

**Primary outcomes of an intervention employing a hybrid online-offline approach to address HIV stigma among women living with HIV in Vietnam**

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**Background:** There are approximately 80,000 women living with HIV/AIDS (WLHA) in Vietnam. In addition to HIV stigma and gender disparities in employment opportunities, financial power, and other social capital, WLHA faced unique challenges stemming from a patriarchal culture in Vietnam. In this context, women are often expected to embody traditional female virtues, maintain a subordinate role to males, and shoulder the primary responsibilities of family caregiving. These societal expectations add another layer of complexity to the stigma and delay in healthcare among WLHA in Vietnam.

**Methods:** The study team developed an online-offline hybrid approach to empower WLHA in Vietnam. This intervention incorporates evidence-based strategies to boost self-efficacy, foster positive coping with stigma, motivate service-seeking and treatment adherence, and engage peer and social support. To allow flexibility, the intervention is designed to be conducted in three modalities: in-person, Zoom, and Zalo (the most popular social media application in Vietnam). The efficacy of this intervention was evaluated through an intervention pilot with a single-arm design, comparing baseline and 4-month assessments among 91 WLHA participants recruited in Hanoi, Vietnam.

**Results:** The mean score of WLHA participants' perceived barrier to access care was significantly reduced from baseline (19.9 ± 0.5) to 4-month assessment (17.3 ± 0.6; p<0.0001). There was significant improvement demonstrated in active cognitive and behavioral coping with HIV (from 58.0 ± 1.0 at baseline to 61.5 ± 1.0 at 4-month; p<0.0001). We also observed a significant reduction in overall stigma score (consisting of awareness of stigma, agreement with stigma, and application of stigma subscales) (from 69.9 ± 1.5 at baseline to 65.2 ± 1.6 at 4-month; p<0.0001). This reduction was also observed in the HIV stigma attached to females, which declined from 70.9 ± 1.7 at baseline to 64.9 ± 1.7 at the 4-month assessment (p<0.0001).

**Conclusions:** These findings underscore the potential of tailored, flexible interventions that leverage both interpersonal support and social media platforms to empower WLHA and engage them in healthcare services. The study offers valuable insights for similar interventions to reduce the negative impacts of HIV stigma and gender disparities in other similar patriarchal contexts.

## OAD3704

### Cognitive trajectories of older adults with and without HIV: a longitudinal population-based study in rural South Africa

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**Background:** Modern antiretroviral therapy has led to aging of people living with HIV (PLWH) and a growing prevalence of neurocognitive disorders associated with aging. However, the relationship between aging, HIV, and cognition remains unclear. We assessed cognitive trajectories among aging rural South African PLWH compared to people living without HIV (PWOH) overall and by viral suppression status.

**Methods:** We used data from the Health and Aging in Africa: Longitudinal Studies in South Africa (HAALSA), an ongoing population cohort of 5,059 adults aged ≥40 years living in rural South Africa.

We conducted linear mixed-effects models to determine the association between HIV serostatus at baseline and the outcomes of:

1. Z-standardized episodic memory score,
2. Activities of Daily Living (ADLs),
3. Instrumental Activities of Daily Living (IADLs), and
4. Trail-making among those with data at three time-points (n=1603).

The episodic memory models were adjusted for practice effects; the remaining models were adjusted for baseline cognition. All models included age, sex, education, wealth index, marital status, country of origin, and size of household, a random slope for time, random intercept for individual, and inverse probability weights for attrition and mortality over time.

**Results:** Suppressed PLWH had significantly better episodic memory over time compared to PWOH ( $b=0.002$ ,  $p\text{-value}=0.017$ ). This trend was still significant after adjusting for sociodemographic characteristics ( $b=0.002$ ,  $p\text{-value}=0.018$ ). There was no significant difference between unsuppressed PLWH and PWOH ( $b=0.00$ ,  $p\text{-value}=0.241$ ). These results were also consistent with the trail-making test after adjustment ( $b=0.03$ ,  $p\text{-value}=0.044$  and  $b=0.01$ ,  $p\text{-value}=0.634$ , respectively). There were no significant differences in ADL or IADL trend.

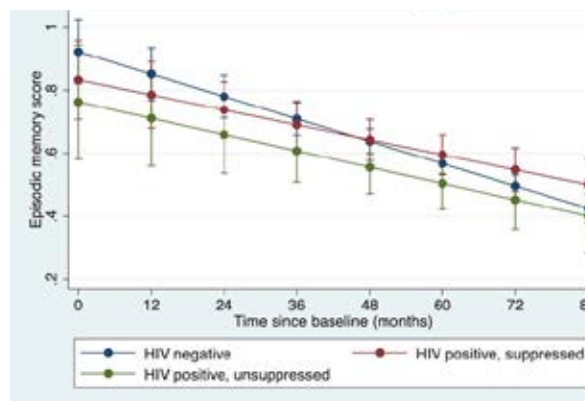


Figure. Effect of HIV serostatus on memory, adjusted.

**Conclusions:** Suppressed PLWH had better cognitive trajectories in episodic memory and executive function than PWOH, but there was no significant difference between unsuppressed PLWH and PWOH. These results offer further evidence of the importance of viral suppression for healthy cognitive aging in PLWH.

## OAD3705

### Experiences and acceptability of Long-acting Injectable antiretroviral therapy (ART) among adolescents enrolled in the Acceptability and Feasibility of long-acting Injectable ART in Adolescents and Young-Adults (AFINATy) study in South Africa

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**Background:** Adolescents living with HIV have struggled to adhere to antiretroviral treatment (ART), with only 10% achieving viral suppression. Long-acting injectable (LAI) antiretroviral therapy (ART) in the form of a cabotegravir (CAB) and rilpivirine (RPV) in combination may be a novel solution adolescents find this formulation acceptable.

**Methods:** Within the ongoing AFINATy study investigating the acceptability and feasibility of LAI among adolescents (12-24 years old), we conducted a series of longitudinal in-depth interviews with a sub-set of trial-participants across three cohorts: those with consistent viral suppres-



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sion on ART; those with evidence of prior poor adherence; and ART-naïve. Participants had to achieve viral suppression on oral ART before starting LAI. The main areas of inquiry for the qualitative aim included: experience with ART, motivation to start LAI, prior experience with LAI, preference between LAI and oral ART. We analyzed data using a thematic and structured framework approach.

**Results:** Using data collected in the first round of interviews, four broad themes emerged:

1. *LAI simplifies life, while pills complicate life*, where the use of LAI reduces the burden of having to plan their lives around their daily pill-taking schedules;
  2. *Living life fully*, where with LAI, participants, for the first time, expressed feeling the freedom of living like individuals who were HIV-free, as they did not have to worry about anything, only to attend their next appointment;
  3. *LAI completely removed the fear of unplanned HIV disclosure* that often occurred among peers and family members caused by carrying or having pills around;
  4. *LAI removed adolescents' fear of missing pills due to pill fatigue and pill burden*, relieving anxieties and pressure of the consequences of not taking them, improving their general well-being and outlook on life.
- For these adolescents, the pain and minor side effects experienced with injections were inconsequential compared to the burden of taking pills daily.

**Conclusions:** Between oral and LAI ART, adolescents much preferred LAI ART. More research is needed to understand the long-term use of LAI and what new challenges might emerge, acknowledging that these adolescents had recently started using LAI.

## OAE04 Advanced HIV disease: Hiding in plain sight

### OAE0402

Improving advanced HIV disease identification among clients failing antiretroviral therapy: an implementation partner-led initiative in Uganda

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**Background:** CD4 testing is the gateway to identifying Advanced HIV Disease (AHD) for both newly diagnosed clients with HIV and those failing treatment (non-suppressed people on antiretroviral therapy). While access

to baseline CD4+ testing for newly diagnosed people has improved over the years with the expansion of CD4+ testing to include VISITECT point-of-care testing, CD4+ testing among failing clients has remained unacceptably low.

**Description:** Between October 2022 and September 2023, the Uganda Ministry of Health (MOH) with support from partners implemented quality-improvement initiatives aimed at addressing gaps in the delivery of the AHD package of care implementation among failing clients. Key interventions implemented included healthcare workers (HCWs) training on the identification and treatment of AHD, data management and reporting, commodity inventory management, and formation of facility-level AHD focal teams. In addition to this, sub-national implementing partners integrated CD4+ testing into targeted community HIV services using a device-free CD4+ testing platform. The cascade was monitored on a bi-weekly basis to measure the impact on key indicators.

**Lessons learned:** Access to CD4+ testing among the failing clients increased from 42.8% before the intervention, to 60% by the end of the quality improvement initiative.



Figure. % Access to CD4+ Testing among NS People over the quarters.

**Conclusions/Next steps:** AHD screening services among failing people is critical to the reduction of AIDS-related deaths. However, more effort such as integration of AHD screening services into existing community outreach programs, HCW capacitation, improved commodity inventory management, and optimized reporting is needed to optimize CD4+ testing among failing people.

## OAE0403

### Cost-effectiveness simulation of implementing a point-of-care test package for opportunistic infections for people with advanced HIV in Mexico City's reference centers: preliminary analysis of the PREVALIO-CDMX study

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**Background:** Opportunistic infections (OIs) remain the main cause of death in people living with HIV in Latin America. Point of care tests (POC) represent an opportunity for timely diagnosis and reduce related costs.

**Methods:** Preliminary analysis of the retrospective data of the PREVALIO-CDMX study (NCT05685641), which is being conducted in 4 reference centers for HIV treatment in Mexico City. We included data of all individuals with advanced HIV disease (<200 CD4 or suspected AIDS-defining disease) that presented to care from September 2022 to September 2023, which underwent standard screening for tuberculosis (TB), disseminated histoplasmosis (DH), and cryptococcal disease (CD) during their routine care. We determined standard packages for related costs of care for the management of these OIs.

We calculated time until OI treatment initiation using day 0 as the moment in which the individual presented to the participating center, care provided during this time lapse was included in cost calculations. The simulated intervention was the center-wide implementation of first-day POC tests on new HIV diagnosis, specifically lateral flow tests for urinary lipoarabinomannan, urinary Histoplasma antigen, and serum Cryptococcus antigen.

We identified potential savings on spared hospitalization days and exempted further tests. We constructed Kaplan-Meier curves to assess differences in time to OI treatment initiation.

**Results:** We included 282 participants, with a CD4 count median of 35 (17-83.5) cells/ml. Median time to OI treatment initiation was 3 (1-4) days.

The simulation predicted a net reduction of costs of 320 USD/person, representing an average reduction of 12.49% and a median reduction in time to treatment initiation of 3 days ( $p=0.002$ ).

**Conclusions:** Optimal implementation of same-day POC tests has the potential to reduce attention costs of individuals with advanced HIV disease and reduce hospital

stays due to diagnostic delays. The potential impact of this intervention could be exponentiated if applied in the first level of care.



Figure 1.

## OAE0404

### Clinical impact and cost-effectiveness of improving access to cryptococcal meningitis diagnostics and treatment in Malawi

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**Background:** Cryptococcal meningitis (CM) causes 13-20% of deaths among PLHIV globally. In sub-Saharan Africa, access to WHO-preferred regimens for everyone in need remains limited.

We modelled the cost-effectiveness of improving access to CM diagnostics and treatment among adult PLHIV initiating HIV care with a positive serum CrAg test result in Malawi.



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**Methods:** We used the CEPAC-I model to evaluate nine strategies singly and in combination: 1) *Status quo* (CM treatment if diagnosed with CM and pre-emptive fluconazole otherwise), 2) *LP for asymptomatic CrAg+*, 3) *Semi-quantitative CrAg (CrAgSQ) for asymptomatic CrAg+* to diagnose CM without LP, 4) *Increased 5FC*, and 5) *Liposomal amphotericin B (LAmB) use* (Table 1A). We simulated a cohort with mean (SD) CD4 27/mL (30/mL), age 37y (10y), 51% female; 15% had symptomatic CM, 48% asymptomatic CM, and 37% asymptomatic cryptococemia. Model outcomes included 1y survival, lifetime quality-adjusted life years (QALYs) and costs, and incremental cost-effectiveness ratios (ICER, \$/QALY); we considered \$640/QALY as the cost-effectiveness threshold. Sensitivity analyses of key parameters were performed.

**Results:** *Status quo* would result in 66% 1y-survival, 8.69 QALYs, and \$930/person (Table 1B). *LP for asymptomatic CrAg+* and *Increased 5FC* would be cost-effective: +10% 1y-survival, +0.89 QALYs, +\$130/person (ICER, \$310/QALY). *CrAgSQ for asymptomatic CrAg+* and *Increased 5FC* would increase QALYs but not be cost-effective (ICER \$780/QALY) due to more PLHIV without CM treated for CM given low test specificity. *LAmB use* could be cost-effective if it were substantially less costly than current prices. Results were sensitive to LP uptake, CrAgSQ specificity, efficacy of pre-emptive fluconazole and CM treatments, and proportion of asymptomatic PLHIV with CM.

A. Model input parameters									
Strategy	Type	Diagnosis	Cost	Treatment if diagnosed with CM	ICER	Cost	ICER	Cost	ICER
Status quo <sup>a</sup>		Uptake (%)	Sensitivity (%)	Access to 5FC (%)	Access to LAmB (%)	ICER (\$/QALY)	Cost (\$)	ICER (\$/QALY)	Cost (\$)
Symptomatic	LP and empTx	66 & 31	99/99	11	0	58	230	58	230
LP for asymptomatic CrAg+	LP and empTx	66 & 31	99/99	11	0	58	230	58	230
Asymptomatic	LP	66	99/99	11	0	58	230	58	230
CrAgSQ for asymptomatic CrAg+	LP and empTx	66 & 31	99/99	11	0	58	230	58	230
Symptomatic	CrAgSQ	66	99/99	11	0	58	230	58	230
Asymptomatic	CrAgSQ	66	99/99	11	0	58	230	58	230
Increased 5FC <sup>b</sup>	For people diagnosed with CM	Test+ or empTx	66 & 31	99/99	11	90	79	290	290
LAmB use <sup>c</sup>	For people diagnosed with CM	Test+ or empTx	66 & 31	99/99	11	90	90	440	440
B. Clinical and economic outcomes									
Strategy	1y survival (%)	QALYs	Cost (\$)	ICER (\$/QALY)	Cost (\$)	ICER (\$/QALY)	Cost (\$)	ICER (\$/QALY)	Cost (\$)
0. Status quo	65.8	8.69	930	-	930	-	930	-	930
1. Increased 5FC	69.8	9.21	1,060	130	1,060	130	1,060	130	1,060
2. LP for asymptomatic CrAg+	70.2	9.24	1,060	130	1,060	130	1,060	130	1,060
3. LAmB use	70.5	9.30	1,340	140	1,340	140	1,340	140	1,340
4. LP for asymptomatic CrAg+ and increased 5FC	72.5	9.57	1,000	110	1,000	110	1,000	110	1,000
5. CrAgSQ for asymptomatic CrAg+	71.2	9.42	1,070	120	1,070	120	1,070	120	1,070
6. CrAgSQ for asymptomatic CrAg+ and increased 5FC	73.3	9.88	1,150	130	1,150	130	1,150	130	1,150
7. LP for asymptomatic CrAg+ and LAmB use	72.9	9.83	1,150	130	1,150	130	1,150	130	1,150
8. CrAgSQ for asymptomatic CrAg+ and LAmB use	73.7	9.73	1,290	140	1,290	140	1,290	140	1,290

Table 1. Model input parameters (A) and clinical and economic outcomes (B) for CM management strategies among PLHIV.

**Conclusions:** Concurrently improving access to CM diagnostics and 5FC for symptomatic and asymptomatic PLHIV with CM would improve clinical outcomes and be cost-effective in Malawi and similar settings. Improving access to LAmB could further improve outcomes and be cost-effective at lower prices.

## OAE0405

### Link between poverty and HIV viral load non-suppression among people living with HIV

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**Background:** HIV disproportionately impacts the impoverished. Social protection interventions (SPIs) including cash and food transfers may interrupt this cycle of poverty and disease. The objective of this study was to identify the relationship between poverty, social protection interventions and HIV viral load (VL) in 15 districts of Zimbabwe in a programmatic setting.

**Methods:** We conducted an exploratory, sequential mixed methods analysis. Quantitative analyses utilized retrospective cross-sectional data collected from January to July 2023 from client satisfaction surveys (CSS) among adults living with HIV (PLHIV) (> 18 years) on antiretroviral therapy (ART). We performed descriptive analyses and generalized estimated equations to evaluate relationships between multidimensional poverty, SPIs, and VL non-suppression (>=1000 copies/mL). Between August and September 2023, we conducted semi-structured in-depth interviews (IDIs) (n=25) with adults (>18 years) with a history of accessing SPIs. IDIs were audio recorded, transcribed, translated, and analyzed using the framework method.

**Results:** Among 13,722 PLHIV in ART care completing the CSS, 8,971 (65.4%) were female. Median age of the respondents was 44 years (Interquartile range [IQR]: 36-52 years). Nearly half (n=6,095; 44.4%) of respondents were multidimensionally poor. An additional 3,471 (25.3%) were vulnerable to multidimensional poverty, 5,894 (43%) lacked food, yet only 2,515 (18%) had ever received SPIs. The majority (1,283 (51.3%)) of SPI recipients received educational assistance. Poverty was associated with HIV VL non-suppression [relative risk (RR)= 1.55; (95% confidence interval (CI): 1.13, 2.13]. SPI receipt was also associated with HIV VL non-suppression [RR=1.67; (95% CI: 1.07, 2.62)]. Qualitative findings showed that despite significant need, PLHIV in ART care had limited information about types of SPIs available and how to apply to the programs.

Further, participants described their experiences of poverty, with SPI providing a fragile support system for access to food and basic needs.

**Conclusions:** SPI receipt is limited among PLHIV in Zimbabwe, despite frequently reported poverty and food insecurity. In this context, SPIs may serve as a surrogate

for socioeconomic vulnerability and appear insufficient to alleviate its effects. There may be a mismatch in SPIs (educational assistance) with individual needs (food insecurity) among this population of PLHIV, signaling importance of concordance in SP interventions with vulnerabilities experienced.

## OAE12 Welcome to the prevention choice agenda!

### OAE1202

Uptake of HIV post-exposure prophylaxis (PEP) in private retail pharmacies in Kenya: early findings from the Pharm PrEP study

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**Background:** HIV post-exposure prophylaxis (PEP) is an effective strategy to reduce the risk of HIV acquisition after recent exposure, but has been underutilized in many HIV prevention programs. In Kenya, PEP is freely available in most public health clinics that offer HIV services; however, it is primarily used for occupational HIV exposure. We report early findings on PEP uptake at 45 intervention pharmacies delivering HIV services for the first time as part of the Pharm PrEP cluster-randomized control trial (cRCT).

**Methods:** As part of the Pharm PrEP cRCT, trained pharmacy providers at 45 private pharmacies in central and western Kenya are offering subsidized PEP and PrEP services to clients seeking sexual health products. Eligible PEP clients are ≥16 years and self-report: unknown/negative HIV status, a potential HIV exposure (e.g., condom break) in <72 hours, and no signs of acute HIV acquisition. Upon enrollment, participants undergo HIV testing and, if negative, are dispensed a 30-day PEP supply. Pharmacy providers record client demographics, HIV test results, and dispensing details in an electronic medical record.

**Results:** From July 2023 to mid-January 2024, 881 of 1534 clients (57%) seeking pharmacy-based HIV services initiated PEP (median: 7 PEP clients/pharmacy, IQR 3-13). The median age of PEP clients was 27 years (IQR: 23-32), with 59% (523/881) being male and 60% (531/881) unmarried. The majority (98%, 849/881) of clients identified as the general population and 61% (538/811) reported having casual sex

partners. The most common exposures leading to PEP use were condom break/condomless sex (85%, 747/811), sexual assault (3%, 23/881), and shared needles (2%, 20/881).

In addition, clients had ongoing HIV risk behaviors that would warrant PrEP use including, inconsistent condom use (64%, 561/881), sexual partners of unknown HIV status (51%, 449/881), and multiple sex partners (48%, 420/881).

**Conclusions:** Early data from the Pharm PrEP cRCT suggest that PEP services are in high demand at private pharmacies in Kenya and could be delivered in partnership with public support.

Additionally, our findings suggest that integrating PEP with PrEP services in HIV prevention programs might help better serve individuals with diverse HIV prevention needs, bringing us closer to ending the AIDS epidemic.

### OAE1203

Knowledge, awareness, feasibility, and acceptability of long-acting Cabotegravir for HIV prevention: results from the SEARCH Dynamic Choice HIV prevention trial

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**Background:** Injectable Cabotegravir (CAB-LA) is highly effective for HIV prevention, but real-world implementation studies among men and women in Africa are lacking. We assessed knowledge, awareness, feasibility, and acceptability among participants who used CAB-LA for prevention in the ongoing SEARCH Dynamic Choice HIV prevention (DCP) randomized implementation study in rural Uganda and Kenya.

**Methods:** The SEARCH DCP study enrolled women and men aged ≥15 years with self-assessed risk for HIV acquisition. The intervention arm included structured product choice (oral PrEP, PEP, or injectable CAB-LA), with flexibility to switch between products based on changes in participant risk or preferences over 48 weeks of follow-up. CAB-LA injections were provided at Ministry of Health clinics. Quantitative surveys were completed by participants who chose and initiated CAB-LA at time of initiation and after 24-weeks of CAB-LA use.

**Results:** Of 487 intervention arm participants, 274 (56%) started CAB-LA during follow-up (183 women, 91 men; 79 youth aged 15-24 years); of these, 198 (72%) used CAB-LA



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for  $\geq 24$  weeks. At initiation, 64% chose CAB-LA because it was easier to take an injection and 49% because of difficulty remembering to take oral pills. Among youth initiators, 42% chose CAB-LA because they did not want someone to see them taking pills and 22% because partners/friends would not let them take pills. At CAB-LA initiation, 99% of participants had basic to no knowledge of CAB-LA, consistent across gender and age groups. Awareness, acceptability, and feasibility were high at 24 weeks (Table).

	Question	Response	Overall	Women	Men	15-24 years	25+ years
Awareness of CAB-LA at Initiation vs. Week-24	"How many of your friends know about CAB-LA?"	None of my friends know about CAB-LA	91% vs. 25%	92% vs. 28%	89% vs. 19%	91% vs. 30%	91% vs. 23%
Acceptability at Week-24	"What is your level of satisfaction for using CAB-LA?"	Satisfied to Very Satisfied	97%	98%	96%	100%	96%
Acceptability at Week-24	"What is the likelihood of you recommending CAB-LA to a friend?"	Likely to Extremely Likely	95%	95%	94%	95%	95%
Feasibility at Week-24	"How easy was it to take CAB-LA?"	Easy to Very Easy	95%	95%	94%	98%	93%

Table: Awareness, Acceptability, and Feasibility of CAB-LA in SEARCH HIV Dynamic Choice Prevention

**Conclusions:** In rural Uganda and Kenya, over half of participants in the SEARCH DCP trial who were offered choice of oral PrEP/PEP or CAB-LA chose and started CAB-LA during the first 48 weeks. CAB-LA was a popular choice for men and women and was feasible to deliver with a high level of satisfaction.

## OAE1204

### Pharmacy-based delivery of long-acting injectable PrEP in Kenya: provider, client, and key stakeholder perspectives on potential challenges and opportunities

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**Background:** Four sub-Saharan African countries have approved long-acting injectable PrEP for HIV prevention. As countries decide where to make injectable PrEP available for maximal impact, private pharmacies are one venue under consideration. To understand the potential barriers and facilitators to delivering injectable PrEP via

private pharmacies in Kenya, we conducted qualitative formative research with pharmacy providers, clients, and key stakeholders.

**Methods:** From July to September 2023, we interviewed pharmacy providers, pharmacy clients, and key stakeholders involved in HIV policymaking, regulation, and program implementation in Central and Western Kenya. We purposively sampled pharmacy providers and clients both with and without prior experience delivering or receiving, respectively, oral PrEP services at a pharmacy. Our semi-structured interview guide was informed by the Updated Consolidated Framework for Implementation Research (CFIR). We analyzed transcripts thematically.

**Results:** We interviewed 16 pharmacy providers, 25 pharmacy clients, and 9 key stakeholders. Each participant group was ~50% female, and median age was 25 (IQR 23-29) among clients and 37 (IQR 34-41) among providers and stakeholders.

Overall, participants supported the idea of pharmacy-based injectable PrEP delivery, with some recommending it first be rolled out at pharmacies with medical providers on staff. Providers and key stakeholders called for updated guidelines specifying the circumstances under which pharmacy providers can deliver injectable PrEP (CFIR: policy and law).

Across all groups, some participants expressed concern about unqualified providers, and many called for the development of an injectable PrEP certificate program—possibly modeled after existing courses on injectable contraception delivery—to ensure competency in maintaining the cold chain; counseling; administering injections; managing drug reactions; assessing side effects; and conducting pharmacovigilance (CFIR: access to knowledge and information).

To keep injectable PrEP affordable for clients and economically viable for pharmacies, a few recommended price controls or government subsidies (CFIR: innovation cost; financing). Some also noted the need for a shared health information system for client tracking (CFIR: information technology infrastructure) and reliable systems for safe disposal of used sharps (CFIR: compatibility).

**Conclusions:** Stakeholders of injectable PrEP are interested in pharmacy-based delivery. Additional implementation research is needed to identify and test specific capacity-building and integration strategies.

## OAE1205

### Preferences for services delivering pre-exposure prophylaxis among sexually active adolescent girls and young women: a discrete choice experiment in Zimbabwe

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**Background:** Adolescent girls and young women (AGYW) in Zimbabwe are disproportionately affected by HIV. As pre-exposure prophylaxis (PrEP) is rolled-out in Zimbabwe, we assessed preferences for services delivering PrEP among sexually active (SA-AGYW; self-reported sex in the last year) in Zimbabwe and identify key drivers of demand for services delivering PrEP.

**Methods:** We conducted a discrete choice experiment (DCE) among SA-AGYW (aged 15 to 24) recruited using a respondent driven sampling survey in six urban and peri-urban districts in May-July 2023. The DCE was designed based on a literature review and qualitative studies and administered face-to-face using pictorial illustrations. Data were analyzed using a conditional logit model.

**Results:** Nine hundred AGYW completed the DCE. There was a general preference for PrEP programmes over not receiving PrEP (see Figure).

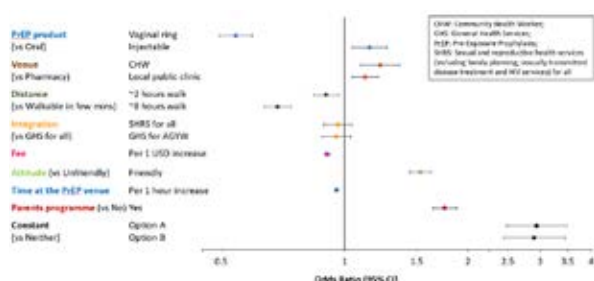


Figure.

Participants had strong positive preferences for (in order of strength): a programme to support parents having a more positive attitude about sexual and reproductive health services (SRHS); a friendly attitude by dispensing health workers; collecting PrEP from a community health

worker (CHW) or the local public sector clinic compared with the pharmacy; and for injectable PrEP compared with oral PrEP. Participants reported negative preferences for: vaginal ring for PrEP (compared with oral PrEP), longer distance to the venue for PrEP collection; higher fees to access PrEP including the consultation; and longer time spent at the PrEP collection venue. There was no evidence of preference for the integration of the PrEP dispensing venue.

**Conclusions:** PrEP programmes can be optimised to reach sexually active AGYW, if PrEP is provided by friendly CHW or local public sector clinic at low-cost for the user, at venues within walking distance, with short waiting times, and with the choice of injectable PrEP. Programmes should be accompanied by activities for building parental support for SRHS.

## OAE20 A tale of two diseases: Novel strategies towards elimination of tuberculosis and viral hepatitis

### OAE2002

#### Promoting exploratory community monitoring of the incidence of tuberculosis and TB/ HIV comorbidities in health centers with the incorporation of Geographic Information Systems (GIS) in Caracas, Venezuela

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**Background:** The Venezuelan humanitarian crisis caused the collapse of the health system. There is an absence of official reports on the epidemiology of Tuberculosis and TB/HIV comorbidities in the COVID-19 context. Health authorities do not provide information on the situation of these diseases and do not authorize NGOs to monitor medical services that care for persons with TB and comorbidities. From 2019 to the present, the Global Fund pays for 100% of ARV and TB medications and supplies for persons with these diseases.

In response, Acción Ciudadana Contra el SIDA (ACCSI) implemented a project financed by The Global Fund with these OBJECTIVES:

1. Generate information through community monitoring with the participation of PLHIV in TB and comorbidity services in 5 hospitals in Caracas;
2. Incorporate GIS (ARCGIS Online software) and KoboToolbox to collect data (cell phone use) in health services, to community monitoring;
3. Carry out evidence-based advocacy to decision makers.



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**Description:** Between November 2022 and April 2023, community monitoring was carried out in a difficult environment as it was affected by the aforementioned obstacles. However, PLHIV participated in stages of community monitoring (coordination, collection, documentation, systematization, analysis and dissemination) in health services of 5 hospitals, obtaining information on comorbidity in Caracas.

**Lessons learned:** The project findings are:

Indicator	Nov 2022	Dec 2022	Jan 2023	Feb 2023	March 2023	Apr 2023	TOTAL
Total number of TB cases	123	81	81	90	102	55	532
No. of report TB cases	85	44	40	46	34	15	264
No. new TB cases	38	37	41	44	68	40	286
Total number of TB/HIV comorbidity cases	14	11	13	15	24	17	94
No. HIV people notified of TB	1	7	7	7	1	0	23
No. people with HIV new TB cases	13	4	6	8	23	17	71

Two dashboards were produced that make visible the results of community monitoring, situation of the last 10 years of TB/HIV comorbidity and georeferencing of 49 TB consultations and pharmacies in 24 Venezuelan states, with public access to persons:

Dashboards 1: <https://ligma.maps.arcgis.com/apps/dashboards/59c1e0c604b54fa4850cacd83fb5f14b>

Dashboards 2: <https://www.arcgis.com/apps/dashboards/10d8877cd51a45ccb9e6b565fd988138>

GIS links health and geography to analyze people's access to health services and effective responses to the Venezuelan health emergency, among the lessons learned.

**Conclusions/Next steps:** The incorporation of GIS in community monitoring professionalized the work of NGOs, by improving the processes of collection, analysis and documentation and of quality data, whose evidence is useful for advocacy to decision makers and contribute to the improvement of international cooperation assistance for Venezuela.

## OAE2003

Community-led monitoring goes beyond evaluating essential health components, it also actively addresses issues of rights and social justice in Indonesia and Manipur, India

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**Background:** Community-led monitoring (CLM) is a routine, ongoing cycle of collecting data on community-designed indicators, identifying gaps, generating action-

able evidence, and advocating to improve essential components of healthcare services. It is gaining recognition among stakeholders and donors. Our project, CLM in Asia, is one of the first digitalized CLM projects, monitoring the essential components of HIV, hepatitis B (HBV) and hepatitis C (HCV) through care recipients.

**Description:** The project was initiated in 2021 by two community-based organizations, Peduli Hati in Jakarta, Indonesia and Community Network for Empowerment (CoNE) in Manipur, India, with amfAR's TREAT Asia program, monitoring 12 health facilities comprised of local district to referral hospitals in select provinces providing public HIV and viral hepatitis services. The indicators developed by the local partners were based on current national guidelines and address the essential components of the accessibility, acceptability, availability, affordability, and quality framework covering HIV, HBV and HCV. From April 2023, the project moved to a digitalized platform with publicly available information on the project details, tools, and a real-time data dashboard.

**Lessons learned:** Post digitalization from April to December 2023, we reached out to 1593 care recipients with 76% between 25 to 49 years of age; 71% male, 28% female, 0.56% transgender. Respondents were receiving care for HIV (62%), HBV, (3%), and HCV (34%). Besides monitoring essential care components and resolving bottlenecks, we assisted 174 people in HIV treatment monitoring, 19 linked to HBV treatment, 37 for HCV treatment. CLM team members resolved 7 episodes of medicine shortages or stock-outs. Interactions with care recipients resulted in successfully linking 20 children living with or affected by HIV to public education programs, restoring the right to education of a child living with HIV, home delivery of antiretrovirals for the visually challenged, addressing gender-based violence, and relocating 7 people to antiretroviral centers which were more convenient for them.

**Conclusions/Next steps:** CLM enables care recipients to have a say in improving the essential components of healthcare services they receive. It not only addresses care bottlenecks at facilities, but also serves as a mechanism to link people to social security schemes and bring about social justice.

## OAE2004

### Improving uptake of tuberculosis testing using urine Lipoarabinomannan among children with advanced HIV disease: outcomes of a quality improvement initiative in southern Nigeria

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**Background:** Diagnosis of Tuberculosis (TB) in children living with HIV (CLHIV) can be challenging using conventional diagnostics. Lateral Flow Urine Lipoarabinomannan (LF-LAM) assay is recommended for TB diagnosis among CLHIV with advanced HIV disease (AHD) in Nigeria, with simultaneous GeneXpert mycobacterium TB/rifampicin (MTB/RIF) tests when sputum or stool samples can be produced. The PEPFAR/USAID-funded ECEWS ACE-5 project implemented this recommendation using a quality implementation framework that included the development of a simplified algorithm for TB testing using LF-LAM, inventory optimisation for LF-LAM, and weekly data reviews. This study assessed the outcomes of this quality implementation approach on the uptake of TB tests using LF-LAM among children with AHD in Southern Nigeria.

**Methods:** This was a retrospective cohort analysis using electronic medical records of ART-naïve children (<15 years old) diagnosed with AHD using the WHO criteria, from October 2022 to March 2023 across 153 health facilities in Akwa Ibom and Cross River States, Nigeria. Results were disaggregated by age and sex. Uptake of LF-LAM tests (Proportion of children with AHD who were tested using LF-LAM) and proportion of LF-LAM tests that were positive, were compared before (October-December 2022 [Period-1]) and during (January-March 2023 [Period-2]) the intervention, using chi-square.

**Results:** In total, 215 children had AHD (M:111, F:104), with 60% (129/215) identified in Period-2. Median age was 2 years (IQR 1-3). Overall, 45.6% (98/215) of children with AHD were tested for TB using LF-LAM, with 18% (18/98) testing positive.

Of those who tested positive via LF-LAM, 88.9% [16/18] were in Period-2. Uptake of LF-LAM tests was significantly higher in Period-2 compared to Period-1 (69.0% [89/129] vs 10.5%

[9/86]  $p<0.01$ ), and the proportion of positive LF-LAM tests was lower in Period-2 than in Period-1 (18.0% [16/89] vs 22.2% [2/9]  $p=0.75$ ).

**Conclusions:** The uptake of TB testing using LF-LAM for children with AHD improved in our setting following a quality implementation approach. Further investigation of factors affecting the uptake of TB testing using LF-LAM in this subpopulation is recommended.

## OAE2005

### Integrating hepatitis C virus self-testing into HIV and harm reduction services as an approach towards HCV micro-elimination among key populations and people living with HIV in Vietnam

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**Background:** Hepatitis C virus self-testing (HCVST) is an innovative approach to accelerate progress towards HCV elimination goals. We conducted a cross-sectional observational study to assess the acceptability and effectiveness of HCVST compared to routine HCV testing among key populations (KP) and people living with HIV (PLHIV) in Hanoi and Ho Chi Minh City, Vietnam.

**Methods:** From September 2023 to January 2024, we engaged eight community-based organizations (CBOs), six anti-retroviral therapy and methadone maintenance treatment (MMT) public clinics, and four KP-led private clinics in implementing community-based, facility-based, online, and secondary distribution. Clients were offered the choice of an oral fluid-based HCVST, or rapid HCV testing provided by CBOs and clinic staff (PL-HCVT). Individuals with a positive HCV test were referred or linked to designated public and private clinics for HCV confirmatory testing and treatment initiation. Acceptability of HCVST was defined as the proportion of first-time HCV testers utilizing the service, and effectiveness was measured by HCV positivity and treatment initiation rates.

**Results:** Of 2,882 individuals recruited, 1,834 opted for HCVST and 1,048 opted for PL-HCVT. The proportion of first-time testers was significantly higher in HCVST compared to PL-HCVT (67.6% vs. 59.1%), and particularly high in secondary distribution and community-based HCVST compared to online and facility-based HCVST (91.4% and 83.8% vs. 48.9% and 36.8%, respectively).

Overall, HCV sero-positivity rate was lower in HCVST than in PL-HCVT (11.2% vs. 18.4%), however, it was higher in community-based and facility-based HCVST compared to secondary distribution and online HCVST (18.1%



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and 16.8% vs. 3.6% and 1.5%, respectively). HCV positivity rate was highest among PLHIV (27.6%), followed by MMT clients (26.4%), people who inject drugs (17.9%), sex partners (3.9%), female sex workers (2.8%), and men who have sex with men (0.3%). Of 399 HCV sero-positive individuals detected, 206 were from HCVST, of which 92.7% received confirmatory testing, and 98.5% of those eligible initiated HCV treatment.

**Conclusions:** HCVST is an additional effective approach to increase uptake of HCV testing and treatment among KPs and PLHIV. HCVST is most effective in reaching unreached people and linkage to care through community-based model, followed by facility-based, secondary distribution and online.

## OAE23 Realizing nothing about us without us: Communities in the lead, ensuring accountability and quality

### OAE2302

Impacts of community-led monitoring on HIV service improvements: implementation in three provinces in Thailand

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**Background:** The implementation of community-led monitoring (CLM) by key populations and people living with HIV communities is still new in the Asia region and has few examples of successful implementation and improvements. We represent here CLM processes and impacts among stakeholders collaborating with the Thailand Ministry of Public Health and implemented in three provinces.

**Description:** Key-population-led health service providers involved in the CLM monitoring cycle engaged in data collection and analysis, stakeholder presentations, advocacy for service quality improvements, and outcome monitoring. Between October 2022 and September 2023, 3,248 responses were gathered online.

FINDINGS (% of responses)	IMPROVEMENT HIGHLIGHTS
Chiangmai 50% lacked information on undetectable=untransmissible (U=U)	Provincial Health Office (PHO) promoted U=U messages, reducing stigma toward PLHIV at provincial media outlets
91.84% indicated limited number of PrEP-offering facilities	PHO assisted all hospitals in Chiangmai to register as PrEP service facilities under National Health Security Office in 2024
Chonburi 12.23% mentioned ARV clinics lacked privacy	Extended ARV clinic area and separated counseling room
21.58% mentioned no client queuing system in place	Implemented a queuing system at ARV clinic
Chiangmai, Chonburi, and Songkhla 18.9% mentioned providers lacked understanding of gender sensitivity and stigma and discrimination	Conducted a series of gender sensitivity training and outcome monitoring for hospital staff

**Lessons learned:** Lessons learned from the provincial CLM implementations included:

- Sharing CLM success stories and challenges among provinces promoted knowledge exchange, problem-solving, and continuous improvement of health service provision.
- CLM working groups are best positioned to drive positive changes in HIV service delivery, policy reforms, stigma reduction, capacity enhancement, and access to accurate information within the HIV response.
- The launch of the CLM official Facebook page successfully promoted knowledge sharing and community engagement among implementers, thereby enhancing the program's effectiveness and impact.

**Conclusions/Next steps:** CLM led by KP and PLHIV communities can enhance the quality of health services. In 2024, CLM will be expanded to three additional provinces: Chiang Rai, Ubonratchathani, and Phitsanulok.

### OAE2303

Post-hospitalization community home visit intervention to decrease mortality among adults with advanced or unsuppressed HIV in urban Zambia: pilot evaluation

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**Background:** HIV-related mortality remains high in Zambia. Hospitalization often precedes death; post-discharge mortality among people with HIV (PLWH) reaches 20-40%. We evaluated a community health worker (CHW) model to provide post-discharge support with the ultimate goal of mortality reduction.

**Methods:** We conducted a quasi-experimental feasibility and acceptability study at two tertiary hospitals in Lusaka, Zambia, using the PRISM implementation science framework. Hospitalized PLWH with either CD4 <200 (i.e., advanced HIV) and/or HIV RNA >60 copies/ml, regardless of treatment history, were enrolled and followed for six months post-discharge. Participants received a novel community intervention, based on formative qualitative work, consisting of a discharge summary card, CHW home visits within 7 days of discharge, and repeated every 2-4 weeks thereafter, and screening and referral for depres-



sion and unhealthy alcohol use. CHW visits were overseen by a physician-clinical liaison officer team based at the discharging hospital. During visits, CHWs provided psychosocial and medication counseling, checked vital signs, and made reminders for outpatient follow-up.

**Results:** From 18 August 2023 to 22 January 2024, 100 study participants (median age, 39 years; 47% women; median CD4, 118 cells/mm<sup>3</sup>) were enrolled. To date, 86 (86%) received at least one home visit (31 within 1 week of discharge); of these, 36 (42%) had two or more visits; 32 (37%) received a discharge summary card; and 86 (100%) were screened for behavioral health problems. At one month, 86 (86%) were alive, 14 (14%) had died; 20 (20%) were readmitted based on concerns found during CHW home visits. Acceptability of CHW home visits among participants and caregivers was high. When available, 6-month mortality data will be compared to a historical control group from the same hospitals.

**Conclusions:** A novel discharge model of care, involving enhanced discharge instructions, CHW home visits, and screening and referral for behavioral health problems, proved feasible and acceptable in urban Zambia. As post-hospital mortality is so high and minimal/no transition of care programs exist in African settings, CHW visits have potential to reduce post-discharge mortality among PLWH. Focusing on the peri-discharge period can strengthen health systems as countries move into HIV epidemic control.

## OAE2304

Improvement on quality of healthcare services offered to people living with HIV at health facility in Cameroon through the community-led monitoring mechanism

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**Background:** Limited ownership of health policies by affected communities in Sub-Saharan Africa in general and Cameroon in particular remains a challenge in successful implementation of the health sector national strategic plan. With support from USAID, the Cameroon Network of Associations of PLHIV (RECAP+) is currently rolling out a CLM mechanism in Cameroon with the overall objective of improving access to free quality HIV/AIDS service offered at facility level while supporting the client-centered approach.

**Description:** The CLM is being rolled out nationwide, in 326 health facilities by 38-member organizations of RECAP+ and 169 rigorously trained site monitors who are mainly PLHIV. Activities include monthly data collection

using two main questionnaires at facility level to inform thirteen main indicators, community sensitization on HIV prevention and treatment access, psychosocial counseling, and evidence-based advocacy for change. The indicators monitored focus on treatment access barriers such as user fees elimination, stigma and discrimination, quality of psychosocial support, and other HIV care related variables.

**Lessons learned:** Contributions of the CLM led to the Ministry of public health developing an HIV CLM guide in 2023 for use by organizations. The CLM also helped in improving community engagement in healthcare; in fiscal year 2023, monitors were able to sensitize 14891 peers at facility-level and 45293 persons in the community on their rights, bringing back 41 LTFU peers to care.

Confidentiality issues were resolved in 8 health facilities and involved the creation of appropriate reception space for clients and serious warning to some health personnel, HIV commodities supplied in 16 facilities, 37 persons linked to the facility for HIV testing amongst which 8 new cases placed on treatment. Improvement in wait time in 10 facilities from two hours to 30 minutes and less involving actions such as the delocalization of viral load testing services and the use of customized tickets for ARV pickups. Thanks to the CLM some health facilities received equipment such as centrifuges, microscopes and fridges from mayors to improve quality of care.

**Conclusions/Next steps:** CLM remains one effective mechanism that governments can put in place to better engage the community and strengthen the health system.

## OAE2305

Bringing evidence to the table: community-led monitoring to reduce human rights violations and violence against sex workers

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**Background:** Since 2014, the Hands Off programme works to reduce violence against sex workers in Southern Africa, to support a decrease in HIV acquisition among this key population. When the programme began, little to no data regarding the prevalence of human rights violations against sex workers was available in the region, meaning previous interventions and advocacy efforts did not focus on the problems that the community itself prioritized.

**Description:** Sex worker-led organizations in Botswana, Mozambique, South Africa, and Zimbabwe were trained on the use of Ona, a secure, free, and open-source data



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collection tool to capture human rights violations in real time. Organizations set up varied peer-monitoring systems by training additional sex workers in their communities to respond to human rights violations and capture data regarding demographics of the sex worker, the kind of violence that occurred, who perpetrated the violence, etc. The data is securely stored via Ona, owned by the sex worker-led organizations, and available for the organizations and the Hands Off team to access and use.

Since 2021, this data has formed the basis of an annual human rights violations report published by Hands Off partners.

**Lessons learned:** Since 2021, at least 1,500 human rights violations against sex workers have been recorded each year. When data collection is driven and owned by community organizations, we find these organizations take initiative to use the data in effective and innovative ways. In Mozambique, sex workers use the evidence collected in data-driven advocacy for stronger protections for sex workers on community, regional, and national levels.

They also use the data collection system as an accountability mechanism to follow up on cases of violence reported to law enforcement. Sex workers in Mozambique report stronger relationships with police and greater safety in their work as a result.

**Conclusions/Next steps:** Community-driven data collection for sex workers is vital for real-time understanding the nature and prevalence of violence in their communities. Their ownership over both the collection process and data itself has created a stronger understanding of high-risk hot spots and stakeholders to target for sensitization, and builds a strong evidence base for data-driven advocacy to support violence prevention.

## OAE25 Integrating social enterprise for sustainability of key population programmes

### OAE2502

Country HIV response sustainability roadmaps: where are key populations in the conversations?

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**Background:** The 2022 PEPFAR Strategic Plan encourages recipient governments to develop sustainability roadmaps. PEPFAR strategy further stipulates that a sustainable response must place people and communities at its center.

**Description:** A rapid, fact-finding study conducted by the Key Population Trans-National Collaboration (KP-TNC) in six countries (Kenya, Tanzania, Zambia, Nigeria, Malawi and South Sudan), reveals a notable absence of the KP community in the sustainability discussions.

The KP Community is not involved in the sustainability discussions yet some of these countries have created Multi-stakeholder Sustainability Technical Working Groups, KP Technical Working Groups and representative apex KP bodies (commonly known as KP-Consortia) that connect KPs to different HIV response platforms and stakeholders.

**Lessons learned:** According to the fact-finding study, key reasons for not including the KP community in the sustainability discussions include: cultural and religious beliefs that stigmatize KPs; push from some conservative policy makers for non-inclusive integration of KP programs; existence of punitive laws towards KPs; lack of frameworks providing guidelines on how the KP Community will be included in the sustainability framework; and lack of political will stemming from lack of understanding of KP needs in relation to HIV programming. This is a signal that some



or all KP HIV response needs within countries are likely not to be considered in the final sustainability roadmaps in case the KP Community will keep being left out of the on-going conversations.

**Conclusions/Next steps:** The lack of involvement of KP networks and representatives in the sustainability roadmap discussions is quite concerning and signals that countries are likely not to support KP programmes once they assume the full burden of the HIV response. This being the case, it would mean that the current gains that have been made in HIV response among KPs and general populations are likely to be reversed.

PEPFAR, Global Fund, UNAIDS and other stakeholders, therefore, need to assist countries to develop a framework for KP engagements in the sustainability roadmaps discussions.

## OAE2503

[Social contracting of NGOs/CBOs to reach the last mile key populations under National AIDS Control Programme \(NACP\) in India: learnings from the implementation of targeted interventions projects](#)

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**Background:** National AIDS Control Organisation (NACO) in India has partnered with Civil Society Organisations (CSOs) primarily Non-Governmental Organisations (NGOs) and Community-Based Organisations (CBOs) through State AIDS Control Societies (SACS) under the Social Contracting mechanism to expand the reach and provide prevention services to the key populations.

The social Contracting model not only includes grant-making by the Government of India but also ensures legislative, policy, and programmatic initiatives to strengthen the service delivery mechanisms.

**Description:** NACO implements the Targeted Intervention (TI) projects as a major prevention initiative through CSOs (NGOs /CBOs) to reach out to the key populations. Peer-led outreach model is adopted to provide a basic package of services tailored to the demands of key populations.

The services include counseling for behavior change, screening for HIV /STI, distribution of commodities (condoms, Needle/Syringes, lubes, etc.), linkages to treatment, as well as mobilization to reach the last mile.

The engagement of CSOs in the projects goes through a robust selection process followed by financing, recruitment of staff, monitoring, supportive supervision, capacity building, and evaluation of projects through third parties in a participatory process.

TI project coverage of the last six years (2017-18 to 2022-23) is analyzed and presented below to see the impact.

Year	Number of TI Projects	Total Coverage of Key Population (in lakh)	Total HIV test Conducted (in lakh)	% of Sero-HIV positive case detected	% linked to ART
2017-18	1450	60.67	21.74	0.25	81.5
2018-19	1443	66.62	23.45	0.25	83.0
2019-20	1426	86.61	27.41	0.23	86.7
2020-21	1472	64.77	23.24	0.20	85.0
2021-22	1512	90.56	30.62	0.20	80.4
2022-23	1543	100.88	34.57	0.25	82.7

The table above indicates that coverage of KP under TI has increased over the year with the increase in HIV testing and linkages to ART.

**Lessons learned:** Peer-led outreach combined with participatory evaluation, digital reporting, and capacity building of CSOs has resulted increase in coverage of KP under the projects.

**Conclusions/Next steps:** : India's social contracting model has contributed to expanding reach with services, increasing community ownership, improved governance, accountability, and partnership between the Government and CSOs. The social contracting model can be replicated in other disease prevention and control programs in the larger health system to fast-track results and achievements.

## OAE2504

[From outreach provider to primary health care clinic for key populations in Thailand: how a community-based organization expanded its mission and moved to sustainable financing](#)

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**Background:** MPLUS Foundation is a community-based organization delivering comprehensive HIV, STI, and primary healthcare services through a key-population-led health service (KPLHS) approach. Over two decades, MPLUS evolved from conducting only HIV outreach to now serving as a government-certified clinic, extending its services to include HIV-adjacent areas like mental health, stigma and discrimination, and anti-bullying. This expansion is supported by diverse funding sources, including USAID, the Global Fund, domestic health financing, grants, and social enterprise incubation.

**Description:** Based on clients' needs, strategic planning, and its evolving mission, MPLUS expanded its services over time to offer increasingly comprehensive HIV/STI services and primary healthcare. This now includes HIV testing, PrEP, and referral to ART services, all recognized over time by the Thai government as reimbursable services by the Thailand National Health Security Office (NHSO). In 2019, MPLUS became the first KP-led organization certified as an HIV testing facility and gained ART provider certification in 2023. This certification led to increased domestic



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financing, reducing MPLUS' dependence on international donors. These sources supported 18% of total operational costs in 2019, increasing to 56% in 2023.

Furthermore, a fee-based social enterprise service was added in 2023, accounting for 2% of total revenue in 2023.

**Lessons learned:** Challenges remain to full sustainability. In January 2023, the Thai government restricted HIV prevention services for non-universal coverage (UC) clients, challenging MPLUS's financial viability. As a certified health facility, MPLUS was more resilient than others in continuing core HIV services through a fee-based model for certain HIV services, utilizing this revenue as a revolving fund to sustain essential HIV services for key populations whose health benefits are not registered under the UC scheme and those with economic challenges.

MPLUS accessed the domestic health fund to explore government reimbursement for adjacent diseases like mental health and telemedicine for noncommunicable diseases to promote well-being of older key populations and other groups in need.

**Conclusions/Next steps:** With careful strategic planning and in environments with universal health coverage, KP-led organizations can transform into primary care facilities to sustainably serve their targeted populations through a one-stop shop model supported by diversified funding, including domestic health financing, grants, and social enterprises.

## OAE2505

### Key population community perspectives on sustainable HIV services

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**Background:** Global funding for HIV programming has decreased, and more funders are prioritizing "transition" or "sustainability" strategies. Continued HIV services for key population (KP) communities under alternative forms of financing require thoughtful consideration prior to transition and inclusion of KP perspectives to ensure continued service utilization and funding.

**Description:** The EpiC Project and Global Black Gay Men Connect (GBGMC) conducted five virtual focus group discussions between August-October 2023. Participants represented a diverse range of perspectives including 84 members of KP communities and organizations serving KP communities from 27 countries in Africa, Asia, and the Caribbean.

Participants shared viewpoints in a pre-consultation survey (n=75), a two-hour discussion (n=84), and a post-consultation survey (n=37). One consultation was held in French, and four in English. Anonymized pre-consultation

survey results were presented during focus groups. Focus groups were transcribed, excluding identifying details, and notes analyzed for prevalent themes.

**Lessons learned:** Consistently, participants highlighted the importance of meaningful involvement of KP communities, including engagement in design, delivery and evaluation of services paired with capacity strengthening support, to ensure communities are prepared to lead service delivery. Access to client-centered HIV services tailored to KP communities (preferably at KP-led facilities) free of stigma and discrimination was noted as critical. Adequate financing for services including access to innovative financing structures such as social contracting or social enterprise to meet needs not funded by governments or other donors was also a theme.

Regarding current services, participants said: "The involvement of key population groups in providing sustainable services is essential ... In [my country], the proportion of clients coming to key population-led facilities is 3-4 times higher than public facilities. And for the clients who come to public facilities ... they usually go with a key population supporter."

In the post-consultation survey, participants requested in-person consultations to have a more nuanced exploration of local financing options, and review models of effective engagement and capacity strengthening for KP communities.

**Conclusions/Next steps:** As sustainability related conversations with funders and governments move forward, further dialogue and engagement of key population communities is needed to ensure equitable access to services in the future and sustain current gains in service delivery.



## OAE30 The new vital sign: Evidence for action to improve mental health access for diverse populations

### OAE3002

#### Mental health outcomes of transgender women in Brazil: a narrative review and a call to action for public health policies

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**Background:** In Brazil, transgender women (TGW) face several mental health challenges, often exacerbated by societal discrimination, physical and sexual violence, economic struggles, and HIV healthcare.

This study reviews these mental health challenges and suggests public health interventions for this vulnerable population.

**Methods:** A narrative review on PubMed was conducted in December 2023, using a combination of Mesh terms and title/abstract keywords: 'TGW', 'mental health outcomes', 'sociodemographic factors', and 'Brazil'. Observational studies on mental health outcomes of TGW in Brazil, regardless of HIV status, were included. Exclusions were made for studies not published in English or Portuguese, case reports, case series, and abstracts.

**Results:** The review revealed high rates of anxiety (26.5%-70.1%), depression (19.1%-69.6%), substance abuse (21.5%-56.6%), and suicidality (25%-47.25%) among TGW in Brazil. These issues are intensified by several societal factors, as illustrated in Table 1.

We propose an integrated policy framework, focusing on:

1. Expanding gender-affirming care in Brazil's Unified Health System (SUS), training health professionals in transgender health, and broadening access to mental health services;
  2. Promoting the Dandarah app, a tool for reporting harassment and violence;
  3. Enhancing job training and placement through non-governmental organizations (NGOs) like Transempregos;
  4. Implementing affirmative university policies for TGW;
  5. Improving access to HIV testing, PrEP, PEP, and HAART.
- Key stakeholders include SUS, the Ministry of Health, healthcare professionals, tech developers, law enforcement, legal aid organizations, employment agencies, private sector, educational institutions, schools, and NGOs.

Author	Year	Factor	Main findings	Impact
Luz <i>et al.</i>	2022	Discrimination	96% experienced discrimination	Increased risk for depression and psychological distress
Letier <i>et al.</i>	2021	Discrimination	Reduced likelihood of medical visits (OR 0.29) and HIV testing (OR 0.41)	Lower health-seeking behavior
Almeida <i>et al.</i>	2022	Violence	Sexual (OR 2.06) and physical violence (OR 2.09) associated with depression	Increased depressive symptoms
Luz <i>et al.</i>	2022	Physical violence	52% experienced physical violence	Higher rates of depressive symptoms
Rafael <i>et al.</i>	2021	Physical violence by family/partner	Increased suicidal ideation (aPR 1.37 and 1.92) and attempts (aPR 1.48 and 1.69)	Increased suicidal ideation and attempts
Reto <i>et al.</i>	2021	Sexual violence	Associated with suicidal ideation and attempts (OR 1.69)	Increased suicidal ideation and attempts
Luz <i>et al.</i>	2022	Sexual violence	42% experienced sexual violence	Increased depressive symptoms and trauma
Zucchi <i>et al.</i>	2019	Economic difficulties	42.3% were sex workers	Correlation with psychological distress
Ferreira <i>et al.</i>	2019	Economic difficulties	78.6% were sex workers and most earned below US\$ 10.00/day	High-risk survival strategies
Ferreira <i>et al.</i>	2019	HIV and health disparities	Only 18.8% of HIV-uninfected TGW used PrEP	Higher risk for HIV seroconversion
Wilson <i>et al.</i>	2019	HIV and health disparities	Discrimination reduced willingness to seek PrEP/healthcare	Barriers to accessing HIV-related healthcare services
Amante <i>et al.</i>	2023	HIV and health disparities	Reluctance to report new symptoms in HIV-positive TGW (aOR 7.62)	Barriers to accessing HIV-related healthcare services
Wilson <i>et al.</i>	2021	HIV and health disparities	Lower odds of PrEP knowledge (OR 0.5) and PrEP awareness (OR 0.5) in younger TGW (18-24 years old), as well as higher odds of unprotected sex (OR 1.8)	Increased vulnerability to HIV
Vera <i>et al.</i>	2021	HIV and health disparities	Higher prevalence of HIV among TGW aged 18-24 (rate ratio 3.85) and those engaged in sex work (rate ratio 5.96)	Elevated HIV risk
Letier <i>et al.</i>	2022	HIV and health disparities	Prevalence of HIV in TGW between 9.0% to 24.3%	Increased prevalence
Grinsztejn <i>et al.</i>	2017	HIV and health disparities	Newly diagnosed HIV infections associated with sex work history (OR 30.7)	Increased prevalence and association with sex work

PrEP: HIV Pre-exposure prophylaxis; PEP: HIV Post-exposure prophylaxis; TGW: transgender women

Table 1. Impact of societal factors on mental health and HIV outcomes of TGW in Brazil.

**Conclusions:** TGW in Brazil experience significant mental health issues, influenced by various factors. A holistic approach, encompassing healthcare, safety, employment, education, and HIV care, is essential. Effective public health policies must be inclusive, responsive, and tailored to TGW's needs, promoting their wellbeing and dignity.

### OAE3003

#### Role of psycho-social counselling in harm reduction program among people who inject drugs: Bangladesh experience

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**Background:** Since 1995, Bangladesh has implemented the harm reduction program to address the needs of the People Who Inject Drugs (PWID). From 2021 to 2023, CARE Bangladesh as an implementer of the Global Fund grant is providing essential harm reduction services to 15,989 PWID of 13 districts. Bio-medical and psycho-social interventions were integrated into the program strategies to minimize the spread of HIV among PWID.

**Description:** Drug addiction's impact on the body, mind, and nervous system, with associated mental health issues, underscores the importance of psycho-social support in successfully integrating drug users into harm reduction services. 20% PWID in Bangladesh enrolled in harm reduction services have a history of over ten years of drug injection, often accompanied by mental illness.



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The harm reduction package offered includes a range of services, from Needle-Syringe distribution to Condom promotion and treatment for various health issues, addressing the complex needs of this population.

25% PWID have received case management, brief intervention, motivational interviewing, cognitive behavior therapy, and social support group development which have decrease drop-out from 9.7% (2021) to 2.2% (2023) and adherence increased from 90% (2021) to more than 95% (2023) to Anti-retroviral Therapy (ART), opioid substitution therapy, management of HIV-HCV.

**Lessons learned:** Mental health support emerges as a cornerstone in addressing drug use disorders, teaching individuals coping mechanisms, replacing negative thoughts with positive ones, emphasizing treatment benefits, and involving family and social support systems.

Despite the challenges faced by counselors in conducting sessions with People Who Inject Drugs (PWID), varied methods, including case management, have been employed to ensure effective counseling sessions through different psycho-social interventions.

**Conclusions/Next steps:** Programmatic data for 2022 showcases retention rates on methadone therapy increase from 63% (2021) to 89% (2023), increase adherence to Anti-Retroviral Therapy ART more than 95% and management of HIV-HCV among 681 PLHIV client.

These positive outcomes underscore the critical impact of psycho-social interventions in maintaining the well-being and social integration of individual drug users.

## OAE3004

iTHRIVE 365 reduces the negative psychological impact of daily intersection stigma for black same gender loving men living with HIV

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**Background:** While emerging evidence shows health inequities among Black gay, bisexual, other same gender loving men living with HIV (SGLMLWH) are driven by intersectional stigma, there is a lack of interventions designed to combat stigma and promote their mental health.

In light of this, our Black SGLM-led multisectoral team developed iTHRIVE 365, a multicomponent mHealth intervention designed to combat the negative effects of stigma by increasing access to health information and motivation, cultivating Black SGLM social support, and facilitating connections to culturally-affirming healthcare and economic resources.

This study examined whether this intervention moderated the daily effects of intersectional stigma on depressive symptoms, anxiety symptoms, and emotion dysregulation among a sample of Black SGLMliving with HIV.

**Methods:** We conducted a 14-day diary study with 32 Black SGLMLWH in Atlanta, GA. Daily surveys assessed intersectional stigma, depressive symptoms, anxiety symptoms, and emotion regulation difficulties. Participants spent 7 days without app access and 7 days with app access. Dynamic structural equation modelling assessed longitudinal associations from intersectional stigma to next-day psychological health. We tested for intervention moderation by comparing these associations between non-access and app-access days.

**Results:** Intersectional stigma was positively associated with next-day depressive symptoms( $\gamma=0.21$ , 95%CI=[.10,.34]), anxiety symptoms( $\gamma=0.26$ , 95%CI=[.13,.37]), and emotion dysregulation( $\gamma=0.09$ , 95%CI=[.01,.19]). iTHRIVE365 significantly moderated the associations with anxiety symptoms and emotion dysregulation, such that there were significant associations with stigma on non-access days, but not app-access days.

Group	Outcome	Parameter	Estimate	95% CI	Std. Effect
No T365 Access	Depressive Sx	Stigma, Fixed Effect	0.18*	[.02, .33]	0.23
	Anxiety Sx	Stigma, Fixed Effect	0.32*	[.16, .50]	0.37
	Emotion Dys	Stigma, Fixed Effect	0.15*	[.02, .28]	0.26
T365 Access	Depressive Sx	Stigma, Fixed Effect	0.19*	[.03, .41]	0.22
	Anxiety Sx	Stigma, Fixed Effect	0.19	[-.01, .40]	0.20
	Emotion Dys	Stigma, Fixed Effect	0.02	[-.10, .15]	0.03

Table 1. Grouped Dynamic Structural Equation Results  
Note: Sx= Symptoms, Dys= Dysregulation, T365= iTHRIVE365 intervention

Estimate = median of the posterior distribution, CI = Credible Interval using the highest posterior density method, Std.

Effect = Standardization using the average of within-person standardization method, \* indicates that 0 is not in the 95% credible interval of the parameter and is analogous to being statistically significant in a frequentist inference.

**Conclusions:** Findings suggest iTHRIVE365 may be an effective tool in reducing the negative mental health impacts of daily intersectional stigma for Black SGLMLWH.

## OAE3005

Evaluating the impact of Prime Time Sister Circles on select health outcomes for a diverse cohort of Black women with HIV in urban U.S.

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**Background:** Prime Time Sister Circles (PTSC) is a community-based, culturally-relevant intervention designed to help Black women improve cardiovascular health. With US Black women disproportionately impacted by cardiovascular risk, interventions to improve cardiovascular health in Black women with HIV are urgently needed. In one of

12 projects funded by HRSA, we implemented PTSC with 2 other interventions (Red Carpet Care and Trauma-informed Care) bundled for Black women with HIV. We report the clinical and access to care impact of PTSC plus the other 2 (base) interventions, compared with the base interventions only.

**Methods:** This study was conducted in community health centers in Philadelphia between May 2021 and December 2022. Eligibility criteria were: (1) Self-identification as a Black woman and (2) HIV diagnosis with (3a) Re-engagement in care or (3b) New diagnosis or (3c)  $\geq 2$  Emergency Department (ED) visits or  $\geq 1$  hospitalization within 12 months or (3d)  $\geq 2$  missed HIV care visits within 6 months. The base interventions were conducted over a 6-month period, and the PTSC intervention occurred over 12 weeks. A comprehensive survey and laboratory examination were conducted and access-to-care data collected at baseline, 6 months and 12 months. We present a descriptive analysis of data collected, comparing the PTSC group to the base intervention only cohort.

**Results:** 46 women enrolled the project, 19 of them opting into and 14 completing the PTSC intervention. Mean age was 51, 19 were born outside the US, 2 were transgender and participants reported a mean of 6 chronic co-morbidities. For both groups improvements were noted in HIV RNA, CD4 cell counts, hemoglobin A1c and LDL as well as in ED utilization and missed HIV primary care visits. These improvements were more pronounced at 6 months than 12 months. Additionally, PTSC participants showed an improvement in blood pressure at 6 months only.

**Conclusions:** Our base evidence-informed bundled interventions were collectively successful in improving HIV-related parameters as well as select cardiovascular risk parameters in this diverse cohort of aging Black women with HIV. The inclusion of PTSC provided added value in improving blood pressure at 6 months. The slight worsening from 6-12 months mandates further study of maintenance interventions.

## OAE39 New strategies for optimizing person-centred care

### OAE3902

STI testing rates among PrEP users randomized to 3-monthly (standard of care) or 6-monthly monitoring within the EZI-PrEP trial, the Netherlands: preliminary results

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**Background:** Decreasing PrEP monitoring visits can reduce PrEP use burden. We examined STI testing behavior and STI positivity among PrEP users randomized to a less frequent 6-monthly versus 3-monthly STI screening (standard-of-care) within the EZI-PrEP study.

**Methods:** EZI-PrEP is a randomized controlled trial (September 2021-March 2024) on the non-inferiority of 6-monthly versus 3-monthly, and online versus in-clinic PrEP monitoring among men-who-have-sex-with-men in the Netherlands. Monitoring includes STI screening; additional free-of-charge STI testing in-between monitoring visits is optional.

This preliminary analysis includes data from participants with  $>1$  PrEP follow-up monitoring visit in Amsterdam, Rotterdam, The Hague and Nijmegen until September 2023. Using visit rate ratios and 95%CI, we compared (i) overall visit rates (i.e., number of PrEP visits and additional STI visits per person-year) and (ii) additional STI visit rates (i.e., number of additional STI visits per person-year) between 6- and 3-monthly monitoring arms.



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Using  $\chi^2$  test, we compared (iii) the proportion of all visits with any positive chlamydia, gonorrhea, or infectious syphilis ('any STI') and (iv) the proportion of all additional STI visits without STI-related symptoms or partner notification between 6-monthly and 3-monthly monitoring arms.

**Results:** 428 participants (6-monthly arm: n=213; 3-monthly arm: n=215) contributed 512 person-years of follow-up. The overall visit rate in the 6-monthly arm was lower than the 3-monthly arm (visit rate ratio=0.70, 95%CI:0.64-0.77). The additional STI visit rate in the 6-monthly arm was higher than the 3-monthly arm (visit rate ratio=1.94, 95%CI:1.58-2.40).

We found no difference in STI positivity between arms (6-monthly arm: 22.3%; 3-monthly arm: 20.5%, p=0.35), nor in the proportion of additional STI visits without STI-related symptoms or a partner notification (6-monthly arm: 52.1%; 3-monthly arm: 42.8%, p=0.071).

**Conclusions:** Compared to PrEP users monitored every 3 months, PrEP users monitored every 6 months attended more additional STI visits, but had fewer visits overall. STI positivity was comparable between the arms.

These preliminary findings suggest that implementing 6-monthly PrEP monitoring as standard-of-care could reduce the total number of visits without resulting in increased STI positivity, leading to cost reductions of PrEP programs. Further research on the impact of 6-monthly monitoring on STI transmission is ongoing.

## OAE3903

Long-term health outcomes of people living with HIV who were enrolled in six-month dispensing of antiretroviral treatment for 12-18 months in four provinces of Mozambique

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**Background:** Multi-month dispensing (MMD) of antiretroviral treatment (ART) reduces unnecessary clinic visits, contributes to improve health outcomes among people living with HIV (PLHIV), and improves the efficiency of health systems. 3MMD dispensing has become the standard of care in many clinical and community settings, and now, globally, the focus is to extend MMD up to a period of six-months (6MMD).

In 2020, Mozambique Ministry of Health adopted a phased approach to facilitate this transition towards 6MMD. US-AID-funded Efficiencies for Clinical HIV Outcomes (ECHO) project is supporting 6MMD implementation in 24 health facilities in four provinces. We analyzed long-term health outcomes of PLHIV who were enrolled in 6MMD for a period of 12-18 months.

**Methods:** This is a quantitative cross-sectional study of PLHIV enrolled in 6MMD from April to September 2022. Eligibility criteria included: age  $\geq 5$  years old, on ART for  $\geq 12$  months, with a viral load (VL)  $<1,000$  copies/ml, have no current illness, and not be on cotrimoxazole and/or tuberculosis prophylaxis (excluding pregnant/breastfeeding women). Data was collected from electronic medical records from 24 health facilities in four Mozambican provinces implementing 6MMD.

All individuals were followed through October 2023 to assess VL coverage, VL suppression (defined as VL $<1,000$  copies/ml) and retention in care after  $\geq 12$  months of enrollment in 6MMD. Descriptive statistics were used to characterize the study sample and determine long-term health outcomes.

**Results:** A total of 55,820 PLHIV enrolled in 6MMD were included in the analysis, of whom 65% were female (36,303/55,820). The median age was 39 years [interquartile range (IQR): 32-47 years]. VL coverage was 82% (45,644/55,820) across the cohort, and among those with a VL test result, 98% (44,580/45,644) were virally suppressed. 98% (54,954/55,820) of individuals were retained in HIV care after  $\geq 12$  months of enrollment in 6MMD.

**Conclusions:** PLHIV enrolled in 6MMD can achieve high rates of VL suppression and retention in care, which supports the case for the expansion of the model to other health facilities.

Further research will be needed to assess outcomes for individuals who have a shorter period on ART before enrollment, and for individuals with longer-term follow-up.

## OAE3904

Aligning key population HIV prevention service preferences and coverage in Vietnam: findings from a national private sector engagement assessment

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**Background:** The HIV response in Vietnam has seen major successes in PrEP scale-up through a range of differentiated models. These include private sector services (PSSs) which are responsible for nearly half of PrEP enrollment nation-wide. While KP access to preferred PSSs is critical to sustainably achieving ending AIDS by 2030 goals, the delta between KP service preferences, willingness to pay (WTP) and actual coverage of desired services is unknown. Such information is critical to understand as donor funding for HIV prevention steadily declines.

**Methods:** We conducted a mixed-method assessment involving an HIV private-sector engagement (PSE) readiness and coverage benchmarking (58/63 provinces) and



a services use, preferences and WTP study in 11 highest HIV burden provinces among 3060 KP (1800 men who have sex with men, 420 transgender women; 420 people who inject drugs; 420 female sex workers) from May to October, 2023. PSSs were defined as general or KP-led clinics, hospitals or pharmacies, and the coverage assessment included provincial mapping of identified services, inventory of services offered, and maximum client load. We also scored provincial Department of Health readiness to engage with or increase coverage of PSSs.

**Results:** Only five of 58 provinces were identified as having high to very high HIV/PHC-related PSS coverage and 36% of provinces had no PSSs at all. Overall, two provinces were identified as representing combined strong PSE readiness and high coverage of PSS. Related to service preferences, 70.5% and 72.2% of KP preferred KP-led clinics for PrEP and PEP, respectively, followed by the public sector and then general private clinics or hospitals. 79.2% of KP reported WTP for PrEP and 68.2% for PEP. Of those, 51% of MSM reported being able to pay the average commercial price for PrEP (drugs, tests, exam), while only 6.9% of PWID, FSW and TGW were able to do the same.

**Conclusions:** There is a significant mis-alignment between KP service preferences, access to PSSs and WTP for preferred services. As donor funding declines, partial-subsidy models that offer reductions in HIV prevention pricing will be required as parallel efforts are undertaken to reduce cost and ultimate price passed onto clients for commercial services.

## OAE3905

Client experiences of and preferences for HIV care delivery during the first six months on antiretroviral therapy in South Africa

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**Background:** Improving retention on antiretroviral therapy (ART) is essential to achieve global HIV goals. Disengagement from care is highest in the early treatment period (<6 months after initiation or re-initiation), but differentiated service delivery models designed to increase retention generally exclude clients with <6 months on ART. We assessed preferences for HIV service delivery in the early treatment period.

**Methods:** From 9/2022-6/2023, we surveyed adult (≥18) clients who were initiating, re-initiating, or on ART for ≤6 months at 18 primary health facilities in South Africa. The survey collected data on experiences with and prefer-

ences for HIV treatment delivery. A subset of respondents were re-contacted ≤12 months later for focus group discussions (FGD) to further explore preferences.

**Results:** We enrolled 1,098 adults (72% female, median age 33): 38% were initiating/re-initiating ART at study enrolment, 38% had been on ART ≤3 months, and 24% had been on ART 3-6 months. While 81% of clients reported actually receiving 1 month of medication at a time, 63% said they would prefer 3- or 6-month dispensing. 61% preferred 3- or 6-month visit scheduling, while only 13% preferred monthly visits. 79% overall would prefer to receive care from a nurse over a doctor (15%), counsellor (5%), or other provider (2%); men (20%) were more likely than women (12%) to prefer a doctor ( $p<0.05$ ). 65% said they would prefer receiving treatment in community settings (school, church, or pharmacy) instead of a clinic. A large majority of participants (93%) had not been offered any choices of service delivery locations or dispensing durations. 50% of participants desired more counselling; FGD participants expressed the need for frequent, intensive, and empathetic counselling during the early treatment period. Unlike the quantitative survey results, FGD participants expressed a preference for collecting medication from the clinic rather than at community pickup points to provide an opportunity to ask questions and receive counselling.

**Conclusions:** Even during the first six months after ART initiation, a substantial proportion of clients would prefer less frequent clinic visits and longer dispensing intervals, though they also value frequent and high-quality counselling. New care models for the early treatment period should reflect these preferences.

## OAF03 The law, human rights and access to medicines

### OAF0302

Challenging assumptions: rethinking the efficacy of voluntary licensing in medicine access, economic landscapes, and policy frameworks

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**Background:** Voluntary licensing is a prevalent practice, particularly in sectors where patents are numerous like pharmaceuticals. During recent years, Voluntary Licenses (VLs) emerged as a predominant solution to ensure access to treatment in resource limited settings to the detriment of other compulsory strategies. The research delves into the multifaceted impacts of VLs on access to medicines, the economic dynamics of the pharmaceutical market, and the broader discourse surrounding access to health.



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**Description:** Drawing insights from an extensive review of bibliographic resources, license agreements, and consultations with legal experts and stakeholders involved in HIV treatment and other medicine policies, this study conducted two analyses.

Firstly, an assessment of the provisions within license agreements was undertaken.

Secondly, the research documented the diverse effects and impacts that these agreements can exert on policies and stakeholders.

**Lessons learned:** The study uncovered a spectrum of potential effects stemming from voluntary licenses. It explores both positive impacts, such as enhanced access for specific populations in certain countries, and negative features within agreements related to target countries, transparency, knowledge transfer, active ingredient usage, pricing, grant-back of rights, and more.

The research examined how license deals influence the conduct and business practices of pharmaceutical companies, including partnerships between previously competitive entities, risk assessment for engaging in compulsory licensing, and potential repercussions for small generic manufacturers.

Moreover, it scrutinized their impact on the access to medicines movement, the utilization of TRIPS flexibilities, and their broader influence on access politics and policy debates.

The study concludes with a series of recommendations aimed at improving license agreements, enhancing their monitoring and regulation, and mitigating the inadvertent creation of new barriers to access to medicines.

**Conclusions/Next steps:** The findings contribute to a comprehensive understanding of industrial dynamics and relationships among various pharmaceutical entities on global markets. They highlight the indirect role that voluntary licensing plays in shaping policies and the access to medicines landscape. These insights are crucial for formulating informed policies to improve access to HIV medicines and guiding stakeholders in negotiations aligned with this overarching objective.

## OAF0303

Popularize the use of TRIPS flexibilities in MENA countries to improve access to ARVs

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**Background:** In the MENA region, the majority of countries encounter challenges in accessing high-quality antiretroviral drugs (ARVs). The latest generation treatments are often patented, and many countries in the region, classified as "developing countries," are increasingly excluded from voluntary licenses granted by pharmaceutical laboratories.

In response to this issue, a solution exists – using the TRIPS flexibilities provided by the WTO. However, these flexibilities are relatively unknown in the region, despite their potential to save millions of lives.

**Description:** The UNITAID Project, led by ITPC Global, is implemented across several countries worldwide. ITPC MENA, in its role as SSR, has been responsible for implementing the project in Morocco and the MENA region since 2018. The project aims to promote the use of flexibilities to enhance access to antiretroviral drugs (ARVs) as well as treatments for co-infections, such as TB, hepatitis, and even Covid-19.

**Lessons learned:** For over 6 years, ITPC MENA has undertaken extensive evidence collection efforts, conducting numerous studies to substantiate our advocacy and expose certain barriers hindering the use of these flexibilities. These barriers include international agreements and validation agreements signed by some countries in the region with the European Patent Office (EPO), demonstrating their impact on access to medicines. Subsequently, based on this evidence, extensive awareness campaigns were conducted targeting civil society, key populations, decision-makers, local generic manufacturers, and patent offices.

Finally, more tangible actions were taken, such as patent oppositions (e.g., TAF for HIV, Baricitinib for Covid-19). Following this approach (data collection, raising-awareness, and concrete actions), we successfully conducted a robust advocacy campaign grounded in evidence, convincing the majority of stakeholders who did not hesitate to express their support.

**Conclusions/Next steps:** Today, we can affirm that the program has borne fruit. For the first time, TRIPS flexibilities are being utilized in Morocco, thanks to successful advocacy and awareness efforts targeting decision-makers. The next step is to replicate the same journey for Morocco in other countries within the region, starting with Tunisia as early as this year.

## OAF0304

National Health insurance coverage of HIV benefits in 5 PEPFAR supported countries: a scoping review

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**Background:** Integration of health benefits such as HIV testing and Anti-Retroviral Therapy (ART) into National Health Insurance (NHI), previously accomplished by Thai-

land and Vietnam with support from the U.S. President's Emergency Plan for AIDS Relief (PEPFAR), may help sustain the HIV response and improve the health of People Living with HIV (PLHIV). African nations have also established NHI benefits.

**Methods:** To discuss key findings from this body of literature and identify HIV related benefits in NHI, we purposively selected four PEPFAR partner countries with NHI (Ghana, Kenya, Nigeria, Rwanda) and one PEPFAR partner country planning to initiate NHI (South Africa), then searched peer reviewed literature in PubMed using terms "health insurance AND HIV AND country name" for each country selected and included 31 of 292 articles that:

- Addressed publicly financed health insurance and HIV,
- In the selected countries, and;
- Published between January 1, 2019 and December 31, 2023.

We identified which HIV benefits (testing, ART) and other benefits addressing PLHIV co-morbidities were included in NHI benefits, through review of the peer reviewed literature and official NHI websites.

**Results:** HIV and non-HIV benefits relevant to PLHIV are included in NHI packages of Ghana, Kenya, and Nigeria and planned for inclusion in South Africa's. Whether Rwanda's package covers these benefits is unclear, as benefits are stated generally ("drugs and medical services").

Our scoping review found:

- 1) *Having NHI is associated with:* higher rates of health seeking behavior, HIV testing, and antenatal screening; increased treatment of OIs in PLHIV; improved obstetric health among PLHIV; chemotherapy for PLHIV with Kaposi's sarcoma; higher cervical cancer survival rates; comprehensive knowledge about HIV/AIDS; and awareness of PrEP, and;
- 2) *Not having NHI is associated with:* HIV acquisition; catastrophic health expenditures for PLHIV; cardiovascular risk factors among PLHIV; and being on ART.

**Conclusions:** Most countries reviewed include (and South Africa plans to include) multiple HIV related benefits in their NHI. Having NHI is associated with greater awareness, access to, and use of health care by PLHIV (except ART). Integration of HIV services and other related health benefits into NHI is ongoing.

## OAF0305

### Community advocacy to reduce IP barriers to access to affordable medicine: lessons learned from the Bedaquiline Patent Opposition in Indonesia

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**Background:** Trade Related Aspects on Intellectual Property Rights (TRIPS) poses a threat to public access to health commodities, especially in developing countries. TRIPS grants inventors monopoly rights, which results in high prices. However, there are cases when companies attempt to extend the protection period by registering new patents for minor modifications to existing products. To prevent such frivolous patents, the filing of Patent Opposition (PO) is needed.

**Description:** From November 2022 to November 2023, the Indonesia AIDS Coalition (IAC) filed a PO against Bedaquiline, part of the first-line treatment regimen for Drug-Resistant TB (DR-TB), dispersible tablet formulations. Overall, Indonesia ranked second in the world for TB cases, with a total of 969,000 cases, of which an estimated 28,000 are DR-TB. PLHIVs are especially vulnerable. In 2021, TB caused the deaths of 6,500 PLHIV, or 29.5% of the total TB-HIV cases.

The PO process lasted for ten rounds, from presenting written arguments to witness examinations. The arguments put forward are that CSOs are interested parties under the Patent Law and can file POs; the steps for creating dispersible tablets are already known; and patent applications for new uses of known substances without an increase in efficacy are not eligible for patents.

#### Lessons learned:

1. There are still differences in views between the judiciary panel and CSOs regarding CSOs' legal standing, which have roots in ambiguous sentences in the Patent Law. This highlights the importance of strengthening the arguments by referring to the organization's constitution and track record, as well as the need to advocate for more clarity;
2. Difficulty in finding local pharmaceutical expert witnesses. This highlights the importance of building rapport with academic circles and the role of international networks;
3. Difficulty finding law firms that possess a community perspective; and,
4. Difficulties in rallying support from TB groups due to the media ban during court proceedings.

**Conclusions/Next steps:** The Bedaquiline case marks the first time a CSO has conducted a PO in Indonesia. Not only for drugs but also for product patents. The lessons learned from this case will inform future PO efforts, specifically on strengthening the argument on CSOs' legal standing.



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## OAF11 The HIV response in the context of political instability and emergencies

### OAF1102

A scoping review of factors associated with HIV acquisition in the context of humanitarian crises

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**Background:** Humanitarian crises – natural or human-made events that can threaten communities' health, safety, security, and well-being – may affect the HIV epidemic dynamics and risk for HIV acquisition.

**Methods:** We conducted a scoping review of literature published in English between January 1990 and March 2022 to characterize the global evidence of modifiable and non-modifiable factors for HIV acquisition in the context of humanitarian crises. We systematically searched, screened, and synthesized literature from MEDLINE, Embase, Global Health (all accessed via Ovid), and Scopus, and sought out grey literature through websites of humanitarian agencies and relevant non-government organizations, the International AIDS Society's abstract databases, and Google Scholar.

We considered studies presenting empirical data on HIV acquisition in humanitarian crises-affected populations, including refugees, asylum seekers, and internally displaced persons.

**Results:** Forty-nine studies met the inclusion criteria. The majority of the studies were quantitative (n=43, 87.8%) and cross-sectional (n=30, 61.2%) in nature. Most of the research was a single-country study (n=43, 87.8%) and conducted in Sub-Saharan Africa (n=31, 63.3%).

We identified 5 non-modifiable factors associated with HIV acquisition (i.e., age, gender, location, place of birth or origin, and ethnicity) and 60 modifiable factors that we classified into five categories, namely, 18 policy and structural, 9 sociocultural, 11 health and mental health, 16 sexual practices, and 6 crisis-related traumatic event factors. Within these modifiable categories, factors that were most often investigated were education level, marital

status, sexually transmitted infection diagnosis, condom use, and experience of rape or sexual trauma, respectively. Informed by the findings, we applied the social ecological framework to map the multidimensional factors associated with HIV acquisition in humanitarian settings at the individual-, social and sexual networks-, community-, and public policy-levels.

**Conclusions:** The current review provides a comprehensive, global analysis of evidence on factors associated with HIV acquisition in humanitarian settings and implications for future programs and research. Future research should consider longitudinal and mixed methods designs to understand the potential causal linkages between non-modifiable and modifiable factors and HIV acquisition and explore the lived experiences of crises-affected populations. Such research will generate actionable evidence to inform ethical and culturally appropriate HIV prevention interventions in humanitarian settings.

### OAF1103

Assessing the disruption of HIV testing and treatment in Nepal during the COVID-19 pandemic: an interrupted time series analysis

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**Background:** Nepal's response to COVID-19, involving public gathering bans and nationwide lockdowns, significantly impacted routine health services. This study evaluates the effect of these measures on HIV testing and treatment services.

**Methods:** We conducted an interrupted time series analysis using national routine health facility data from all HIV testing and treatment centers in Nepal, spanning January 2019 to December 2021. The study period includes the pre-pandemic phase (January 2019 to March 2020) and the pandemic period marked by three COVID-19 waves (December 2020 to December 2021). We analyzed monthly data on HIV testing, positive diagnoses, and new Antiretroviral Therapy (ART) enrollments. The Poisson regression model was applied to compare rates pre- and post-COVID-19 outbreak, yielding relative risk (RR) estimates with 95% confidence intervals (CI).

**Results:** Throughout the study period, 675,939 individuals were tested for HIV, 7,926 diagnosed with HIV, and 7,189 commenced ART. The pandemic correlated with a 34% reduction in HIV testing (RR: 0.657; 95% CI: 0.651-0.663; P < 0.001), a 47% decrease in positive diagnoses (RR: 0.529; 95% CI: 0.482-0.579; P < 0.001), and a 36% decline in new ART enrollments (RR: 0.641; 95% CI: 0.585-0.705; P < 0.001).

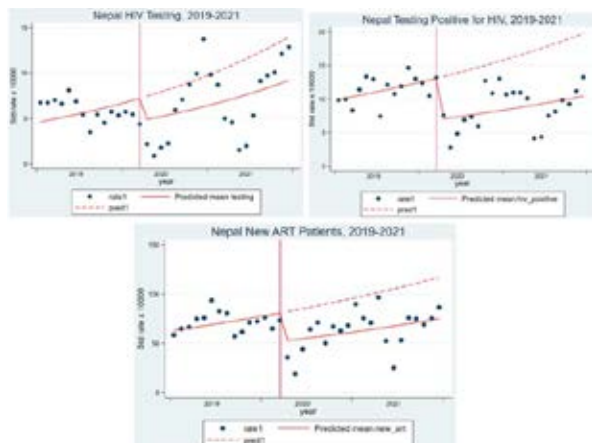


Figure 1. Interrupted time series with level of change model. Graph displays the pre and post COVID-19 trend of HIV testing, diagnosis, and new ART patients' monthly rates (continuous line), and the counterfactual scenario (dashed line).

**Conclusions:** The COVID-19 pandemic significantly disrupted HIV testing and treatment in Nepal. These findings highlight the urgent need for resilient health systems in low- and middle-income countries to sustain HIV control efforts amidst pandemic-related disruptions. Proactive measures are crucial to safeguard the gains made in HIV prevention and care against future health crises.

## OAF1104

Scaling up and drafting of risk mitigation strategies for key population programs in the context of complex and changing legal, social & political environment in Kenya

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**Background:** In a concerning trend of violence against Kenya's LGBTQ community, activists Joash Mosoti, Sheila Lumumba, and Edwin Chiloba were brutally murdered between May 2021 and January 2023. This surge in hatred coincided with a growing regional anti-right movement in East Africa fueling an anti-LGBTIQ discourse.

The situation reached a tipping point when the Supreme court of Kenya delivered a landmark verdict on March 24th 2023, supporting legal registration of an LGBTIQ group.

This further convoked protests, violence incitement toward LGBTIQ individuals, organizations and allies and introduction of anti-LGBTIQ legislations in parliament.

**Description:** In March 2023, LGBTIQ and sex workers' leaders in Kenya's coast region addressed challenges amid the anti-LGBTIQ campaign. Topics included rhetoric, legal

gaps, evictions, violence, and mental health. Proposed solutions: engaging sensitized religious leaders, mapping legal advisors, safe spaces, community sensitization, and a crisis response framework. Strategies for mental health, evictions, and asylum information were outlined. Funding from UHAI, Hivos, The Global Fund, USAID-Stawisha Pwani, embassies, and NGLHRC, KELIN, and Defenders Coalition aims to protect LGBTQ rights amid a hostile environment.

Issue	Challenges/Context	Intervention/Solutions	Resources
Anti-LGBTIQ Rhetoric, Threats, Campaigns	Homophobic rhetoric and threats from religious and community leaders online and offline, attacks on supportive religious leaders	Engage sensitized religious leaders, community monitoring, strategic faith engagement, and sensitization/training programs	PCMA, Kenya training manual, UHAI, Hivos, GF, Stawisha, Embassies
Legal Resources and Frameworks	Lack of legal resources for emergency and post-emergency responses, insufficient cultural competence in legal representation	Enhance capacity of legal frameworks, create accessible legal databases, negotiate group deals with law firms, and work with sensitized law enforcement	Kenya Ministry of Law, National Legal Council, UHAI, Hivos, GF, UHAI, Hivos, PCMA, Defenders Coalition
Evictions	Business closures, community space closures, and lack of shelter or support during evictions	Identify safe spaces, strengthen communities and stakeholders, provide legal support, establish emergency support fund, and draft eviction policy	NGLHRC, GALIC, Defenders Coalition, UHAI, GF
Violence	Physical, sexual, emotional, verbal abuse, challenges with forced displacement, transitions	Community sensitization, safety/security training, review training manuals, mental health support, and dialogue with stakeholders	Kenya law enforcement, provincial, county, religious leaders, Hivos, GF, UHAI, GF, Stawisha
Crisis Response Strategy	Lack of a strong, functional, and coordinated crisis response strategy	Develop a coordinated risk mitigation framework with a hotline, documentation/data tracking, internal communication plan, and training more paragon	Kenya police, Kenya Coast Guard, UHAI, Hivos, GF, UHAI, Hivos, PCMA, Defenders Coalition
Mental Health	Stigma, violence, and anti-LGBTIQ campaigns leading to mental health risks, lack of culturally equipped mental health providers	Identify mental health practitioners, sensitive and engage them, provide referrals, therapy/counseling for community workers, activists, and volunteers	Kenya police, Kenya Coast Guard, UHAI, Hivos, GF, UHAI, Hivos, PCMA, Defenders Coalition
Asylum	Lack of understanding of asylum processes, eligibility, and gatekeepers	Proper documentation, provide information on accepting countries, and conduct seminars/workshops	Kenya police, Kenya Coast Guard, UHAI, Hivos, GF, UHAI, Hivos, PCMA, Defenders Coalition
Data Tracking	Insufficient data tracking on cases and incidents	Proper documentation of data/incidents/cases, provide information on accepting countries, conduct community/volunteer trainings	Kenya police, Kenya Coast Guard, UHAI, Hivos, GF, UHAI, Hivos, PCMA, Defenders Coalition

**Lessons learned:** Despite security risks, essential services like ARV and PrEP distribution persisted amid anti-LGBTIQ campaigns, utilizing COVID-19 care models like tele-consultation and online support. Community-led programs monitored campaigns online/offline. Limited donor support hindered organizations without a regional plan. Engagements with police, boda boda riders, religious leaders, and health officials provided sensitization opportunities. Challenges included funding shortages for emergencies and structural interventions. Nevertheless, improved relationships with law enforcement, boda boda riders, and health committees emerged through collaborative efforts amid adversity.

**Conclusions/Next steps:** Community leaders highlight inadequate understanding of key populations, escalating violence, and protests against supporting key population programs.

To ensure HIV response sustainability, crucial factors include supporting and funding community-led organizations for engaging stakeholders, challenging anti-rights narratives, and advocating for inclusion.

## OAF1105

Providing legal information through the chatbot "Legal Bot 100% LIFE" during full-scale war and martial law on the territory of Ukraine

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**Background:** With the beginning of a full-scale war on the territory of Ukraine, providing services for the prevention, testing, and treatment of HIV became complicated. 2,464 cases of AIDS were during 01.01.2023 - 01.10.2023 according to statistics by the Public Health Center of the MOH of Ukraine. The temporary loss of administrative control



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over part of the territory makes it impossible to obtain complete information about the level of damage to the entire population right now.

Many people with HIV and tuberculosis and representatives of vulnerable groups (hereinafter the Clients) do not have access to services, medicines, and information due to hostilities.

**Methods:** A chatbot "Legal Bot 100% LIFE" (Chatbot) has been implemented by CO "100 PERCENT LIFE", so the Clients can get legal and information about the nearest legal offices and organizations providing social services. The Chatbot consists of 10 sections of answers now, including: HIV+, How to get HIV treatment; Pregnant women and women in labor; Social issues; Privacy; Replacement therapy; Tuberculosis; Discrimination; Viral hepatitis and Martial Law (the last two was supplemented in response to the challenges of war in 2022-2023).

The Legal Bot became a comfortable way to obtain legal advice and useful information which helped clients to reduce the negative impact of hostilities and martial law.

**Results:** Clients have gotten 1928 consultations through it in 2022-2023. The consultations provided by it concerning issues of violation of rights to access to medical care, services, military service, treatment of HIV, hepatitis, tuberculosis, etc. The Chatbot is popular because it shows its effectiveness during limited access to information and services of human rights defenders in wartime conditions for key groups.

**Conclusions:** The Chatbot provides sustainability of legal services and online information about the possibility of receiving other services for the Clients using modern digital technologies during military operations and martial law since the situation in Ukraine requires the introduction of new digital solutions to overcome new challenges.

duction of the proposed anti-LGBTQ+ bill by the Ghanaian parliament has further facilitated an environment where MSM constantly experience societal homophobia, fearmongering, and human-rights abuses which affect uptake and delivery of HIV services for MSM. Maintaining uninterrupted access to essential HIV services for MSM in the wake of the anti-LGBTQ+ debate requires using integrated and community-based strategies.

**Description:** Various community-based approaches to HIV service delivery for MSM were introduced during the wake of anti-LGBTQ+ debate in three districts.

Peer Educators halted conventional small and large group outreach and engaged peers with interpersonal one-on-one meetings to reduce public visibility. M-Friends/M-Watchers were deployed to facilitate access to needed legal and protective services; and address HIV-related stigma and human rights abuses directed at MSM.

Flexible community-based strategies and cross-cutting initiatives were implemented to preserve access to HIV services and promote safety of KP implementers and MSM during the period: (1) Social media platforms were used to engage peers for HTS and support PLHIVs through virtual case management; (2) HTS and treatment took place at homes and safe locations identified and agreed to by peers at their own convenience; (3) Condoms, lubricants and HIV self-test kits were made available at community-led DICs and outlets for easy access; (4) The program promoted multi-month dispensing of ART and PrEP to eliminate clinic visits.

**Lessons learned:** Introduction of community-based strategies reached out to more MSM and increased HIV+ yield across the 3 districts. During the period of anti-LGBTQ+ debate from September 2022-February 2023, 690 new MSM were reached and tested for HIV; 49 were diagnosed positive. After the introduction of community-based strategies, from March-August 2023, 834 new MSM were reached and tested; 141 were diagnosed positive.

**Conclusions/Next steps:** Community-based approaches to HIV service delivery proved to be effective within the period of the anti-LGBTQ+ debate. Nevertheless, the influence of the anti-LGBTQ+ bill on HIV&AIDS programming is enormous affecting MSM and organizations offering services to them. We therefore call for a high-level stakeholder advocacy on the effect of the anti-LGBTQ+ bill against sexual minorities in the fight against HIV&AIDS.

## OAF27 Criminalized populations addressing human rights barriers: Pathways to progress

### OAF2702

Promoting access to HIV services among men-who-have-sex-with-men under a harsh environment in the wake of the anti-LGBTQ+ debate in Ghana

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**Background:** Men-who-have-sex-with-men (MSM) in Ghana often face challenges accessing HIV services for reasons including stigma and discrimination. The intro-

## OAF2703

### Strategies for HIV service continuity and risk mitigation for outlawed key populations in a restrictive legal environment

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**Background:** On 26th May 2023, the President of Uganda assented to the Anti- Homosexual Act, which subsequently came into force on 30<sup>th</sup> May 2023. Within 2 months of the enactment of the law, The AIDS Support Organization (TASO) sub-recipient, Human Rights Awareness and Promotion Forum (HRAPF) handled 141 cases involving LGBTIQ persons. 64.5% of these cases involved violence that targeted LGBTIQ person, 28 cases of evictions, and 15 cases of arrests (HRAPF report 23/June/2023). TASO is the second principle recipient of the Global Fund and we share strategies used for risk mitigation to ensure continuity of HIV services to the affected Key Populations (KPs).

**Description:** TASO and its Sub-Recipients (SR) partnered with Ministry of Health (MoH) and Uganda AIDS Commission to implement an adaptation plan to enable continuity of HIV services in the midst of the restrictive legal environment. This involved sensitization of the key stakeholders at 3 levels (National, sub-national and facility levels) on the impact of AHA on HIV services. At the National level, sensitization targeted parliament's HIV/AIDS committee. The sub national level targeted District and City leaders while facility level targeted health workers; KP peers, and local leaders. To assure health workers' safety, the Ministry of Health was engaged to issue a circular to guide health workers. Joint meetings to strengthen linkage between HIV service providers and legal support agencies were conducted. Safety and security training workshops for Civil Society Organizations and health workers were held. Standard Operating Procedures (SOPs) for client follow up and data collection were reviewed.

**Lessons learned:** HRAPF report shows 21% reduction of cases handled in October-December quarter compared to April-June quarter. The Director of Public Prosecutions issued a circular to guide all prosecutors on management of cases with charges preferred under the AHA. Strong linkage between HIV service providers and legal service providers greatly reduces the risk of arrests. The next steps will involve rolling out safe integrated key population information system managed by the key population consortium.

**Conclusions/Next steps:** It is possible to continue providing HIV services even in restrictive legal environment by mitigating security risks by engaging key stakeholders at all levels.

## OAF2704

### Ensuring the right to breastfeeding for women and pregnant people with undetectable HIV viral load in 13 Latin American countries

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**Background:** In 2010, the Pan American Health Organization, (PAHO) committed to eliminating mother-to-child transmission (EMTCT) of HIV and syphilis, establishing targets for 2015. This commitment persisted through the 2017 ETMI Plus initiative. Despite these efforts, breastfeeding for women with HIV remains forbidden and criminalized, needing guidance for decision-makers on reproductive rights, specifically regarding breastfeeding for those with undetectable viral loads.

**Methods:** Data was collected in 2023 across 13 Latin American countries eligible to the Global Fund grants including Bolivia, Colombia, Costa Rica, Cuba, Ecuador, El Salvador, Honduras, Guatemala, Nicaragua, Paraguay, Peru, Dominican Republic, and Venezuela, to understand the integration of national public policies on breastfeeding and HIV. Using stakeholder mapping, semi-structured interviews with National AIDS Programs and documentary reviews; the study identified actors, processes, and limitations within gender equality, reproductive rights, and HIV responses.

**Results:** Diverse breastfeeding approaches for women with undetectable viral loads across the 13 countries, emphasizing risks and promoting formula substitution. Despite regional ETMI Plus adherence, no documented breastfeeding cases exist, posing policy challenges. Issues include sustaining pregnancy attention, HIV test result delays, and control loss for HIV-positive pregnant adolescents due to stigma. Economic policies in Venezuela affecting formula underscore PAHO collaboration needs for guideline updates.

Recommendations stress enhancing care, addressing stigma, designing guidelines for indigenous women, and ensuring comprehensive care, with calls for UN and Global Fund modifications to promote inclusivity.

Regarding HIV criminalization laws, seven countries criminalize transmission, non-disclosure, or exposure to HIV, while four do not, relying on general criminal law. Cuba is an exception with no HIV criminal persecution, and one country lacks available data.

**Conclusions:** Ensuring reproductive rights, especially regarding breastfeeding, for women and pregnant individuals with HIV is imperative. The decision to substitute breastfeeding with formula milk, the only 0% HIV transmission risk option, should be stigma-free. Urgent actions include case registration, advocacy for expanded feeding choices, and updating guidelines for those with



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undetectable viral loads. Prioritizing economic, technical, and political support, and placing the needs of women with HIV at the center of the response, is essential in Latin America.

## OAF2705

Advocacy for drug policy reforms at high political level in the EECA region

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<sup>1</sup>Eastern and Central European and Central Asian Commission on Drug Policy, Mariestad, Sweden

**Background:** An enabling environment is critical for effective HIV response. Protective laws for people living with HIV and key populations contribute to better HIV outcomes, while criminalization of these populations and discriminatory laws undermine success. In the EECA region, drug legislation is primarily repressive and punitive, imposing severe criminal sanctions on people who use drugs. Massive criminalization prevent KPs from accessing health and social services.

**Description:** The Central and Eastern European and Central Asian Commission on Drug Policy (ECEACD) was initiated by Alexander Kwasniewski, former President of Poland and was created in 2021 gathering nine opinion leaders from the region in order to inspire better drug policy based on scientific evidence and human rights. The Commissioners are regional leaders from different professional arenas: former Heads of State, politicians, former members of Parliaments, diplomats, scientists, and philanthropists from the region. The core role of the Commission is advocacy for better drug policy at the high political level.

During last three years, Commissioners have conducted country missions to Kyrgyzstan, Moldova, Lithuania, Georgia. During these visits Commissioners have meetings with highest political leaders: Presidents of the states, Prime-Ministers, Ministers of Health, Ministers of Internal Affairs, Members of the Parliaments, other top level authorities. It helped to get political commitment for drug policy reforms.

Currently EU accession perspectives provide a great window of opportunities for the candidate countries: Moldova, Ukraine and Georgia. ECEACD provides expertise and support to governments to reform drug policies in compliance with EU requirements and standards.

**Lessons learned:** High political level advocacy resulted with political support to progressive reforms:

1. Seimas (Parliament of Lithuania) Committee on Legal Affairs approved amendments to the Administrative and Criminal Code that propose to decriminalize possession of small amounts of cannabis without intent to distribute it;
2. Committee on law enforcement of the Parliament of Kyrgyz Republic approved draft law that eliminate compulsory treatment for people who use drugs.

Top politicians from other countries committed to make drug policy reform in their countries.

**Conclusions/Next steps:** The ECEACD aims to inspire an open and honest debate, and promote evidence-based drug policy approaches across the region.

## OAF31 Transformative leadership and approaches for people living with HIV and criminalized populations

### OAF3102

Community activism to achieve access to housing, nutrition, and transportation assistance for all low-income people living with HIV

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**Background:** Evidence shows that safe, stable housing is essential to support effective antiretroviral treatment (ART) that sustains optimal health for people with HIV and stops ongoing transmission. In New York City (NYC), unstable housing has been found to be the single strongest predictor of poor HIV health outcomes and health disparities. Yet, few jurisdictions invest in social supports as HIV healthcare.

As the result of persistent community activism over a 30-year period, in 2016 NYC became the first jurisdiction to provide housing, nutrition, and transportation assistance for every low-income person with HIV.

**Description:** In the mid-1980's New York State (NYS) put in place a government-funded rental assistance program for people with HIV-related illness, and New York City (NYC) supplemented this support with an HIV-specific nutrition and transportation enhancement to existing cash transfer programs for low-income New Yorkers. Initially viewed as palliative care, the supports were limited to people with an AIDS diagnosis.

With the advent of effective ART these social protection programs were recognized as critical enablers of HIV treatment.

Extensive community advocacy over a 30-year period beginning in 1988, including litigation, legislative lobbying, and civil disobedience, gradually expanded the reach of the NYS/NYC-funded social protection programs, and in 2016 these social supports were expanded to all low-income NYC residents with HIV experiencing homelessness and housing instability.

**Lessons learned:** At December 31, 2023, 27,472 New Yorkers with HIV (33% of all diagnosed) received public housing assistance. Among people with HIV in NYC in medical care, 88% were virally suppressed at the end of 2022, and

79% had sustained viral suppression from 2018 through 2022. Evidence-based community activism is key to addressing HIV health inequities and ending HIV epidemics.

**Conclusions/Next steps:** As the first jurisdiction to provide access to meaningful housing supports for all low-income persons with HIV, NYC has demonstrated the feasibility and effectiveness of addressing key social determinants of HIV health outcomes, and the vital role of community activism to achieve HIV health equity.

## OAF3103

### Navigating opposition: understanding and responding to coordinated resistance against Comprehensive Sexuality Education (CSE) and Sexual and Reproductive Health Rights (SRHR)

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**Background:** Resistance against Comprehensive Sexuality Education (CSE) and Sexual and Reproductive Health Rights (SRHR) is a longstanding challenge, particularly fueled by conservative opposition intersecting with youth, sexuality, gender, and power dynamics. Recently, this opposition has gained traction, both within countries and at multilateral UN political levels. Despite global consensus on the positive impact of CSE, coordinated efforts aim to instigate doubt and distrust.

This research explores the politicization of CSE, identifying patterns and trends in opposition, with a focus on counter-movements describing themselves as 'pro-family' but labeled 'anti-gender' by concerned activists.

**Methods:** The research was conducted remotely in 2021-2022, engaging professionals working on CSE across the world. Semi-structured interviews with key informants provided insights into anti-CSE and anti-SRHR advocacy. Participants from diverse stakeholder groups were interviewed, offering a comprehensive view.

The study covered regions including Eastern and Southern Africa, Asia Pacific, Eastern Europe and Central Asia, Latin America and the Caribbean, Western and Central Africa, and the Arab States/Middle East and North Africa.

**Results:** The study identified 'activated opposition' against CSE. Eastern and Southern Africa provides an important case study for observing how a 'pro-family' organization from the global north has mobilized a highly coordinated anti-CSE regional advocacy campaign in the global south. West and Central Africa witnessed the politicization of CSE, with political leaders leveraging it for their agendas.

The Arab States exhibited institutionalized opposition rooted in strong religious views.

In Asia Pacific, governments opposed CSE, fearing it contradicted traditional family values. In Latin America, opposition stems from religious and cultural perspectives.

**Conclusions:** The research highlights the urgent need for additional evidence to support CSE, emphasizing the efficacy of its outcomes. Strategies include monitoring and responding to opposition, mapping allies, engaging media positively, mobilizing civil society, and understanding challenges in language and framing. Coordinated efforts between UN agencies, strategic partners, civil society, and governments are crucial. The findings emphasize the necessity for a proactive and comprehensive approach to address the evolving landscape of opposition against CSE and SRHR, ensuring the protection and advancement of sexual and reproductive rights globally.

## OAF3104

### A successful establishment of paralegals as human rights defenders towards ending HIV in Thailand

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**Background:** The lack of legal and human rights knowledge among populations with higher risk of being discriminated, including people living with/affected by HIV, are common in Thailand. Legal and rights services provided by the government is limited, often complicated, and taking time. We aimed to:

- Establish a cadre of paralegals to actively promote, prevent and protect human rights and
- Document the burden of human rights violation and discriminatory actions.

**Description:** The Foundation for AIDS Rights (FAR) focused on paralegals establishment due to clear limitations of dedicated legal professionals and government mechanisms to promote and protect human rights. FAR together with communities with lived experiences, legal and human right experts, developed the "Paralegals as Human Rights Defenders" curriculum.

Key contents included

- Concept of respect in human dignity and diversity,
- Knowledge of human rights basics and justice system in Thailand, and;
- Skills on fact findings and case analysis.

Civil Society Organizations (CSOs) were invited to identify members with potentials to become a paralegal -trusted by communities, ability to access communities, and enthusiasm to empower their peers on human rights aspect.



AIDS 2024



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## Lessons learned:

- *A cadre of paralegals can be successfully established.* During January 2021–May 2023, 64 paralegals were trained. FAR provided technical support to and accepted case referral from these paralegals.
- *Documentation of human rights violations and discriminatory incidents can be made through the country's Crisis Response System (CRS).* For HIV-related incidents, 192 reports—mainly compulsory HIV testing in workplace, involuntary HIV status disclosure, denial of health and social services, were filed through trained paralegals.
- *Data were used for policy advocacy and public communications.* Common incidents were used by Thailand's National AIDS Subcommittee on AIDS Rights Protection and Promotion for policy change and public communication design.

**Conclusions/Next steps:** Deprofessionalization of legal and human rights services is crucial to empower people to know their rights, voice their discriminatory experiences, and advocate for policy/law reforms. Paralegals can act as human right service providers to be integrated into community-led health services in Thailand. Curriculum will be expanded and tailored for paralegals serving migrants and people who use drugs.

## OAF3105

Bridging the divide and channelling support for parliamentarians to influence the repealing of "Bad" laws Africa, a case of the decriminalisation of HIV transmission in Zimbabwe 2022

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**Background:** The criminalization of wilful transmission of HIV has been shown to perpetuate gender inequalities, increase stigma among people living with HIV, and not effectively decrease HIV infections. Zimbabwe, with one of the highest HIV prevalence rates globally, has been significantly affected by the epidemic. The objective was to implement the recommendations of an HIV legal environment assessment, specifically repealing section 79 of the Zimbabwe Constitution, which criminalizes wilful transmission of HIV, and advocating for the release of prisoners incarcerated under the same law.

**Methods:** Partnerships were formed with parliament, the National AIDS Council, civil society organizations, and development agencies such as UNDP and UNAIDS. Strategies included raising awareness through campaigns, conducting research for evidence-based policies, organizing dialogues, capacity building of parliamentary champions for sexual reproductive health rights, and holding public hearings in various provinces. Civil society organizations contributed their expertise and advocacy skills, while affected communities shared their lived experiences.

**Results:** The Minister of Justice successfully embedded the decriminalization of section 79 within a controversial Marriage Bill and presented it to Parliament for debate. Public hearings showed that 71% of attendees supported the motion to repeal the law. Legislators proposed advising the president to consider releasing all prisoners incarcerated under the same law.

**Conclusions:** Through policy advocacy and sustainable development initiatives, parliamentarians, together with development agencies, can collaborate to address HIV-related issues and drive progress towards inclusive laws that address HIV. Strong partnerships between civil society organizations, the executive, and legislators were key to achieving this change. This strategy can be replicated in efforts to change "bad" laws. Support for Zimbabwean parliamentarians in advocating for the release of prisoners incarcerated based on this repealed law is necessary.

## OAF41 Removing legal, policy and human rights barriers for children and young people

## OAF4102

Brazilian network of young people living with HIV/AIDS: we are the answer - what adolescents and young people living with HIV/AIDS think about the access to health services in Brazil

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**Background:** In Brazil, out of the 43,403 reported HIV cases in 2022, nearly half (41%) affected individuals between 15 and 29 years old, showing the need to prioritize actions to reach this age group. The Brazilian Network of Young People Living with HIV/AIDS (RNAJVHA) closely supported the mobilization and elaboration of the "We Are the Answer" study aiming to understand the obstacles to access healthcare through the experiences of young people living with HIV (YPLHIV) and develop strategies to enhance healthcare services aimed at this population.

**Methods:** The study, a collaboration between UNICEF, UNAIDS, civil society organizations, and the private sector, employed a unique approach by integrating both quantitative and qualitative methods for data collection and analysis. A representative sample of YPLHIV from 18 to 29



years old (n=710) participated in online interviews and the qualitative phase included interviews with RNAJVHA leaders (n=7) and round table discussions (n=70) in seven Brazilian capitals. These activities took place between March and April 2023, in which the participants were mobilized through websites and a peer-to-peer mobilization strategy. Round table discussions were facilitated by trained YPLHIV mobilizers.

**Results:** A fifth of respondents have experienced situations such as disrespect for privacy, discomfort during health care or feelings of guilt or shame for being a person with HIV/AIDS while using the Brazilian health system. Findings from the qualitative research align seamlessly with the quantitative findings, emphasizing stigma and discrimination among healthcare professionals as important barriers to treatment adherence. YPLHIV brought several recommendations for the improvement of services, such as: broaden access to information; provision psychological support; expanded and humanized health care; create and expand public campaigns to deconstruct the stigma of HIV/AIDS; include and expand the participation of YPLHIV in public policy decisions; and develop a protocol for communicating U=U.

**Conclusions:** The principle of GIPA and the policy of putting people at the centre of the response are some of the alternatives for strengthening public policies on HIV/AIDS. The community mobilization of YPLHIV for the preparation of this study strengthened the local and national leadership of RNAJVHA, which provided subsidies for the construction of public policies on HIV/AIDS in Brazil.

## OAF4103

**HIV is not gender neutral: how can we track whether the International AIDS Conference (IAC) represents the issues women and trans people living with HIV care about?**

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<sup>1</sup>Global Network of Young People living with HIV (Y+), Machakos, Kenya, <sup>2</sup>The Transgender Law Center, Oakland, United States, <sup>3</sup>Making Waves, Harare, United Kingdom, <sup>4</sup>International Community of Women living with HIV (ICW), Buenos Aires, Argentina, <sup>5</sup>Athena Network, Seattle, United States, <sup>6</sup>Positively UK, London, United Kingdom, <sup>7</sup>The Sophia Forum, London, United Kingdom, <sup>8</sup>Hillingdon AIDS Response Trust, Hillingdon, United Kingdom, <sup>9</sup>4M Mentor Mothers Network, London, United Kingdom, <sup>10</sup>University of Oxford, Oxford, United Kingdom, <sup>11</sup>European AIDS Treatment Group, Edinburgh, United Kingdom, <sup>12</sup>Positive Young Women Voices, Dandora, Kenya, <sup>13</sup>The Jamaican Community of Women living with HIV (JCW+), Kingston, Jamaica, <sup>14</sup>ICW Asia Pacific, Bangkok, Thailand, <sup>15</sup>Making Waves, Gijon, Spain, <sup>16</sup>Salamander Trust, London, United Kingdom, <sup>17</sup>Making Waves, London, United Kingdom

**Background:** IAC sets the global HIV agenda - so it is important to monitor whether priority issues of women and trans people living with HIV are covered at the IAC. We also track the use of stigmatising language, to support the work of community networks and uphold the *People First Charter*.

### Methods:

- Key terms were selected reflecting: gendered research on health and HIV treatment, meaningful engagement, psychosocial support, mental health, respectful and comprehensive services including SRH services, freedom from violence and discrimination, protective laws, freedom from criminalisation, and economic justice.
- We searched the AIDS2022 Abstract Book for key terms and compared numbers to previous abstract books from 2016.
- We searched the online portal for abstracts using the same key terms, and IAS+.
- Oral abstracts were read for gendered intention, disaggregation and reflections relevant to women, girls and trans people living with HIV.

### Results:

- Coverage of issues:
- There are very few mentions of IPV, GBV, VAWG, SRHR, GIPA, MIWA and (gender) transformative.
  - 85% of oral abstracts were either overwhelmingly gender neutral, or focused on prevention or men.



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- 18 (15%) oral abstracts had some intention to illuminate issues for women, girls and trans people living with HIV (through research aims or disaggregation) and gendered reflections.

Stigmatising language:

- The use of 'infect\*' remains extremely high. Use of 'infected' has reduced. Use of the acronym WLHIV has increased from 11 mentions in 2016 to 541 in 2022.

Challenges with tracking:

- The abstract book search does not give the number of abstracts using each term.
- The online portal search does not allow for multiple-word terms, and does not return more than 200 results.

- Abstract submission keywords are inadequate.

- Manual oral abstract search was time consuming, and lacked precision.

**Conclusions:**

- Tracking coverage of issues is problematic, undermining accountability of IAC to women, girls and trans people living with HIV. This should be addressed.
- Our issues are still inadequately covered. Research with clear gendered intentions, results and reflections is rare.
- Stigmatising language is widely used.
- The alert on abstract submissions for stigmatising language is a welcome response to our longstanding requests.
- IAS should continue to encourage and prioritise gendered research.

The database evaluates whether adolescents ( $\geq 12$  years) can access HIV testing and treatment services without parental consent, in alignment with the WHO recommended policy.

**Results:** In our preliminary analysis, we found relevant guidelines for 109 countries. Among them, only 25% (28/109) countries have adopted optimal AOA policies.

Testing policies: 18% (16/89) countries do not have specific AOA guidelines, 40% (35/89) require parental consent for individuals  $\leq 18$  years, 14% (13/89) countries require parental consent for those below 16 years and 14 years, respectively. 26 countries have created policy exceptions for HIV testing, including, demonstrated maturity, pregnancy, emancipated minors and sexual activity.

Treatment policies: 29.5% (21/71) countries lack AOA guidelines, 39.4% (28/71) countries have policies that require parental consent for adolescents  $\leq 18$  years, 21.1% (15/71) countries require consent for adolescents  $\leq 16$  years, and 7% (5/71) countries require consent for adolescents  $\leq 14$  years.

In sub-Saharan Africa, the region with the highest number of children and adolescents living with HIV (CALHIV), only 11 countries have adopted WHO AOA recommendations. Among 10 countries with the largest CALHIV population, only Mozambique and Lesotho have not adopted optimal AOA policies.

**Conclusions:** Many countries are out of step with WHO recommendations on AOA to HIV testing and treatment. Policy reform is needed in these countries to facilitate adolescent-centric HIV care and enable adolescents to make informed decisions about their health.

## OAF4104

Facilitating adolescent access to HIV interventions through age of access (AOA) policy reform

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**Background:** The science informing the fight against HIV/AIDS is the most advanced it has ever been, and yet adolescent populations continue to remain particularly affected. An enabling national policy environment should include alignment with WHO guidelines on the age of access (AOA) to HIV testing and treatment. WHO recommends eliminating parental consent requirements to access HIV services for adolescents aged 12 years and above. Here, we examine national AOA policies by evaluating if adolescents can access HIV testing and treatment without parental consent.

**Methods:** The HIV Policy Lab, a collaboration between Georgetown University, UNAIDS, and the Global Network of People Living with HIV (GNP+) tracks the adoption status of 33 globally recommended laws and policies for 194 countries.

## OAF4105

Supporting caregivers to care for children living with HIV in South Africa

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<sup>1</sup>Zoe-Life, Training, Westville, South Africa, <sup>2</sup>Zoe-Life, Training, Durban, South Africa

**Background:** In 2016, 320,000 children aged 0-14 years were living with HIV in South Africa, the majority of whom acquired HIV through vertical transmission. However, 45% of these children were not enrolled in ART as a high number of children are lost to follow up after 12 months of age. HIV disclosure in South Africa is hindered by significant stigma and discrimination associated with HIV, leading to fear of rejection, isolation, and bullying for children and their families. Children and their caregivers often lack accurate knowledge about HIV, making effective disclosure challenging.

**Description:** KidzAlive@Home, implemented by Zoë-Life SA with support from Aidsfonds (2019-2022), enhances HIV identification, testing, treatment, and care retention for children in South Africa. Operating in eThekweni and uMgungundlovu districts, it collaborates with trusted com-

munity structures like faith based and community based organizations. The program offers caregivers resources like the KidzAdherence curriculum and Talk Tool, simplifying treatment literacy.

Healthcare workers utilize these tools for age-appropriate HIV education, disclosure support, and counseling. Child-friendly spaces within health facilities facilitate learning in a comfortable environment, contributing to improved care for children living with HIV.

**Lessons learned:** Knowledge must be translated into action. caregivers need support to translate knowledge into action which requires tools that are child -friendly and easy to understand. creating comfort in child-friendly spaces is critical to engaging caregivers and children themselves in their own care. child-friendly spaces and household visit create trust and comfort so that health-care workers can alleviate fears , support disclosure and help to translate knowledge. Kidzadherence clubs help children to understand their diagnosis and reduce fear through connection with other children living with HIV increasing agency in their own care.

**Conclusions/Next steps:** Zoë-Life's success with the KidzAlive@Home project has led to the government's endorsement of the approach as an intervention to improve children's health outcomes. Zoë-Life wants to continue to build capacity of community-based organisations within and outside of South Africa through quality assurance and quality improvement, strengthening the structures that support families so that care can be accessible and effective for the long term.



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## Poster discussion sessions

### Track A: Basic and translational science

#### HIV virology

#### TUPEA001

Probing the HIV-1 Gag-Pol self-association domains by using a Gag-Pol virus-like particle assembly system

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**Background:** Activation of HIV-1 protease (PR) is triggered by Gag-Pol dimerization or multimerization. HIV-1 PR encoded by the pol gene, which is translated as a Gag-Pol fusion protein. Gag-Pol is unable to form virus-like particles (VLPs) because of lacking the p6gag budding domain. We previously found amino acid substitution mutations at reverse transcriptase (RT) led to p66/51RT heterodimer instability associated with impaired PR activation. In addition, *efavirenz* (EFV), an RT dimerization enhancer, could enhance PR activation. These data suggest an involvement of RT in PR activation. However, it remains to be corroborated that RT contributes to PR activation through promoting Gag-Pol dimerization.

Since we found p6gag-containing Gag-Pol could assemble and release from cells as VLPs, we assumed RT mutations disrupting Gag-Pol/Gag-Pol interactions would block Gagp6-Pol VLP assembly.

**Methods:** To test whether RT/RT interactions could affect Gag-Pol dimerization, the RT amino acid substitution mutations known to impair PR activation were cloned into the Gagp6-Pol. To map the domains involved in Gag-Pol/Gag-Pol interactions, the major Gag assembly domain combined with or without deletions of p6\*, PR or/and integrase (IN) were deleted from Gagp6-Pol. The resultant constructs were transiently expressed in HEK293T cells. Culture supernatants were collected, pelleted and subjected to western immunoblot analysis.

**Results:** Besides Gagp6-Pol, a p6gag-containing Pol expression vector designated p6-Pol was still capable of producing VLPs. Amino acid substitution mutations, which impaired RT stability and PR activation, could reduce Gagp6-Pol and p6-Pol VLP yields. Further, these RT mutations could also attenuate the EFV enhancement of Gagp6-Pol VLP assembly. Sucrose density gradient fractionation analyses suggest p6gag-containing RT molecules could form VLPs with a density slightly lower than that of wild-type particles.

**Conclusions:** Our results support the proposal that impaired RT stability or RT/RT interactions could disrupt Gag-Pol/Gag-Pol interaction, leading to insufficient PR

activation. This Gagp6-Pol VLP assembly system provides a convenient assay to probe the domains involved in Gag-Pol/Gag-Pol interactions.

#### TUPEA002

HIV-1 pre-integrative latency: dynamics and intracellular localization of stabilized unintegrated linear DNAs

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**Background:** HIV pre-integrative latency is defined by the persistence of unintegrated linear DNA (ULD) delayed for integration. We have recently shown that this persistence depends on the cell type and its activation state. These ULDs can persist for up to 3 months in resting CD4 T-cells in vitro (Roux *et al*, 2023).

In the context of viral eradication strategies, this persistence could be an obstacle to the development of new therapies for the cure of either diagnosed or exposed individuals. With this in mind, we aim to determine the cellular and viral environment required for ULD stability.

**Methods:** The localisation of ULDs in activated T cells (MT4-R5), in macrophage-derived monocytes (MDM) and in resting CD4 T-cells, was determined by fluorescence microscopy using a virus containing a fluorescent integrase and the DNAscope technology. In parallel, cell fractionation was performed and ULDs were quantified by DUSQ (DNA Ultra-Sensitive quantification) using next generation sequencing.

**Results:** We observed that in early stages of infection, ULDs were located in the perinuclear zone in MDMs. On the other hand, at times longer than 3 days post-infection, ULDs remained exclusively located in the nuclear fraction. Interestingly, the co-localisation of integrase with ULDs remained stable over time, even after more than one week of infection.

**Conclusions:** In the cells studied, the pre-integrative latency seems to be located in the nucleus and we were able to observe the stability of integrase over time, co-localising with ULDs, suggesting that this integrase stability is at the origin of their future integration capacity and therefore of the pre-integrative latency phenomenon.

We now want to determine the protein environment of these stabilised ULDs and their ability to maintain their integrity over time. We think that the exploration of stabilized ULDs environment could lead to the identification of cellular and/or viral factors that could be targeted for cure.



Oral abstracts



Poster exhibition



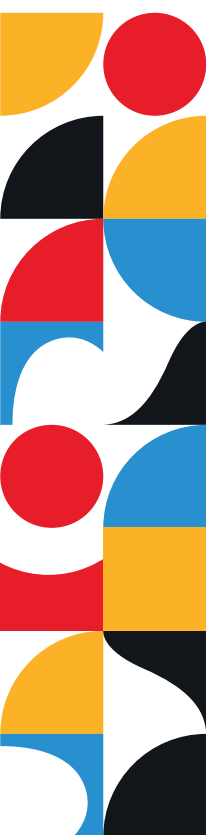
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## TUPEA003

### In vivo detection of HIV-1 antisense transcripts in persons living with HIV before and during ART

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**Background:** Natural antisense transcripts (NATs) are expressed by viruses, prokaryotes, and eukaryotes and primarily function in regulating sense gene expression through multiple mechanisms. *In vitro* studies have shown that HIV-1 expresses antisense transcripts (AST) from a Tat-independent negative sense promoter in the 3' LTR. In cell line studies, AST was demonstrated to promote HIV latency through epigenetic modification of histones in the 5' LTR by the Polycomb Repressor Complex 2 (PRC2). Here, we asked whether HIV AST is expressed in peripheral blood mononuclear cells (PBMCs) that were donated from ART-naïve and ART-treated persons living with HIV (PLWH).

**Methods:** PBMCs were donated by 11 PLWH with varying levels of plasma viremia. PLWH were either ART-naïve or undergoing treatment interruption with HIV-RNA ranging from <50–200,000 copies/ml of plasma (n=8). PLWH on ART had <50 copies of HIV-RNA/ml of plasma for a median of 5.4-years (n=3). AST levels were measured by cell-associated antisense RNA single-genome sequencing (SGS) of a 1.7kb fragment in the opposite orientation of the *env* coding region.

An endpoint digital PCR approach with specific HIV primers for each individual was also used to quantify AST copies in the samples.

**Results:** We detected AST in 10/11 PLWH with a median of 11 copies/100 PBMCs with HIV-DNA. Antisense SGS revealed that about 5% of the PBMCs with HIV-DNA donated from PLWH on ART contained AST at any given time. Genetic diversity of AST was consistent with expression from a diverse population of proviruses. Proviral clonal populations were identified with matched AST from multiple aliquots of single PBMC with HIV-DNA. Digital PCR showed similar levels of AST expression in PLWH who were not on ART and had varying levels of HIV-RNA.

**Conclusions:** The low-level expression of HIV antisense RNA that was detected regardless of treatment status is consistent with defined NATs in other systems. The *in vivo* expression of HIV AST irrespective of ART status warrants further investigation into its potential role as an RNA ca-

pable of regulating HIV-1 sense gene expression and inducing HIV latency. Understanding the role of HIV AST *in vivo* may inform future strategies for controlling HIV replication without ART.

## TUPEA004

### The R2 switch: anti-retroviral therapy skews the latent reservoir towards latency-promoting viral strains in HIV-1C infection

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**Background:** HIV-1C generates a plethora of novel promoter variant viral strains containing multiple copies of important Transcription Factor Binding Sites (TFBS). In a multi-centric longitudinal observational study, we previously reported the presence of nine different promoter variants circulating in India.

The present study examined how the TFBS profile variation of the LTR, especially the duplication of the RBEIII-binding motif, influences the latent reservoir characteristics in the natural infection of HIV-1C.

**Methods:** CD4+ cells were isolated from 25 patients before and after ART and activated. Genomic DNA and cell-associated RNA were amplified and sequenced using NGS, and the proportions of different LTR variant strains were quantified. Latency establishment and reversal kinetics were performed using panels of sub-genomic reporter viral strains. The TFBS occupancy was validated with the CUT&RUN assay. Integration Site Loop Amplification was performed to identify integration sites. The latent reservoir was quantified using U-TILDA, and ChIP-seq data was analysed from the ROADMAP database.

**Results:** We observed that the latent reservoirs in subjects were progressively enriched with variant viral strains containing two copies of the RBEIII binding motif. This phenomenon, which we call 'R2 switch', was absent in the early HIV infection, appeared spontaneously with time, and, importantly, was enhanced by ART administration. We show further that in a co-infection, the R2 viral strains demonstrated significant resistance to reactivation compared to the canonical virus when the enriched CD4



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cells were subjected to diverse activation conditions. We constructed several reporter-virus-and-cell models using T cell lines and primary CD4 cells to substantiate this finding. We are presently characterizing the Transcription Factor Binding profile of the R2 viruses using the CUT&RUN assay and determining the influence of the epigenetic landscape and the integration site on the reactivation properties of the R2 viral strains.

**Conclusions:** We show, for the first time, that ART selects for LTR variant viral strains that resist latency reversal. We propose that by selectively eliminating the transcriptionally active viral strains in the reservoir, ART skews the reservoir toward the R2 switch. This phenomenon appears to be HIV-1C-specific. Our work is relevant to ART initiation, treatment duration, post-treatment control, and cure research.

## HIV pathogenesis

### TUPEA005

Pre-treatment immune senescence is associated with immune reconstitution among PLWHIV after receiving anti-retroviral therapy

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**Background:** The potential for immune reconstitution failure (IR) looms over people living with HIV (PLWHIV) undergoing antiretroviral therapy (ART). This retrospective cohort study aimed to investigate risk factors impacting IR and to analyze the potential role of immune senescence in IR post ART.

**Methods:** PLWHIV were comprehensively assessed for demographic, clinical, and immunological data undergoing 48 weeks of ART. Univariate and multivariate logistic analyses identified factors influencing IR. Flow cytometry evaluated lymphocyte phenotype and immunological functionality.

**Results:** Enrollment comprised 510 PLWHIV, with 210 at acquired immunodeficiency syndrome (AIDS) stage and the rest at non-AIDS stage during diagnosis. Subsequent subdivision into IR and non-IR (NIR) groups at week 48 revealed a younger age in the IR group, both in AIDS ( $P=0.012$ ) and non-AIDS stage ( $P=0.029$ ) participants. Multivariate analysis established age as an independent risk factor for IR in both groups. Post ART, PLWHIV in the NIR group exhibited a more pronounced immuno-senescence phenotype,

characterized by a decline in naïve T cells and an increase in memory T cells. Nevertheless, ART failed to fully restore lymphocyte function. Comparable results were observed when exploring the immune function of CXCR5+ lymphocytes, indicating a stronger cytokine secretion function in CXCR5+ lymphocytes than CXCR5- lymphocytes in both non-AIDS and AIDS groups, irrespective of achieving IR.

**Conclusions:** Pre-ART immune senescence significantly influenced immune reconstitution in PLWHIV after ART. These findings underscore the importance of considering age and immune senescence in tailoring therapeutic strategies for individuals with HIV undergoing antiretroviral treatment.

### TUPEA006

Longitudinal evaluation of cerebrospinal fluid neurofilament light chain concentration during primary HIV infection

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**Background:** HIV invasion of the central nervous system (CNS) during early stages is associated with neuronal injury prior to antiretroviral therapy (ART) initiation. We longitudinally evaluated cerebrospinal fluid (CSF) neurofilament light chain protein (NfL) concentration, a marker of neuronal injury, in ART-naïve participants and those who initiated ART during early stages of HIV.

**Methods:** In this retrospective cohort study, NfL concentration was measured using Single molecule array technology in CSF samples collected from men who have sex with men (MSM) enrolled in the Primary Infection CNS Events Study (PISCES) conducted in San Francisco, USA between 2005-2014. We compared  $\log_{10}$ -transformed CSF NfL concentration at baseline and at least 24 weeks follow-up in an untreated group ( $n=21$ ) and between the last sampling point prior to ART initiation and at a minimum of 24 weeks post ART initiation in a group that started ART ( $n=16$ ). A multivariable logistic regression model was used to determine predictors of baseline CSF NfL concentration while Pearson's correlation assessed correlation between baseline NfL concentration and a summed 11 test neuropsychological battery (NPZ).

**Results:** A total of 33 males, median age 40 (IQR: 32-46) years, were included in the study. At baseline, all participants except for one were ART-naïve. Age and CSF white blood cell count were significantly associated with increased baseline NfL concentration ( $\beta=0.02$ ; 95% CI: 0.01-0.03,  $p=0.01$ ) and ( $\beta=0.02$ ; 95% CI: 0.01, 0.04,  $p=0.01$ ), respectively. The median follow-up weeks for the untreated


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group was 27.6 (IQR: 26.7-29.0) and NfL concentration did not vary significantly between this time point and baseline ( $p=0.81$ ). There was no significant difference ( $p=0.9$ ) in CSF NfL concentration between last sampling point prior to ART initiation and post initiation [median duration on ART was 32.2 (27.9-39.6) weeks].

Additionally, no significant correlation was found between NPZ scores and NfL concentration ( $r=0.24$ ,  $p=0.2$ ).

**Conclusions:** In the PISCES study of MSM, CSF NfL concentrations did not decline after >24 weeks of follow-up in the absence of therapy and after >24 weeks of ART treatment during early HIV infection.

Further studies are needed to understand whether neuronal injury sustained during untreated infection resolve with a longer duration of treatment.

## Host immune responses

### TUPEA007

Dysregulated immune checkpoints in the central nervous system in people living with HIV: biomarkers for HIV-associated neurocognitive disorder

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**Background:** Immune checkpoints (ICPs) consist of receptor-ligand pairs, exerting inhibitory or stimulatory effects on immune defense, surveillance, regulation, and self-tolerance. These ICPs exist in both membrane-bound and soluble forms *in vivo*. While the blockade of inhibitory membrane-bound ICPs (mICPs) such as CTLA-4, PD-1, and PD-L1 has emerged as a revolutionary therapy for advanced malignancies, soluble ICPs (sICPs) are found in the bloodstream and likely exhibit biological functions.

However, the origin, regulation, and biological significance of both mICPs and sICPs in the central nervous system (CNS) have not yet been systematically studied.

**Methods:** We used multiplex immunoassays to simultaneously quantify 16 sICPs and 65 inflammatory cytokines/chemokines/growth factors in cerebrospinal fluid (CSF) samples from 33 HIV-negative individuals and 105 people living with HIV (PLWH), including those with and without HIV-associated neurocognitive disorder (HAND). We also studied the expression of ICPs in neural cells in response to cytokine stimulation *in vitro*.

**Results:** 10 sICPs were consistently detected in all CSF samples, most of which were significantly elevated in PLWH. Notably, soluble HVEM (sHVEM) exhibited a marked increase in HAND compared to PLWH without HAND, suggesting its potential as a biomarker for HAND.

Analyzing the correlations between these inflammatory mediators and sICPs in the CSF samples using R programming, we found that 3 sICPs, including sHVEM, were most unambiguously correlated with inflammatory factors, suggesting functional connections between sICPs and inflammatory mediators in the CNS of HAND. The strong and positive correlation between CSF levels of sHVEM and IFN- $\gamma$ /IL-1 $\beta$ /TNF- $\alpha$  prompted us to investigate whether these inflammatory cytokines could induce the expression of HVEM in neural cells.

Our experiments revealed that HVEM expression in SK-N-BE, a human neuronal cell line, was induced by IFN- $\gamma$  stimulation and further enhanced by the addition of IL-1 $\beta$  + TNF- $\alpha$ . Thus, CNS ICPs can be induced by inflammatory cytokines.

**Conclusions:** Our findings unveil the dysregulation of CNS ICPs in PLWH, with CSF sHVEM emerging as a potential biomarker for HAND.

### TUPEA008

Innate/memory-like CD8<sup>+</sup>NKG2A<sup>+</sup>T cells with a regulatory phenotype and high effector capacity are expanded and correlate with markers of gut integrity and low inflammation in people living with HIV-2

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**Background:** Chronic inflammation is associated with an increased risk of non-AIDS co-morbidities. Our previous data in the African green monkey/SIVagm model suggest a regulatory role of CD8<sup>+</sup>NKG2A/C<sup>+</sup>T cells in the gut. People living with HIV-2 (PLWH-2) display no gut damage even in the presence of viral replication. We hypothesize that CD8<sup>+</sup>NKG2A/C<sup>+</sup>T cells have a regulatory role and are expanded in PLWH-2. Therefore, we aimed to study the phenotype and functional profile of CD8<sup>+</sup>NKG2A/C<sup>+</sup>T cells in PLWH-2 compared to PLWH-1.

**Methods:** We analyzed PBMCs of 38 PLWH-1, 17 PLWH-2 and 7 blood donors (BD) (16 viremic and 37 non-viremic, 27 women and 35 men). We performed a deep-phenotyping analysis using spectral flow cytometry. We investigated the functional profile through stimulation with IL-2+IL-15 and MHC-I-devoided target cells (innate activity), or with





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anti-CD3/CD28 (TCR activation). We quantified markers of systemic immune activation and gut-barrier integrity, and compared the data by sub-groups (i.e. controllers, under-ART and viremic PLWH).

**Results:** PLWH-2 displayed higher CD8<sup>+</sup>NKG2A/C<sup>+</sup>T cell frequencies than PLWH-1 and BD. CD8<sup>+</sup>NKG2A<sup>+</sup>T cells correlated positively (0.7242,  $P=0.001$ ) with the CD4<sup>+</sup>Th17/Treg ratio and negatively (-0.6132,  $P=0.0089$ ) with CD8<sup>+</sup>HLA-DR<sup>+</sup>CD38<sup>+</sup>T cells in PLWH-2 but not in PLWH-1. In BD, CD8<sup>+</sup>NKG2A<sup>+</sup>T cells expressed higher levels of chemokine/cytokine receptors (CXCR3, CXCR5, IL-21R, IL-23R, and GTR), integrin  $\beta$ 7 (adhesion), granzyme B, NKP80, CD39 (regulatory), and IL-22 as compared to other CD8<sup>+</sup>T cell subpopulations. There was an up-regulation of CD49d and CCR5 (homing), NKP80, CD226, granzyme B, and Ki-67 in CD8<sup>+</sup>NKG2A<sup>+</sup>T cells from PLWH-2 as compared to PLWH-1 and BD. The TCR-activation response of CD8<sup>+</sup>NKG2A<sup>+</sup>T cells was higher for PLWH-2 than for PLWH-1 and BD. No differences by gender or age were found.

**Conclusions:** CD8<sup>+</sup>NKG2A/C<sup>+</sup>T cell frequencies were highest in PLWH-2. These cells displayed a regulatory profile and correlated positively with Th17 CD4<sup>+</sup> cell levels, and negatively with immune activation in PLWH-2.

Our data are in favor of an anti-inflammatory role of CD8<sup>+</sup>NKG2A<sup>+</sup>T cells and of a positive association with gut integrity. This is important in the context of immunotherapies and the potential management of persistent chronic activation/inflammation in PLWH.

## TUPEA009

### Safety and immunogenicity of a subtype C ALVAC-HIV and bivalent subtype C gp120 vaccine regimen adjuvanted with MF59 or Alum in a phase 1/2a randomized clinical trial

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**Background:** Adjuvants are widely used to enhance and/or direct vaccine-induced immune responses yet are rarely evaluated head-to-head. The HVTN 107 trial directly compared responses elicited by the ALVAC-HIV+gp120/MF59 regimen evaluated in the phase 2b/3 HVTN 702 trial that showed no vaccine efficacy to an alternative alum-adjuvanted regimen. This ALVAC-HIV+gp120/alum was a subtype C adapted version of the RV144 regimen that showed modest efficacy.

**Methods:** 132 healthy adults without HIV in South Africa, Zimbabwe, and Mozambique were randomized to receive intramuscularly:

1. Two priming doses of ALVAC-HIV (months 0, 1) followed by three booster doses of ALVAC-HIV+gp120/MF59 (months 3, 6, 12), n=36;
2. Two priming doses of ALVAC-HIV (months 0, 1) followed by three booster doses of ALVAC-HIV+gp120/alum (months 3, 6, 12), n=36;
3. Four doses of ALVAC-HIV+gp120/MF59 co-administered (months 0, 1, 6, 12), n=36; or,

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4. Two priming doses of ALVAC-HIV (months 0 and 1) followed by three booster doses of ALVAC-HIV+gp120/no adjuvant (months 3, 6, and 12), n=24.

Primary outcomes were safety and immunogenicity, including binding antibody and cellular responses at months 6.5, 12, 12.5, 18.

**Results:** Vaccinations were well-tolerated with mild to moderate systemic symptoms in 33.3% (44/132) of participants. Cellular and antibody responses did not differ substantially between adjuvants, with no differences at month 6.5, the primary time point of interest. At month 18, CD4+ T-cell response rates were higher for the alum- than MF59-adjuvanted group to the vaccine-matched protein inserts (1086 gp120: 68% vs. 38%, p=0.032; TV1 gp120: 75% vs. 46%, p-value=0.039) although magnitudes and polyfunctionality scores did not differ. Both adjuvants induced significantly higher binding antibody and cellular responses than the unadjuvanted group over time with 2- to 3-fold higher response rates at month 6.5 (p-values=0.006-0.049).

The prime-boost ALVAC+gp120/MF59 group generally had lower antibody but higher CD4+ T-cell responses than the co-administration group, however these differences were not consistently maintained across antigens or time points.

**Conclusions:** Although MF59 was expected to enhance immune responses, alum induced similar binding antibody and cellular responses to MF59, suggesting that the choice between these adjuvants may not be critical for the ALVAC+gp120 regimen for these immune responses.

## TUPEA010

Proteomic signatures reveal a subset of HIV controllers who resemble people without HIV, characterized by low reservoir sizes and IL-1beta levels

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**Background:** HIV controllers can suppress viral replication without ART. Recently, controllers with unique reservoirs – few intact proviruses and integration within inactive chromosomal regions – have been described ("exceptional controllers"), but their inflammatory state is unknown. Identification of immunologic pathways linked with control could reveal whether some PWH achieve a state resembling cure.

**Methods:** Among ART-naïve aviremic controllers (n=62), ART-suppressed non-controllers (n=37), and age/sex-matched people without HIV (n=50), we measured 374 plasma proteins using Olink proteomics. Using R, we constructed a dendrogram and visualized hierarchical clustering and assessed age/sex-adjusted relationships between each protein and group.

We compared controllers who resembled people without HIV with the remaining controllers using five machine learning algorithms.

**Results:** ART-suppressed non-controllers had higher levels of inflammation than ART-naïve controllers, including CCL11/21/23/24/25, CXCL12/17, IL17D, VEGFA, TNFRSF11B, and TNFSF11/13/13C. Controllers overall had higher levels of inflammation compared to people without HIV, including IL1B/16/18, GZMB, NCF2, JUN, CXCL1/6/8, and TGFβ1.

We identified a subset of controllers (n=8 total [n=7 adjusted for age, n=3 adjusted for age/sex]) whose protein expression resembled people without HIV. No such pattern was present among ART-suppressed non-controllers. Using proteomic signatures, CD4:CD8 ratio, and intact viral DNA as attributes, we classified this controller subset using various AI algorithms. The most robust algorithm, RandomTree, utilized proteins EIF4G1, NRTN, PRSS8, and MICB\_MICA. In this subset compared to all controllers, analysis of the top 10% of significant proteins by gene ontology revealed lack of activation of MAPK/ERK (FGF2, IL1B, SPRY2, TGFβ1, TIMP3, VEGFA) pathways. Between age-adjusted and age/sex-adjusted controllers resembling people without HIV, the single commonality was low IL-1beta levels. This subset tended to have smaller intact reservoirs by FLIP-seq than the other controllers (0.09/10<sup>6</sup>PBMCs vs. 0.25/10<sup>6</sup>PBMCs).

**Conclusions:** These data suggest that there is a unique clinical phenotype of a near-cure state characterized by low amounts of intact genomes and minimal persistent inflammation ("exceptional control"). IL-1beta, an inflammation marker associated with cardiovascular disease and other comorbidities, was particularly low in these individuals. Identifying the mechanisms of control resulting in fewer inflammatory consequences in these rare PWH could inform the development of novel curative interventions.







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## TUPEA011

### Rectal mucosal injury and healing among HIV-negative men who have sex with men (MSM)

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**Background:** MSM who engage in receptive anal intercourse (RAI) demonstrate a unique rectal mucosal immune environment compared to men who do not engage in RAI. We compared the immune and microbiome response to experimentally-induced rectal mucosal (RM) injury and mucosal healing between these groups of men without HIV.

**Methods:** HIV-negative MSM engaging in RAI (n=19) and men who never engaged in RAI (controls; n=6) aged 18-59 years underwent collection of RM secretions via anoscopy prior to experimentally-induced injury with biopsy forceps and subsequent digital imaging.

Participants then returned on days 2, 5, and 8 for repeated collection of mucosal secretions adjacent to the injury and imaging. Concentrations of 12 cytokines were measured by LegendPlex, and the microbiome was characterized by 16s rRNA sequencing.

Linear decomposition modeling (LDM) was utilized to examine cytokine concentrations, changes in the microbiome, and wound healing over time.

**Results:** RM levels of IL-1 $\beta$ , IL-17A, IP-10, IL-8, IFN- $\gamma$ , and a composite cytokine score were significantly higher among MSM engaging in RAI compared to controls at baseline and overall across study visits. Levels of IL-6 and IP-10 increased significantly after injury in both groups. Healing time after injury was faster among MSM engaging in RAI, although not statistically significant.

While the microbiome composition of MSM engaging in RAI was significantly different from controls, we did not detect any microbiome changes after injury. The overall microbiome composition and 26 individual taxa were significantly associated with the composite cytokine score.

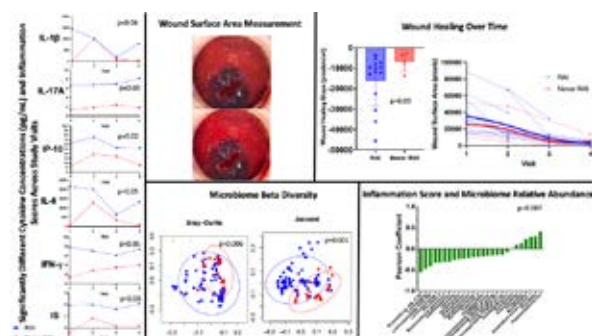


Figure.

**Conclusions:** MSM engaging in RAI demonstrated higher baseline RM inflammation, faster wound healing, and a distinct rectal microbiome compared with men who never engaged in RAI. IL-6 and IP-10 may be important mediators in the acute injury response, and specific bacterial taxa are associated with both high and low inflammation. Future research should explore how these factors facilitate or hinder mucosal HIV transmission.

## TUPEA012

### SAMD9 and SAMD9L innate immune host factors are conserved from prokaryotes to eucaryotes and display signatures of genetic conflicts including natural adaptations to lentivirus/HIV in hominids

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**Background:** Human SAMD9 and SAMD9L are duplicated genes from the interferon innate immunity involved in the restriction of diverse viruses, including poxviruses. We previously showed that SAMD9L restricts HIV-1 and primate lentiviruses in the late phases of replication, while SAMD9 has a mild proviral effect. Now, we uncover the evolutionary and functional dynamics of the *SAMD9/9L* immune gene family from bacteria to primates, and their impact on antiviral defense mechanisms.

**Methods:** We used AlphaFold and FoldSeek structural homology AI tools to reconstruct SAMD9/9L functional and structural evolutionary history in very ancient times. We performed phylogenomic and population genetic analyses of the locus at the inter- and intra-species levels in mammals. We finally tested the functional impact of newly identified SAMD9L variants in HIV infected cells.

**Results:** We identified homologs of SAMD9/9L in bacterial organisms with some associated with the Avs anti-phage defense system, exhibiting conserved antiviral functions analogous to the human genes. The conservation of the nuclease active site of SAMD9/9L, as well as the multi-domain architecture, in bacterial homologs underscore their importance throughout domains of life.

We further trace the evolutionary origin of the ancient SAMD9/9L duplication in mammals. This gene family displays important genomic plasticity, with multiple copy number variations during mammalian evolution. Notably, primate SAMD9/9L have evolved under genetic conflicts, with independent gene losses and lineage-specific positive selection. Among hominids, bonobos stand out as the sole species that have lost SAMD9. We found that:


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i. SAMD9 loss is not fixed within the population and  
ii. SAMD9L harbors bonobo-specific polymorphisms (SNPs). Functionally, we found that these natural variants increased SAMD9L antiviral activity ("gain-of-function"), creating a more potent anti-HIV restrictor.

**Conclusions:** Interestingly, unlike humans and chimpanzees, bonobos do not host any lentivirus. We propose that the absence of the pro-lentiviral SAMD9 and the presence of a more potent anti-lentiviral SAMD9L in bonobos might contribute to their reduced susceptibility to lentiviruses. Furthermore, these SAMD9L "gain-of-function" polymorphisms may constitute a mechanism to compensate for SAMD9 loss to maintain cellular translation functions. Overall, these findings unveil natural adaptations in a major antiviral defense gene family with direct implications for understanding lentivirus-primate interactions and susceptibility.

## TUPEA013

The impact of stopping antiretroviral therapy on HIV-specific T-cell responses

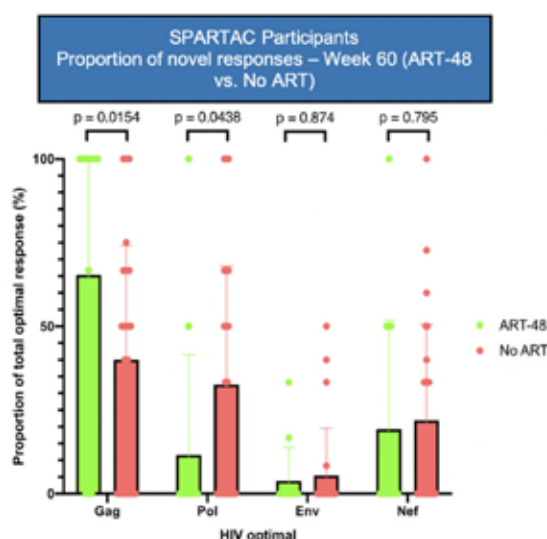
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**Background:** Treatment interruption (TI) of antiretroviral therapy (ART) to explore viral rebound in studies of interventions to induce HIV remission may itself impact the quantity and quality of HIV-specific T cell responses, potentially inducing shifts in immunodominance and subsequent viral control. Understanding these responses could inform strategies to enhance immune-mediated viral control and help interpret interventional studies that include a TI.

**Methods:** HIV-specific T-cell immunity was analysed using gamma interferon enzyme linked immunospot in two clinical trials. The SPARTAC trial randomised individuals with primary HIV infection (PHI) to 48 weeks of ART (ART-48 group, n=24 studied here) or no immediate therapy (no ART group, n=37). HIV-specific T-cell immunity was analysed at Weeks 0, 24 and 60 in both groups. In the PITCH observational cohort (n=7), participants started ART in PHI for at least one year, followed by TI. HIV-specific T-cell immunity was analysed before, during and after TI.

**Results:** In SPARTAC, participants treated in PHI for 48 weeks made proportionately more Gag responses to novel epitopes at Week 60 (having been off ART for 12 weeks) compared to pre-ART baseline, compared to untreated participants at the same timepoint (p=0.02). New responses in untreated participants remaining off ART became less Gag (p=0.006) and more Nef-directed (p=0.03) between Weeks 24 and 60. In the more-intensively followed PITCH study, 6/7 participants showed dominant Gag and/or Pol-specific responses post-TI compared to pre-TI. One PITCH participant who remained virally suppressed for 170 days during TI showed stepwise increases in Gag-specific responses until viral rebound (>129 copies RNA/ml) and ART re-initiation.



**Conclusions:** Treatment interruption in PHI is associated with shifts in dominant responses towards Gag, during or post-TI that were not seen in people untreated in PHI. These findings may help inform vaccine immunogen design by harnessing HIV-specific T cell responses associated with viral control.



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## Understanding and targeting persistent HIV reservoirs

### TUPEA014

Single-cell multi-omic sequencing of *in vitro* HIV-1 infection identifies integration-associated effector programs

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**Background:** *In vitro* HIV-1 infection models have tremendous potential to advance the cure research agenda with iterative manipulations that can reveal targetable mechanisms of HIV-1 persistence. In combination with single-cell multi-omic approaches, it is possible to define the cellular mechanisms that support HIV-1 infection and reactivation. We therefore used trimodal sequencing to identify features of single HIV-1+ cells using an *in vitro* infection model.

**Methods:** Naïve CD4+ T cells were activated with anti-CD3/anti-CD28 in the presence of anti-IL-4, anti-IL-12, and TGF-β1 (Bosque/Planelles model) for 72 hours. After bead removal, cells were rested in IL-2-supplemented media for 96 hours before spinoculation with HIV-1 (SUMA molecular clone). Cells were then rested in IL-2-supplemented media for 6 days prior to single-cell multi-omic profiling. We applied single-cell, trimodal sequencing of surface proteins, transcripts (scRNAseq), and accessible chromatin (scATACseq). The scRNAseq and scATACseq outputs were aligned to both human and HIV-1 SUMA genomes, allowing paired information of infection status with cellular protein, transcriptional, and epigenetic features. Cells with a minimum of two HIV-1-RNA-aligning unique molecular identifiers (UMIs) were considered HIV-1 RNA+, and cells with a minimum of one HIV-1-DNA-aligning UMI were considered HIV-1 DNA+.

**Results:** 9,708 CD4+ T cells were profiled after quality-control filtering, of which 1,112 cells (11.5%) contained HIV-1 DNA and 5,888 cells (60.7%) with HIV-1 mRNA (9.2% HIV-1 DNA+ RNA+). We clustered and annotated cells using a 3-way weighted *k*-nearest neighbor analysis using protein, RNA, and ATAC data. HIV-1 DNA+ cells were enriched in effector T (T<sub>EFF</sub>) cells. Transcriptional effector programs enriched in HIV-1 DNA+ cells included cytotoxic (granzymes, *PRF1*), antiviral (*CCL5*, *IFNG*), and T follicular helper (*MAF*, *BCL6*)

phenotypes. In the ADT component, HIV-1 DNA+ cells were enriched for surface expression of CD161, and this enrichment was mirrored by *KLRB1* transcription.

**Conclusions:** These data suggest that early *in vitro* HIV-1 infection of activated cells is associated with transcriptional profiles related to cytotoxicity, antiviral responses, and T follicular helper cell programs. The role of the surface protein CD161 in early HIV-1 infection warrants continued study.

Ongoing analysis of early infection events using single-cell multi-omic modalities has the capacity to identify specific cellular phenotypes in cure-directed strategies.

### TUPEA015

HIV clonal expansion is driven by CD4+ T-cell proliferation in response to antigen during long-term viral suppression in cisgender males with HIV

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**Background:** HIV-1 is incurable due to a reservoir of latently infected CD4+ T-cells harbouring replication-competent HIV-1 proviruses which persist partly due to antigen-driven proliferation. Using near-full length (NFL) proviral sequencing, we assessed how antigen-driven CD4+ T-cell activation and proliferation shape the defective and intact HIV reservoirs over time.

**Methods:** Peripheral blood mononuclear cells (PBMCs) were isolated from longitudinal leukaphereses of four virally suppressed cisgender male people living with HIV (PWH) over a median (range) 1.9 (1.1-4.7) years. CD8-depleted PBMCs were stimulated *ex vivo* for 18 hours or 7 days with overlapping peptide pools spanning antigen epitopes of cytomegalovirus (CMV) pp65, HIV Gag, and Epstein-Barr Virus (EBV) EBNA1 and BZLF1. Using an activation-induced markers (AIM) assay identifying early (18 hours) and late (7 days) cellular activation, antigen-responsive CD4+ T-cells were isolated by fluorescence-activated cell sorting. Proliferation was tracked using a celltrace dye. HIV DNA quantitation and single-genome NFL HIV-1 proviral sequencing were performed on sorted AIM+ cells.

**Results:** Early (18 hours) and late (7 days) antigen responses measured by AIM were positively correlated ( $R^2=0.72$ ) as well as antigen responses measured by AIM and cellular proliferation at 7 days ( $R^2=0.96$ ). AIM responses at 18 hours were highest amongst cells responsive to CMV pp65 (median [range] 1.77% [0.78-4.49%]) followed by HIV gag (0.29% [0.02-1.44%]), EBV EBNA1 (0.08% [0-0.27%]) and


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BZLF1 (0.02% [0-0.09%]). However, AIM responses after 7 days were similar between CMV- and HIV-responsive cells driven by high cellular proliferation in response to HIV gag (8.22% [2.96-11.5%] proliferated cf. 6.46% [1.62-33.5%] for CMV). In one donor, expansion of a defective provirus with an 8.5kb deletion spanning *gag* – 3' long terminal repeat resulted in the proliferation of 29 clones. Importantly, *ex vivo* clonal expansion events of intact HIV-1 proviruses within HIV-responsive CD4+ T-cells were observed.

**Conclusions:** Despite ongoing immune exhaustion amongst PWH, CD4+ T-cells maintain high proliferative capacity upon antigen recognition, such that low frequencies of antigen-responsive cells can quickly undergo large expansions, including those harbouring intact proviruses. The extensive expansion of infected cells harbouring HIV integrants with large deletions akin to endogenised retroviruses may reflect preferential proliferation of translation-incompetent proviruses.

## TUPEA016

Phenotypic and virological characterization of the total and translation-competent HIV-1 reservoirs in blood and matched tissues from individuals on therapy

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**Background:** Characterizing the HIV-1 reservoir in blood and lymphoid tissues is key to advance cure interventions. To date, no study has comprehensively evaluated both the viral composition and the immune phenotype of the total and inducible HIV reservoirs in blood, lymph nodes (LN), and gut simultaneously.

**Methods:** Matched blood, LN and gut biopsies were obtained from 5 HIV+ individuals undergoing antiretroviral therapy for an average time of 16.2y. Near-full length (NFL) sequencing was conducted using the HIV ProViral UMI-mediated Long-read Sequencing assay on blood, LN and gut. Following a 24h-stimulation with the Tat mRNA-containing lipid nanoparticle (Tat-LNP) and Panobinostat (PNB), phenotypic characterization of blood and LN p24+ cells was carried out on the same samples using the HIV-Flow assay (n = 128 and 55 p24+ cells from blood and LN, respectively).

**Results:** NFL sequencing indicated no compartmentalization, with the detection of identical defective and intact sequences across anatomical sites. Following Tat-LNP/PNB stimulation, the p24+ cells frequencies were similar between blood and LN (means = 11.5 and 9.0 p24+ cells/10<sup>6</sup> CD4 T cells, respectively). While the majority of blood p24+ cells shared a central/transitional and effector memory

phenotype (TCM/TTM: 69/128, TEM: 53/128), most of the LN p24+ cells showed a TCM/TTM phenotype (46/55). Similar proportions of p24+ cells expressed PD1 in blood and LN (44/128 and 13/55, respectively).

Only 11/128 blood p24+ cells expressed the follicular homing marker CXCR5, whereas 29/55 LN p24+ cells expressed CXCR5. However, in both compartments, few p24+ cells displayed a follicular helper T cell phenotype (Tfh CXCR5<sup>+</sup>PD1<sup>+</sup>: 0/128 in blood and 6/55 p24+ cells in LN).

Furthermore, none of the LN p24+ cells exhibited characteristics of germinal center Tfh cells (CXCR5<sup>high</sup>PD1<sup>high</sup>). Finally, while 22/128 blood p24+ cells expressed the cytotoxic molecule GZMA, only 1/55 p24+ cells was GZMA+ in the LN, suggesting that GZMA expression is not a distinctive feature of the LN inducible reservoir.

**Conclusions:** Our study reinforces the notion that HIV-infected cells can circulate across various anatomical compartments. Furthermore, the inducible reservoir has a distinct phenotype between blood and LN, and does not appear to be located within Tfh cells in long-term treated individuals.

## TUPEA017

Focusing HIV-1 Gag T-cell responses to highly conserved regions by DNA vaccination of people without HIV in the HVTN 119 trial

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**Background:** In non-human primates, an HIV-1 DNA vaccine composed of 7 structurally important, highly conserved elements (termed CE) of p24<sup>Gag</sup> induced focused cytotoxic T cell responses to these regions. In a phase I clinical trial (HVTN 119, NCT03181789) amongst people without HIV, we compared T-cell responses between two DNA vaccine regimens - one with CE plus full-length p55<sup>Gag</sup> and the other with a full-length p55<sup>Gag</sup> alone.

**Methods:** Group1 (n=25) received two administrations of CE DNA followed by two administrations of CE+p55<sup>Gag</sup>. Group2 (n=25) received four administrations of p55<sup>Gag</sup> DNA.







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All vaccines included IL-12 DNA as adjuvant. Group3 (n=6) received saline. The vaccines were injected intramuscularly in both deltoids, followed by electroporation (Ichor Tri-Grid™) at 0, 1, 3 and 6 months. Participants were followed for safety, tolerability and immunogenicity at month (M) 0, M1.5 and M6.5. T cell responses were assessed by intracellular cytokine staining for expression of IFN-gamma and/or IL-2 using peptide pools to each of the 7 CE, total CE, and p55<sup>Gag</sup>.

**Results:** Both regimens were safe and well-tolerated. The CE DNA vaccine was immunogenic at M1.5 (29% CD4, 4% CD8 responders) and responses against CE were significantly (p=0.037; 0.004) boosted by CE+p55<sup>Gag</sup> DNA (64% CD4+, 42% CD8+). Group1 developed CD4+ responses to 5 of 7 CE, reaching significance for CE5 (p=0.006) compared to Group2, which had responses to only 2 CE. Both groups had CD8+ T-cell responses (6 and 4 of 7 CE, respectively). The mean CD4+ CE Tcell breadth was higher in Group1 (0.68) compared to Group 2 (0.22) with a statistically significant difference of 0.464 (p=0.029) and showed a strong trend for overall (CD4+ plus CD8+) increased breadth (0.615, p=0.051). Both groups developed high p55<sup>Gag</sup> T-cell responses (91% vs 91%) as well as p24<sup>Gag</sup> antibody (91% vs 80%) responses. In Group1, vaccine-induced CD4+ CE T-cell responses correlated (p=0.007) with p24<sup>Gag</sup> antibody responses.

**Conclusions:** The CE+p55<sup>Gag</sup> DNA vaccine focused T-cell immune responses to conserved regions in p24<sup>Gag</sup>, resulting in a significant increase in breadth. Vaccines able to focus immune responses to highly conserved regions should be considered as part of a comprehensive HIV vaccine strategy.

## TUPEA018

### Targeting PTPN1/PTPN2 to improve HIV cure approaches

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**Background:** Nonreceptor tyrosine phosphatases (NTPs) play an important role regulating protein phosphorylation and have been proposed as attractive therapeutic targets for cancer and metabolic diseases. We have previously identified that 3-Hydroxy-1,2,3-benzotriazin-4(3H)-one (HODHBt) enhanced STAT activation upon cytokine stimulation leading to increased reactivation of latent HIV and effector functions of NK and CD8 T cells. We demonstrated that HODHBt interacts with and inhibits the NTPs PTPN1 and PTPN2. The small molecule AB-BV-CLS-484 (AC-484) is an active site inhibitor of PTPN1 and

PTPN2 currently in clinical trials for advanced solid tumors. In this study, we compared AC-484 and HODHBt for reactivation of latent HIV and ability to promote immune activation.

**Methods:** First, we evaluated the effects on STAT5 transcriptional activity using HEK-Blue-IL2/IL15 cells. Second, we performed a pSTAT5 time course experiment in primary total CD4 T cells. Next, we compared the effects of HODHBt and a dose response of AC-484 on immune activation, cytokine secretion, and increase NK effector functions. Finally, we measured the HIV latency reversal activity of AC-484 in a primary cell model of latency.

**Results:** AC-484 was 1,500-fold more potent activating STAT5 transcriptional activity than HODHBt in the HEK-Blue-IL2/IL15 cell line in the absence of toxicity (IC50 0.97μM vs 1,515μM).

However, in primary cells, AC-484 was not able to sustain STAT5 phosphorylation over time compared to HODHBt. Mechanistically, HODHBt treatment leads to the degradation of PTPN2 and PTPN1 while AC-484 fails to do so. Both HODHBt and AC-484 were sufficient to enhance immune activation of CD4T, CD8T and NK cells without induction of pro-inflammatory cytokines.

Finally, AC-484 increased IL-2 mediated viral reactivation in a primary cell model of latency albeit to a lesser extent than HODHBt.

**Conclusions:** Given our findings that AC-484 is sufficient to promote immune activation despite reduced latency reversal activity compared to HODHBt. Future directions include investigation of the effects of AC-484 on the anti-HIV activity of immune effector cells including CD8T cells and NK cells and its latency reversal properties in synergy with other LRAs.

Overall, our work highlights the possible therapeutic potential of PTPN1/PTPN2 inhibition in the search for globally applicable and efficient HIV cure strategies.

## TUPEA019

### Proteasome inhibition induces latency reversal and augments NK cell-mediated killing by downregulating HLA-E

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**Background:** Employing the shock and kill strategy involves the use of latency reversal agents (LRAs) to reactivate the latent viral reservoir, rendering it visible for recognition and subsequent elimination by the host's immune system. Although this strategy has demonstrated high efficacy *in vitro* and *ex vivo*, so far, no significant delays in time to viral rebound have been observed *in*

vivo. This lack of delay is most likely attributed to the insufficient elimination of reactivated reservoir cells by the host's immune effector cells, including natural killer (NK) cells. Indeed, NK-cell functionality is diminished by the inhibitory interaction between NKG2A and HLA-E. Notably, inhibiting the proteasome has proven effective in reducing HLA-E expression on various tumor cell types, thereby enhancing NK-cell mediated killing. However, its impact on HIV-1 latency remains unexplored. Therefore, our study aimed to investigate the impact of blocking the inhibitory interaction between NKG2A receptor and HLA-E on NK cell-mediated killing of reactivated reservoir cells.

**Methods:** We examined the impact of bortezomib and other proteasome inhibitors on various latently infected cell lines including J-Lat8.4, J-Lat10.6, J-Lat15.4 and ACH-2 cells, as well as on primary NK cells utilizing flow cytometry. Subsequently, we assessed NK-cell mediated killing of reactivated cell lines by co-culturing primary NK cells from both healthy individuals and from people living with HIV (PLWH) through flow cytometry.

**Results:** Our findings reveal that the proteasome inhibitor bortezomib significantly reduced HLA-E expression on J-Lat cells, leading to a moderate increase in NK-cell cytotoxicity in healthy individuals and a significant increase in PLWH. Moreover, bortezomib induced latency reversal in J-Lat 10.6 cells but not in other variants of the J-Lat model. Additionally, treatment with bortezomib led to a reduced NKG2A expression on primary NK cells thereby improving NK-cell functionality.

**Conclusions:** Our results indicate that proteasome inhibition not only induces latency reversal but also enhances subsequent NK-cell mediated killing of latently infected cells *in vitro* by downregulating HLA-E. This implies that targeting the proteasome could serve as a novel therapeutic approach in the shock and kill strategy, with the potential to improve clinical outcomes. Nevertheless, further validation in primary latency models is still warranted.

## TUPEA020

### Implementing a phylogenetic approach to infer the integration dates of hypermutated proviruses persisting during art

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**Background:** Hypermutated proviruses, which arise in a single replication cycle when host antiviral APOBEC proteins introduce G-to-A mutations throughout the HIV genome, persist during ART. But, their within-host origins and longevity are poorly understood because standard phylogenetic analyses, which assume that mutations gradually arise over many replication cycles, cannot accommodate them. We describe an approach for within-host phylogenetic analysis and molecular dating of hypermutated proviruses.

**Methods:** We analyzed longitudinal datasets from 6 women living with HIV, comprising >800 single-genome HIV RNA *env* sequences collected between seroconversion and ART initiation (median 8 years), along with >600 proviral *env* sequences sampled over a median 9 years on ART. APOBEC-induced mutations were identified using Hypermut. For each participant we inferred within-host maximum-likelihood phylogenies relating each participant's *env* pre-ART plasma sequences and *env*-intact on-



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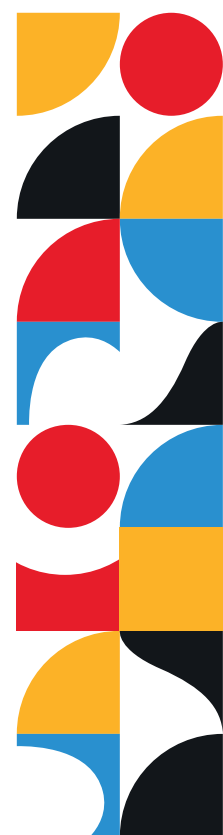
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ART proviruses, with or without hypermutated proviruses. For the latter, APOBEC-mutated sites were either included unaltered, completely stripped from the alignment, or replaced with "R" (mixture of A/G). Proviral ages were inferred using an established root-to-tip regression approach.

**Results:** Phylogenies featured a median 286 (range:120-421) sequences per participant, including a median 19 (range:5-23) hypermutated proviruses. When directly incorporated into phylogenies, hypermutated proviruses displayed significantly longer branch lengths and higher evolutionary distinctiveness than *env*-intact proviruses (all  $p < 0.0001$ ), and clustered extensively. All these metrics normalized after stripping hypermutated sites from the alignment or replacing them with R.

The resulting trees produced age estimates of *env*-intact proviruses that were concordant to those from trees that excluded hypermutated sequences, though coefficients were generally slightly higher using the "R replacement" approach (0.90-0.99). Using the latter trees to molecularly date hypermutated proviruses revealed that these integrated throughout untreated infection, and persisted during ART. In 4 participants, the ages of hypermutated proviruses did not significantly differ from *env*-intact ones, in one participant they were on average slightly older than *env*-intact ones, and in another they were slightly younger.

**Conclusions:** Our approach allows hypermutated sequences to be incorporated into phylogenies for hypothesis testing. Our observations enrich our understanding of reservoir evolutionary dynamics by revealing that hypermutated proviruses, like other provirus types, are archived throughout untreated infection and can persist for years on ART.

## Novel treatment and prevention strategies, vaccines and immunotherapies

### TUPEA021

#### Phase 1 first-in-human study of VIR-1111, a prototype CMV-HIV vaccine vector

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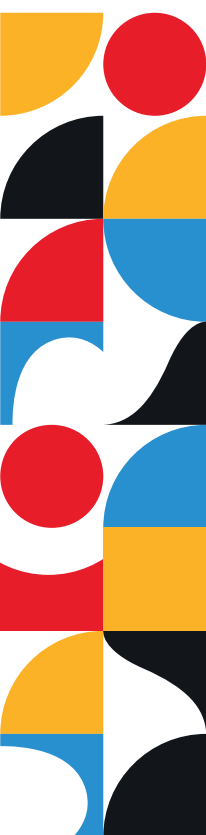
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**Background:** Despite progress increasing antiretroviral treatment and PrEP utilization, HIV transmission persists globally. An effective HIV vaccine is needed to eliminate transmission and end the epidemic, but prior attempts had limited success or failed. Vir is developing a human cytomegalovirus (CMV) vaccine vector to leverage CMV's potential to elicit robust, sustained HIV-specific T cell responses, including effector memory T cells that traffic into tissue sites of viral entry and infection.

**Methods:** VIR-1111, a prototype CMV-HIV vaccine was evaluated in a randomized, double-blind, placebo-controlled first-in-human phase 1 study in healthy CMV-seropositive adults without HIV (NCT04725877). Participants were randomized to multiple dose-escalation of VIR-1111 ( $1 \times 10^3$  focus-forming units [ffu] ( $n = 4$ ),  $3 \times 10^4$  ffu ( $n = 5$ ),  $1 \times 10^6$  ffu ( $n = 11$ ) or placebo ( $n = 7$ ) subcutaneously administered at Day 1 and Week 8, and followed for 36 weeks for safety and immunogenicity.

**Results:** Twenty-seven participants were dosed; 20 received VIR-1111 (75% male). Mean age was 39.5 years (range: 23-51). 81.5% were White (37% Hispanic or Latino), 7.4% Black, 3.7% Pacific Islander, and 7.4% multiple races. Adverse event (AE) incidence was similar between VIR-1111 (55.0%) and placebo (57.1%) with no dose-dependent effect. 5/20 (25.0%) VIR-1111 and 2/7 (28.6%) placebo participants had AEs considered related to study intervention, all mild and transient. Local and systemic reactogenicity was reported mild by 6/20 (30%) VIR-1111 and 5/7 (71.4%) placebo participants, and moderate by 6/20 (30%) VIR-1111 participants. No clinically significant laboratory abnormalities were observed. VIR-1111 was not detected in blood, urine, or saliva. There were no sustained Gag-specific T cell nor antibody responses at any VIR-1111 dose. Peripheral blood RNAseq analysis revealed differential interferon and inflammatory pathway gene expression in 5/20 (25%) VIR-1111 participants, with maximal signal one week post-second dose.

**Conclusions:** VIR-1111 was generally safe and well-tolerated in healthy participants. While VIR-1111 did not elicit sustained Gag-specific immune responses, a gene sig-



nature associated with vaccine responses was identified in 5/20 participants. This study provides foundational safety data supporting further CMV-HIV vaccine development. VIR-1388, an optimized, next-generation CMV-HIV vaccine, is being evaluated in an ongoing Phase 1 study (NCT05854381).

## TUPEA022

### Suppression of HIV transcription via LNP-delivered mRNA-encoded CRISPR-Cas13: a novel latency promoting agent

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**Background:** Prolonged persistence of HIV latently infected cells on antiretroviral therapy (ART) in people with HIV (PWH) serves as a major roadblock towards a cure for HIV infections. CRISPR-Cas13 is a programmable RNA-nuclease that can effectively degrade viral transcripts and could be exploited to eliminate viral reactivation after cessation of ART. We hypothesised that the CRISPR-Cas13 system could knock down the essential HIV Tat protein, thus locking HIV into deep latency.

**Methods:** We used a proprietary T-cell tropic lipid nanoparticle (LNP) formulation to deliver a nucleoside-modified Cas13 mRNA and CRISPR guide RNA (crRNA) to HIV latently infected cell lines, JLat A2 and ACH2. We investigated two Cas13 orthologs, PspCas13b and RfxCas13d, that differ in their molecular mechanisms and are evolutionary distinct. Tat mRNA expression was measured by RT-qPCR, and viral reactivation via flow cytometry-based assessment of GFP reporter and viral p24 expression. Additionally, we assessed the ability of Tat-targeting Cas13 mRNA to suppress viral expression in human CD4+ T cells infected with a dual-reporter virus via flow cytometry.

**Results:** In the JLat A2 cell model, LNP-delivered Tat-targeting crRNA and RfxCas13d mRNA led to 80%±5% reduction in Tat mRNA expression ( $p<0.0001$ ) and 90%±9% reduction in GFP expression ( $p<0.0001$ ) indicative of viral reactivation. In the ACH2 cell model, Tat-targeting RfxCas13d mRNA resulted in reduction of 65%±10% in viral p24 expression ( $p<0.0001$ ). Similar findings were observed using the pspCas13b ortholog.

Additionally, we observed a significant reduction in cell viability ( $40\%\pm 8$ ,  $p<0.0001$ ) with both PspCas13b and RfxCas13d Tat-targeting mRNA relative to a non-targeting control.

Finally, in human CD4+ T cells infected with an HIV dual-reporter virus, Tat-specific crRNA and Cas13 mRNA delivered via LNP, resulted in 40% reduction in productive infection and an increase of 35% in latent population, consistent with enhancement of latent infection and suppression of HIV transcription/translation.

**Conclusions:** Our results demonstrate that a Tat-targeting Cas13 mRNA delivered via a T-cell tropic LNP effectively suppresses Tat expression in HIV latency cell lines and HIV-infected primary CD4+ T cells. Future work will determine the effect of this approach in cells from PWH on ART and whether the suppression persists with cell division.

## TUPEA023

### Anti-HIV-1 tier-2 neutralizing antibody induction by immunization with a Sendai virus vector expressing particles with modified HIV-1 Env trimers

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**Background:** Induction of broader anti-HIV-1 neutralizing antibody (NAb) responses is an important strategy for the development of an HIV vaccine. Env trimers can be a promising immunogen for boosting. We have recently developed a Sendai virus (SeV) vector expressing particles carrying chimeric HIV-1 Env trimers (EnvF consisting of HIV-1 Env extracellular domain and SeV transmembrane-cytoplasmic domain), confirmed NAb induction against an HIV-1 tier-1 strain by SeV-EnvF immunization in mice (Vaccine 40:2420-2431, 2022). In the present study, we investigated the potential of SeV-EnvF immunization to induce NAb against HIV-1 tier-2 strains in rabbits.

**Methods:** In the first experiment, twenty rabbits were intranasally immunized three times with SeVs expressing BG505-EnvF and/or AD8EO-EnvF. In the second experiment, eight rabbits were intranasally immunized three times with SeV expressing BG505-EnvF and/or AD8EO-EnvF followed by boosting six times with SeVs expressing modified BG505-EnvF and/or AD8EO-EnvF. Anti-gp120 binding antibodies and anti-HIV-1 NAb responses in serum obtained post-immunization were examined using several HIV-1 tier-1 and tier-2 strains.



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**Results:** In the first experiment, SeV-BG505-EnvF immunization induced higher anti-HIV-1 tier-1 NAb responses than SeV-AD8EO-EnvF, but all the animals showed poor anti-HIV-1 tier-2 NAb induction. In the second experiment, NAb responses against HIV-1 tier-2 strains were induced after multiple boosting with SeV expressing modified EnvF.

**Conclusions:** The present study indicates the potential of SeV-EnvF boosting to induce NAb responses against HIV-1 tier-2 strains, implying that SeV-EnvF could be useful for boosting to induce broader anti-HIV-1 NAb responses.

## TUPEA024

**A novel PD1-enhanced DNA vaccine in PLWH under cART: a Phase 1, randomized, double-blinded, placebo-controlled, and dose-escalation study**

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**Background:** Combination antiretroviral therapy (cART) has successfully resulted in the saving of millions of lives. cART, However, cannot cure HIV-1. Here, we report a third-generation DNA vaccine namely ICVAX that incorporates a PD1-enhanced DC-targeting strategy and conserved HIV-1 mosaic Gag antigens. In preclinical non-human primate studies, such a vaccine conferred cART-free virologic control for over 6 years, whereas all control monkeys died within one and a half years after the pathogenic SHIV challenge.

**Methods:** We conducted a single-center, randomized, double-blind, placebo-controlled phase 1 clinical trial of ICVAX (CTR20223007) in persons living with HIV (PLWH) under effective cART. The primary objective was to assess the safety and tolerability of this vaccine.

The second exploratory objective was to determine the immunogenicity of ICVAX and its impact on peripheral virus reservoirs. ART-suppressed individuals were enrolled in a dose-escalation study of ICVAX in three different cohorts (1 mg, 2mg, and 4mg). 4 shots of ICVAX were administered intramuscularly (IM) with an interval of 4 weeks for the first 12 weeks; another boost shot was given, separated by 24 weeks.

**Results:** 45 cART-treated HIV-1 individuals who have achieved sustained viral load suppression were enrolled and randomized 4:1 to receive three different dosages of vaccine or the same volume of placebo control via intramuscular injection, followed by short-pulse electropora-

tion (EP) with a proprietary device at the same site (Table 1). Preliminary data indicate that this novel generation DNA vaccine with IM/EP is safe and well-tolerated, with no vaccine-related severe adverse events (SAE), potential immune-mediated diseases, or Grade 3 or higher adverse events (AEs).

The primary clinical AEs reported were mild injection site pain and rash (Table 1). No significant laboratory AEs attributable to ICVAX were observed. No clinically significant change in CD4 T cell count or VL occurred following the injection of ICVAX. In exploratory analyses, most vaccine recipients generated potent T-cell immune responses, as detected by the ELISPOT assay. More immunogenicity analyses by flow cytometry are ongoing.

**Conclusions:** These data suggest that ICVAX in ART-suppressed PLWH is safe and immunogenic and that larger clinical trials are needed to further investigate the effects of ICVAX on reservoirs.

## TUPEA025

**Covalent complexing of HIV1-C SOSIP.664 to 2dCD4<sup>S60C</sup> changes the conformational dynamics of CD4 and demonstrates exceptional immunogenicity in New Zealand white rabbits**

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**Background:** The human immunodeficiency virus type 1 (HIV-1) envelope glycoprotein (Env) mediates infection by targeting the host CD4 receptors. When bound to CD4, the HIV-1 Env undergoes conformational rearrangements that expose cryptic epitopes which could be exploited by vaccination. Our group has developed a CD4 mutant (2dCD4<sup>S60C</sup>) which stabilises the interaction between Env and CD4 through targeted inter-chain disulphide linkage. The resulting complexes elicit broadly neutralizing antibodies (bNAbs) in a preclinical setting, with preliminary mapping experiments suggesting the observed antibody response is predominantly CD4-specific.

This study further biochemically characterises the stabilised Env:CD4 interaction to aid in our understanding of the potent antibody responses elicited following small animal immunizations.

**Methods:** Purified HIV-1C SOSIP.664 trimeric Env was complexed to 2dCD4, covalently (Env:2dCD4<sup>S60C</sup>) and non-covalently (Env:2dCD4<sup>WT</sup>). Conformational dynamics of the complexes were compared using hydrogen-deuterium exchange mass spectrometry (HDX-MS). Antigenicity of the complexes was evaluated in ELISAs and immunogenicity of the covalent complex tested in New Zealand white rabbits.

**Results:** HDX-MS revealed the dynamics of key CD4 contact residues important for MHCII and Env binding located in CD4 domain 1 were maintained in the Env:2dCD4<sup>S60C</sup> complex, with greater variation observed throughout CD4 domain 2 when compared to Env:2dCD4<sup>WT</sup>. The covalent complex maintained the Env structural integrity as it was recognised by most anti-HIV antibodies targeting the V1V2 apex and the CD4 binding site.

Additionally, the covalent complex elicited bNAbs responses in rabbits, neutralising 76% of a global panel of clinically relevant HIV-1 pseudoviruses.

**Conclusions:** Combined these data suggest functionally significant residues in CD4 domain 1 remain anchored within each Env:CD4 complex, whilst the increased flexibility of CD4 domain 2 residues in the covalent complex may allow for the presentation of diverse antigenic targets on the host cell receptor relevant for HIV-1 neutralization. Fine mapping of the elicited antibody responses is required to confirm this hypothesis.

Overall, results reaffirm the continual development of Env:2dCD4<sup>S60C</sup> complex immunogens as promising HIV-1 vaccine candidates.

## TUPEA026

TCR repertoire diversity allows for expansion of HIV-specific CD8 T-cells following anti-PD1 in people with HIV and cancer on ART

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**Background:** In people living with HIV (PWH), immune dysfunction persists with elevated expression of the exhaustion marker programmed death (PD1) despite suppressive antiretroviral therapy (ART). Anti-PD1 therapy in people with cancer can enhance tumor-specific T-cell responses through the proliferative burst of exhausted effector T-cells (T<sub>EX</sub>). We aimed to determine the effects of anti-PD1 in vivo on the T-cell receptor (TCR) repertoire of HIV-specific CD8 T-cells.

**Methods:** As part of a prospective longitudinal clinical trial of PWH on ART with cancer (AIDS Malignancy Consortium-095 Study), participants received anti-PD1 (nivolumab) every 3 weeks. Blood was collected prior to and following the first, fourth and subsequent infusions. We sorted HIV-tetramer+ CD8 T-cells from six participants and performed single cell RNA sequencing and TCR repertoire computational analysis. We used a data-based frequency cut-off and considered a clonotype as expanded when a particular TCR sequence constituted > 2% of the overall TCR sequences.

**Results:** Out of 1828 TCR clonotypes, 55 expanded, totalling 913 cells, with 78.2% identified as T<sub>EM</sub> or T<sub>EX</sub> cells. All cells with expanded clonotypes showed differentially expressed genes upregulated for effector functions and



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antigen recognition. Baseline TCR diversity positively correlated with expanded clonotypes after a single anti-PD1 dose ( $r=0.57$ ). In 3 participants, high diversity in HIV tetramer+ CD8 T-cells led to rapid expansion and subsequent contraction with additional doses. In the other 3 participants, lower diversity also resulted in clonotype expansion, but only after multiple anti-PD1 doses. Pair-wise TCR distance analysis demonstrated that expanded clones were biochemically diverse and therefore likely recognise a diverse range of HIV epitopes.

**Conclusions:** PWH on ART and cancer with a diverse HIV-specific TCR repertoire at baseline exhibit rapid clonotype expansion after a single anti-PD1 dose, while a less diverse TCR repertoire requires multiple doses of anti-PD1 for expansion. Whether these expanded clonotypes can control HIV replication once ART is stopped remains to be determined in future clinical trials of anti-PD1 in PWH on ART.

## TUPEA027

Delivery and long-term expression of CCR5-blocking monoclonal antibody Leronlimab with AAV for ART-free remission from SHIV viremia

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**Background:** CCR5 blockade represents a scalable non-transplantation approach for long-term ART-free HIV remission. Here, we tested if AAV vectors could induce long-term expression of CCR5-blocking monoclonal antibody Leronlimab in a SHIV-infected rhesus macaques (RMs).

**Methods:** Four SHIV-infected RMs received AAV9 encoding macaque Fc Leronlimab with stabilizing, silencing, and half-life extending mutations (AAV9-MacLSLeron). Animals were monitored longitudinally for CCR5 receptor occupancy (RO), plasma Leronlimab concentrations, antidrug antibodies (ADAs), and SHIV plasma viral loads.

**Results:** All four AAV9-MacLSLeron-treated RMs reached 100% CCR5 RO on blood CD4+ T cells within 1 week and plasma Leronlimab was detected ( $>1\mu\text{g/ml}$ ) within 2 weeks of AAV administration. In two of the RMs, SHIV viremia declined and reached undetectable levels between 10-40 weeks post-AAV, and those levels have remained undetectable through 70 weeks post-AAV. The remaining two RMs developed ADAs within 5-15 weeks post-AAV re-

sulting in complete clearance of Leronlimab from plasma as well as a rapid decline in CCR5 RO. Spontaneous reemergence of CCR5 RO by Leronlimab was observed approximately 1 year post-AAV. One of the two animals has had full and sustained CCR5 RO, detectable plasma Leronlimab, and undetectable SHIV RNA in plasma for over 1 year post-reexpression. The second re-expressing animal has achieved and maintained 100% CCR5 RO for about 10 weeks, has detectable plasma Leronlimab, and has declined plasma viremia.

**Conclusions:** While further investigation is needed to develop AAV vectors and/or regimens that reduce the incidence of ADAs, the transgene reexpression phenomenon we have observed highlights the need to further investigate the interplay between AAV establishment and the development of ADAs.

Overall, these data demonstrate the potential of AAV vectors for sustained antibody-based CCR5 blockade as a gene therapy approach for long-term ART-free HIV remission.

## TUPEA028

Evaluation of a supplement-containing enema on intestinal immunity, microbiome, and susceptibility to low dose intrarectal SIV

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**Background:** In the Americas and Europe, men who have sex with men (MSM) are disproportionately affected by HIV. Rectal douching among MSM is proposed as a contributor to gastrointestinal damage and microbiome disruptions. We developed an epithelial-enhancing enema by supplementation with prebiotic fiber inulin and short-chain fatty acid sodium butyrate (Enema-BF).

We hypothesize that epithelial-enhancing enemas will mitigate colorectal epithelial damage and reduce intrarectal HIV acquisition.

**Methods:** We administered hypotonic enemas (Normosol-R) to rhesus macaques with or without inulin and sodium butyrate ( $n=6$  each Controls, Enema-alone, Enema-BF) thrice-weekly, prior to repeated low-dose intra-rectal SIVmac239X challenge.

Before and 28 days after treatment initiation ( $n=12$  enemas) we assessed the fecal microbiome by 16S Illumina sequencing and surveyed intestinal and systemic immunity by flow cytometry, transcriptional analysis (NanoString), and ELISA.

Fifty-six days after initiation ( $n=24$ ) we initiated challenges with 4 TCID<sub>50</sub> SIVmac239X. Susceptibility to acquisition was assessed by time to infection and acquired transmitter-founder (T/F) variants.


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**Results:** Enema-alone animals exhibited significantly lower frequencies of rectal memory CD8<sup>+</sup> T-cells (CD8<sup>+</sup> TM), lower IL-2 expression by CD8<sup>+</sup> TM, and lower IL-22 production by both CD4<sup>+</sup> and CD8<sup>+</sup> TM, as compared to controls. Enema supplementation restored CD8<sup>+</sup> TM frequencies and IL-22 production. No differences were observed in plasma sCD14 or iFABP2 between groups. Irrespective of supplementation, enema treatment was associated with fecal bacterial dysbiosis. Whereas Enema-alone animals exhibited significantly increased frequencies of many *Prevotellaceae* species, these perturbations were blunted with supplementation. Of animals infected thus far, there are no differences in the number of challenges that resulted in infection; however, Enema-BF animals acquired a significantly higher number of T/F variants.

**Conclusions:** Our analyses assess the effect of repeated enema use on the intestinal microbiome and immunity, as well as the efficacy of a putatively epithelial-enhancing enema on these same measures.

Although our epithelial-enhancing enema limited a proinflammatory intestinal milieu and mitigated *Prevotellaceae* expansion, increased acquisition of T/F variants in Enema-BF animals suggests that our therapeutic may not reduce lentiviral acquisition. Insights gained from our study will inform the consequences of repeated enema usage in MSM and the design of improved bowel-clearing preparations for sexual and surgical use.

## TUPEA029

Population pharmacokinetics of ainoovirine and exposure-response analysis in people living with HIV

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**Background:** Ainoovirine (ANV) is a new generation of non-nucleoside reverse transcriptase inhibitor for the treatment of human immunodeficiency virus (HIV) type 1 infection. This study aimed to evaluate the population pharmacokinetic (PopPK) profile and exposure-response relationship of ANV among people living with HIV.

**Methods:** Plasma concentration-time data from phase 1 and phase 3 clinical trials of ANV were pooled for developing the PopPK model. Exposure estimates obtained from the final model were used in exposure-response

analysis for virologic responses and safety responses. Trial registration with Chinese Clinical Trial Registry (ChiCTR1800018022 and ChiCTR1800019041).

**Results:** ANV exhibited a nonlinear pharmacokinetic profile, which was best described by a two-compartment model with first-order elimination. There were no significant covariates correlated to the pharmacokinetic parameters of ANV. The PopPK parameter estimate (relative standard error) for CL/F was 6.46 L/h (15.0), and the clearance of ANV increased after multiple doses. The exposure-response model revealed no significant correlation between the virologic response (HIV-RNA <50 copies/mL) at 48 weeks and the exposure, but the incidence of adverse events increased with the increasing exposure (P value of steady-state trough concentration and area under the steady-state curve were 0.0177 and 0.0141, respectively).

**Conclusions:** Our PopPK model supported ANV 150 mg once daily as the recommended dose for people living with HIV, requiring no dose adjustment for the studied factors. Optimization of ANV dose may be warranted in clinical practice due to an increasing trend in adverse reactions with increasing exposure.

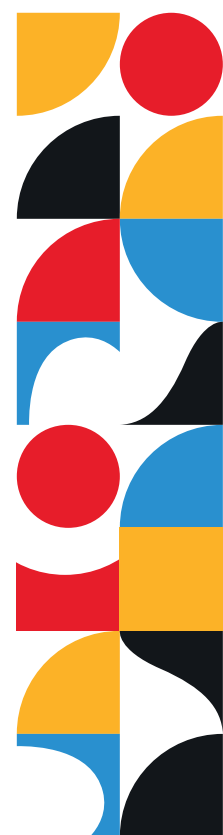
## TUPEA030

A membrane-anchored consensus-C-Env-protein delivered via combinations of a DNA vaccine with viral vectors elicits potent and long-lasting adaptive immune responses

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**Background:** The generation of an HIV-1 vaccine able to induce long-lasting protective immunity remains a main challenge. Here, we aimed to modify next-generation sol-







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uble, prefusion-stabilized, close-to-native, glycan-engineered clade C gp140 envelope (Env) trimers (sC23v4 KIKO and ConCv5 KIKO) for optimal display on the cell surface following homologous or heterologous vector delivery.

**Methods:** A combination of the following modifications scored best regarding the preservation of closed, native-like Env trimer conformation and antigenicity when using a panel of selected broadly neutralizing (bnAb) and non-neutralizing (nnAb) monoclonal antibodies for flow cytometry: i) replacing the natural cleavage site with a native flexible linker and introducing a single amino acid substitution to prevent CD4 binding (\*), ii) fusing a heterologous VSV-G-derived transmembrane moiety to the gp140 C-terminus, and iii) deleting six residues proximal to the membrane.

**Results:** When delivering membrane-tethered sC23v4 KIKO\* and ConCv5 KIKO\* via DNA, VSV-GP, and NYVAC vectors, the two native-like Env trimers provide differential antigenicity profiles. Whereas such patterns were largely consistent among the different vectors for either Env trimer, the membrane-tethered ConCv5 KIKO\* trimer adopted a more closed and native-like structure than sC23v4 KIKO\*. In immunized mice, VSV-GP and NYVAC vectors expressing the membrane-tethered ConCv5 KIKO\* administered in prime/boost combination were the most effective regimens for the priming of Env-specific CD4 T cells among all tested combinations. The subsequent booster administration of trimeric ConCv5 KIKO\* Env protein preserved the T cell activation levels between groups. The evaluation of the HIV-1-specific humoral responses induced in the different immunization groups after protein boosts showed that the various prime/boost protocols elicited broad and potent antibody responses, preferentially of a Th1-associated IgG2a subclass, and that the obtained antibody levels remained high at the memory phase.

**Conclusions:** In summary, we provide a feasible strategy to display multiple copies of native-like Env trimers on the cell surface, which translates into efficient priming of sustained CD4+ T cell responses after vector delivery as well as broad, potent, and sustained antibody responses following booster immunizations with the homologous, prefusion-stabilized, close-to-native ConCv5 KIKO\* gp140 Env trimer.

## TUPEA031

### Downselection and GMP-manufacturing of sequential clade C Env trimer immunogens to guide B cell maturation towards broadly neutralizing antibody responses

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**Background:** Stabilization of the HIV-1 Envelope glycoprotein trimer (Env) in its native pre-fusion closed conformation is regarded as one requirement for the induction of neutralizing antibody (nAb) responses. Another essential requirement toward neutralization breadth is proper engagement of B cell receptors on naive B cells and subsequent guiding of B cell maturation by means of vaccination with sequential immunogens.

**Methods:** Here, we systematically analysed how the stepwise stabilization of a clade C consensus (ConC) Env immunogen impacts biochemical and biophysical protein traits such as antigenicity, thermal stability, structural integrity, and particle size distribution. Immunogenicity and neutralization profiles were assessed via mouse and rabbit studies. The most promising ConC candidate was modified with the goal to engage the germline gIVRC B cell receptor. CHO cell lines were developed, and a process was established to support GMP manufacturing of two Env trimer immunogens for sequential immunization.


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**Results:** The increasing degree of prefusion Env trimer rigidification positively correlated with manufacturability, stability, and an overall favourable binding profile of structure-dependent broadly neutralizing antibodies (bnAbs) and non-neutralizing antibodies (non-nAbs). Increased structural integrity of the Env trimers improved the quality of binding antibodies and Tier2 neutralization capacity of sera obtained from rabbits following immunization with modified ConCv5 Env (ConCv5KIKO) in MPLA.

Further modifications enabled binding of the germ-line-targeting ConCv5 Env trimer (ConCv5-GT) to the germ-line VRC01 mAb and functional engagement with B cell lines displaying gIVRC01. Avidity gains achieved by ConCv5-GT multimerization on silica nanoparticles further improved activation of gIVRC01 B cell lines.

**Conclusions:** Based on these findings, two lots of Env trimers, ConCv5-GT and ConCv5-KIKO, for sequential immunization were manufactured and released as GMP-grade drug substance and product for clinical validation.

## HIV-associated viruses, co-infections and co-morbidities

### TUPEA032

Nef is the key pathogenic factor responsible for HIV-associated atherosclerosis

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**Background:** Anti-retroviral therapy (ART) can suppress HIV replication to undetectable levels and restore immune functions. Nevertheless, incidence of certain co-morbidities, in particular atherosclerosis, is significantly increased in ART-treated HIV-infected individuals. Pathogenic factors responsible for atherosclerosis in this population are not fully understood, limiting therapeutic approaches. In this study, we created a mouse model of HIV-associated atherosclerosis to test the hypothesis that Nef is the key pathogenic factor responsible for increased atherosclerosis associated with HIV infection.

**Methods:** The model we created is based on NSG immunodeficient mice. Newborn mice were sub-lethally irradiated and humanized by human cord blood CD34<sup>+</sup> cells. Humanized mice were injected with AAV-PCSK9, transferred to high-fat diet and infected with Nef-positive or Nef-deficient HIV-1 JR-CSF (or left uninfected). Each group had three mice (or male). Viral load and PCSK9 were an-

alyzed every 2 weeks, and after 14 weeks mice were sacrificed and analyzed for lipoproteins, inflammatory cytokines, and atherosclerotic plaques on aorta.

**Results:** Our analysis demonstrated that Nef-positive and Nef-negative HIV-1 strain used in this study (JR-CSF) replicated to the same level (5x10<sup>7</sup> copies/ml) in humanized NSG mice. Mice infected with Nef-positive virus developed significantly more atherosclerotic plaques (1.7% of aorta surface) than mice infected with Nef-negative HIV (1.3%) or uninfected mice (1.2%). HDL levels were significantly lower in HIV Nef<sup>+</sup> infected mice, but LDL levels were similar.

Ultrasound analysis demonstrated an over 2-fold decrease in LCCA and aortic root wall movement (diastole to systole) in mice infected with Nef-positive HIV-1 relative to uninfected mice or mice infected with Nef-deficient HIV-1. IL-6, TNF $\alpha$  and IL-1 $\beta$  were significantly increased in the plasma of mice infected with Nef-positive HIV-1 relative to mice in two other groups.

**Conclusions:** We describe the mouse model that reproduces HIV-associated atherosclerosis. Surprisingly, atherosclerosis in mice infected with Nef-deficient HIV-1 was not increased relative to uninfected mice, suggesting that Nef may be the only HIV-associated pro-atherogenic factor, at least in this model. Targeting Nef may be a promising therapeutic approach aimed at preventing this dangerous co-morbidity.

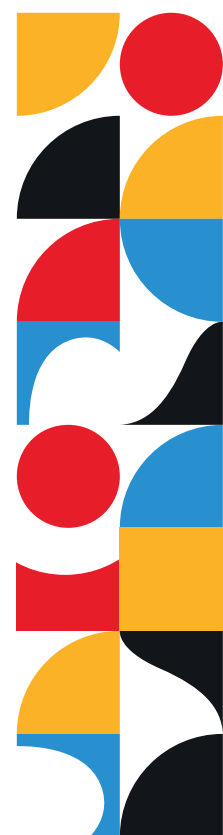
### TUPEA033

Whole genome sequencing-based profiling of rifampicin-resistant *Mycobacterium tuberculosis* strains by HIV status in Botswana

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**Background:** Whole genome sequencing technology (WGS) provides more comprehensive drug resistance profiles which could guide choice of treatment. The objective of this study was to utilize WGS technology to characterize





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*Mycobacterium tuberculosis* (Mtb) isolates and evaluate the association of rifampicin-resistant-TB with HIV acquisition in Botswana.

**Methods:** A retrospective cohort study was conducted on 133 individuals diagnosed with rifampicin-resistant-TB from 2016-2021. Genomic DNA was extracted from isolates cultured on Löwenstein-Jensen media using the cetyltrimethylammonium bromide(CTAB) method. Library preparation was performed with the Illumina DNA prep kit and loaded on Illumina NextSeq 2000 platform. TBProfiler(v4.4.2) was used to identify and delineate *M.tb* lineages and drug resistance profiles according to WHO mutations catalogue. Logistic regression models were used to identify predictive factors of HIV in people with rifampicin-resistant-TB.

**Results:** In this cohort, 73/133(55%) were people living with HIV (PLWH). The median age of PLWH was 41 (Q1, Q3: 32, 48) years, which were older than people not living with HIV (PNLWH) (median age: 29 (Q1, Q3: 25, 47)(p=0.01). A total of 106/133 were successfully sequenced of which 64 were PLWH and 42 were PNLWH. Amongst 106 sequences, 61, 27, 16 and 2 belonged to lineage4, lineage1, lineage2 and lineage3(all from PLWH), respectively. For rifampicin, *rpoB*\_p.S450L(n=28) and *rpoB*\_p.H445L(n = 23) and were detected while for isoniazid, *katG*\_p.S315T was found in 50/106. Mutations associated with anti-TB drugs were stratified by HIV status in Table 1. Mutation *rpoB*\_c.1303\_1305delGAC was only observed among PLWH(n=3). Mono-rifampicin-resistant-TB was associated with living with HIV (unadjusted odd ratio:3.3, 95% confidence intervals:1.2-8.9(p=0.02)) when compared to those diagnosed with multidrug resistant-TB and pre-extensively drug resistant-TB.

Table 1. Mutations associated with anti TB drug stratified by HIV status.

Drug	Mutations	People not living with HIV (n=42)	People living with HIV (n=64)
Isoniazid	<i>inhA</i> _c.1030G>A	0/42	0/64
	<i>inhA</i> _c.1030G>C	0/42	0/64
	<i>inhA</i> _c.1030G>T	0/42	0/64
	<i>inhA</i> _c.1030G>A	0/42	0/64
	<i>inhA</i> _c.1030G>C	0/42	0/64
	<i>inhA</i> _c.1030G>T	0/42	0/64
	<i>inhA</i> _c.1030G>A	0/42	0/64
	<i>inhA</i> _c.1030G>C	0/42	0/64
	<i>inhA</i> _c.1030G>T	0/42	0/64
	<i>inhA</i> _c.1030G>A	0/42	0/64
Rifampicin	<i>rpoB</i> _c.507G>A	0/42	0/64
	<i>rpoB</i> _c.507G>C	0/42	0/64
	<i>rpoB</i> _c.507G>T	0/42	0/64
	<i>rpoB</i> _c.507G>A	0/42	0/64
Fluoroquinolones (Moxifloxacin, Levofloxacin, Ciprofloxacin)	<i>gyrA</i> _c.83G>A	0/42	0/64
	<i>gyrA</i> _c.83G>C	0/42	0/64
	<i>gyrA</i> _c.83G>T	0/42	0/64
	<i>gyrA</i> _c.83G>A	0/42	0/64
Ethambutol	<i>embB</i> _c.300G>A	0/42	0/64
	<i>embB</i> _c.300G>C	0/42	0/64
	<i>embB</i> _c.300G>T	0/42	0/64
	<i>embB</i> _c.300G>A	0/42	0/64
Pyrazinamide	<i>pncA</i> _c.1030G>A	0/42	0/64
	<i>pncA</i> _c.1030G>C	0/42	0/64
	<i>pncA</i> _c.1030G>T	0/42	0/64
	<i>pncA</i> _c.1030G>A	0/42	0/64

**Conclusions:** Being elderly and diagnosed with Rifampicin-mono-resistant-TB were associated with living with HIV among people with rifampicin-resistant-TB in Botswana. WGS is useful in detecting drug resistance mutations missed in current diagnostic tools and can potentially guide more tailored treatment strategies.

## TUPEA034

### Genotypic characterization of drug-resistant *Mycobacterium tuberculosis* isolates from people living with HIV in Blantyre, Malawi

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**Background:** Globally, about 0.167 million people died of HIV-associated TB in the year 2022 and around 10 million fall ill with TB every year. African region accounts for 23% of new cases. Malawi is among top 8 most HIV-TB co-infection burdened countries in Africa, the health condition is worsened by the country state of being one of the poorest countries in Africa with a fourth highest percentage of people living in extreme poverty in the world. A steady increase in the prevalence rate of HIV/AIDS makes the situation even more precarious. Malawi, with around 19 million inhabitants, shares geographical borders with Mozambique, Tanzania and Zambia where HIV-TB co-infection is also endemic. Molecular epidemiological studies have reported 7 main lineages (L1-L7) of *Mycobacterium tuberculosis* (Mtb) with each lineage adapting to populations of a specific geographical area. Certain Mtb lineages have been associated with evolution of unique properties such as increasing virulence and pathogenicity.

Specifically, the Beijing family of L2 has been associated with increasing drug resistance and HIV co-infection in some parts of the world including South Africa and Mozambique. Studies have expressed the diversity of *Mycobacterium tuberculosis* strains in some regions but few such studies have linked TB strains to multidrug resistance in people living with HIV.

**Methods:** A retrospective cross section study was conducted on the mycobacterium (Mtb) clinical isolates amongst TB drug resistant people living with HIV to establish and investigate any association with multidrug resistance. TB resistance was confirmed using GeneXpert followed by manual DNA extraction using C TAB method on 30 samples. Multiplex PCR and gel electrophoresis were used to cluster the mycobacterium (TB) strains present in the 30 isolates into 4 lineages (genotypes).

**Results:** There were 0/30 (0%) isolates belonging to Lineage 1, 0/30 (0%) isolates belonging to Lineage 2, 2/30 (7%) isolates belonging to Lineage 3 and 28/30 (93%) isolates belonging to Lineage 4.

**Conclusions:** The TB isolate belonging to Lineage 4 is predominant in HIV positive individuals who are resistant to TB treatment. Study of Lineage 4 isolates may play a key role in the design and formulation of an effective treatment for HIV-associated TB.

## TUPEA035

### IDO-driven Tryptophan catabolism and systemic inflammation in people with HIV under anti-retroviral therapy diagnosed with subclinical coronary artery disease: results of the Canadian HIV and Aging Cohort Study

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**Background:** Despite the success of ART, people with HIV (PLWH) suffer from inflammatory comorbidities such as coronary artery disease (CAD). Tryptophan (Trp) catabolism via Kynurenine (Kyn) pathway by indolamine 2,3-dioxygenase (IDO), expressed by myeloid cells, is associated with HIV disease progression and atherosclerosis. Thus, we assessed the Trp metabolism and its interplay with peripheral markers of inflammation in PLWH with subclinical CAD.

**Methods:** Blood specimens from HIV+CAD+ (n=34), HIV+CAD- (n=32), HIV-CAD+ (n=17) and HIV-CAD- (n=23) participants were obtained from the Canadian HIV Aging Cohort Study. CAD was determined by cardiac computed tomography angiography. Plasma levels of Tryptophan metabolites were measured by solid-phase-extraction liquid chromatography-tandem mass spectrometry.

Soluble inflammatory mediators were measured by Luminescence or ELISA. Myeloid and lymphoid cell subsets were assessed by multi-color flow cytometry.

**Results:** Kyn/Trp and 3-hydroxykynurenine/Xanthurenic acid ratios as markers of IDO activity were significantly increased in HIV+CAD+ compared to HIV-CAD- and HIV-CAD+. Accordingly, plasma IFN $\gamma$  levels were highest in HIV+CAD+ individuals within study groups and correlated positively with Kyn/Trp ratio.

Positive correlation of Kyn/Trp ratio with plasma IP-10 levels in both HIV+ and HIV- groups were observed, while independent of the CAD status. Significant increases in the Trp metabolites kynurenic acid, anthranilic acid were observed in PLWH, while the levels of xanthurenic acid were decreased in PLWH independent of their CAD status. HIV+CAD+ individuals also exhibited the highest plasma levels of the markers of gut mucosal damage REG-3 $\alpha$  and IFABP within study groups, but only IFABP was associated with the CAD status. Increases in the levels of other inflammatory mediators sTNF- $\alpha$  and IL-6 were associated to the presence of HIV, but independent of CAD.

Non-classical CD16+ monocyte frequencies were decreased in CAD+ participants along with enriched frequencies of classical CD14+ in these individuals and regardless of their HIV status. mDC, CD73+ CD4 and Treg frequencies were all decreased in HIV+CAD+ group, while their levels were not associated with Trp metabolites.

**Conclusions:** IDO activity was increased in HIV+CAD+ individuals compared to both HIV negative groups, along with their higher levels of the markers of the gut mucosal damage, IFN $\gamma$  and altered monocyte subsets.

## SARS-CoV-2 virology, pathogenesis, host immune responses, vaccines and immunotherapies

## TUPEA036

### Longitudinal SARS-CoV-2 antibody and cellular immune responses during the endemic phase in people living with and without HIV in Ethiopia

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**Background:** During the COVID-19 pandemic, people living with HIV (PLWH) did not have significantly higher infection rates, but greater mortality rates, especially among severely immunosuppressed individuals, were observed. During the endemic phase of the COVID-19 pandemic, we compared the seroprevalence, reinfection rates, and clinical impact among PLWH and those without HIV.

**Methods:** We recruited health care workers and general population members from Jimma, Ethiopia in a longitudinal cohort study. Data was collected between Nov-2022 and Dec-2023, with 3-month study visit intervals. Blood samples for SARS-CoV-2 serology (Roche Elecsys®) and T cell analysis (Interferon gamma release assay, IGRA) were collected. Reinfection with SARS-CoV-2 was defined based on an anti-N antibody titer increase of greater than 2 standard deviations (SD) of the test variance.

We compared the distribution of binding anti-S antibodies and T cell IGRA responses using boxplots and Wilcoxon-test among PLWH and those without HIV in a 2:1 age-



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sex-matched sample. Linear mixed models were used to analyze the serological course over time. Included factors were HIV status, reinfections, age, and sex.

**Results:** In total, 102 out of 500 participants (20.4%) were PLWH, 85.3% were female, with a mean age of 36.5 years (SD 9.0). All PLWH were on antiretroviral treatment and 11.8% thereof had a CD4 cell count <350 cells/ $\mu$ L (mean CD4: 651.6). No difference in the proportion of reinfections in PLWH and matched HIV-negative participants was observed (30.4% vs. 30.8%), and no cases of severe COVID-19 disease were reported. Anti-S antibody response increased over time on a population level (Beta 1.025, 95%-CI: 1.007; 1.043) but was lower for PLWH versus without HIV (Beta 0.849, 95%-CI: 0.743; 0.971).

There were no differences in anti-S antibody response over time between groups based on the presence or absence of reinfection (Beta 0.977, 95%-CI: 0.887; 1.085). The distribution of T cell responses was not statistically different between groups ( $p=0.928$ ).

**Conclusions:** During the endemic phase of COVID-19, we observed similar surrogate reinfection rates by HIV status in one third of the study population, without evidence for severe COVID-19 disease. However, binding anti-S antibody levels were lower in PLWH, indicating a potential impact on SARS-CoV-2-specific immune responses.

## TUPEA037

Chemokine receptors expression is altered during convalescent COVID-19 in people living with HIV on art

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W.C. Lara Vázquez<sup>1</sup>, A. Juárez Díaz<sup>1</sup>, E. Canché Mucul<sup>1</sup>,

J.C. Rodríguez Hernández<sup>1</sup>, S. Avila Ríos<sup>1</sup>

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**Background:** Several studies have demonstrated that people living with HIV (PLWHIV) on suppressive antiretroviral therapy (ART) do not exhibit higher susceptibility to COVID-19 infection and show similar clinical presentation and mortality as persons without HIV. Nevertheless, the effect of COVID-19 infection on the immune system of PLWHIV during the convalescent phase remains unknown.

The aim of this study is to describe the expression of chemokine receptors on T cells, B cells and monocytes during early convalescent COVID-19 in treated PLWHIV.

**Methods:** Enrollment of the participants occurred from April to November 2021. The study comprised 53 long-term treated (10 years) PLWHIV, of whom, 35 were diagnosed with COVID-19 in the past 5 months (HIV+COVID+) and 18 had never been infected by COVID-19 (HIV+COVID-). Freshly purified PBMCs were immunophenotyped using

flow cytometry. Statistical analyses were performed using GraphPad Prism9. U-Mann Whitney test was used to compare the study groups.

**Results:** We found that HIV+COVID+ individuals exhibited similar frequencies and activation levels of CD4+ and CD8+ T cells than HIV+COVID- individuals ( $p > 0.05$  in all cases). However, CCR1 expression was significantly decreased on CD8+ T cells ( $p = 0.0003$ ), B cells ( $p = 0.0046$ ), classical monocytes ( $p = 0.0005$ ) and non-classical monocytes ( $p = 0.0006$ ) in HIV+COVID+ compared to HIV+COVID- individuals. In the HIV+COVID+ group, CCR4 expression was increased in classical ( $p = 0.0001$ ) and non-classical monocytes ( $p = 0.0008$ ), while CCR5 was significantly reduced in classical monocytes ( $p = 0.0345$ ) compared to HIV+COVID- individuals. Moreover, the expression of the fractalkine receptor (CX3CR1) was significantly increased in the HIV+COVID+ group on CD4+ ( $p = 0.0007$ ) and CD8+ ( $p < 0.0001$ ) T cells, classical monocytes ( $p < 0.0001$ ), and B cells ( $p < 0.0001$ ) compared to HIV+COVID- individuals.

**Conclusions:** After complete COVID-19 recovery in the absence of any clinical symptoms, altered expression of chemokine receptors was observed in treated PLWHIV after 5 months of acute COVID-19 infection. The altered expression seems to perdure after months of active COVID-19 infection and may contribute to modification in the migration patterns of the immune cells and aberrant inflammatory responses in treated PLWHIV.

## TUPEA038

Short-lived neutralizing antibody activity against SARS-CoV-2 in newborns of vaccinated mothers

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**Background:** Maternal-derived antibodies, transferred through the placenta or breast milk, represent a powerful tool to reduce the burden of neonatal infections. Maternal vaccination against Influenza and Tetanus, Diphtheria and acellular Pertussis (Tdap) has been well studied in terms of safety and efficacy for the protection of the newborn. We analyzed neonatal protection against severe acute respiratory syndrome coronavirus 2 (SARS-CoV-2) passively acquired after mother vaccination and/or infection (hybrid immunity).

**Methods:** Eighteen newborns of mothers vaccinated with three doses of BNT162b2 mRNA vaccine before pregnancy were enrolled in the study. Infants were stratified based


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on the anamnestic lack/presence of COVID-19 maternal infection: 8 infants from SV (SARS-CoV-2 Vaccinated) mothers and 12 from SIV (SARS-CoV-2 Infected and Vaccinated) women. SARS-CoV-2-specific neutralizing antibody activity (NA) in plasma was assessed by virus neutralization assay (vNTA) against the SARS-CoV-2 Omicron (Omi, B.1.1.529) strain at delivery (T0) and 3 months after birth (T3).

**Results:** Average time from mother vaccination to delivery was similar in both groups (mean $\pm$ SD: SV=16 months $\pm$ 2.4; SIV=16 months $\pm$  6). In the SIV group, average time elapsed between the infection and delivery was 12 months (mean $\pm$ SD: 12 months $\pm$ 5). At birth, significantly lower NA was observed in infants of SV compared to SIV mothers ( $p < 0.05$ ). NA declined equally in both groups three months after delivery (mean $\pm$ SD: T3 vs T0 in SV=-39% $\pm$ 0.6; T3 vs T0 in SIV=-33% $\pm$ 0.5).

Finally, in non-breastfed infants NA was null at T3, whereas breastfed infants reported a minimal NA (mean $\pm$ SD: 18 $\pm$ 22), independently from previous maternal SARS-CoV-2 infection.

**Conclusions:** Results herein show that:

1. Maternal hybrid immunity confers greater protection at birth;
  2. Neutralization activity drops rapidly over time independently of previous maternal infection and;
  3. Neutralization activity is higher in breastfed newborns.
- Our findings suggest that, regardless of a previous SARS-CoV-2 infection, a booster vaccination should be recommended during pregnancy to confer a higher and long-lasting protection to the newborn.

## TUPEA039

Consecutive SARS-CoV-2 vaccine doses enhance immunity against variants in HIV-positive individuals, especially those with a compromised immune system

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**Background:** This study explored the impact of the humoral and cellular immune responses to SARS-CoV-2 variants in individuals living with HIV-1 (PLWH), especially those with compromised immune systems, following different COVID-19 vaccines and considered concurrent infections.

**Methods:** A prospective cohort study collected peripheral blood mononuclear cells (PBMCs) after multiple doses of COVID-19 vaccines, including both mRNA- and protein-based vaccines. Multiparametric flow cytometry analysis (IGRA) quantified CD4 and CD8 cell responses against the spike glycoprotein of the Wuhan, Delta and Omicron variants.

Additional assessments included changes in total and specific memory B cells (MBC) and quantification of S-specific IgG antibodies.

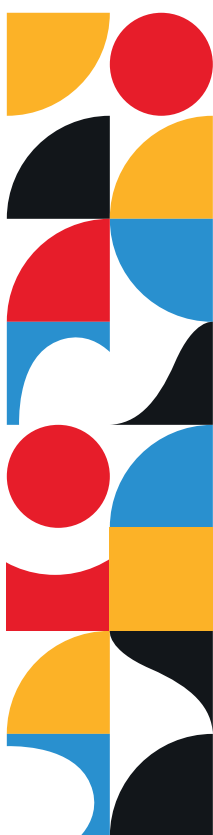
**Results:** A total of 151 PLWH under suppressive antiretroviral treatment received successive doses of either mRNA (N=118; Moderna or Comirnaty) or viral vector vaccines (N=33; Oxford-AstraZeneca or Janssen).

After the initial vaccination schedule, individuals with prior SARS-CoV-2 infection and those receiving mRNA-based vaccines showed higher spike IgG antibodies against Wuhan, Delta, and Omicron variants, along with specific MBCs, compared to uninfected individuals, those receiving other vaccines, and HIV-uninfected individuals. Wuhan-specific CD8 cell levels were higher in PLWH receiving mRNA vaccines but still lower than in HIV-uninfected individuals. Immunosuppressed PLWH (CD4 counts below 350 cells/mm<sup>3</sup>) exhibited lower Wuhan/Delta-specific IgG antibodies and specific MBCs.

Additionally, they had fewer Wuhan-specific CD4 cells and Delta-specific CD8 cells. Those with a CD4/CD8 ratio below 0.4 had reduced Delta-specific IgG antibodies, MBC, and Wuhan/Delta-specific CD8 cells. All PLWH received a third mRNA vaccine dose, resulting in significant improvements in all variables.

Intercurrent infections were more prevalent among uninfected PLWH compared to those with previous infection (30% vs. 7%,  $p=0.002$ ). Levels of antibodies and specific CD4/CD8 cells were comparable to healthy individuals. Immunosuppressed individuals exhibited similar levels of all variables, except for MBCs, which were lower compared to immunocompetent individuals ( $p < 0.001$ ). A fourth dose of mRNA vaccine further enhanced immune responses in a limited sample of 15 PLWH.

**Conclusions:** Despite initially lower immune responses in PLWH, particularly those with immunosuppression and a low CD4/CD8 ratio, successive vaccine doses significantly improved both humoral and cellular immune responses. Booster doses, especially for immunosuppressed PLWH, are strongly recommended to optimize immune responses against SARS-CoV-2 variants.



## Course of HIV disease

### TUPEB040

People presenting with advanced HIV disease are at high risk of dying: a mortality audit could help provide useful lessons

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**Background:** In October 2022, Tanzania reported 4,666 (0.3%) deaths among the 1.6 million people living with HIV (PLHIV) on antiretroviral therapy (ART) that PEPFAR was supporting. Understanding the causes of death is critical to Tanzania achieving the UNAIDS 95-95-95 goals.

**Description:** A death audit was conducted at two health facilities in Lindi Region, one hospital (1,140 PLHIV) and a health center (725 PLHIV). Deaths occurring between October 1, 2022 to June 30, 2023 were assessed for likely causes of death. The virologic and immunological status, retention, and suspected or diagnosed opportunistic infections within the six months of death were reviewed to determine whether death was likely related to advanced HIV disease (AHD). Deaths were categorized as either HIV or non-HIV related.

**Lessons learned:** Overall 41 PLHIV died with a median age of 48 years, 56% were female and 17 (41%) had been on ART <6 months prior to death. Among deceased clients on ART >6 months, median duration on ART was 7-years. 91% had VL < 1000 copies/mL. Of 41 deaths, 19 (46%) were likely AHD related. HIV-related deaths (HRD) were more likely to occur within 6 months of ART initiation (63%) compared to non-HRD (23%). The most common conditions associated with HRD were tuberculosis (37%) and cryptococcal meningitis (26%), while non-communicable diseases (32%) and malaria (23%) were the most associated with non-HRD.

	HRD	Non-HRD
Deaths in FY23 Q1-Q3, n (%)	19	22
Median Age (years)	46	51
Female, n (%)	11 (58%)	12 (55%)
<6 months of ART prior to death, n (%)	12 (63%)	5 (23%)
>6 months of ART prior to death, n (%)	7 (37%)	17 (77%)
Median time on ART (years)	7.7	6.9
VL<1000, n (%)	7 (83%)	15 (94%)

Table 1. Characteristics of HRD and Non-HRD

**Conclusions/Next steps:** Deaths related to AHD or HIV are likely due to late diagnosis and simple mortality audits are a useful way to characterize them. Strategies to improve early diagnosis are critical in decreasing mortality. Among PLHIV on long term ART, screening, and management of NCDs could reduce deaths.

### TUPEB041

Outcomes of people with advanced HIV disease in the intensive care unit in Australia and New Zealand: a retrospective cohort study over three decades

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**Background:** A substantial proportion of people living with Human Immunodeficiency Virus (HIV) present or re-enter care with Advanced HIV disease (AHD). Admission to an Intensive Care Unit (ICU) for people with AHD was contentious in the 1980s and 1990s due to the poor prognosis of AHD at this time.

HIV and ICU management has since evolved, but limited data exist describing changes in survival for the subset of people with AHD and critical illness. We describe outcomes for people with AHD in Australia and New Zealand over three decades.

**Methods:** Retrospective cohort study of ICU admissions in Australia and New Zealand between 1993 and 2022, with a diagnosis of AHD. AHD was defined according to Acute Physiology and Chronic Health Assessment IIIJ, requiring a HIV diagnosis plus AHD-defining complication.

Data were extracted from the Australia and New Zealand Intensive Care Society Adult Patient Database, a binational clinical registry that receives data from over 200 ICUs. Descriptive longitudinal analysis of demographic, clinical, and outcome data was performed.

**Results:** We identified 1505 ICU admissions with comorbid AHD. Admission numbers increased over the study period (n=275 in 1993-2002; n=357 in 2003-2012; n=873 in 2013-2022).

Comparing 1993-2002 to 2013-2022, as demonstrated in Figure 1, we observed substantial reduction in both crude hospital mortality (36% vs 14% p <0.001) and ICU mortality (23% vs 9% p<0.001).

Median age increased (41 vs 53 years, p<0.001), illness se-

verity remained similar (mean APACHE-III score 70.0 vs 73.3,  $p=0.11$ ), and mechanical ventilation rates decreased (57% vs 39%,  $p<0.001$ ).

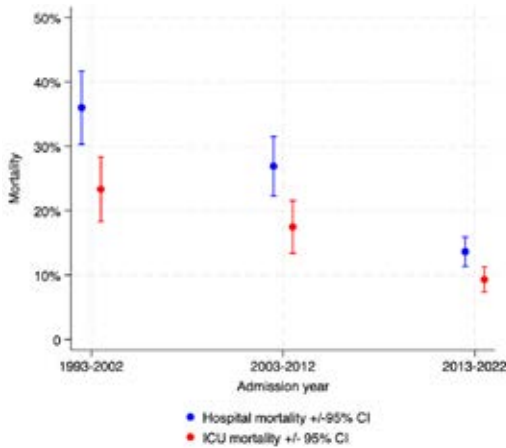


Figure 1. Crude hospital and ICU mortality.

**Conclusions:** Despite advances in HIV care, there remains a subset of people with AHD who require ICU admission. Mortality in this group has declined by more than 50%, but remains high. Mechanisms for improved survival likely relate to improvements in both ICU and HIV care and remains an important area for further research.

## TUPEB042

### Mortality rate and cause of death in people living with HIV in long term antiretroviral therapy at HIV-NAT, Bangkok, Thailand

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**Background:** With increased access to effective antiretroviral therapy (ART), life expectancy of people with HIV (PWH) has significantly improved.

However, mortality rates remain higher than those without HIV. Several deaths can be averted if cause of death could be modified and treated.

We therefore investigated the causes and predictor of death among PWH on long term ART in Thailand.

**Methods:** We retrospectively analyzed data from a prospective long term adult PWH (aged  $\geq 18$  years) cohort at HIV-NAT, Thai Red Cross AIDS Research Centre, Thailand. This cohort was established in 1996. Participants were followed-up 6 monthly. Follow up time was calculated from

the first visit until death. Cumulative all-cause mortality incidence was calculated with losses and transfers considered competing events.

**Results:** A total of 3,156 PWH (70 % male, median age 32 years, median CD4 240 (IQR:111-376 cells/mm<sup>3</sup>) were enrolled. During median duration follow-up of 6.5 (2.5-14.8) years, 227 (7.2%) PWH died, 18/227 (7.9%) died within a year of ART initiation. Almost 56% of them died from non-AIDS related, following by AIDS-related (24%) and unknown cause (20%). The most common causes of death were TB (37: 16.3%), cardiovascular disease (26: 11.5%), hepatocellular carcinoma (12: 5%), and suicides (5%). At the time prior death, median age was 49 years, 68% had HIV RNA  $< 50$  copies/ml and 50 (22%) PWH had prior TB disease. For those with prior TB, 52% died from non AIDS.

In a multivariable model, older age (sub-hazard ratio [sHR]: 1.05, 95%CI: 1.04-1.07), heterosexual male (sHR: 1.72, 95%CI: 1.23-2.43), and ever having TB (sHR: 1.62, 95%CI: 1.13-2.32) were associated with higher mortality after adjusting for baseline CD4 count, and hepatitis B/ C co-infection (Figure1).

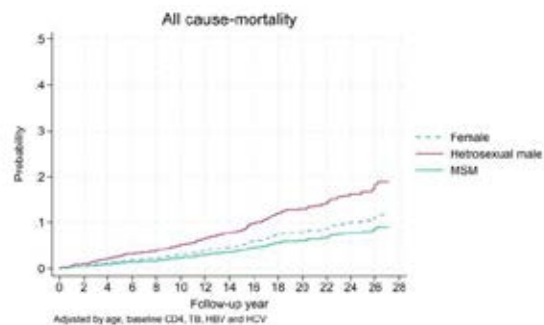


Figure 1. Cumulative incidence of mortality by gender.

**Conclusions:** Ever having TB infection was an independent and potentially modifiable risk factor for all-cause mortality. TB prevention in PWH should be aggressively pursued to reduce mortality risk.



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### TUPEB043

The diagnostic performance of a urinary albumin and creatinine point of care test in screening for chronic kidney disease among young people living with HIV in Uganda

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**Background:** Point of Care (POC) tests for albumin and creatinine are useful to screen for chronic kidney disease (CKD). They have mostly been used for people living with diabetes mellitus to rapidly identify those at risk of developing kidney disease. Their utility has not been assessed among young people living with HIV (YPLHIV). Our aim was to determine the diagnostic performance of a urinary albumin and creatinine POC for diagnosis of CKD among YPLHIV in Uganda.

**Methods:** We conducted a cross-sectional study comparing the diagnostic performance of MicroalbumPHAN® (Erba Lachema Czech Republic), a urinary albumin and creatinine POC test against the laboratory-measured albumin and creatinine as the reference standard. The participants were YPLHIV aged 10 to 24 years enrolled in seven public HIV clinics. They provided a spot mid-stream urine sample that was tested for albumin and creatinine using the POC and in the laboratory, and for proteinuria using urine dipstick. The albumin creatinine ratio (ACR) was calculated. Demographics and laboratory results were summarised in proportions, means and medians. The sensitivity, specificity, negative and positive predictive values of the POC vs the laboratory test, and factors associated with having a positive POC test using logistic regression were determined.

**Results:** A total of 497 participants were enrolled, 278 (56%) were females and 331 (67%) were aged 10-17 years. More participants had an ACR below 30mg/g on the laboratory measured ACR (88%) than the POC (64%). The POC showed a sensitivity of 74.5% (95% CI 70.6-78.4%) and a specificity

of 68.1% (95% CI 63.9-72.3%). The PPV was 21.5% (95% CI 17.8-25.1%) and the NPV was 95.8% (95% CI 94.0-97.6%) and an accuracy of 68.8%. Having a positive POC test was associated with having proteinuria (OR=2.82; 95% CI 1.89-4.22, p<0.001); a BMI <19.5 (OR=1.69 95% CI 1.17-2.45, p=0.005), and being male (OR=1.48; 95% CI 1.02-2.14, p=0.04).

**Conclusions:** The POC test had low sensitivity and specificity among YPLHIV in Uganda. However, it is still useful to rule out kidney disease given its high negative predictive value. It should be validated among people living with HIV against the 24-hour urinary excretion rate to further determine its diagnostic performance.

### TUPEB044

Clinical relevance of Next Generation Sequencing (NGS) of HIV intracellular DNA

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**Background:** Intracellular DNA genotyping may be useful in people with HIV (PWH) with low or non-detectable HIV RNA, contemplating ART change. These assays may miss relevant drug resistance mutations (DRMs) and detect others present in defective virus. Thus, more data are needed to refine the clinical utility of DNA mutations for ART selection.

This study compares baseline HIV DNA and RNA genotypes in PWH initiating their first ART regimen.

**Methods:** In an ongoing study, paired DNA and RNA genotypes were collected on 27 ART-naïve PWH prior to ART initiation and on 3 after initiation. NGS was performed on DNA extracted from peripheral blood mononuclear cells and plasma RNA with the Ion Torrent PGM System. DRMs (threshold ≥1%) were interpreted by the HIV Stanford Database version 9.4. DRMs were categorized by target [protease, reverse transcriptase (RT), and integrase (IN)]; Stanford resistance score for unique codons (≥30 vs <30); variant frequency (≥5% vs <5%); and potential APOBEC activity (pAPOa).

**Results:** Overall, 29/30 PWH had DNA and 23/30 RNA DRMs. Among all DRMs scoring ≥30: 72% occurred in DNA (28% at ≥5%; 45% with pAPOa; 67% in combined RT and IN classes); and 28% occurred in RNA (21% at ≥5%; 18% with pAPOa; 76% in combined RT and IN classes). DNA sequencing detected 17 PWH with RT codon 184V/I mutations which were accompanied by IN DRMs in 13. RNA sequencing detected 2 PWH with codon 184V/I mutations, both with IN DRMs. Excluding pAPOa-specified DRMs, but including all DRMs with Stanford scores ≥0, 11/30 had DNA DRMs while 5/30 had RNA DRMs to 3 or 4 drug classes.

**Conclusions:** DNA genotyping on ART-naïve PWH yielded 2.5-fold more DRMs than RNA genotyping, particularly in RT and IN classes. RT codon 184 DRMs occurred in over half the population and were accompanied by IN DRMs in


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76%. Thus, IN-based 2-drug regimens may be at particular risk. Nearly 3/4 of DNA DRMs occurred at low frequency and nearly half showed pAPOa. The predominance low frequency DRMs and pAPOa in DNA vs RNA suggests that some DNA DRMs may be due error or defective virus and cautious interpretation is warranted.

## TUPEB045

### Increased HIV viral testing output through mega polymerase chain reaction laboratories upgrade in Nigeria: a retrospective study

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**Background:** HIV viral load(HVL) monitoring plays a pivotal role in determining treatment success among individuals living with HIV. In Nigeria, as of 2016, inadequate testing capacities posed a significant challenge, only approximately 36% of 700,265 eligible clients receiving antiretroviral treatment had access to HVL testing. In alignment with Federal Ministry of Health's "test and treat" policy, addressing this issue required structural and equipment upgrades, as well as capacity building for personnel. We present a comprehensive analysis of HVL testing in three PCR laboratories in Nigeria both before and after their transformation into mega laboratories.

**Description:** PEPFAR supported substantial laboratory health systems strengthening interventions between 2017 and 2019. We rationalized laboratory services by reducing number of supported PCR laboratories from 27 to 17 based on historical data to improve efficiency and equitable workload distribution. The National Integrated Sample Referral Network was launched. Infrastructural and equipment upgrade for 6 selected high-throughput laboratories to mega laboratories in 2019.

USAID led the upgrade of 3 Laboratories situated at Nigeria Institute for Medical Research (NIMR) Lagos, University of Uyo Teaching Hospital (UUTH) Uyo, and Chukwemeka Odumegwu Ojukwu Teaching Hospital (COOUTH) Awka. Roche Cobas AmpliPrep/Cobas TaqMan 48 & 96 were replaced with Cobas 68/8800 in NIMR while additional Abbott m2000 sp/rt were placed in UUTH and COOUTH.

Additional staff were recruited, backup power supply was provided and allowances for extended working hours beyond the regular 8 hours of operation was introduced. Data on HVL samples received and tested before (January 2017 - December 2019) and after (January 2020 - December 2022) the intervention were collated from the

National Laboratory Information Management Systems and laboratory Registers and analyzed by Multivariate analysis of variance (MANOVA) on IBM SPSS 25.

**Lessons learned:** There was a significant difference in number of samples received & tested in the PCLs with a Wilks' Lambda value of 0.066, ( $p=0.001$ ). The Tests of between-subjects effects for samples received ( $F=18.2$ ,  $p=0.001$ ) & samples tested ( $F=11.1$ ,  $p=0.001$ ) were significant at 5 df. Samples received post-intervention (1,764,436) were greater than samples received pre-intervention (218,136) by 88% (1,546,300). Similarly, samples tested post-intervention (1,669,250) were greater than samples tested pre-intervention (219,587) by 87% (1,449,663).

**Conclusions/Next steps:** These data showed that mega PCL approach to HVL testing services contributed significantly to HVL testing uptake. The findings underscore importance of health system strengthening initiatives in expanding access to critical HIV services, leading to improved HIV treatment outcomes across Nigeria.

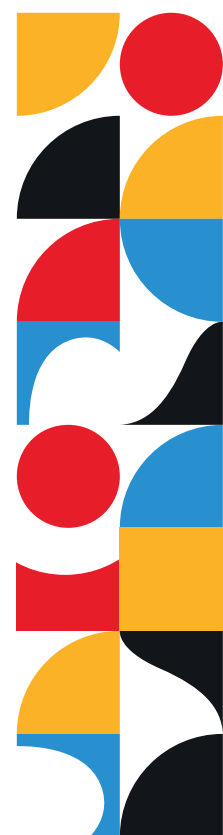
## TUPEB046

### Evaluation of two bioinformatics algorithms for the analysis of mutations associated with HIV-1 resistance to antiretrovirals

N.-K. Etame<sup>1</sup>, J. Fokam<sup>2</sup>, E. Ngoufack<sup>2</sup>, C. Chenwi<sup>2</sup>, N. Parkin<sup>3</sup>, C. Scheepers<sup>4</sup>, S. Inzaule<sup>5</sup>, D. Takou<sup>2</sup>, E. Molimbou<sup>2</sup>, A.D. Nka<sup>2</sup>, H. Gouissi Anguechia<sup>2</sup>, A.C. Ka'e<sup>2</sup>, G. Beloumou Angong<sup>2</sup>, S.C. Djupsa Ndjeyep<sup>2</sup>, A.M. Kengni Nguoko<sup>2</sup>, A.R. Nayang Mundo<sup>2</sup>, L.G. Moko Fotso<sup>2</sup>, D. Tambe<sup>2</sup>, P.P. Tueguem<sup>2</sup>, M.C. Tommo Tchouaket<sup>2</sup>, S.M. Sosso<sup>6</sup>, V. Colizzi<sup>7</sup>, C.-F. Perno<sup>8</sup>, N. Ndembu<sup>9</sup>, F.-X. Mbopi-Keou<sup>10</sup>, A. Ndjolo<sup>1</sup>

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**Background:** Efficient monitoring of HIV drug resistance depends on the use of standardized bioinformatics tools that are reliable and best suited for the identification of drug resistance mutations (DRMs) by healthcare staff. In this frame, we aimed to compare the concordance of the HIV-1 genotypic profiles obtained from sequences analyzed using two editing algorithms.





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**Methods:** A comparative study was conducted on plasma samples from HIV-1-infected individuals received at the virology laboratory of the Chantal BIYA International Reference Centre (CIRCB) from April through August 2023 for genotypic resistance testing. Raw HIV-1 sequence data were analyzed simultaneously using RECall™ (semi-manual) versus Exatype™ (automated) algorithms. Statistical analyses were performed on Excel-2016; with  $p < 0.05$  considered statistically significant.

**Results:** A total of 221 HIV-1 sequences were included from patients with a mean age of  $32 \pm 15$  years, 52.5% female and 100% on antiretroviral therapy. According to the quality validation conditions, 70.1% (155/221) of the sequences were validated by RECall™ compared with 60.2% (133/221) by Exatype™,  $p < 0.0001$ .

Specifically, positive and negative concordances between the two algorithms were 85.8% (155/221) and 75% (66/221) respectively, with  $\kappa = 0.78$ . Among sequences edited by the two algorithms, the concordance in terms of identification of viral subtypes was 100% (133/133): CRF02\_AG (81/81), A1 (29/29), G (5/5), F2 (5/5) and others (D, CRF18\_cpx, CRF13\_cpx, CRF01\_AE, CRF37\_cpx: 13/13).

Regarding the detection of DRMs, the two algorithms gave a concordance of 99.0%, 98.0%, 98.6% and 100.0% for DRMs to protease inhibitors, nucleoside reverse transcriptase inhibitors, non-nucleoside reverse transcriptase inhibitors and integrase inhibitors, respectively. The semi-manual algorithm (RECall™) had a higher validation rate (70.1%) for sequence analysis with an average turn-around-time ( $5.5 \pm 1.7$  min) meanwhile the automated algorithm (Exatype™) was faster with only  $2.5 \pm 1.1$  min. Thus, the efficiency (validation rate/turn-around-time) of RECall™ versus Exatype™ was 12.7 (70.1/5.5) versus 24.1 (60.2/2.5).

**Conclusions:** Analysis of DRMs and HIV-1 clades using automated (Exatype™) and semi-manual (RECall™) bioinformatics tools shows a good agreement, supporting the interoperability of these tools in routine clinical practice. However, based on its higher efficiency, the use of the automated algorithm is preferable, while the semi-manual algorithm serves as an alternative in case of failure/inaccessibility to the preferred approach.

## TUPEB047

### HIV acquisition intra PrEP: do we need to change the existing diagnostic algorithms?

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**Background:** Pre-exposure prophylaxis (PrEP) is a highly-effective HIV-prevention strategy. Initiating PrEP with a recent undiagnosed HIV-acquisition, or its occurrence during PrEP, could hinder the diagnosis due to a delay in anti-HIV antibodies and viral RNA/proteins detection.

**Methods:** We report the HIV-diagnosis difficulties in one individual that acquired HIV during PrEP, followed for 13-months. ELISA and Rapid-test serology-assays, Western Blot (WB), and viral load (VL) determination in whole and centrifuged (100,000xg 2h) plasma were performed. HIV proviral and total-DNA was evaluated by PCR in PBMC and isolated-CD4+ T-cells. HIV-specific T-cells were evaluated by flow cytometry after 14-day in vitro expansion with HIV-specific peptides.

**Results:** Results from a 36-year-old man who acquired HIV during PrEP (3TC/TDF, initiated 12/26/2022) are depicted in Table 1. On 03/16/2023, cART (3TC/TDF/DLG) was started with the first reactive ELISA (low OD); HIV rapid-test remained negative. WB was indeterminate (gp120 band) along the follow-up, until last visit. Low-range VL was detected from centrifuged-plasma; 0.33 HIV-DNA copies/1M CD4 T-cells were detected. Resistance-assay amplified the integrase HIV-proviral region, no resistance-associated mutations were found. Low magnitude of nef and p24-specific T-cells were found.

**Conclusions:** The standard algorithm might not be useful for HIV-diagnosis during PrEP. A cART-initiation delay could lead to the development of resistance-associated mutations and higher reservoir-size, underscoring the importance of early diagnosis. In this scenario, the use of rapid tests could render false negative results due to their limited number of antigens used in this type of assay. ELISA seems to play a better role for screening in this setting and WB positive criteria should be reconsidered, a single band could be sufficient in this context. RNA-detection techniques could be modified, using concentration techniques for detection of low levels of RNA. These considerations should be included in diagnostic algorithms of HIV-guidelines.


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## TUPEB048

### Improving maternal HIV retesting in maternal newborn and child health clinics using paper-based health records in Zambia, 2022-2023: lessons from 4 provinces

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**Background:** Incident maternal HIV acquisition is the leading cause of vertical HIV transmission, particularly during the lactating period. Regular HIV retesting for previously HIV negative pregnant and breastfeeding women (PBFW) can ensure early identification and rapid linkage to antiretroviral therapy (ART) of mother who acquire HIV. We describe maternal HIV retesting scale-up efforts in 4 of 10 Zambian provinces.

**Description:** Maternal Newborn Child Health (MNCH) clinics in Zambia routinely conduct HIV retesting every 3 months on previously HIV negative PBFW. Programmatic

challenges such as high numbers of PBFW in MNCH clinics, limited HIV testing kits, space, and staffing, and limited use of electronic health records (EHR), inhibit optimal retesting. MNCH teams in Eastern, Lusaka, Southern and Western provinces designed and implemented a model to scale-up maternal HIV retesting in all their MNCH clinics from October 2022 onwards. This model consisted of interventions to enhance integrated service-delivery, improve data management, dedicate HIV testing infrastructure, build capacity, task-shift to peer-mothers, and utilize continuous quality improvement approaches (Figure 1).

**Lessons learned:** After a year of implementation, maternal HIV retesting increased by more than 260% (from 116,265-303,142 tests) compared to the pre-implementation period (Figure 2). While the number of mothers diagnosed with HIV only slightly increased, retesting is still an impactful intervention to avert vertical transmission of HIV through interventions such as Pre-Exposure Prophylaxis. When utilizing a paper-based system, the tracking process can be challenging, and implementation of this model required substantial time spent reviewing registers.



Figure 1. The maternal HIV retesting model implemented by 4 provinces in Zambia.



Figure 2. Maternal HIV retesting trends before and during implementation of the model.

**Conclusions/Next steps:** Scaling-up maternal HIV retesting was successfully demonstrated using this model and would be beneficial for other Zambian provinces to adapt. For resource-constrained settings, that rely on paper-based systems, developing similar maternal HIV retesting models is useful for such scale-up efforts. Finally, scaling-up the use of EHR in MNCH clinics is a high priority in Zambia for a more robust maternal tracking system.





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## TUPEB049

### Persistence of CXCR4-tropic virus and incidence of clinical events in persons living with four-class drug resistant HIV: data from The Prestigio Registry

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**Background:** We investigated the effect of the persistence of CXCR4-tropic virus on the occurrence of clinical events in persons living with 4-drug class resistant HIV (4DR-PWH).

**Methods:** We included PWH with a documented 4-class resistance (NRTIs, NNRTIs, PIs and INSTIs) and ≥2 HIV-tropism determinations during follow-up.

Follow-up accrued from the date of first 4DR evidence (baseline) until last visit (freezing time 31/Dec/2023/death/loss-to-follow-up).

HIV-co-receptor tropism (as determined by V3-loop sequencing) was defined as persistent if it remained unchanged during follow-up.

Clinical events were divided into HIV-related events (conditions included in the CDC classification categories B and C) and non-HIV-related events.

Incidence rates and 95% confidence intervals (IRs, 95%CI) of clinical events calculated with Poisson regression and compared with IR ratios (IRRs). Predictors of clinical events assessed by multivariable Poisson regression.

	Overall N=144	Other N=12	Persistent CXCR4 N=47	p-value
Sex at birth (male)	119 (76.4%)	11 (75.2%)	39 (83.0%)	0.277
Age (years)	49.8 (18.3-55.8)	50.3 (45.8-53.9)	48.1 (42.7-54.5)	0.579
Risk factors				0.809
Men who have sex with men	40 (27.8%)	27 (21.7%)	10 (21.3%)	
MSM and/or HIV coinfection	47 (32.6%)	22 (22.2%)	10 (21.3%)	0.404
Injectable HIV drugs	21.3 (17.7-26.0)	23.9 (18.9-28.6)	25.6 (18.9-33.2)	0.034
Years of ART	18.2 (14.9-21.4)	18.3 (14.9-21.4)	18.2 (13.9-22.5)	0.983
Detectable HIV RNA (copies)	132 (91.6%)	81 (66.7%)	41 (87.2%)	0.180
CD4+CD8+	0.38 (0.30-0.48)	0.37 (0.32-0.44)	0.39 (0.33-0.46)	0.402

Table 1. Baseline characteristics, according to HIV-co-receptor-tropism, of 4DR-PLWH with at least 2 tropism determinations. Results described by median (IQR) or frequency (%) and compared by Mann-Whitney or Chi-Square/Fisher's tests.

**Results:** A total of 144 4DR-PWH [47 (33%) with persistent CXCR4-tropism, 39 (27%) with persistent CCR5-tropism and 58 (40%) with a tropism switch during follow-up] were included with a median follow-up of 7.80 years (IQR=5.80-10.6). Baseline characteristics reported in Table 1.

Overall, 117 (81.3%) 4DR-PLWH experienced ≥1 clinical event during follow-up; IR:32.5(95%CI=29.3-35.9)

PWH with persistent CXCR4-tropic-HIV had higher IRs of HIV-related events compared to other PWH (Table2).

Clinical events	Number of PWH with persistent CXCR4	Number of events in persons with persistent CXCR4	IR (95%CI) in persons with persistent CXCR4 per 100 PY	Number of persons with other tropism	Number of events in persons with other tropism	IR (95%CI) in persons with other tropism per 100 PY	IR ratio (95%CI)	p-value
Overall events	37	124	32.5 (27.1-38.9)	81	267	32.4 (23.4-38.7)	1.00 (0.81, 1.24)	0.975
Deaths	9	9	2.36 (1.08-4.95)	10	10	1.25 (0.60-2.52)	1.87 (0.76-4.57)	0.160
HIV-related events <sup>a</sup>	10	16	4.22 (2.43-6.92)	11	14	1.22 (0.67-2.06)	3.46 (1.54-8.25)	0.001
Non-HIV-related events <sup>b</sup>	11	22	6.17 (3.62-9.74)	36	62	1.70 (1.10-2.62)	3.62 (1.91-6.92)	0.001
Major adverse cardiovascular events <sup>c</sup>	4	4	1.06 (0.29-3.88)	11	16	1.45 (0.58-3.62)	0.72 (0.21-2.46)	0.571
HIV-related events <sup>d</sup>	4	4	1.06 (0.29-3.88)	2	3	1.50 (0.38-5.82)	0.70 (0.19-2.64)	0.571
Non-HIV-related events <sup>e</sup>	4	4	1.06 (0.29-3.88)	6	7	1.16 (0.38-3.42)	0.91 (0.24-3.42)	0.878
ADH-defining events <sup>f</sup>	5	10	2.69 (1.44-5.01)	8	10	1.25 (0.47-3.20)	2.15 (0.87-5.30)	0.046
HIV-related clinical events <sup>g</sup>	10	20	5.25 (3.21-8.71)	10	20	2.52 (1.34-4.39)	2.08 (1.12-3.86)	0.042

Table 2. Incidence rates (IR) and incidence rate ratios (IRR) of different clinical events categories between persons with persistent CXCR4-tropism and other tropism (CCR5-tropism, or CXCR4-tropism switch during follow-up).

Abbreviations: IR, incidence rate; IRR, incidence rate ratio; PY, person-years.

a. HIV-related events: all events included in the CDC classification categories B and C.

b. Non-HIV-related events: all events not included in the CDC classification categories B and C.

c. Major adverse cardiovascular events: myocardial infarction, stroke, heart failure, peripheral vascular disease, aortic aneurysm/dissection.

d. HIV-related events: HIV-related events included in the CDC classification categories B and C.

e. Non-HIV-related events: non-HIV-related events included in the CDC classification categories B and C.

f. ADH-defining events: all events included in the CDC classification categories B and C.

g. HIV-related clinical events: HIV-related events included in the CDC classification categories B and C.

After adjusting for age, sex-at-birth and CD4+/CD8+ at baseline, standardized viremia copy-years [adjusted-IRR: 1.66 (95%CI=1.24-2.26), p<.001] and persistent CXCR4-tropism [adjusted-IRR: 2.01 (95%CI=1.04-3.91), p=0.037] were associated with the occurrence of HIV-related events.

**Conclusions:** Among 4DR-PWH, the persistence of CXCR4-tropic virus was associated with an increased risk of HIV-related clinical events.

## TUPEB050

### The role of HIV self-testing in crisis situations: a review of PEPFAR's HIV self-testing kit distribution data from 2019-2023

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**Background:** The world is experiencing increased crises that have impacted movement of individuals at unprecedented levels. These movement impacts create barriers and reduce access to facility-based HIV testing services (HTS).

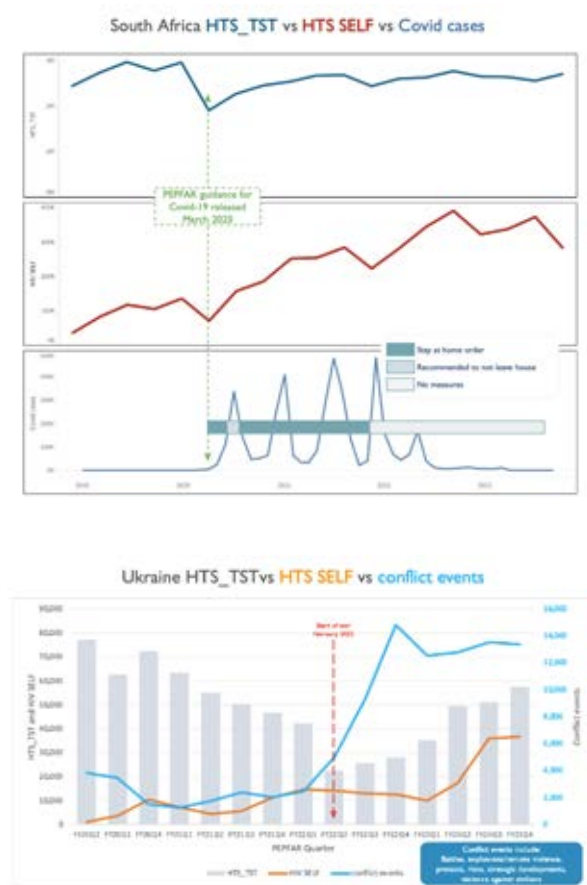
We assessed two instances of PEPFAR countries experiencing crisis situations, from pandemic to full-scale war, and analyzed how the distribution of HIV self-testing (HIVST) kits during this period potentially filled testing gaps.

South Africa accounted for 45% of the continent's COVID-19 cases. The nationwide lockdown, initiated on March 26, 2020, led to the closure of all non-essential services.

The first year of Russia's invasion of Ukraine resulted in significant damage to healthcare infrastructure: 218 hospitals/clinics damaged or destroyed; 181 attacks carried out on other health infrastructure; and 65 ambulances attacked. Access to healthcare was severely disrupted.

**Methods:** We reviewed PEPFAR Panorama Spotlight data from Ukraine and South Africa (FY19-FY23) to compare HIVST distribution and facility HTS. Additionally, we looked at conflict data from the Armed Conflict Location & Event Data Project and Our World in Data for COVID-19 (2020-2023).

**Results:** From March 2020 to 2023, South Africa reported over 4 million COVID-19 cases and 21 months of movement restriction. A 20% decrease in facility HTS coincided with a 430% increase in HIVST distribution. In Ukraine, over 106,000 conflict events from January 2020 - October 2023 coincide with a decrease in facility HTS, and a 572% (FY20-FY23) increase in HIVST distribution.



**Conclusions:** Expansion and utilization of HIVST is a critical tool for preserving access to HTS in countries facing crisis situations.

## TUPEB051

### Prevalence and trajectory of low-level viremia in PLHIV on treatment: a descriptive study in Vietnam, 2018-2023

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**Background:** HIV low-level viremia (LLV) (50 to 1,000 copies/mL) is linked to higher risk of virologic failure. WHO guidance recommends adherence interventions for clients with viral load (VL) >50 copies/mL. We sought to investigate the prevalence of LLV among people living with HIV (PLHIV) in Vietnam.

**Methods:** Electronic Medical Records for PLHIV on antiretroviral therapy (ART) between January 1, 2018–July 31, 2023, were analyzed from five provinces and two cities. PLHIV with unique identifiers and ≥2 VL results had their first and last VL results categorized as: undetectable (<50 copies/mL); LLV-low (50-200 copies/mL); LLV-high (201-1,000 copies/mL); and non-suppressed (>1,000 copies/mL). Chi-square tests were used for statistical significance.

**Results:** Of 49,973 PLHIV who met inclusion criteria, 7,124 (14.3%) had ≥ 1 LLV result during the observation period. Within LLV thresholds, the median VL was 92 copies/mL (IQR: 65-170). Males (15.6%) had higher LLV occurrence than females (10.4%) ( $p < 0.001$ ). Partners of PLHIV had slightly higher LLV occurrence (16.8%) compared to men who have sex with men (16.1%), transgender PLHIV (15.8%), people who inject drugs (14.2%), and sex workers (13.6%). Of 2,473 PLHIV with first VL LLV-low, 2,129 (86.1%) had undetectable last VL. Of 656 PLHIV with first VL LLV-high, 499 (76.1%) were undetectable at their last VL. Viral load changes are illustrated in Figure 1. The median time between the first and last VL was 195 weeks (IQR: 107.3, 225.4).

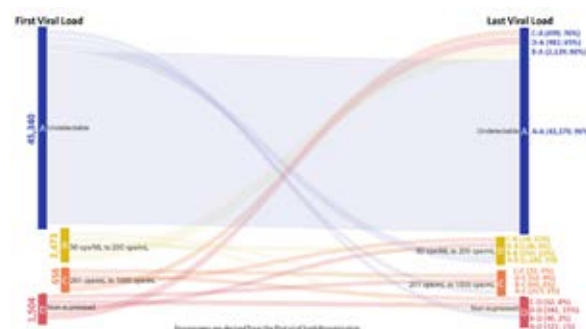


Figure 1.



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**Conclusions:** In a 5-year period, about 14% of PLHIV on treatment in Vietnam had experienced LLV at least once. Most of those with LLV at first VL became undetectable by their final VL. The proportion of LLV for key populations with HIV were similar to the general PLHIV population. Further analyses to understand the impact of interventions for LLV, including enhanced adherence counseling and ART changes, are planned to inform program priorities.

## TUPEB052

Xpert MTB/RIF ultra assay in stools and urine for the diagnosis of tuberculosis in children living with HIV: the Médecins Sans Frontières experience in Guinea-Bissau and South Sudan

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**Background:** Over half of childhood tuberculosis (TB) remains undiagnosed yearly. TB culture is often unavailable. WHO recommends Xpert-Ultra as first test for diagnosis of paediatric TB, but microbiological confirmation remains low and often requires invasive procedures.

We aimed to determine the utility of Xpert-Ultra in stools and urine samples to diagnose TB in children living with HIV (CLWH) in two high-TB burden settings.

**Methods:** This cross-sectional multicentric study took place at Simão Mendes hospital, Guinea-Bissau, from July 2019 to April 2020, and in Malakal hospitals, South Sudan, from November 2019 to June 2023. Children 6 months to 15 years with presumptive TB underwent clinical and laboratory assessment, with one respiratory or extrapulmonary sample (gold standard (GS)), one stool and one urine specimens analysed with Xpert-Ultra.

**Results:** A total of 93 CLWH were enrolled from Bissau (n=57) and Malakal (n=36), with 49 (53%) females and median (IQR) age of 3.3 (1.5-10) years. Three-fourth of children had severe acute malnutrition (SAM). A total of 72 (77%) children were on ART at baseline and 26/77 (34%) had CD4 count <200cells/mm<sup>3</sup>.

Confirmation of TB was achieved in 10 (11%); 61 (66%) had unconfirmed TB, and 22 (24%) had unlikely TB. Of 93 children with GS diagnosis, the overall yield of positive TB results was 11% (10/93): 10% (9/90) in pulmonary samples and 20% (1/5) in extrapulmonary samples.

A total of 86 and 91 samples were used to evaluate Xpert-Ultra on stools and urine, respectively. Compared to GS, sensitivity and specificity on stool were 87.5%(95%CI:52.9-97.8) and 100%(95%CI: 95.3-100), whereas on urine were 30%(95%CI:10.8-60.3) and 100%(95%CI:95.5-100), respectively. No children were positive on stools or urine and negative with GS.

**Conclusions:** Xpert-Ultra in stools showed high sensitivity and specificity in children living with HIV when compared to gold standard. Test performance in urine was low but number of confirmed cases was low too, therefore more research could help determine its clinical indication in CLWH.

## Co-infections (including opportunistic infections)

### TUPEB053

Identification of multi-repeat sequences using genome mining approaches for developing highly sensitive molecular diagnostic assay for the detection of curable sexually transmitted infections in HIV burden countries

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**Background:** Curable sexually transmitted infections (STIs) such as *Neisseria gonorrhoeae* (*N. gonorrhoeae*), *Chlamydia trachomatis* (*C. trachomatis*) and *Treponema pallidum* (*T. pallidum*) and *Trichomonas vaginalis* (*T. vaginalis*) are major causes of poor pregnancy outcome.

The World Health Organization (WHO) recommends STI screening as a component of comprehensive care for people with HIV in recognizing the impact of STI management on HIV incidence. Most STIs are asymptomatic in pregnant women and a syndrome-based approach of testing leads to missed diagnosis.

**Methods:** Here, we have identified new diagnostic target biomarker regions for *N. gonorrhoeae*, *C. trachomatis* *T. pallidum* and *T. vaginalis* using an algorithm for genome mining of identical multi repeat sequences (IMRS). These were then developed as DNA amplification primers to design better diagnostic assays.

To test the primer pair, genomic DNA was 10-fold serially diluted (100pg/μL to 1×10<sup>-3</sup>pg/μL) and used as DNA template for PCR reactions. The gold standard PCR using 16S rRNA for *N. gonorrhoeae*, *C. trachomatis* *T. pallidum* prim-

ers and 18S rRNA for *T. vaginalis* were also run as a comparative test, and both assay products resolved on 1% agarose gel.

**Results:** The *N. gonorrhoeae* and *C. trachomatis* IMRS-PCR assay had an analytical sensitivity of 6 fg/mL and 9.5 fg/μL, respectively representing better sensitivity compared to the 16S rRNA PCR assay with analytical sensitivity of 4.3096 pg/μL. The assays were also validated with clinical samples. Combining the iso-thermal IMRS with a low-cost Lateral Flow Assay, we were able to detect *N. gonorrhoeae* and *C. trachomatis* amplicons at a starting concentration of 100 pg/mL and 10 pg/μL, respectively.

Lower limit of detection analysis confirmed that the *T. pallidum* and *T. vaginalis* -IMRS primers both offered higher test sensitivity of 0.03 fg/μL starting PCR template concentration.

Using the *T. pallidum* and *T. vaginalis* -IMRS primers, we were able to observe Isothermal amplification of genomic DNA at concentration of 0.01 pg/μL and 100 pg/μL, respectively.

**Conclusions:** Our data demonstrate the successful development of cost effective and sensitive lateral flow and isothermal assays for detecting curable sexually transmitted infections with potential use in field settings mostly in HIV burden countries.

## TUPEB054

### High prevalence of hepatitis B virus drug resistance mutations to lamivudine among people with HIV and HBV in rural and peri-urban communities in Botswana

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**Background:** Hepatitis B virus (HBV) remains a global health concern even in the era of potent vaccines and antiretroviral therapy (ART) that can greatly reduce morbidity and mortality. Prolonged antiviral use without adequate monitoring may lead to the selection of variants with resistance associated mutations (RAMs) that reduce ART susceptibility. We aimed to determine the prevalence of hepatitis B virus (HBV) resistance-associated mutations (RAMs) in people with HBV and human immunodeficiency virus (HIV/HBV) in Botswana.

**Methods:** Plasma samples from people with HIV (PWH) recruited in the Botswana Combination Prevention Project (BCPP) (2013 – 2018) were used in this study. We employed next generation sequencing to sequence HBV isolated from participants with HBV and HIV. FASTQ were uploaded into Genome Detective for reference assembly. Consensus sequences were analyzed for genotypic and mutational profiles using Geno2pheno and Stanford HBV database.

**Results:** Overall, 98 HBV sequences had evaluable reverse transcriptase (RT) region coverage. The median participant age was 43 years (IQR: 37, 49) and 66/98 (67.4%) were female. Most participants, 85/97 (87.6%) had suppressed HIV viral load (VL). HBV RAMs were identified in 61/98 (62.2%) participants in 7 HBV RT positions, mostly associated with lamivudine (3TC) resistance and none to tenofovir. There are positions rt204, rt180, rt173, rt250, rt80, rt169 and rt236. Most RAMs were in positions 204 (60.3%), 180 (50.5%) and 173 (33.3%). The triple and double amino acid substitutions, rtV173L/L180M/M204V and rtL180M/M204V were the most predominant (17/61 [27.9%] and 10/61 [16.4%] respectively).

Most participants (96.7%) with RAMs were on ART for a median duration of 7.5 years (IQR: 4.8, 10.5). Approximately 27.9% (17/61) of participants with RAMs had undetectable HBV VL, 50.8% (31/61) had VL <2000 IU/mL and 13/61 (21.3%) had VL ≥2000 IU/mL.

**Conclusions:** In ART-experienced people with HIV/HBV, the prevalence of HBV RAMs to 3TC was high. The high prevalence of 3TC RAMs in this population discourages the use of ART regimens with 3TC as the only HBV-active drug in people living with HIV/HBV. The presence of HBV RAMs hinders HBV elimination efforts hence the need to monitor HBV drug resistance mutations in Botswana and globally.

## TUPEB055

### Trends in and risk factors for drug resistance of *Mycobacterium tuberculosis* in people living with HIV

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**Background:** To analyze trends in and risk factors for drug resistance of *Mycobacterium tuberculosis* in people living with HIV and active tuberculosis.

**Methods:** The clinical data of MTB and HIV co-acquired persons treated at the Shanghai Public Health Clinical Center between 2010 and 2022 were collected. The diagnosis of tuberculosis was confirmed by solid or liquid culture. The phenotype drug sensitivity test was carried out with proportional method, and the drug resistance



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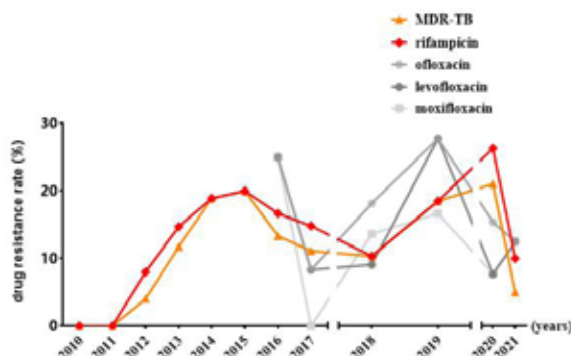
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to first-line and second-line drugs was analyzed. Logistic regression analysis was performed to identify associated risk factors for MTB drug resistance.

**Results:** Of the 304 HIV-acquired people with MTB positive-culture and first-line drug sensitivity test results, 114(37.5%) were resistant to at least one first-line anti-tuberculosis drug. Of the 93 HIV-acquired people with first-line and second-line antituberculosis drug sensitivity test results, 40(43%) were resistant to at least one anti-tuberculosis drug and 20 (21.5%), 27(29.0%), 19 (20.4%), 16(17.2%), 14(15.1%) were resistant to rifampicin, streptomycin, ofloxacin, levofloxacin, moxifloxacin, respectively; seventeen persons (18.3%) had multidrug-resistant tuberculosis (MDR-TB). From 2010 to 2021, the resistance rates of streptomycin and rifampicin were from 14.3% to 40.0% and 8.0% to 26.3%, respectively, showing an increasing trend year by year. From 2016 to 2021, the resistance rate of quinolones was from 7.7% to 27.8%, showing an overall upward trend year by year. Logistic regression analysis showed that age<60 years old was a risk factor for streptomycin resistance, single drug resistance, total resistance (RR 4.139,  $P=0.023$ ; RR 7.734,  $P=0.047$ ; RR 3.733,  $P=0.009$ ). Retreatment was a risk factor for resistance to rifampicin, ofloxacin, levofloxacin (RR 2.984,  $P=0.047$ ; RR 4.517,  $P=0.038$ ; RR 6.277,  $P=0.014$ ).



**Conclusions:** The drug resistance rates of MTB to rifampicin and quinolones in people living with HIV/AIDS are high and increasing year by year. Age and retreatment are the main factors affecting drug resistance.

## TUPEB056

### Characterization of incident hepatitis C virus infection among people living with HIV in a HIV clinic in South Korea

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**Background:** Coinfection with human immunodeficiency virus (HIV) and hepatitis C virus (HCV) can cause more rapid progression to cirrhosis than HCV-monoinfection. In this study, incident HCV case (IHCV)s were investigated in a HIV clinic in South Korea.

**Methods:** A retrospective HIV cohort was constructed who visited National Medical Center in Korea from 2013 to 2022 and performed  $\geq 1$  anti-HCV antibody tests (anti-HCV) during the study period. IHCV was defined as newly confirmed HCV infection by PCR with a prior negative anti-HCV and factors associated with IHCV were investigated among ALT>150 IU/mL sub-cohort without plausible reasons for ALT elevation.

**Results:** Overall, 2,567 HIV clinic visitors were recruited during the study period and 42 (1.63%) were confirmed as HIV/HCV co-infection. Fifteen IHCVs were identified during the study period. While no IHCV was observed in 2013-2015, incidence of 2016-2019 and 2020-2022 were 0.84 and 1.48 per 1000 person-year, respectively (Figure 1). Subtype 1a were more common among IHCVs in 2020-2022 (8/9) while Subtype 2 dominated in 2016-2019 (5/6,  $p=0.003$ ). Most IHCVs were identified during the evaluation of de novo liver enzyme elevation which was identified through the regularly performed blood tests (86.7%, 13/15).

Comparing twelve IHCVs with ALT>150 IU/mL with 58 HIV mono-infection comparators whose peak ALT exceeded 150 IU/mL during the study period, age, sex, HIV/HCV infection risk factor, CD4 cell count, and HIV-RNA viral load were not different between two groups. However, mean peak ALT of IHCVs was higher than comparators (776 vs. 237,  $p<0.001$ , Figure 2) and syphilis treatment within prior 24 months of ALT elevation was more common in IHCV group (41.7% vs. 12.7%,  $p=0.026$ ).

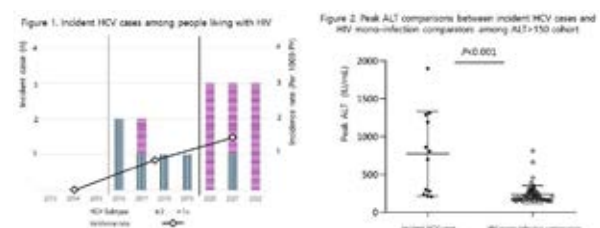


Figure 2: Peak ALT comparisons between incident HCV cases and HIV mono-infection comparators among ALT>150 cohort



**Conclusions:** Incidence rate of HCV among PLH revealed increasing trend between 2013 and 2022 among visitors at a HIV clinic in South Korea. Subtype 1a dominated among IHCVs after 2020 and recent syphilis treatment was associated with IHCVs.

## TUPEB057

Tuberculosis related mortality among people living with HIV- PEPFAR, [2022-2023]

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**Background:** TB remains the world's second leading cause of death from a single infectious agent in 2022, after COVID-19, and caused almost twice as many deaths as HIV/AIDS. The U.S. President's Emergency Plan for AIDS Relief (PEPFAR) monitors TB-related deaths among people living with HIV (PLHIV) in supported facilities in line with its 2023 United Nations High Level Meeting (UNHLM) commitment of finding 2 million PLHIV with TB and avoiding 500,000 TB-related deaths.

**Methods:** We analyzed data from 2022–2023 that were collected in supported facilities. Data were collected as a non-mandatory indicator on a quarterly basis as part of the PEPFAR reporting. The collected variables included TB-related deaths by country, age disaggregation, funding agency and sex.

**Results:** The number of TB-related deaths increased from 2,486 in FY22 (5.2%) to 3,213 in FY23 (6.2%). There were 727 more deaths from TB in FY23. In USAID supported facilities, 17,266 PLHIV died in FY23 vs 16,444 in FY22. There was a 5% increase in PLHIV deaths from FY22 to FY23 representing 33.2% and 34.1% of all reported deaths respectively. These represent 34.1% and 33.2% of the total deaths in FY22 and FY23 respectively. Whilst there was a 2.3% decline in the number of PLHIV deaths in children and adolescents from 2,246 to 2,194 during FY22–FY23, there was a 5.8% increase in TB-related deaths from 104 to 110 over the same period. In FY22, 1,118 females (45%) and 1,368 males (55%) living with HIV died from TB. In FY23, there were also more males who died from TB with 1,684 (52.4%) male and 1,529 female (47.6%) deaths in PEPFAR-supported facilities. Uganda and Kenya are the top countries reporting high numbers of TB related deaths among PLHIV with 517 and 1,096 in FY23 respectively.

**Conclusions:** These data showed an increased number of TB-related deaths among PLHIV and higher rates for children and adolescents living with HIV than adults. There are some data issues in terms of consistency, quality, and completeness at country level. Further investigations and assessments should be conducted in some countries to have a better sense of TB-related deaths among PLHIV.

## TUPEB058

Life After Mpox (LAMP) study: psychosocial and behavioral effects of mpox and mpox outbreak in persons recovered from and at risk for mpox at two sites, August–December 2023

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**Background:** Few reports assess psychosocial effects and behavioral changes after the mpox outbreak. During 8/14/2023–12/04/2023, the Life After Mpox (LAMP) study assessed these among impacted groups.

**Methods:** Via online questionnaire, adult participants in New York City and Houston diagnosed with symptomatic, laboratory-confirmed mpox 10–14 months earlier (during 5/17/2022–1/15/2023) (post-mpox), and persons who did not have mpox and were either living with HIV and diagnosed with an STI within ≤12 months or PrEP-eligible (at-risk) self-reported psychosocial and behavioral changes (increased, decreased, no change) since mpox or the mpox outbreak. Post-mpox and at-risk group responses were compared (Chi-square test).

**Results:** 154 post-mpox and 201 at-risk participants (median ages 35 years) enrolled. Most self-identified, respectively, as: Black/African American (43%, 37%), White (37%, 38%), and/or Hispanic/Latino (49%, 54%); born male (96%, 85%) or female (3.2%, 15%); and currently a male (91%, 72%); [(84%, 62%) reporting male-to-male sex], female (3%, 15%) or transgender (2.6%, 7%) person.

Many in each group were living with HIV (64%, 41%), some reporting VL>200 copies/mL (17%, 12%). Post-mpox participants more often reported increased psychosocial changes.

Changes (since outbreak) differing between post-mpox and at-risk groups included: feeling down, depressed or hopeless ( $p=0.011$ ); unable to stop worrying ( $p=0.004$ ); anhedonia ( $p<0.001$ ); worry about appearance ( $p=0.042$ );



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and attending school or work ( $p=0.006$ ) (Table). Changed frequency of hookup/dating app sex differed between groups ( $p=0.002$ ), often increased (16%, 33%). Both groups reported increases in number of sex partners (15%, 23%); group sex (30%, 32%); attending sex venues/sex parties/bathhouses (25%, 39%); and drug (37%, 37%) or alcohol (19%, 25%) use. Drug and alcohol use increased most among Hispanic/Latino participants (50%, 30%).

Table. Subject psychosocial effects of and behavioral changes following the 2022 impact of Omicron among recovered impact patients and persons at risk for impact in New York City and its suburbs – LAHSU study, August–December 2020

	It has for some participants, and negative changes				It has a positive impact, and positive changes				t-Test		
	Yes or not, this effect does not apply	Agreement (mean <sup>a</sup> )	Disagreement	No effect	Yes or not, this effect does not apply	Agreement (mean <sup>a</sup> )	Disagreement	No effect			
<b>Psychological effect or behavior</b>											
Feeling down, depressed, or sad	68	528	106	28%	64	87	0%	4%	1.76	0.01	
Feeling more confident, or happy	62	538	116	28%	62%	88	0%	35%	0.68	0.024	
Feeling more energetic, or more active	67	538	106	28%	64%	75	37	1%	45%	0.86	0.001
Feeling more relaxed, or less stressed	63	523	126	54%	54%	67	2%	41%	54%	0.47	0.001
Feeling more in control	62	533	102	30%	54%	69	0%	42%	50%	0.12	0.001
Feeling more confident, or happy	64	533	126	33%	40%	88	10%	22%	14%	0.26	0.001
Feeling more energetic, or more active	65	513	126	51%	53%	54	87	24%	30%	41%	0.8
<b>Physical effect or behavior</b>											
Feeling more energetic, or more active	151	85	26%	30%	10%	79	72	33%	20%	42%	0.3

<sup>a</sup>  $\chi^2$ -value for difference between frequencies of post-ignition and at-risk responses of decreased, increased and no change since ignition outbreak; does not include responses of 'I don't know' or 'data not apply to me'. 'I did not do this' or 'data not apply to me' or missing responses between 0-9 missing responses for each query are not displayed.  
<sup>b</sup> Analysis denominator for frequency of decreased, increased or no change response.

**Conclusions:** Psychosocial effects and behavioral changes after the mpox outbreak occurred in both groups, some more frequent after mpox recovery, some with racial/ethnic variation. Sexual risk behaviors increased. Interventions are needed to reduce mpox psychosocial impact and future mpox/HIV/STI vulnerability.

## TUPEB059

# Testing for and treatment of latent tuberculosis infection (LTBI) in people with HIV at a university hospital in Taiwan

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Y.-S. Huang<sup>2</sup>, W.-D. Liu<sup>3</sup>, K.-Y. Lin<sup>2</sup>, S.-C. Pan<sup>2</sup>, H.-Y. Chang<sup>1</sup>,  
Y.-Z. Luo<sup>1</sup>, L.-Y. Chen<sup>1</sup>, Y.-T. Chen<sup>1</sup>, C.-C. Hung<sup>4,5,2</sup>

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**Background:** HIV infection increases the risk of developing TB among people with latent TB infection (LTBI) by more than 20 times compared with general population. The WHO guidelines therefore strongly recommend testing for and treatment of LTBI be accomplished among PWH. We aimed to investigate the care cascade of LTBI among PWH at a university hospital in Taiwan in 2019–2023.

**Methods:** PWH are provided with free-of-charge interferon-gamma release assay (IGRA) and treatments for LTBI since 2019. LTBI treatments include 1-month daily isoniazid (300 mg) plus rifapentine (600 mg) (1HP), 3-month

weekly isoniazid (900 mg) plus rifapentine (900 mg) (3HP), 4-month daily rifampin (4R), and 9-month daily isoniazid (9H). The patients testing IGRA-positive were advised to receive directly-observed therapy for LTBI after active TB was excluded by review of clinical symptomatology and chest radiography.

**Results:** From 2019 to 2023, 3482 PLWH without a previous history of TB or LTBI treatment underwent IGRA testing. The majority of the included PWH were male (96.6%) (mean age, 41.6 years). Overall, 136 (4.1%) tested IGRA-positive and 35 (1.1%) had indeterminate results. 126 (92.6%) and 1 (2.9%) PWH with positive IGRA and those with indeterminate IGRA result, respectively, initiated LTBI treatment. 1HP (89/121,73.6%) and 3HP (30/121,24.8%) were the most common regimens prescribed. The most frequent ART used were coformulated bictegravir/emtricitabine/tenofovir alafenamide (96/121,79.3%) and DTG-based regimens (21/121, 17.4%).

Overall, 111 (91.7%) PWH completed LTBI treatment and 9 failed to complete LTBI treatment. The most common reasons of treatment non-completion included skin rash, nausea and general malaise. Before LTBI treatment, plasma HIV-1 RNA <200 and <50 copies/ml was 98.3% (119/121) and 93.4% (113/121), respectively, for PWH who initiated LTBI treatment; at 3-6 months of LTBI treatment completion, the respective rate of <200 and <50 copies/ml was 96.4% (106/110) and 94.5% (104/110).

**Conclusions:** The screening rate for LTBI among PWH at the study site was 95.6% and the positive rate was 4.1%. About 92.6% of PWH testing positive for LTBI initiated treatment and only 8.3% failed to complete treatment due to adverse effects. Combination of 1HP or 3HP with integrase inhibitor-based antiretroviral therapy did not compromise the virologic control.

## TUPEB060

## Real-world vaccine effectiveness of mpox vaccination: a systematic review

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**Background:** MVA-BN (Jynneos®/Imvanex®/Imvamune®), developed to prevent smallpox, was the primary vaccine used during the recent global mpox outbreak. Efficacy of the vaccine against mpox has not yet been demonstrated in clinical trials; however, since the outbreak start, a number of real-world effectiveness studies have been conducted. This systematic literature review aimed to summarize the current evidence on the vaccine's effectiveness, analyse the strengths and limitations of the studies, and review the quality of the available evidence.



**Description:** PubMed, Embase, and LILACS were searched as well as grey literature sources such as MedRxiv and publications' reference lists to identify observational studies published between January 2022 and November 2023 estimating vaccine effectiveness (VE) or the risk of infection among vaccinated compared to unvaccinated individuals.

Data was extracted from the selected articles, including study characteristics, methods, measures of association, and crude and adjusted VE estimates.

**Lessons learned:** Thirteen studies were identified that reported data on VE. VE estimates ranged from 35% to 89% for a single dose (reported by eleven studies) and from 66% to 90% for two doses (reported by six studies). Heterogeneity existed between studies in design and in how the 'at risk' population was defined and captured, which may contribute to the observed differences in VE estimates.

For instance, at risk populations used to capture controls or in which the underlying vaccine coverage was estimated varied from wide populations including all men who have sex with men to more select populations of those receiving HIV-PrEP or those with recent sexually transmitted infections only.

Despite this, the VE estimates were fairly similar across studies with the exception of one low outlier.

**Conclusions/Next steps:** Despite variations in study methods and how 'at-risk' populations were defined, the MVA-BN vaccine was consistently shown to be effective in preventing mpox when administered as either one or two doses.

## TUPEB061

### Tuberculosis prevalence, incidence, and mortality in the CoVPN 3008 (Ubuntu) Covid-19 vaccine trial among predominantly people living with HIV in East and Southern Africa

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**Background:** The high burden of tuberculosis (TB) in Africa (208 annual cases/100,000 population) has implications for clinical trial design, safety monitoring, and data interpretation. We describe baseline TB prevalence as well as TB incidence and mortality during the first six months of CoVPN 3008 (Ubuntu), a study of the mRNA-1273 Covid-19 vaccine in predominantly people living with HIV (PLWH) in East and Southern Africa.

**Methods:** We enrolled adults living with HIV or another comorbidity associated with severe Covid-19 at 47 sites in seven countries. Participants were asked about prior or current TB at enrolment to determine baseline prevalence. Serious adverse events (SAEs), including hospitalizations and deaths, were captured for all participants throughout the study duration. Incident TB was assessed when reported as an SAE. Odds ratios were derived using univariate logistic regression to associate TB outcomes with baseline characteristics.



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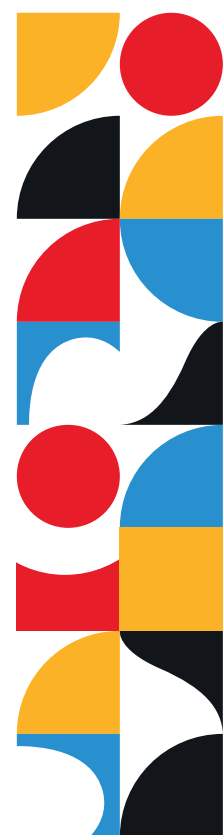
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**Results:** Among 14,237 participants enrolled from December 2021 to September 2022, 14,001 (83% PLWH) were analysed for a six-month post-enrolment period. For PLWH, median CD4 count was 635 cells/mm<sup>3</sup> (IQR 423-866) and 18.5% had a detectable HIV viral load. 142 participants (1%) had active TB at enrolment, of whom 121 (85%) were PLWH. 1,743 (12%) had baseline history of prior TB. 26 (0.19%) participants (including 25 PLWH) were identified with TB during follow-up, for an incidence of 394 per 100,000 person-years. Incidence was strongly associated with prior TB, low CD4 counts, and HIV viremia (Table 1). Among active cases at enrolment and incident cases, 12/168 (7%) died, for a TB mortality incidence of 179 deaths per 100,000 person-years.

Baseline characteristic	Participants without TB at baseline* N=13,859 N (%)	Participants with incident TB* N=26 N (%)	Odds Ratio (95% CI)	P value
Age ≥ 40 years	6434 (46%)	11 (42%)	0.85 (0.39, 1.84)	0.674
Male sex at birth	3826 (27%)	10 (38%)	1.54 (0.74, 3.62)	0.220
BMI ≤ 18.5	1229 (9%)	4 (15%)	1.87 (0.64, 5.44)	0.290
History of prior TB	1743 (12%)	9 (35%)	3.69 (1.64, 8.30)	0.002
Living with HIV	11,560 (83%)	25 (96%)	4.99 (0.67, 36.78)	0.119
CD4 count <200 cells/mm <sup>3</sup> **	730 (5%)	15 (58%)	22.70 (10.16, 50.71)	< 0.0001
CD4 count <500 cells/mm <sup>3</sup> **	3760 (27%)	21 (81%)	10.95 (3.75, 31.91)	< 0.0001
HIV viral load ≥50 copies/mL**	2639 (20%)	17 (65%)	6.86 (2.83, 15.22)	< 0.0001

\*142 participants with active TB at baseline were excluded from assessment of TB incidence and association with baseline characteristics. \*\*Among PLWH (N=11,560).

Table 1. Baseline characteristics and association with TB incidence.

**Conclusions:** This African cohort of largely PLWH experienced a high burden of TB disease and mortality, particularly those with uncontrolled HIV. Clinical trials involving PLWH in this region should include TB screening, robust safety surveillance, and engagement with local health experts for provision of comprehensive HIV/TB care.

## TUPEB063

### Tuberculous pericarditis with and without HIV in adults in Thailand's tertiary care center

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**Background:** The data on HIV-associated tuberculous (TB) pericarditis in Thailand is still sparse. This study aimed to determine the significant differences between TB pericarditis in HIV-positive and HIV-negative adults in Thailand.

**Methods:** A retrospective study was conducted in adults with TB pericarditis at Siriraj Hospital, Bangkok, Thailand, from January 2005 to December 2021.

**Results:** Of the 114 cases included, 25 (21.9%) had HIV-associated TB pericarditis, and 89 (78.1%) had non-HIV-associated TB pericarditis. Most HIV-positive individuals were male (56.0%) with a median (IQR) CD4 level of 84 (23-161) cells/mm<sup>3</sup> and did not receive antiretroviral therapy (92.0%). The HIV-positive cases were younger than HIV-negative cases (median (IQR) age: 33 (29-48) vs. 57 (45-74) years,  $p < 0.001$ ). Fever (83.3% vs. 61.4%,  $p = 0.044$ ),

hepatomegaly (66.7% vs. 35.6%,  $p = 0.006$ ), and cardiac tamponade (44.0% vs. 23.6%,  $p = 0.045$ ) were more common in HIV-positive adults than in HIV-negative adults. TB dissemination (87.5% vs. 42.5%,  $p < 0.001$ ) and positive mycobacterial blood culture (33.3% vs. 1.5%,  $p < 0.001$ ) were more significantly observed in HIV-positive individuals than those without HIV. Comparison between HIV-associated TB pericarditis and non-HIV-associated TB pericarditis resulted in a lower rate of obtained pericardial samples (52.0% vs. 82.0%,  $p = 0.002$ ), a higher rate of positive TB molecular testing (58.3% vs. 25.0%,  $p = 0.036$ ), and a positive TB culture (66.7% vs. 37.1%,  $p = 0.066$ ) in pericardial samples; however, the rate of positive AFB in pericardial samples was not significantly different in both groups (15.4% vs. 12.7%,  $p = 0.677$ ). Only one MDR-TB infection was found in the HIV-positive group. Anti-TB treatment and corticosteroid therapy were similar in both groups. Surgical treatment was performed in 48 adults without HIV (53.9%) but only in 2 adults with HIV (8.0%) ( $p < 0.001$ ). In-hospital mortality was not different in HIV-positive and HIV-negative groups; however, 1-year mortality was significantly higher in HIV-positive individuals than HIV-negative individuals (52.0% vs. 19.1%,  $p = 0.001$ ).

**Conclusions:** Compared to non-HIV-associated TB pericarditis, HIV-associated TB pericarditis appears to be a more aggressive disease with a higher mortality rate and a greater propensity for TB dissemination.

## TUPEB064

### Barriers and facilitators to Mpox vaccination among populations at high risk for exposure

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**Background:** Little is known about beliefs, barriers, and facilitators to Mpox vaccination among sexual and gender minorities, people of color, and people living with HIV (PLWH) — populations at high-risk for exposure or adverse outcomes.

**Methods:** We conducted semi-structured interviews of individuals in Philadelphia recruited at University of Pennsylvania clinics and two community-based organizations serving LGBTQ-identifying persons of color who:

1. Were cisgender men who had sex with men, or transgender identity,
2. Had a sexually transmitted infection in the last 12 months, or sex with multiple partners within the last 2 weeks.

We used purposive selection to ensure inclusion of PLWH. We also interviewed health care workers at UPHS who were involved with the vaccine roll out.

We used an integrated analysis approach combining modified grounded theory and implementation science constructs.

**Results:** We interviewed 30 healthcare clients and community members 2/2023-9/2023 (median age 34 years [IQR 30-38.5]; 73% cisgender male; 13% Hispanic, 40% non-Hispanic White, 43% non-Hispanic Black, 3% non-Hispanic Asian; 33% PLWH; 43% Mpox vaccinated), and 10 health care workers (physicians, nurses, social workers, schedulers).

Healthcare client and community member participants varied in their perceptions of community- and self-risk for Mpox, depending on the perceived importance of sexual identity (e.g., "gay") versus specific sexual behaviors (e.g., "condomless sex"), but generally believed that at-risk individuals should be vaccinated. They reported trusting Mpox information from sources they trusted for other health information, such as health departments, community-based organizations, or knowledgeable members of social networks.

Commonly reported barriers to vaccination included inadequate awareness/knowledge, misinformation, burdensome registration processes, and vaccine availability. Facilitators included perceived self-risk, technological literacy, and having time and resources to find and register for vaccination. Health care workers identified barriers to vaccination at multiple levels including stigma associated with the physical mark at the vaccination site, logistical challenges coordinating with the city health department, and inadequate staffing to meet the sudden upsurge in demand.

**Conclusions:** Participants identified important structural and informational barriers to receiving Mpox vaccination during the public health emergency. Harmonizing vaccination efforts with preexisting trusted health-, community-, and social network-based resources may improve uptake and reduce disparities.

## TUPEB065

Integrating cervical cancer screening into routine HIV/AIDS care clinics: a strategic approach for increased uptake, early detection, and treatment of precancerous lesions among women living with HIV at Maanyi H.C.III

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**Background:** This project aimed at assessing the impact of an integrated cervical cancer screening initiative within routine HIV/AIDS care clinics at Maanyi H.C.III. The primary objective was to increase the percentage of women of reproductive age living with HIV screened for cervical cancer. The hypothesis tested is that integrating cervical

cancer screening into regular HIV care will lead to a significant improvement in screening rates among this population. The project addressed the critical need to enhance preventive measures and early detection for cervical cancer among women living with HIV.

**Methods:** The project was conducted at Maanyi H.C.III in Mityana, Uganda. The research employed a Continuous Quality Improvement (CQI) approach, integrating cervical cancer screening into ART clinic days. Women of reproductive age accessing HIV care were provided comprehensive health education, screened based on eligibility criteria, and those found positive received prompt treatment. Qualitative data were collected through interviews and focus group discussions with healthcare providers and women accessing HIV care. A longitudinal analysis of screening rates was performed.

**Results:** The percentage of HIV Positive women screened for cervical cancer increased from 20% (10/50) in April 2023, to 29% (14/48) in May 2023, to 31% (14/45) in June 2023, to 50% (25/50) in July 2023, to 82% (40/49) in August 2023, 91% (50/55) in September 2023, to 100% (49/49) in October 2023, to 100% (35/35) in November 2023. Qualitative findings revealed positive patient experiences and enhanced collaboration between HIV and cervical cancer screening health teams.

**Conclusions:** The study's significance lies in achieving the targeted 100% screening rate, showcasing the feasibility and success of integrating cervical cancer screening into routine HIV care. This integrated approach contributes to a patient-centered strategy, ensuring comprehensive healthcare for women living with HIV. The results emphasize the potential for sustainable, holistic healthcare initiatives that address multiple health concerns simultaneously.

Future implications include the scalability of this model to similar settings, reinforcing the importance of integrated services for improved HIV prevention, treatment, and overall healthcare support.



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## TUPEB066

Comparison of serologic responses of early syphilis to treatment with single-dose ceftriaxone plus doxycycline versus single-dose benzathine penicillin G plus doxycycline among people with HIV: interim analysis

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**Background:** Co-infections of chlamydia and gonorrhea are common among people with HIV (PWH) experiencing early syphilis. Ceftriaxone and doxycycline, as alternative antibiotics for the treatment of early syphilis, may be effective not only for syphilis but also for chlamydia and gonorrhea.

The study aimed to evaluate the efficacy of a single-dose ceftriaxone combined with doxycycline for the treatment of early syphilis among PWH.

**Methods:** We conducted an open-label, randomized-controlled, non-inferiority trial to compare serologic responses to treatment with a 1-g single-dose ceftriaxone combined with 7-day doxycycline versus a 2.4-MU single-dose BPG combined with 7-day doxycycline in PWH who presented with early syphilis. Rapid plasma regain (RPR) titers were determined at baseline and weeks 4, 12, 24, 36 and 48. *T. pallidum* PCR (TP-PCR) and bacterial sexually transmitted infections (STIs) screening were performed at baseline on specimens collected from oral rinse, urethral and rectal sites, with follow-up tests performed weekly for 4 weeks and at week 4, respectively.

The primary outcome was the serologic response of syphilis at 24 weeks, which was defined as at least a 4-fold decline in RPR titers. The secondary outcomes were microbiologic responses of syphilis and bacterial STIs.

**Results:** From March to November 2023, 32 PWH with early syphilis received a single-dose ceftriaxone plus doxycycline (CTX/Doxy) and 22 received a single-dose BPG plus doxycycline (BPG/Doxy). All participants were men who have sex with men, with a baseline median CD4 count of 557 cells/mm<sup>3</sup> and 88.9% having plasma viral load <200 copies/mL. The baseline co-infection rates of chlamydia and gonorrhea were 38.9% and 14.8%, respectively. In the intention-to-treat analysis, PWH receiving CTX/Doxy had a numerically higher serologic response rate at 6 months of treatment than those receiving BPG/Doxy (71.4% vs 42.9%,  $P=0.346$ ). At week 4, the microbiologic responses for chlamydia were similar between the two study groups,

whereas more PWH receiving CTX/Doxy achieved microbiologic responses for syphilis and gonorrhea compared to those receiving BPG/Doxy (93.5% vs 75.0% and 100% vs 40.0%, respectively).

**Conclusions:** In this interim report, CTX/Doxy achieved numerically higher serologic and microbiologic responses in PWH with early syphilis than BPG/Doxy during a 6-month follow-up period.

## TUPEB067

Prioritizing advanced HIV disease screening for treatment interruption in PLHIV: early learnings from implementation of new guidelines in Zimbabwe

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**Background:** People living with HIV (PLHIV) who experience treatment interruption are at high risk for mortality caused by advanced HIV disease (AHD), including tuberculosis (TB) and cryptococcal meningitis. In 2022 Zimbabwe introduced a new national guideline to facilitate immediate AHD screening of PLHIV reengaging in care.

**Description:** A total of 70 public sector facilities across five provinces implemented the new guideline for PLHIV returning to care. PLHIV returning to care were categorized based on time disengaged from care (<3 months or ≥3 months). PLHIV with treatment interruption ≥3 months are indicated for immediate AHD screening, starting with VISITECT CD4 point-of-care testing, and then further same-day screening with cryptococcal antigen lateral flow assay (CrAg LFA), and tuberculosis lipoarabinomannan antigen assays (TB-LAM) for those with CD4<200. Here we present data on PLHIV reengaging in HIV care in the first twelve months of implementation, from Oct 1, 2022, to Sept 30, 2023.

**Lessons learned:** A total of 1,821 PLHIV were reengaged in care between October 1, 2022, and September 30, 2023. Among these, 81.4% (1,484) were reengaging in care after ≥ 3 months treatment interruption. Of these 23.2% (345/1,484) received CD4 testing and 41.2% (142/345) had CD4 count <200 cells/μL. Of those tested, 12.4% (25/202) were positive for TB-LAM and 5.9% (11/187) were positive for CrAg. Of the total receiving CD4 testing 15.1% (52/345) were reached on subsequent visit. Health-care workers reported that guidelines specifying which laboratory test to prioritize for PLHIV returning to care was helpful, although

client flow and staff shortages were cited as additional challenges to implementation. Additionally, there is need to close the gap and ensure that recipients of care get AHD screening on point of re-engagement into care as it becomes difficult to offer the package on subsequent visits.

**Conclusions/Next steps:** Re-engaging in care guidelines have reinforced the importance and execution of pro-active clinical review and testing for clients at high risk of AHD. However, efforts to secure adequate staffing, establishing client flow, and consistent stocks of commodities are needed to improve comprehensive implementation of these guidelines at scale.

## TUPEB068

Is doxycycline post-exposure prophylaxis being utilised in Germany? Insights from an online survey among German men who have sex with men

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Germany

**Background:** Doxycycline post-exposure prophylaxis (Doxy-PEP) reduces the likelihood of bacterial sexually transmitted infections (STI) such as syphilis, gonorrhea, and chlamydia by approximately to two-thirds in a single study with men who have sex with men (MSM) in the United States of America. Currently, data on the frequency of Doxy-PEP use in German MSM are limited.

This study aimed to assess the estimates, knowledge, and frequency of Doxy-PEP use in the German MSM community.

**Methods:** We conducted a national online survey in Germany from summer to fall of 2023, recruiting MSM and transgender women aged  $\geq 18$  years. Participants were invited to complete the online survey through social media, online dating platforms, and print media advertisements, with active recruitment and poster advertising in private practices, tertiary outpatient clinics, and MSM community events in Munich.

**Results:** In total, 438 participants completed the online survey and were included in the study analysis. The majority of 433 participants identified themselves as male, 380 as homosexual, and 76 were living with the human immunodeficiency virus (HIV). In total, 209 participants reported HIV pre-exposure prophylaxis (PrEP) use. Overall, 170 participants have heard of Doxy-PEP, and 275 would

consider taking it, but only 32 reported having ever taken Doxy-PEP. In most cases, Doxy-PEP was prescribed by a medical practitioner (20 participants). The most common reasons for a negative attitude towards Doxy-PEP were apprehension about insufficient detailed information and concerns about antibiotic resistance. Most Doxy-PEP users described positive experiences with it and would be willing to retake it. Doxy-PEP users were more often on HIV PrEP, had a higher self-reported risk of bacterial STIs, and reported a history of bacterial STIs more frequently compared to participants who had no prior experiences with Doxy-PEP.

**Conclusions:** The study demonstrates high awareness and strong interest in Doxy-PEP among German MSM; however, the actual usage of Doxy-PEP remained low in the summer and fall of 2023.

## TUPEB069

Tuberculosis and HIV-coinfection in children at a tertiary hospital in Zambia: a 15-year retrospective review of TB notifications

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<sup>2</sup>University Teaching Hospitals, Children's Hospital, Lusaka, Zambia

**Background:** HIV-positive children are disproportionately affected by TB. There have been many programmes targeting HIV and TB elimination. We aimed to explore the prevalence and trends in childhood TB-HIV coinfection from 2007 to 2021 at a tertiary hospital in Zambia.

**Methods:** We conducted a retrospective observational study at the University Teaching Hospitals - Children's Hospital in Lusaka, Zambia. All children aged 0 to 15 years diagnosed with TB between 2007 and 2021 recorded in hospital TB registers per national TB guidelines were included.

A complete enumeration of eligible children in the registers was conducted using a hospital-validated data-collection tool. We collected sociodemographic and TB/HIV data and fitted linear regression models to assess trends in subgroup-specific TB-HIV coinfection rates.

**Results:** Among 6075 children diagnosed with TB, 52% were male, 96% had a documented HIV status, and the overall prevalence of TB-HIV coinfection was 46.2%(95%CI: 45.0-47.5). The prevalence among females was 47.3%(95%CI: 45.5-49.1) and among males was 45.2%(95%CI: 43.5-47.0). The median age was 3 years(IQR: 1 - 8 years).

In the fitted models, the overall baseline prevalence of TB-HIV coinfection was 55% (95%CI; 47-63) reducing annually at -1.3%(95%CI; -2.3% to -0.37%,  $p=0.011$ ). Infants had the highest coinfection baseline(70%; 95%CI; 61-79) reducing at -2.5% per year. Coinfection in children aged 1-4 years and 5-15 years reduced at -1.3% per year (95%CI; -2.4% to -0.24%,  $p=0.020$ ) and -0.71% (95%CI; -1.8% to 0.33%,  $p=0.20$ )



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respectively from a baseline of 50%(95%CI: 41-59) and 52%(95%CI: 43-60). Coinfection in males and females reduced at -1.4% per year(95%CI: -2.4% to -0.45%,  $p=0.008$ ) and -1.2% per year(95%CI: -2.2% to -0.22%,  $p=0.021$ ) from 54% and 55% respectively.

**Conclusions:** We observed a reduction over time in TB-HIV coinfection rates among children, suggesting the effectiveness of childhood TB/HIV-elimination activities and the need to sustain and expand them. Trends incorporating nationwide treatment outcomes and the efficacy of specific elimination programs should be assessed in the future.

## TUPEB070

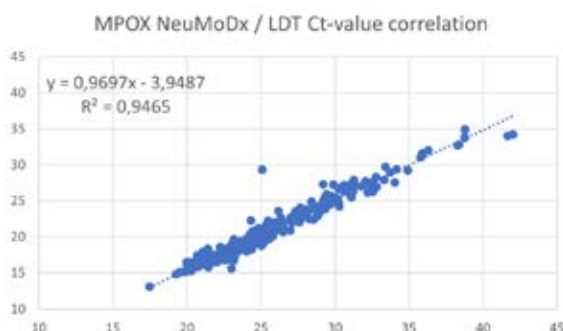
### Evaluation of the performance of the NeuMoDx MPXV Test

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**Background:** Timely testing of m-pox virus (MPXV) is important for client care, contact tracing, and decreasing transmission. The objective of this study was to evaluate the accuracy of the new NeuMoDx MPXV Test in detecting m-pox virus (MPXV) from swabs compared with an in-house assay developed to begin of the global outbreak 2022.

**Methods:** We tested 247 MPXV-positive and 50 MPXV-negative archived (-20°C) residual samples in parallel on the NeuMoDx with the MPXV Test strips (Qiagen) and with an in-house PCR (LDT, primer and probes from TibMolbiol, cfx96 Biorad; extraction Nimbus, Seegene) to estimate the correlation between both tests. In a dilution series from a sample quantified by digital PCR, the detection limits (95% hit-rates) of the tests were determined by probit analysis.



**Results:** All client samples initially negative for MPXV were confirmed as negative with both tests. All 247 initial in-house PCR-positive results were reported positive with both tests. The correlation between results of both tests was very high ( $R^2: 0.95$ ) but with an intercept of about 4 Ct. The mean difference in Ct values determined by Bland-Altman analysis was 4.74 cycles, with the lower Ct values in the NeuMoDx MPXV Test strips. The probit analyses gave

95% hit-rates of 445cps/mL for the LDT and for the NeuMoDx MPXV Test a value below 32cps/mL, the last dilution step in our analysis.

**Conclusions:** In this comparative analysis the NeuMoDx MPXV Test assay showed a high specificity and very good sensitivity with a lower detection limit below 32 copies/mL. The random access capabilities of the NeuMoDx system allowed for improving turn-around-time of results in comparison to the batchprocedure-based LDT assay.

## Co-morbidities and clinical complications of HIV and antiretroviral therapy

## TUPEB071

### Weight gain prediction in naive treated people with HIV using a machine learning approach

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**Background:** Excessive weight gain in naive treated people living with HIV is well known, especially with integrase inhibitor or tenofovir alafenamide but exhibits a high inter-individual variability. Many studies using linear statistical approaches have highlighted the effect of sex, ethnicity, and age at a population scale. Machine learning (ML) is increasingly used in medical field and allows for individual predictions using linear or non-linear relationships between weight gain and predictors.

We aimed to build an algorithm to predict body weight (BW) at different time points after antiretroviral therapy (ART) initiation using a ML approach.

**Methods:** Dat'Aids French database of naive diagnosed people between 2004 and 2021 was analyzed. Data cleaning with imputation of missing data and correction of continuous outliers to obtain a Gaussian distribution were performed. BW at 6, 12 and 24 months after ART initiation were predicted based on 112 covariates including baseline BW, socio-demographic and virological data, comedication, comorbidities and ART regimen. Extreme Gradient Boosting (XGBoost) models were fitted in R using the tidymodels framework. Data were split into a train (75%) and test (25%) set. For each timepoint, the XGBoost model with the lowest imprecision (RMSE) in a 10-fold cross validation experiment was evaluated in the test set.


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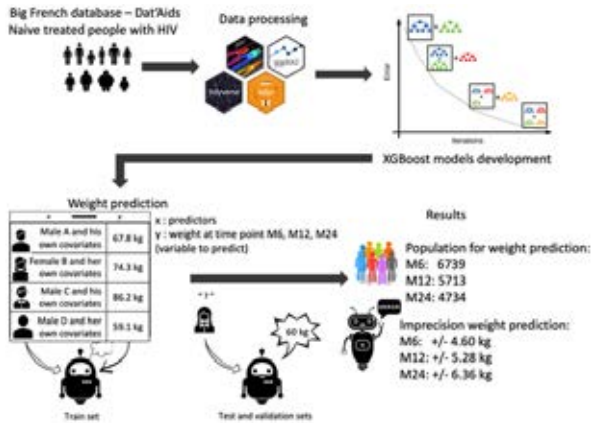
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**Results:** Available data from 6 739, 5 713 and 4 734 naive people respectively were analyzed for BW predictions at 6, 12 and 24 months. Cohorts were composed at 70% of Male and were from France for a half and from Central and West Africa for 20%. Less than 15% had AIDS. XGBoost results exhibited imprecisions (RMSE) of 4.60, 5.28 and 6.36 kg for the predictions of BW at 6, 12 and 24 months respectively.



**Conclusions:** The performances of the ML algorithm developed in order to predict BW after ART initiation, were not accurate enough to be used in clinical practice.

## TUPEB072

Switching to B/F/TAF in a real-world cohort of older people with HIV and a high burden of non-AIDS-related comorbidities

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**Background:** Older people with HIV (PWH) have an increased prevalence of age-associated comorbidities. We assessed the effect of switching to bicitgravir/emtricitabine/tenofovir alafenamide (B/F/TAF) in PWH aged ≥50 years with a high burden of comorbidities and comediations.

**Methods:** BICSTaR is a large, multinational, prospective, observational cohort evaluating real-world effectiveness and safety of B/F/TAF in PWH. This analysis included treatment-experienced PWH aged ≥50 years with (or history of) ≥1 comorbidity at baseline. Assessments at 24 months (M) included effectiveness, safety, laboratory parameters, weight change, drug-drug interactions (DDIs; per Liverpool Interactions Checker) and persistence. HIV Treatment Satisfaction Questionnaire change (HIVTSQc) was assessed at 12M.

**Results:** 401 PWH aged ≥50 years who switched to B/F/TAF were included; median age 56 years; 86% male, 81% White; 18% aged ≥65 years. Overall, 65%/21%/14% switched from INSTI-/NNRTI-/boosted PI-based regimens, respectively. Baseline comorbidities included cardiovascular (48%), neuropsychiatric (34%) and musculoskeletal (28%); 22% reported taking ≥5 comediations. At 24M, 96% (315/328) had viral load <50 c/mL; viral suppression rates were similar by age, sex, race and those with ≥2 comorbidities/≥5 comediations at switch, with no treatment emergent resistance to B/F/TAF. Drug-related adverse events (DRAEs) occurred in 13% (54/401) and serious DRAEs in 0.2% (1/401). DRAEs leading to discontinuation occurred in 7% (27/401). Laboratory findings remained stable with no worsening in lipid, renal or liver parameters (table). Median (Q1, Q3) weight change was +1.0 kg (-1.3, 3.2) at 24M. No clinically significant DDIs were expected between B/F/TAF and comediations commonly prescribed in this cohort. At 24M, B/F/TAF treatment persistence was 90% (359/401). Treatment satisfaction was high at baseline and increased through 12M (median [Q1, Q3] HIVTSQc: +24.5 [13.0, 29.0]; n=290).

Laboratory Parameter, median (Q1, Q3)	Baseline	Change at 24M
eGFR, mL/min/1.73 m <sup>2</sup> [n=204]	84.7 (74.1, 102.3)	-5.0 (-13.7, 1.8)
ALT, U/L [n=263]	24.0 (19.0, 32.0)	+1.0 (-4.0, 7.4)
AST, U/L [n=220]	25.0 (20.9, 31.0)	+1.0 (-4.0, 5.0)
Total cholesterol, mg/dL [n=197]	181.7 (150.8, 214.3)	-1.9 (-26.3, 21.3)
Total cholesterol: HDL ratio [n=173]	4.1 (3.1, 4.7)	-0.1 (-0.6, 0.5)

**Conclusions:** In this cohort of PWH aged ≥50 years with a high prevalence of comorbidities, switching to B/F/TAF was highly effective and generally well tolerated. Cardiometabolic and renal parameters remained stable and high rates of persistence were maintained though 24M. These data support the safety of switching to B/F/TAF in older PWH.



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## TUPEB073

Severe depression in people with HIV may be linked to increased neuroinflammation: a diffusion-weighted MRS study

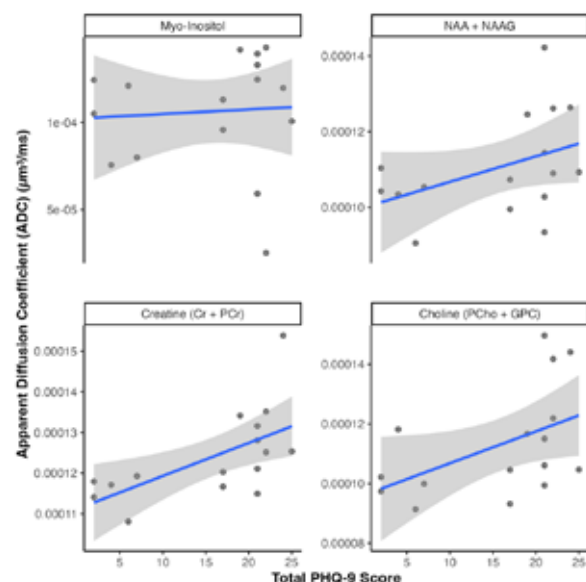
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**Background:** People with HIV exhibit neuroinflammation, which may contribute to depression. Neuroinflammation may be measured non-invasively using diffusion-weighted magnetic resonance spectroscopy (DW-MRS).

We investigated whether DW-MRS biomarkers were correlated with depressive symptom severity in people with HIV.

**Methods:** Adults with HIV completed the Patient Health Questionnaire (PHQ-9). Participants were split into high ("HD", PHQ-9  $\geq 15$ ) or low ("LD", PHQ-9  $\leq 7$ ) depressive symptom severity groups. DW-MRS data were acquired using a 3T Siemens Prisma scanner in a volume of interest in the anterior cingulate cortex (ACC), using which we quantified apparent diffusion coefficients (ADCs) for four metabolites. We then calculated Spearman's correlations between biomarker values and PHQ-9 score. All  $p$ -values were FDR-corrected for multiple comparisons to yield  $q$ -values.



**Results:** Participants were  $N = 16$  virally-suppressed people with HIV, with median age of 51 years, of whom 88% self-identified as men and 75% as White. Participants in the HD ( $n = 11$ , median PHQ-9 score = 21) and LD ( $n = 5$ , median PHQ-9 score = 4) groups had comparable socio-

demographic characteristics. ADCs for creatine ( $r = 0.72$ ,  $q = 0.008$ ) and choline ( $r = 0.58$ ,  $q = 0.045$ ) were strongly correlated with PHQ-9 score, but not for myo-inositol and NAA ( $q > 0.05$ ).

**Conclusions:** Intracellular diffusion of creatine and choline in the ACC were strongly correlated with depressive symptoms in people with HIV. Increased creatine and choline diffusion represent biomarkers of neuroinflammation as these have been reported in neuroinflammatory conditions (multiple sclerosis and neuropsychiatric lupus) and following experimentally-induced inflammation in humans (PMIDs 28394203, 26969685, 34673176). Therefore, our findings suggest that greater depressive symptom severity in people with HIV may be linked to increased neuroinflammation. With further validation, these biomarkers may help clarify the role of neuroinflammation in the pathogenesis of severe depression in people with HIV and enable targeted interventions.

## TUPEB074

Comprehensive lipidomic study revealed key lipid modules associated with depression in people with HIV

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**Background:** People with HIV (PWH) are at higher risk of depression than the general population. In the general population, lipid alterations are associated with depression; however, there is a lack of comprehensive lipidomics studies to investigate differential lipid changes associated with depression in people with versus without HIV.

**Methods:** A comprehensive lipidomics study was conducted among 712 PWH and 712 age- and sex-matched normal controls (NC) from the Comparative HIV and Aging Research in Taizhou (CHART) cohort, Eastern China. Depression was defined as a score of  $\geq 18$  on the validated 9-item revised Zung Self-rating Depression Scale. Differential lipids were screened using logistic regression, fold change, and Orthogonal Partial Least Squares Discriminant Analysis. Weighted Correlation Network Analysis identified highly correlated lipid modules.

**Results:** The prevalence of depression was 37.7% (195/712) for PWH and 8.0% (57/712) for NC, respectively. After adjusting for sociodemographic, HIV-related characteristics, 12 top lipid species, representing independent signals for 12 lipid classes, were identified to be associated with depression in PWH. For PWH with depression, carnitine (20:0) ( $P < 0.001$ ), lysophosphatidylcholine (O-22:1) ( $P = 0.006$ ), phosphatidylserine (20:4/20:4) ( $P = 0.046$ ) were upregulated, while tauroolithocholic acid-3-sulfate



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( $P=0.022$ ), ceramide-AS(d18:1/21:0(2OH)) ( $P=0.005$ ), ceramide-NS(d18:1/25:1) ( $P<0.001$ ), N-acyl-lysophosphatidylethanolamine (16:1/N-16:0) ( $P=0.033$ ), lysophosphatidylethanolamine(16:1) ( $P=0.034$ ), monoglyceride (18:2) ( $P=0.002$ ), phosphatidylcholine(16:1/18:2) ( $P<0.001$ ), phosphatidylethanolamine(18:1/18:3) ( $P<0.001$ ), and phosphatidylglycerol(16:0/20:0) ( $P<0.001$ ) were downregulated (FIG.(a)).

The downregulation of ceramide-AS(d18:1/21:0(2OH)) was also found in NC with depression. Lipid network revealed depression in PWH was significantly associated with up-regulation of the lipid module composed of long-chain carnitine and the lipid module mainly composed of lysophosphatidylcholine and lysophosphatidylethanolamine with long and saturated acyl chains ( $P<0.001$ ), and was significantly associated with downregulation of the lipid module mainly composed of phosphatidylcholine and lysophosphatidylethanolamine with unsaturated acyl chains ( $P<0.001$ ) (FIG.(b)). No depression-related lipid modules were identified in NC.

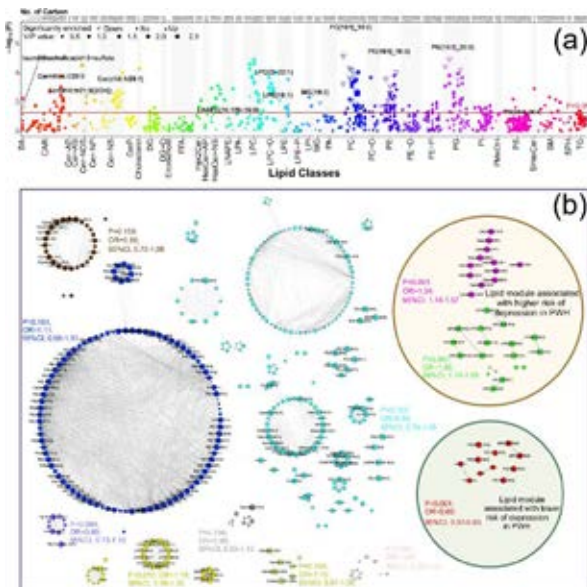


Figure. Lipid species and lipid modules associated with depression in PWH. (a) Manhattan plot of lipids associated with depression in PWH, top lipids labelled. VIP, variable importance in projection. (b) Lipid modules associated with depression in PWH. OR, odds ratio per standard deviation of module score.

**Conclusions:** The identification of lipid metabolic abnormalities in PWH with depression warrants further evaluation, and underscores the potential importance of lipid metabolic intervention for PWH with depression.

## TUPEB075

### Clinical implications of neurocognitive impairment in people living with HIV

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**Background:** The prevalence and clinical implications of HIV-associated neurocognitive disorders (HAND) remain debated. This study aimed to assess HAND diagnosis in a cohort of 270 people living with HIV (PLWH) and investigate its impact during follow up.

**Methods:** Cohort of PLWH from 2012 to 2016 enrolled for assessing HAND using Brief Neurocognitive Score (BNCS) and Grooved Pegboard test, in addition to psychological (HAD anxiety and depression) and functional (PAOFI; Patient's Assessment of Own Functioning Inventory) assessments. A normalized value for BNCS (NPZ3) and including Grooved pegboard (NPZ5) was obtained. Adherence to antiretroviral treatment was measured at enrolment and at 3- and 6-year intervals, according to pharmacy pickup data and patient's interview through a validate questionnaire.

**Results:** The descriptive variables are described in Table 1. According to NPZ3, HAND was observed in 13% of PLWH, correlated with a lower educational level ( $p=0.002$ ), higher depression score ( $p=0.01$ ), and lower CD4+ nadir ( $p=0.001$ ). NPZ3 and NPZ5 showed a significant correlation ( $r=0.62$ ), with NPZ5 being more sensitive in identifying HAND. Of note, both NPZ3 and NPZ5 were correlated with PAOFI score. In a linear regression analysis, HAND was associated with CD4+ nadir and education level. After adjusting by age, anxiety and depression, a lower NPZ3 value at inclusion was associated with a lower adherence level in the questionnaire (95% vs. 98%;  $p=0.01$ ) and in delay in the pickup of medication in pharmacy (69 vs. 26 days;  $p<0.001$ ) at 3 years of follow up. Moreover, initial NPZ5 predicted poor compliance and loss of follow up after 6 years of evaluation ( $p=0.003$ ).

Age (years)	44 (18-80)
Sex at birth male	211 (78%)
CD4 nadir (cels/mm <sup>3</sup> )	235 (121-365)
CD4 at inclusion	368 (232-523)
Undetectable viral load (VL)at baseline	268 (99%)

**Conclusions:** HAND diagnosis is associated with immunosuppression and lead to functional impairment. Notably, those PLWH with HAND demonstrated sustained poor adherence and compliance during long-term follow-up, emphasizing the need for targeted interventions to improve treatment outcomes in this population.





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## TUPEB076

Effect of dolutegravir on weight changes and lipid profile compared with efavirenz in people living with HIV: a retrospective cohort study

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**Background:** Dolutegravir (DTG) has been recently introduced and widely used as the first-line antiretroviral therapy (ART) in Asian countries. There is limited data on DTG-associated weight gain among Asian treatment-naïve people living with HIV.

**Methods:** In Thailand, 81 and 100 adults initiating DTG-based and efavirenz (EFV)-based ART, respectively, were retrospective studies of weight changes and lipid profiles at 6 and 12 months after ART initiation. Multivariate with repeated measures using a multilevel mixed-effects linear regression was used to compare the primary outcome between groups.

**Results:** At baseline, the DTG group had a lower mean BW (60.7 kg vs. 64.3 kg,  $p=0.071$ ), a higher proportion of smoking (25.9% vs. 14.0%,  $p=0.043$ ), lower mean CD4 count (126 cells/mm<sup>3</sup> vs. 243 cells/mm<sup>3</sup>,  $p=0.002$ ), and lower mean cholesterol (172 mg/dL vs. 185 mg/dL,  $p=0.029$ ). At 6 months and 12 months, DTG groups had lower mean BW compared to those of the EFV group (58.2 kg vs. 66.0 kg, mean difference -7.8,  $p=0.005$  and 59.6 kg vs. 67.0 kg, mean difference -7.3,  $p=0.008$ , respectively). In comparison between baseline and 12 months, the DTG group had no statistically significant difference in BW, 60.7 kg vs. 59.6 kg,  $p=0.495$ ; in contrast, the EFV group had a statistically increased in BW, 64.3 kg vs. 66.9 kg,  $p=0.019$ . At 6 months and 12 months, DTG groups had lower mean cholesterol compared to those of the EFV group (174 mg/dL vs. 188 mg/dL, mean difference (MD) -14.2,  $p=0.022$  and 179 mg/dL vs 187 mg/dL, MD -8.1,  $p=0.183$ , respectively). In comparison between baseline and 12 months, neither the DTG nor EFV groups had a statistical increase in cholesterol levels.

Factors associated with BW at every point of time, after adjusting, were DTG [MD -6.24, 95% confidence interval (CI) -10.55, -1.93,  $p=0.005$ ], universal coverage health insurance (MD -5.50, 95% CI -10.46, -0.55,  $p=0.029$ ), opportunistic infections (MD -12.36, 95% CI -20.33, -4.40,  $p=0.002$ ), and height (MD 0.53, 95% CI 0.27, 0.79,  $p<0.001$ ).

**Conclusions:** DTG-based ART is not statistically associated with increased BW and cholesterol levels in naïve Thai PLHIV compared to EFV-based ART. The results support the National guidelines.

## TUPEB077

Reasons for emergency department use among people engaged in HIV care in the Southeastern US

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**Background:** Characterizing emergency department (ED) use among people with HIV (PWH) could help identify unmet needs and inform outpatient prevention. We investigated reasons for ED visits in a clinical cohort of PWH in the state of North Carolina.

**Methods:** Among PWH in HIV care from 2016-2022, we examined ED visits that did not result in hospitalization. We categorized the first-listed ED visit diagnosis International Classification of Diseases, 10<sup>th</sup> revision code using the modified Clinical Classifications Software Refined (CCSR). We estimated ED visit incidence rates (IRs) using Poisson regression with GEE to account for repeated measures.

**Results:** The 2409 included PWH were 57% Black, 31% White, and 26% women. At the start of study follow-up, the median age was 47 years (IQR 35-55), the median CD4 count was 593 cells/mm<sup>3</sup> (IQR 372-826), and 71.3% had a viral load <40 copies/mL.

During the study period, there were 3016 ED visits over 12,445 person-years (IR 24.2 per 100 person-years [95% CI 23.4-25.1]). Of 738 (31%) PWH who had ≥1 ED visit during the study period, 40.7% had one ED visit, 17.2% two ED visits, 11.3% three ED visits, 6.8% four ED visits, and 34.0% had ≥5 ED visits. The five most frequent ED diagnosis categories were Symptoms Not Elsewhere Classified (19.1%), Musculoskeletal (13.5%), Injury/Poisoning (10.8%), Circulatory (8.1%), and Digestive (7.2%) (Table).

Disease Category	N (% of all visits)	Most Common Diagnosis (% of category)
Symptoms Not Classified	557 (19.1%)	Abdominal Symptoms (32.1%), Respiratory Symptoms (19.0%), Nausea/Vomiting (8.8%)
Musculoskeletal System	393 (13.5%)	Musculoskeletal Pain (49.1%)
Injury and Poisoning	314 (10.8%)	Initial Contusion (17.8%)
Circulatory System	237 (8.1%)	Nonspecific Chest Pain (70.5%)
Digestive System	211 (7.2%)	Disorders of Teeth (34.8%)
Respiratory System	184 (6.3%)	Upper Respiratory Infections (27.9%)
Genitourinary System	181 (6.2%)	Urinary Tract Infections (37.6%)
Nervous System	157 (5.4%)	Headache, Migraines (54.1%)

Table. Distribution of Disease Categories for the First-Listed ED Visit Diagnosis, with the Most Common Diagnosis in Each Category. Displayed are categories accounting for >5% of all ED visits.



**Conclusions:** Almost a third of PWH in this cohort sought care in the ED for conditions that did not require hospitalization. Reasons for ED visit were varied. Further work on drivers of ED use is needed to improve disease prevention and access to non-emergency outpatient care, particularly for PWH with a high number of ED visits.

## TUPEB078

### A new approach to preventing anal cancer in PLWHIV

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**Background:** Anal cancer is one of the most common cancers in PLWHIV, especially in MSM. Effective treatment of the precursor lesion, anal high grade squamous intraepithelial lesions (HSIL), markedly reduces the likelihood of progression to cancer. Current approaches to anal HSIL treatment (such as electrocautery) require the use of intra-procedure High Resolution Anoscopy (HRA), and are associated with frequent treatment failures. Radio Frequency Ablation (RFA) is highly effective in the treatment of esophageal HSIL. We assessed the efficacy of RFA in the treatment of intra-anal HSIL in PLWHIV and those without HIV.

**Methods:** Between August 2022 and March 2024, 30 high risk individuals were assessed by HRA for the presence of persisting intra-anal HSIL. Following informed consent, patients were given sedation anesthesia and a bilateral pudendal nerve block of 20ml 2% ropivacaine in an Endoscopy Suite. A single circumferential RFA treatment was then performed, using a catheter attached to a Barrx™ flex RFA energy generator (Medtronic, Minneapolis, MN, USA). Treatment response was assessed by HRA, three months following the RFA. Those with residual HSIL, after the circumferential RFA, were offered a subsequent, targeted, RFA.

**Results:** 23 (77%) of the patients were MSM or transgendered women and a total of 18 (60%) were LWHIV. Compared to HIV negative patients, PLWHIV were slightly older (mean age 62.5 v 60.8 years) and more likely to be past or current smokers (60.1% v 41.7%). The initial mean number of intra-anal octants affected by HSIL was 3.72 (range 1 to 7). PLWHIV had more extensive disease, but demonstrated a greater reduction in area affected by HSIL (68.3% v 56%) and were more likely to completely clear their HSIL (33% v 8.3%) and HPV (22.2% v 8.3%). Post-operative pain was reported at 53%, comparable to electrocautery. No participants developed stenosis.

**Conclusions:** RFA was easy to set up and did not require the use of intra-procedural HRA, thus potentially being available in settings with limited HRA capacity. RFA was at

least as effective as electrocautery in treating intra-anal HSIL in PLWHIV, and may be of particular value in those with extensive disease.

## TUPEB079

### Anal high-grade squamous intraepithelial lesion screening algorithms for Thai cisgender men and transgender women who have sex with men: baseline results of a multiphase optimization strategy study

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**Background:** Men who have sex with men, especially with HIV, face heightened risk of anal cancer. Treating its precursor, anal high-grade squamous intraepithelial lesion (HSIL), can reduce this risk. The current standard screening practice, anal cytology, has low sensitivity (19%). We aimed to identify an optimal anal HSIL screening algorithm using a Multiphase Optimization Strategy Trial (MOST).

**Methods:** The optimization phase enrolled participants aged ≥30 years old with HIV and ≥40 years old without HIV in Bangkok, Thailand, and followed them every six months for one year. Participants chose between self-sampling and physician sampling. Self-sampled participants were randomized into groups receiving combinations of anal cytology and high-risk human papillomavirus (HPV) DNA testing.

Physician-sampled participants were randomized into groups receiving combinations of digital anorectal examination, anal cytology, high-risk HPV DNA testing, and high-resolution anoscopy (HRA).

In groups without HRA, positive digital rectal examination, cytology, or high-risk HPV results were followed up with HRA.

**Results:** Between October 2022 and April 2023, 157 cisgender men and 23 transgender women were enrolled and conducted baseline visits. Of these, 132 (73.3%) had HIV. Median age was 43 years in those with HIV, and 46 years in those without HIV.

Four (2.22%) chose self-sampling, while 176 (97.8%) chose physician sampling. No HSIL diagnoses originated from self-sampled groups, while 20 were from physician-sampled groups (11.1% of 180, 95%CI 6.9%–16.6%).

Of all HSIL diagnoses, 16/20 (80.0%) originated from groups with HRA as standard screening method, while 4/20 (20.0%) were from a positive high-risk HPV DNA followed up with HRA.



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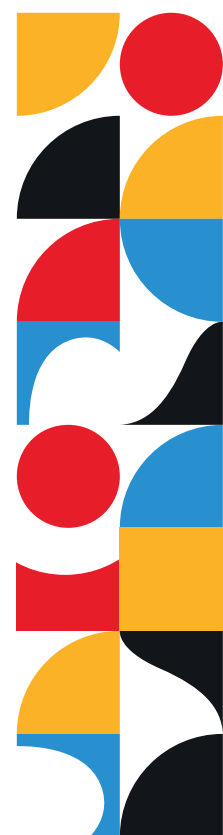
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Sampling method	Procedures	With HIV: HSIL n/N (%)	Without HIV: HSIL n/N (%)	Overall: n/N (%)
Self-sampling	Anal cytology, high-risk HPV; high-risk HPV only	0/2 (0%)	0/2 (0%)	0/4 (0%)
	Digital anorectal examination, anal cytology, high-risk HPV, high-resolution anoscopy	5/16 (31.3%)	0/6 (0%)	5/22 (22.7%)
	Digital anorectal examination, anal cytology, high-resolution anoscopy	2/15 (13.3%)	0/6 (0%)	2/21 (9.5%)
Physician sampling	Digital anorectal examination, high-risk HPV, high-resolution anoscopy	2/16 (12.5%)	1/6 (16.7%)	3/22 (13.6%)
	Digital anorectal examination, high-resolution anoscopy	5/16 (31.3%)	1/6 (16.7%)	6/22 (27.3%)
	Digital anorectal examination, anal cytology, high-risk HPV	3/16 (18.8%)	0/6 (0%)	3/22 (13.6%)
	Digital anorectal examination, anal cytology	0/16 (0%)	0/5 (0%)	0/21 (0%)
	Digital anorectal examination, high-risk HPV	1/17 (5.9%)	0/5 (0%)	1/22 (4.5%)
	Digital anorectal examination	0/16 (0%)	0/6 (0%)	0/22 (0%)

**Conclusions:** Most participants favored physician-sampled HSIL screening over self-sampling. HRA, with or without adjunctive testing, detected the most HSIL. While anal cytology did not contribute to HSIL diagnosis, using HRA as a follow-up test after a positive high-risk HPV result demonstrated potential as a screening approach.

## TUPEB080

Clinical efficacy of the HIV protease-inhibitor Indinavir alone or in combination with chemotherapy for the treatment of early and advanced classic Kaposi's sarcoma

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**Background:** Kaposi's sarcoma (KS) is a "rare" disease of angioproliferative nature presenting in different clinical-epidemiologic forms, all associated with human herpes virus-8 (HHV-8) infection and sharing the same histopathology. KS has gained notoriety with the advent of HIV/AIDS where it is frequent and aggressive, whereas classic KS (CKS) can be indolent and generally arises in elderly men.

Of note, no definitive cure has been established for KS, and all conventional therapies are only temporarily effective.

Previous data indicated that HIV protease inhibitors, as Indinavir, have anti-KS activity by exerting direct anti-angiogenic and anti-tumor effects, due to inhibition of ma-

trix-metalloproteases activation (Sgadari, NatMed 2002, LancetOncol, 2003; Monini, NatCancerRev 2004; Toschi, IntJCancer 2011; Qui, MolCancerTher 2020).

A proof-of-concept phase 2 trial indicated that Indinavir is safe and effective in participants with early CKS versus those with advanced disease, suggesting that these persons may achieve a response only after debulking chemotherapy (Monini, AIDS 2009).

**Methods:** Monocentric, open label, non-randomized phase 2 trial in elderly people with progressive advanced CKS aimed at determining the clinical response to Indinavir associated with debulking chemotherapy, followed by a maintenance phase with Indinavir alone. Secondary endpoints included safety and KS biomarkers.

**Results:** Twenty-eight persons with advanced CKS were screened and 25 started treatment. All evaluable participants (22) responded to debulking therapy. Out of these, 16 entered a maintenance phase with Indinavir alone. The overall response rate upon maintenance was 75%, with a better duration than previously reported in historical data from the same clinical center with chemotherapy alone or more recent experimental approaches. Moreover, most responders showed further clinical improvements (lesion number/nodularity) during maintenance and post-treatment follow-up. As compared to progressors, responders also showed an amelioration of the immune status with a consistent B cell increase, and positive changes of KS biomarkers (Sgadari C et al, submitted).

**Conclusions:** Our results indicate that Indinavir is safe and effective in early CKS, it boosts and maintains the clinical activity of conventional chemotherapy in advanced disease, and it could be rapidly adopted for the clinical management of persons with KS or other tumors associated or not with HIV infection.

## TUPEB081

144-week update: change in weight and BMI associated with switching to bictegrovir/emtricitabine/tenofovir alafenamide vs. a dolutegravir-based regimen among virologically suppressed adults living with HIV

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**Background:** Previously, we demonstrated that switching to a bictegrovir (BIC) vs. dolutegravir (DTG)-based regimen (DBR) were both associated with lower annualized weight gain post-switch that was not significantly different at Week 96. Here, we report updated changes in weight and BMI through 144 weeks compared to 2 years prior to switch.

**Methods:** Data on demographics, clinical characteristics, weight, and BMI are collected from virologically suppressed adults switched to BIC/emtricitabine(F)/tenofovir alafenamide (TAF), DTG plus F/TAF, DTG/abacavir (ABC)/lamivudine (3TC), DTG/rilpivirine (RPV), and DTG/3TC 2 years prior to switch through 144 weeks post switch. Linear spline models were fit to estimate and compare the trajectories of weight and BMI changes observed pre-and-post-switch.

Adjusted piecewise linear mixed-effects models were fit to examine factors associated with weight and BMI change pre-and-post-switch.

**Results:** Baseline demographic and clinical characteristics have been previously reported. Six hundred and seventy-three switched to BIC/F/TAF, 148 switched to DTG plus F/TAF, 51 switched to DTG/ABC/3TC, 48 switched to DTG/RPV and 36 switched to DTG/3TC.

At Week 144, switching to BIC/F/TAF vs. a DBR (grouped) were both associated with lower annualized weight gain post-switch (-0.88 kg/year vs. -0.39 kg/year respectively,  $p=0.15$ ). DTG plus F/TAF switches had the highest annualized weight gain (0.68 kg/year, 95% confidence interval (CI): -0.32, 1.65) whereas, DTG/RPV switches had the lowest annualized weight gain (-2.22 kg/year, 95% CI: -3.69, -0.62) post-switch at Week 144. DTG/RPV and BIC/F/TAF switches were the only groups with significantly lower annualized weight gain post-switch at Week 144.

Similar trends were observed for BMI changes. Baseline BMI < 18.5 kg/m<sup>2</sup> was the only evaluated factor associated with significantly higher annualized weight gain post-switch whereas multiple factors were associated with significantly lower annualized weight gain, but among them baseline BMI ≥ 30 kg/m<sup>2</sup> and switching from a protease inhibitor were associated with the lowest annualized weight gain post-switch.

**Conclusions:** At Week 144, switching to a BIC vs. DBR were both associated with lower annualized weight gain post-switch that was not significantly different. Weight and BMI changes were largely stable for many groups at Week 144, however, switching to BIC/F/TAF and DTG/RPV were associated with significantly lower annualized weight gain post-switch.

## TUPEB082

### Neuropsychiatric adverse events in PWH starting a new INSTI-based regimen

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**Background:** Although clinical trials reported a low and comparable rate of neuropsychiatric (NP) disturbances among people with HIV (PWH) receiving INSTI, higher rates of these disturbances have been reported in clinical practice.

**Methods:** Using data from the SCOLTA project, a multi-center observational study following PWH who start antiretrovirals to identify adverse events (AEs) in real-life, we performed a retrospective analysis (NEURO-INSTI) to assess incidence rates (IR) and 95% confidence intervals (95% CI) of NP AEs and related interruptions.

Observation was truncated at the first occurrence of any NP AEs, even if not causing treatment discontinuation. IRs were calculated as number of first occurrences/1000 person years follow-up (PYFU). When crude IR were significantly different according to selected baseline variables, they were included in the multivariate generalized linear model, to calculate the adjusted IRs (aIRs).

**Results:** We analyzed NP AEs occurring in 2922 PWH (mean age 47.2 years) on INSTI cohorts since 2007. Over a median observation time of 28 months (interquartile range 14-45), 126 NP AEs and 72 related discontinuations occurred; IRs were 15.9/1000 PYFU (95% CI, 13.4-19.0) and 9.1/1000 PYFU (95% CI 7.2-11.5), respectively.



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Adjusted IRs are reported in the Table. PWH with a history of IDU and ART naïve individuals had higher aIRs and discontinued treatment more frequently. People with psychiatric disorders at baseline also had higher incidence rates of NP AEs but not of discontinuations. Regarding the role of antiretrovirals, PWH taking abacavir and DTG or RAL had higher aIRs of NP AEs: aIRs for DTG were >3-fold higher than with BIC, although with non-significant CI.

	N (%)	PWH N=70246	Any CNS AEs N=16	Adjusted CNS/NP AEs (95% CI)	CNS AEs leading to discontinuation N=12	Adjusted CNS/NP AEs leading to discontinuation (95% CI)
Female	716 (24.3)	1964.52	38	25.2 (14.6-36.8)	20	15.2 (8.3-23.9)
Male	2188 (75.7)	5059.48	68	18.7 (12.2-26.9)	12	11.2 (7.2-16.9)
Age <18 years	1653 (56.6)	4421.78	68	18.2 (12.2-26.9)	31	9.9 (5.6-16.6)
Age ≥18 years	2867 (43.4)	3479.92	28	22.4 (15.6-34.0)	41	17.1 (10.2-23.9)
Integrase drug use history no	2718 (91.4)	4342.57	47	14.5 (9.2-21.3)	40	8.2 (5.1-11.5)
Integrase drug use history yes	544 (19.6)	1529.49	81	26.2 (16.6-40.9)	23	19.8 (11.6-31.8)
ART experienced	2362 (79.6)	4416.23	102	18.2 (12.2-27.3)	50	8.1 (5.0-12.7)
ART naïve	620 (21.2)	1608.47	24	28.9 (17.7-50.4)	22	28.9 (15.5-50.8)
CNS range A	1443 (49.4)	3006.06	44	17.3 (10.9-27.4)	35	17.8 (10.4-27.3)
B	754 (25.3)	2118.39	28	21.3 (13.6-33.4)	20	23.2 (14.3-36.4)
C	751 (25.4)	1913.13	43	25.4 (16.6-38.7)	17	35.2 (19.9-60.8)
PWH without psychiatric comorbidity	2683 (91.8)	1756.28	107	15.2 (10.3-21.4)	45	13.9 (8.3-20.6)
PWH with psychiatric comorbidity	239 (8.2)	1466.37	19	27.8 (16.4-47.2)	7	13.2 (5.3-30.7)
Regimen without abacavir	2431 (81.2)	7998.09	91	20.3 (14.6-29.6)	43	9.6 (6.5-14.5)
Regimen with abacavir	495 (18.8)	1922.39	25	33.2 (19.4-49.3)	29	17.7 (9.3-30.8)
Regimen without DTG	2633 (90.4)	6276.80	111	16.3 (11.0-24.3)	27	13.9 (8.4-20.3)
Regimen with DTG	689 (19.6)	1624.91	15	29.8 (15.4-49.6)	15	21.9 (10.6-40.8)
Integrase cohort	716 (24.3)	1382.39	8	7.6 (3.4-17.3)	8	13.4 (5.2-29.6)
Nonintegrase	1378 (49.6)	4516.80	63	25.4 (16.5-39.9)	33	18.2 (10.3-29.4)
Polypill	138 (4.8)	176.29	6	15.4 (6.5-33.5)	3	8.2 (2.5-26.5)
Polypill	119 (17.4)	1307.20	49	40.5 (26.1-60.8)	8	14.1 (6.6-31.1)

Table. Number of CNS AEs (any and leading to treatment discontinuation) and adjusted IRs (for CNS/NP AEs) in PWH starting a new INSTI-based treatment, stratified by characteristics at baseline.

**Conclusions:** Among PWH on INSTI treatment, IDU history and being on an initial ART regimen contributed to the occurrence of NP AEs and related discontinuations. PWH on DTG or RAL as INSTI showed higher aIRs of NP AEs, although not significant.

## TUPEB083

Binge eating behaviors and weigh excess in people with HIV: a possible underestimated cause?

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**Background:** Binge eating (BE) is a mental health disorder, possibly leading to weight gain (WG), whose prevalence and correlation with weight excess in people with HIV (PWH) have been scarcely investigated.

**Methods:** We included adult PWH during routine visits from October 2022 to February 2023. Participants underwent the validated Binge eating scale (BES) questionnaire (score <17 BE very unlikely, BE≥17 possible/very likely), with the support of a psychiatrist. Body mass index (BMI) was calculated as per WHO definitions (underweight <18, normal 18-24.9, overweighted 25-29.9, and obese ≥30 kg/m<sup>2</sup>). We performed a logistic regression for the binary outcome BES≥17 and being overweighted/obese as effect measure of risk association, and then adjusted for possible confounders (including exposure to integrase inhibi-

tors). We moreover performed a sensitivity analysis fitting the regression model both including and excluding people suffering from depression (which may drive BE).

**Results:** We included 1204 PWH, 68.7% males, median age 53 years (IQR:44-60), 85.5% Caucasian, 95.6% with HIV viral load <50 copies/ml (other characteristics Table 1).

As for BMI categories we had underweight in 17.4%, normal in 43.6%, overweight in 35.1%, and obese in 19.4% cases. Considering BES, 1089 (90.4%) PWH had a score <17, 115 (9.6%) ≥17.

Multivariable analysis showed that obesity (OR =6.20, p<0.0001), overweight (OR=2.21, p=0.006), and depression (OR=2.03, p=0.023) were significantly associated with high BES score.

At the sensitivity analysis, our results were confirmed and obesity and overweight remained significantly associated with BE behaviours (excluding depression, obesity OR = 6.49, p<0.0001, being overweighted OR = 2.15, p = 0.024, including depression obesity OR = 6.01, p = 0.018, being overweighted OR=3.47, p = 0.048).

Characteristic	Overall= 1204 n (%)	Characteristic	Overall= 1204 n (%)
Level of education, high, n (%)	828 (68.7)	Current CD4+ T cell count, cell/mm <sup>3</sup> , median (IQR)	643 (483-823)
Current smoker, n (%)	626 (52)	CD4+ T cell count at nadir, cell/mm <sup>3</sup> , median (IQR)	300 (163-450)
Regular physical exercise, n (%)	289 (24)	AIDS events in medical history, yes, n (%)	239 (19.8)
Alcohol use disorder, n (%)	103 (8.5)	Current integrase inhibitor exposure, yes, n (%)	734 (61)
Years living with HIV, median (IQR)	15 (8-24)	Multimorbidity, n (%)	816 (67.7)
Years on antiretrovirals, median (IQR)	14 (7-22)	Polypharmacy, n (%)	227 (18.8)

**Conclusions:** BE should be considered among other possible causes of WG in PWH. Our results push towards an in-depth study of this topic for a better understanding of the phenomenon in PWH, possibly identifying subgroups of this population who could benefit from a psychoeducational/psychological intervention to preventing WG.

## TUPEB084

### Evaluation of infectious diseases physicians' approach toward the treatment of dyslipidemia in PLWH

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**Background:** Human Immunodeficiency Virus (HIV) infection is associated with risk factors for cardiovascular disease (CVD), including elevated serum lipids. Treatments of dyslipidemia decrease low-density lipoprotein cholesterol (LDL-C), and significantly reduce cardiovascular events.

This study aimed to evaluate the approach of physicians who are infectious diseases specialists or residents toward the treatment of dyslipidemia in people living with HIV (PLWH).

**Methods:** This study was conducted as an online survey to infectious disease specialists or residents attending the 7th International HIV/AIDS Congress on December 7-10, 2023. The survey collects data about the characteristics and experience of physicians. Also, the attitudes of physicians towards dyslipidemia management in PLWH were obtained. This study was approved by local Ethics Committee.

**Results:** Ninety-one participants were included in the study (60.4% specialists and 39.6% residents). Thirty-six percent (n=33) of physicians stated that they did not use any guidelines in their clinical practice. The specialists were more likely to use guidelines than the residents (72.7% vs 50.0, p = 0.047).

Most physicians (67.2%, n=39) preferred using the 2023 European Aids Clinical Society (EACS) Guidelines. Despite 25% (n=23) of the physicians did not use any calculator for CVD risk assessment, for those who use CVD risk assessment, Framingham was preferred by majority of them (75%, n=51).

The most frequently prescribed statins by physicians were atorvastatin (47.3%), pitavastatin (28.6%) and rosuvastatin (23.1%). Seventy-four percent (n=67) of physicians doubted the necessity of dyslipidemia treatment, and 77% (n=70) physicians were affected by the patient's reluctance.

Physicians' attitudes about dyslipidemia treatment are shown in Table 1. Physicians thought that dyslipidemia treatment targets for PLWH should be based on LDL-C (81.3%), total cholesterol/HDL ratio (12.1%) and non-HDL-C (6.6%).

	Strongly agree n (%)	Agree n (%)	Neutral n (%)	Disagree n (%)	Strongly disagree n (%)
Dyslipidemia guidelines contain sufficient information for PLWH.	11 (12.1)	28 (30.8)	29 (31.8)	21 (23.1)	2 (2.2)
Workload and time constraints hinder the implementation of dyslipidemia guideline recommendations.	18 (19.8)	40 (43.9)	19 (20.9)	10 (11.0)	4 (4.4)
Cardiovascular risk assessment is an integral part of clinical practice.	44 (48.3)	38 (41.8)	8 (8.8)	-	1 (1.1)

Table 1. Some survey questions and physicians' preferences and attitudes on treating dyslipidemia in PLWH.

**Conclusions:** Several physicians (specialists and residents) did not use guidelines and CVD risk calculators and doubted the necessity of dyslipidemia treatment. In addition, the patients' reluctance may affect the physicians' decisions. Continuing education programs regarding dyslipidemia management are vital for health professionals and PLWH.

## TUPEB085

### Non-small cell lung cancer survival, by tumor stage and histology, among people with and without HIV

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**Background:** Among people with lung cancer, having HIV is associated with poorer survival. Few studies have evaluated the HIV survival gap by tumor histology and stage.

**Methods:** A retrospective cohort of people with HIV (PWH) and people without HIV (PWoH) with newly diagnosed non-small cell lung cancer (NSCLC), identified between 2008-2020 from the US Department of Veterans Affairs and Kaiser Permanente. Hazard ratios for HIV status associated with survival up to 5 years were estimated from Cox models stratified by histological subtype (adenocarcinoma, squamous) and TNM stage (I, II/III, IV), adjusting for baseline factors (see Table footnote). Separate models adjusted for time-dependent cancer treatment initiation within 6 months.



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**Results:** There were 654 NSCLC cases diagnosed in PWH (53% adenocarcinoma, 33% squamous cell, 14% not specified; 97% men; 48% non-Hispanic Black, 48% non-Hispanic White). There were 91370 NSCLC cases diagnosed among PWoH (52% adenocarcinoma, 33% squamous cell, 15% not specified; 83% men; 14% non-Hispanic Black, 76% non-Hispanic White). For PWH, 22% were stage I, 13% stage II, 18% stage III, 40% stage IV, with median survival of 1.0 and 1.1 years for adenocarcinomas and squamous cell, respectively. For PWoH, 24% were stage I, 10% stage II, 20% stage III, 38% stage IV, with median survival of 1.5 and 1.3 years for adenocarcinomas and squamous cell, respectively. PWH had 30-50% higher mortality across most of the analyzed histologic and stage subgroups, except for adenocarcinoma stages II/III (Table). Finally, 77% of PWH and 78% of PWoH had cancer treatment within 6 months; adjustment for treatment did not change inferences (data not shown).

TNM Stage	All NSCLC <sup>2</sup>		Adenocarcinoma		Squamous cell	
	HR	(95% CI)	HR	(95% CI)	HR	(95% CI)
I	1.35	(1.06, 1.70)	1.44	(1.02, 2.02)	1.32	(0.82, 1.90)
II or III	1.27	(1.07, 1.49)	1.02	(0.79, 1.33)	1.46	(1.15, 1.86)
IV	1.31	(1.16, 1.49)	1.39	(1.18, 1.65)	1.25	(0.96, 1.63)

<sup>1</sup>From Cox regression models adjusted for baseline age, sex, race/ethnicity, diagnosis year, Deyo comorbidity index, smoking, substance use disorders, and organization

<sup>2</sup>Includes adenocarcinoma, squamous cell, and NSCLC histology not otherwise specified

**Table. Adjusted hazard ratios (95% confidence intervals)<sup>1</sup> for association of HIV status (reference: PWoH) with mortality risk up to 5 years after NSCLC diagnosis.**

**Conclusions:** The reduced survival for PWH with NSCLC was similar by stage and may not be due to treatment differences. The similar survival by HIV status for stage II or III adenocarcinomas, but not squamous cell cancers, requires further investigation.

## TUPEB086

### Changes in body mass index in children and adolescents in Europe and Thailand before and after starting dolutegravir and compared to protease inhibitors using propensity scoring analysis

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**Background:** Some studies report weight gain on Dolutegravir(DTG) but data in children/adolescents living with HIV(CALWHIV) are limited.

**Methods:** CALWHIV on DTG aged 2-<18 years from 15 cohorts in the European Pregnancy and Paediatric Infections Cohort Collaboration were included. Mixed-models were used to describe changes in body mass index-for-age z-score(zBMI) by sex, age and treatment/viral load(VL) status at DTG start.

First cubic splines were used to describe non-linear zBMI trajectories 96-weeks before and after DTG start. Second, linear spline models estimated mean zBMI change in 48-weeks before and after DTG start to compare changes in short-term growth trajectories.


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Third, CALWHIV aged 6-18 years at DTG start were compared to CALWHIV starting protease inhibitors (PI)-based regimens using propensity scores (PS) to balance differences in characteristics at regimen start.

Weighted mixed-models with linear splines were used to compare mean change in zBMI on DTG versus PIs from regimen start to 48 and 96-weeks.

**Results:** 907 CALWHIV with  $\geq 1$  zBMI measurement in the 96-weeks before and after DTG start were included. Median age at DTG start was 14[IQR 11-16] years, 451(50%) female, zBMI 0.38[-0.57-1.24], 68(8%) ART-naïve, 494(55%) ART-experienced/suppressed (VL<200c/ml), 116(13%) ART-experienced/unsuppressed (VL $\geq$ 200c/ml), 229(25%) ART-experienced/VL-unknown. Median time on DTG was 110[65-177] weeks.

CALWHIV of all age groups, treatment/VL status and sex experienced zBMI increase after DTG start (Figure). In linear spline models, there was no evidence that mean changes in zBMI differed in the 48-weeks before and after DTG start in any subgroup ( $p>0.1$ ).

In PS analysis, changes in zBMI in 455 CALWHIV on DTG were compared to 299 on PIs. There were no statistical differences in mean zBMI change over 48/96-weeks on DTG versus PI overall [change at 96-weeks: 0.23(95%CI 0.15,0.32) v 0.16(0.05,0.26),  $p=0.265$ ], or within treatment/VL subgroups( $p>0.1$ ).

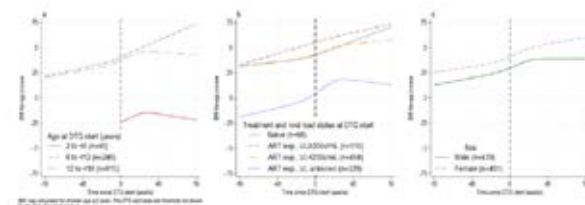


Figure. Mixed-model using cubic splines to estimate non-linear growth trajectories of zBMI in the 96 weeks before and after DTG start.

**Conclusions:** CALWHIV experienced increases in zBMI after DTG start comparable to changes observed pre-DTG, and those observed on PI-based regimens.

## TUPEB087

Coronary artery calcium and abnormal arteries to predict death and cardiovascular diseases in older people living with HIV: a cohort study

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**Background:** Older PLWH bear a higher CVD burden due to traditional and HIV-specific factors. This study explored the use of non-invasive tools like ABI, CAVI, and CAC to improve CVD prediction and mortality assessment in this population.

**Methods:** This prospective study, part of the HIV-NAT aging cohort, examined 358 PLWH aged 50 and older from 2015-2023. Participants underwent assessments for peripheral arterial disease (PAD) and arterial stiffness, with CAC scores categorizing coronary artery disease risk. Data on CVD events (myocardial infarction, stroke, or revascularization) and deaths were extracted. Competing risks were considered for CVD events, with all-cause mortality assessed using Kaplan-Meier curves.

**Results:** In baseline characteristics, significant differences in age, sex, and underlying diseases (diabetes, hypertension) were observed among various CAC categories. Throughout the follow-up, 16 CVD events and 26 deaths occurred. Smoking posed a significant risk for CVD (SHR 8.78, 95% CI [7-45.41],  $p<0.05$ ) and death (HR:3.02, 95% CI [1.09-8.36],  $p=0.03$ ). Abnormal Triglyceride (HR 4.36, 95% CI [1.59-11.95],  $p<0.05$ ) and IL-6  $>6$  (HR 4.36, 95% CI [1.59-11.95],  $p=0.004$ ) were associated with death. Positive ABI and CAVI weren't significantly linked to CVD survival.

However, PAD participants had a higher death risk (HR 4.88, 95% CI [1.99-11.94],  $p=0.001$ ). While not statistically significant, a positive CAC score showed a potential trend for CVD risk.

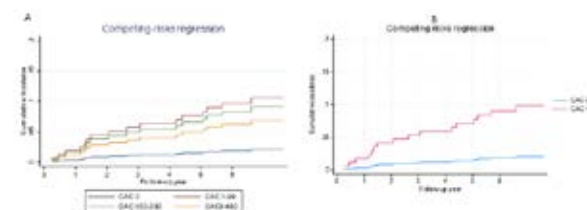


Figure. Kaplan-Meier for all-cause mortality by:  
A. Degrees of coronary artery calcium (CAC) scores.  
B. Stratified CAC by positive or negative.

**Conclusions:** Our findings emphasize the significance of traditional CVD risk factors like smoking and hypertension in PLWH. While ABI and CAVI may not be ideal for stand-alone risk assessment, CAVI shows promise in predicting mortality.

However, the association between elevated CAC scores and event rates is uncertain due to limited events and wide confidence intervals. Larger studies are required to validate and explore CAC's predictive potential across the risk spectrum.

Additionally, inflammatory marker like IL-6 as alternative predictors is warranted.





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## TUPEB088

Investigating lipid trends in DOR/RPV/DTG/BIC-including regimens using generalized additive mixed models

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**Background:** We compared the dynamics of total cholesterol (TC) and low-density lipoprotein (LDL) cholesterol in people living with HIV (PLWH) who switched to a regimen including doravirine (DOR), rilpivirine (RPV), dolutegravir (DTG) or bictegravir (BIC).

**Methods:** Observational cohort study of adult PLWH, antiretroviral therapy (ART)-experienced, who switched to a DOR/RPV/DTG/BIC-including regimen and were naïve to the studied drugs, with at least lipid determinations  $\geq 2$  before the switch and  $\geq 4$  after the switch.

Follow-up accrued from the first lipid determination within a 5-year interval before the switch, until the last available determination after the switch or the start of an ART-regimen not including DOR/RPV/DTG/BIC.

Generalized Additive Mixed Models were used to study the lipid dynamics. In addition to DOR/RPV/DTG/BIC-intake, variables considered were age, sex, BMI, TDF/TAF use, other antiretroviral drugs intake (grouped by class), statin use, diabetes, CVD events, CD4+ and viremia.

ART and statin covariates were coded as time-dependent variables, counting years of continuous use. Continuous risk variables were modeled nonparametrically, while covariates related to the drugs studied were modeled parametrically to facilitate comparisons.

Individual characteristics and temporal dynamics were modeled using random effects and an autoregressive structure on errors.

Slopes and 95% confidence intervals (CIs) were estimated distinguishing two intervals: the first 2 years of continuous use and longer periods.

**Results:** TC was evaluated in 2742 PLWH (60596 determinations); 2196/2742 were males (80%). At ART-switch, median age was 50.7 years (IQR:43.4-56.0), BMI 23.9 kg/m<sup>2</sup> (IQR:21.8-26.2), CD4+ 724 cells/ $\mu$ L (IQR:538-946), years of ART 12.7 (IQR:5.8-19.0), TC 190 mg/dL (IQR:165-217), LDL 120 mg/dL (IQR:97-143) and 2453 people (89%) had HIV-RNA  $< 50$  copies/mL.

2381/2742 PLWH were evaluated for LDL-cholesterol (54552 determinations).

The table shows the mean change/year in lipids associated with the studied drugs.

As the median follow-up under DOR was 1.2 years (IQR 0.64-1.69), no slope could be estimated for treatment longer than 2 years.

	Total Cholesterol mean change/year (95%CI) 0-2 years	Total Cholesterol mean change/year (95%CI) >2 years	LDL-Cholesterol mean change/year (95%CI) 0-2 years	LDL-Cholesterol mean change/year (95%CI) >2 years
doravirine	-4.16 (-8.37; 0.05), p=0.053	NA	-5.43 (-9.78; -1.08), p=0.014	NA
rilpivirine	-0.61 (-1.34; 0.13), p=0.105	2.09 (1.65; 2.54), p<0.001	1.01 (0.26; 1.76), p=0.008	0.69 (0.26; 1.12), p=0.002
dolutegravir	-0.54 (-1.20; 0.13), p=0.113	1.05 (0.59; 1.51), p<0.001	1.10 (0.43; 1.77), p=0.001	-0.31 (-0.76; 0.15), p=0.184
bictegravir	1.08 (-0.22; 2.38), p=0.102	-1.27 (-3.49; 0.94), p=0.261	-1.59 (-2.90; -0.27), p=0.018	1.11 (-1.15; 3.37), p=0.335

**Conclusions:** DOR showed the most favorable outcome on lipids over the first two years of use, especially on LDL-cholesterol.

## TUPEB089

Cystatin C as a marker of tubular and renal function in people living with HIV: the role of tenofovir disoproxil fumarate

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**Background:** The use of antiretrovirals such as tenofovir disoproxil fumarate (TDF) and an ageing population living with HIV (PLWH) make necessary to have reliable estimates of renal function.

The aim of this study was to compare the performance of serum cystatin C (cysC) and cysC-based glomerular filtration rate (GFR) to serum creatinine (scr)-based GFR equation in different clinical situations.

**Methods:** Cross sectional study of 280 PLWH, after excluding those receiving dolutegravir, bictegravir, rilpivirine, and cobicistat. Estimated GFR was derived using MDRD or CKD-epi equations (eGFR-scr) o cysC-based calculations (eGFR-cysC). Proximal tubular renal dysfunction was defined as  $\geq 2$  tubular parameters abnormalities (proteinuria, albuminuria, phosphaturia, uricosuria, glycosuria).

**Results:** Median age was 47 years (range, 23-74) and 80% were male. Nadir CD4 count was 255 cells/mm<sup>3</sup> (IQR, 146-364): After a median time of HIV of 164 months (IQR, 64-249), current CD4+ count was 581 cells/mm<sup>3</sup> (438-778) and HIV RNA level  $< 50$  cop/ml in 97% of cases.

Of note, 30% had hepatitis C virus (HCV) coinfection (35% with F3-F4). After a median time of 60 months of TDF use (80% remained in TDF), serum cystatin C level was 0.9 gr/L (IQR, 0.79-1.02), not related with nadir or current CD4+ count, neither with HIV RNA level pre- or on treatment.

However, HCV coinfection was associated with higher cysC and lower eGFR-cysC (p<0.01). After excluding PLWH with HCV, a moderate correlation between eGFR-scr and eGFR-cysC was observed (rho=0.521; p<0.01), and eGFR-cy-



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sC ruled out the presence of CKD in 30% of cases identified by eGFR-scr. Of note, eGFR-cysC was not correlated with BMI, but it was directly correlated with age. Also, it was associated with time on TDF ( $\rho = -0.15$ ;  $p = 0.06$ ), and it was directly correlated with proximal tubular renal abnormalities.

**Conclusions:** Serum cystatin C and eGFR-cysC could be more sensitive than serum creatinine in the detection of tubular renal alterations in PLWH. Importantly, cystatin C is not affected by BMI, CD4+ or HIV RNA level in well-controlled PLWH without HCV coinfection.

## HIV and ageing

### TUPEB090

Multimorbidity, polypharmacy, anticholinergic burden and frailty in HIV: disentangling the complex interactions through structural equation modeling

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**Background:** Understanding the intricate dynamics among HIV, multimorbidity, polypharmacy, cognition, and frailty is crucial for advancing person-centered care. This study employs structural equation modelling (SEM) to estimate the extent to which sociodemographic characteristics, HIV-associated factors, multimorbidity, polypharmacy, and anticholinergic/sedative burden jointly affect cognitive ability, self-reported cognitive difficulties, and physical frailty in individuals living with HIV.

**Methods:** A cross-sectional analysis of 824 participants living with HIV from the Positive Brain Health Now cohort (85% male) was conducted. Multimorbidity (Charlson Comorbidity Index), polypharmacy (non-antiretroviral medication count), and anticholinergic burden (Anticholinergic and Sedative Burden Catalog) were assessed. Frailty and cognitive abilities were measured using the Modified Fried Frailty Criteria and the Brief Cognitive Ability Measure, respectively. The SEM, conducted using 'lavaan' in R, applied the Weighted Least Squares Mean and

Variance adjusted estimator, with model validation via Leave-One-Out Cross-Validation and z-score significance testing and bootstrapping for effect analysis.

**Results:** We observed a significant positive association between cognitive difficulties and physical frailty ( $\beta_{std} = 0.70$ ,  $p < 0.0001$ ), contrasting with the negligible association with cognitive ability. Anticholinergic burden was modestly correlated with physical frailty ( $\beta_{std} = 0.26$ ,  $p < 0.0001$ ) and cognitive difficulty ( $\beta_{std} = 0.22$ ,  $p < 0.0001$ ), yet unrelated to cognitive ability.

A significant mediation effect was observed between medication count and physical frailty ( $\beta_{std} = 0.18$ ,  $p < 0.0001$ ). Sex directly impacted cognitive ability and indirectly influenced physical frailty and cognitive difficulty via polypharmacy and anticholinergic burden.

Duration of HIV and nadir CD4 levels directly related to physical frailty and cognitive outcomes and indirectly through multimorbidity and polypharmacy. Education directly affected cognitive ability and frailty and indirectly through anticholinergic burden.

Age influences both frailty and cognitive function. Comorbidity and polypharmacy were indirectly linked to frailty and cognitive difficulties via anticholinergic burden. The model demonstrated a good fit (CFI: 0.978, TLI: 0.962, RMSEA: 0.048, SRMR: 0.038) and maintained robustness following cross-validation.

**Conclusions:** SEM revealed direct and indirect associations between important variables and physical frailty, cognitive ability, and difficulty. This comprehensive analysis underscores the necessity of considering a holistic approach in clinical care, especially in managing polypharmacy and anticholinergic burden, to improve health outcomes in people aging with HIV.





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## TUPEB091

### No evidence of pitavastatin effect on muscle density or area among people with HIV

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**Background:** Skeletal muscle density (MD) and area (MA) are key components of physical function; both decline with increasing age. We have previously shown an increase in lean muscle mass with rosuvastatin among people with HIV (PWH), though rarely, statins have been associated with rapid muscle breakdown. We leveraged REPRIEVE to evaluate the impact of 2 years of pitavastatin on MD and MA.

**Methods:** REPRIEVE was a double-blind randomized trial evaluating pitavastatin for primary prevention of major adverse cardiovascular events in PWH. This analysis focuses on participants who underwent coronary CT in the Mechanistic Substudy. Thoracic paraspinal, pectoralis, and infraspinatus MD (Hounsfield units, HU) and MA (adjusted for height (HT), cm<sup>2</sup>/m) were assessed on non-contrast CT images. The difference in baseline-adjusted levels at month 24 between the two treatment groups was estimated using linear regression.

**Results:** Of 804 substudy participants, 692 remained on treatment at month 24; of those, 510 had imaging at baseline and month 24. Median age was 51 (IQR: 46-55) years; 17% female, 36% Black, and 27% Hispanic. There was minimal change in muscle measures within treatment groups, and the estimated treatment group differences were minimal (Table).

Table: Muscle Measure Distributions, Mean (SD)		Baseline		Month 24		Pitavastatin - Placebo Estimate [95% CI]	P-value
		Pitavastatin	Placebo	Pitavastatin	Placebo		
MD (HU)	Paraspinal	36.8 (16.1)	36.4 (16.7)	36.2 (16.7)	36.4 (16.1)	0.6 [-1.7, 2.9]	0.62
	Pectoral	41.4 (15.9)	40.9 (16.2)	41.5 (16.1)	41.8 (15.4)	-0.6 [-2.7, 1.4]	0.55
	Infraspinatus	44.3 (17.1)	42.6 (18.1)	44.2 (13.4)	44.0 (15.6)	-0.5 [-2.8, 1.8]	0.67
MA/HT (cm <sup>2</sup> /m)	Paraspinal	12.0 (4.8)	12.5 (5.1)	12.1 (4.8)	12.5 (4.9)	0.01 [-0.5, 0.5]	0.98
	Pectoral	8.3 (5.4)	8.6 (5.1)	8.2 (4.9)	8.7 (5.2)	-0.3 [-0.8, 0.3]	0.31
	Infraspinatus	6.3 (4.5)	6.3 (4.6)	6.5 (4.6)	6.2 (4.2)	0.4 [-0.2, 0.9]	0.21

Findings were generally consistent in prespecified subgroups including by sex, race, ART duration, nadir and baseline CD4, and baseline inflammatory and myokine biomarkers. A trend towards a protective pitavastatin ef-

fect on paraspinal MA/HT was observed among older individuals ( $\geq 55$  years; 0.96 [95% CI: -0.02, 1.94] cm<sup>2</sup>/m,  $p=0.10$  for interaction with treatment) and those with baseline muscle aches/weakness (0.87 [-0.28, 2.02] cm<sup>2</sup>/m;  $p=0.11$ ).

**Conclusions:** We found minimal change in muscle measures over 24 months overall, or difference between treatment arms. Trends towards a potentially protective effect of pitavastatin on MA/HT among older PWH and those with muscle aches/weakness warrant further study. These findings support the safety of statins among PWH.

## TUPEB092

### Multimorbidity by sex at birth among ageing (65 years and older) persons with HIV (PWH) in the Southern United States (US)

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**Background:** The Southern US has the highest prevalence of obesity (35.8%), encompasses the "stroke belt and diabetes belt" and includes 45% of PWH in the US. We characterize multimorbidity among ageing PWH in the Southern US to facilitate discussion around the unique health needs of this population.

**Methods:** Using the UNC CFAR HIV Clinical Cohort, we identified PWH  $\geq 65$ yo seen in the UNC Infectious Disease clinic who had  $\geq 1$  HIV RNA test performed between 1/1/22-12/31/23. We recorded sex at birth and defined multimorbidity as having  $\geq 2$  of the following: Hypertension classified by ICD9/10 codes; Hepatitis C if positive antibody or RNA; Hepatitis B if positive surface antigen, or core antibody, or DNA; Diabetes Mellitus (DM) Hemoglobin A1c  $\geq 6.5$ ; chronic kidney disease (CKD) (eGFR  $< 60$  ml/min calculated using CKD-EPI and most recent serum creatinine); and obesity BMI  $\geq 30$ kg/m<sup>2</sup>. Significance testing for continuous variables was performed using t-tests and for categorical variables using chi-square or Fisher's exact test.

**Results:** PWH (n=299) who fit entry criteria had median age 70.9 [IQR 67-73] years. Most were male (70.2%), African American (AA) (55.9%), had HIV RNA  $< 50$ copies/ml (95%) at last clinic encounter, and long duration of HIV acquisition median 25 years (IQR 18-30) and maximum 42 years. Nadir CD4 median 150 cells/mm<sup>3</sup> [IQR 52.5-306], current median CD4 574 cells/mm<sup>3</sup> [IQR 420-799]. Women, compared with men, were more likely ( $p<0.05$ ) to be AA (76.1 vs. 47.1%), obese (39.5 vs. 21.6%), have DM (59.1% vs. 35.7%) and have higher CD4 cells/mm<sup>3</sup> (median 667 vs. 545). More men ( $p<0.05$ ) were Hepatitis B positive (43.8 vs. 22.2%). We found no sex differences when comparing Hepatitis C, CKD and hypertension ( $p>0.05$ ). The overall prevalence of multimorbidity ( $\geq 2$  comorbidities) was high (75.2%), and significantly higher in women ( $p<0.05$ ) compared to men



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(83% vs. 72%). Proportions of multimorbidity among study participants were: two (26.1%), three (28.8%), four (14.4%), five or more (6.0%) comorbidities.

**Conclusions:** Multimorbidity with non-communicable diseases is high among PWH  $\geq 65$  years. Management of ageing PWH may need to take into account sex, with women requiring more careful attention to weight and glycemic control, and men to liver function.

## TUPEB093

Comprehensive geriatric assessment for people living with HIV and frailty: a feasibility randomized controlled trial

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**Background:** The population of people ageing with HIV is growing, and frailty is rising. Understanding the practicality and acceptability of frailty interventions for older people living with HIV (OPLWH) is crucial.

This study aimed to assess the feasibility and acceptability of delivering a novel comprehensive geriatric assessment (CGA) intervention for screening and management of frailty in OPLWH.

**Methods:** A mixed-methods single-centre feasibility RCT among OPLWH  $\geq 50$  years old, identified as frail using the FRAIL scale in Brighton, UK. Participants were randomized 1:1 to parallel groups: usual care or Silver Clinic intervention, consisting of a CGA delivered jointly by a geriatrician and HIV physician. Primary feasibility outcomes were rates of recruitment, retention and completion of outcome measures.

Patient-reported clinical outcome measures for frailty and quality of life were measured at baseline, 6 and 12 months. Acceptability was evaluated using in-depth qualitative interviews.

**Results:** 25 OPLWH were enrolled (15 intervention: 10 usual care). Most participants were male (99%) and white (88%), median (IQR) age 64 (54-79) years. The recruitment target of 84 participants was not achieved; retention (100% at 6 months) and outcome measure completion (n=97% 6 months) were high. Improvements in Timed and Up and Go tests and health-related quality of life were observed in the intervention group vs the control group at 12 months.

No changes in other frailty measures or clinical parameters were observed. Interviews revealed study processes and implemented outcome measures as acceptable and considered the intervention as a valuable addition to ageing HIV care.

	Intervention n=15	Usual care n=10
<b>Social-care related quality of life **</b>		
6 months	0.5 [0.4,0.9]	0.6 [0.4,0.7]
12 months	0.7 [0.4,0.9]	0.5 [0.4,0.8]
<b>EQ-5D-5L VAS **</b>		
6 months	50 [40,65]	65 [44,79]
12 months	57 [50,75]	50 [41,60]
<b>Timed up and go ** (seconds)</b>		
6 months	15 [12, 20]	12 [10,22]
12 months	12 [10, 16]	13 [10,23]
<b>HIV PROM *</b>		
6 months	28.7 (10.0)	24.8 (8.4)
12 months	28.3 (9.0)	25.5 (12.2)
<b>Montreal Cognitive Assessment**</b>		
6 months	25 [23,26]	24 [21,27]
12 months	26 [24,27]	25 [24,28]
<b>FRAX score **</b>		
6 months	6.0 [4.4,7.4]	7.0 [6.0,13.0]
12 months	6.0 [4.4,7.4]	5.7 [4.6,9.0]
<b>QRISK **</b>		
6 months	15 [12.1, 25]	27 [16,39]
12 months	15 [13.2,24]	24 [16,28]

\*Mean (SD) \*\*Median [IQR]

Table. Descriptive statistics of outcome measures by group.

**Conclusions:** CGA was acceptable and, compared to usual care, potentially improves health-related quality of life and Timed Up and Go scores over 12 months. Although the trial had high retention, recruiting frail individuals was challenging. A large RCT to determine the effectiveness of CGA in OPLWH is warranted using a multicentre design to improve recruitment.

## Antiretroviral therapies and clinical issues in adults

### TUPEB094

Mode of administration matters: willingness of people with HIV to switch to future long-acting treatments and health care professionals' intention to discuss these options

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**Background:** Understanding preferences for Long-Acting Regimens (LAR) of people with HIV (PWH) and health care professionals (HCP) is important to optimize and personalize care. We aim to identify preferences for current and





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future LARs among PWH and investigate HCPs' willingness to discuss these options with PWH when they become available.

**Methods:** This study was conducted at Amsterdam UMC between July 2023 and December 2023. Six hypothetical descriptions of LARs in the form of vignettes, illustrating administration mode, frequency, site, and side effects were presented to all participants.

We asked participants if they were willing to consider a switch to each of these vignettes or preferred to continue their current oral regimen.

We asked HCPs if they would be likely to discuss each of the vignettes as potential treatment options with the participants. Both the percentage of participants that would be willing to switch to each of the options and the percentage that would be willing, but with whom the particular vignette would not be discussed by the HCP are reported.

**Results:** Of the 259 participants (median age 55 [20-84]; 79% males, 88% would be willing to switch to at least one vignette and 11% to all six options. The vast majority, i.e., 77% would consider switching to weekly tablets. Willingness to switch to intramuscular and subcutaneous injections, infusions and implants varied from 35% to 42%. HCPs' (n= 22; 64% working >10 years) intention to discuss each option with participants ranged from 58% to 90%. HCPs would discuss all LAR options in 40% of participants. In 37% to 40% of the participants that would be willing to switch to either intramuscular or intravenous regimens, the treatment options would not be discussed with them by the HCP.

**Conclusions:** Most participants would be willing to switch to weekly oral tablets. Among the other LARs, comparable levels of willingness are observed. Our findings suggest that HCPs may underestimate participants' willingness to switch to intramuscular injections and intravenous infusions.

Further research should explore the underlying reasons behind PWHs willingness and HCPs intentions to discuss various LAR options.

## TUPEB095

12-month outcomes of cabotegravir plus rilpivirine long-acting every 2 months in a real-world setting: effectiveness, adherence to injections, and patient-reported outcomes from people with HIV-1 in the German CARLOS cohort

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**Background:** Injectable long-acting (LA) cabotegravir (CAB) plus rilpivirine (RPV) offers an alternative mode of drug administration with less frequent dosing than daily oral antiretroviral therapy (ART). CARLOS is a non-interventional, 3-year, multicenter cohort study including people living with HIV-1 (PWH) on suppressive daily oral ART who switched to CAB+RPV LA dosed every 2 months in routine clinical care in Germany. Here, we describe outcomes at Month (M) 12.

**Methods:** M12 effectiveness outcomes include virologic suppression (HIV-1 RNA <50 copies/mL), virologic non-response (HIV-1 RNA ≥50 copies/mL), and virologic failure (two consecutive HIV-1 RNA ≥200 copies/mL, or a single HIV-1 RNA ≥200 copies/mL followed by treatment discontinuation).

Additional outcomes include adherence to the injection window and change in HIV Treatment Satisfaction Questionnaire status version (HIVTSQs) score.

**Results:** In total, 351 PWH were included in the analysis at M12. Overall, 95.1% (n=1847/1943) of CAB+RPV LA injections were administered before or within the ±7-day injection window, and 4.9% (n=96/1943) occurred late. At M12, 85.8% (n=301/351) of participants maintained virologic suppression, and 9.4% (n=33/351) discontinued due to tolerability (n=13/351 [3.7%]; n=10 due to injection-related reasons) or non-virologic reasons (n=20/351 [5.7%]). There were five participants with virologic failure (n=5/351 [1.4%]). Full virologic outcomes are shown in Figure 1.



\*Virologic failure (two consecutive HIV-1 RNA ≥200 copies/mL, or a single HIV-1 RNA ≥200 copies/mL followed by treatment discontinuation). Participant 1: HIV-1 RNA <50 copies/mL; 2: HIV-1 RNA <50 copies/mL; 3: HIV-1 RNA <50 copies/mL; 4: HIV-1 RNA <50 copies/mL; 5: HIV-1 RNA <50 copies/mL; 6: HIV-1 RNA <50 copies/mL; 7: HIV-1 RNA <50 copies/mL; 8: HIV-1 RNA <50 copies/mL; 9: HIV-1 RNA <50 copies/mL; 10: HIV-1 RNA <50 copies/mL; 11: HIV-1 RNA <50 copies/mL; 12: HIV-1 RNA <50 copies/mL; 13: HIV-1 RNA <50 copies/mL; 14: HIV-1 RNA <50 copies/mL; 15: HIV-1 RNA <50 copies/mL; 16: HIV-1 RNA <50 copies/mL; 17: HIV-1 RNA <50 copies/mL; 18: HIV-1 RNA <50 copies/mL; 19: HIV-1 RNA <50 copies/mL; 20: HIV-1 RNA <50 copies/mL; 21: HIV-1 RNA <50 copies/mL; 22: HIV-1 RNA <50 copies/mL; 23: HIV-1 RNA <50 copies/mL; 24: HIV-1 RNA <50 copies/mL; 25: HIV-1 RNA <50 copies/mL; 26: HIV-1 RNA <50 copies/mL; 27: HIV-1 RNA <50 copies/mL; 28: HIV-1 RNA <50 copies/mL; 29: HIV-1 RNA <50 copies/mL; 30: HIV-1 RNA <50 copies/mL; 31: HIV-1 RNA <50 copies/mL; 32: HIV-1 RNA <50 copies/mL; 33: HIV-1 RNA <50 copies/mL; 34: HIV-1 RNA <50 copies/mL; 35: HIV-1 RNA <50 copies/mL; 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For participants (n=251/351) completing the HIVTSQs at both baseline (mean score, 54.6/66) and M12 (mean score, 61.0/66), a statistically significant improvement in treatment satisfaction was observed (mean change, +6.4;  $p < 0.001$ ).

**Conclusions:** In this real-world cohort, CAB+RPV LA maintained high rates of virologic suppression, with few treatment failures, in the first 12 months following switch. There was a low rate of discontinuation due to injection site reactions, and the majority of injections were administered within the  $\pm 7$ -day injection window or earlier. Despite high baseline scores on oral ART, treatment satisfaction scores increased significantly for participants remaining on CAB+RPV LA at M12.

## TUPEB096

Impact of different INSTIs on BMI among HIV treatment-naïve patients in Shenzhen, China: a real-world data analysis

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**Background:** INSTIs-based ART might be associated with weight gain. The impact of different types of INSTIs has not been determined, particularly in combination with TDF or TAF. We compared BMI changes among HIV-infected treatment-naïve patients using data from electronic record in Shenzhen, China.

**Methods:** We conducted a descriptive analysis of 5102 PLHIV aged  $\geq 18$  years at ART initiation before and after ART between 2019 and May 2023. We used linear mixed models with interaction terms to assess whether BMI changes of PLHIV differed significantly over time between the treatment groups. We categorized the treatment group into three subgroups: NNRTI, INSTI, and PI. In order to examine the differential effects of these categories on BMI changes, we performed a subgroup analysis including the subjects who received INSTI to assess the effect of the four regimens (TDF+3TC/DTG, TAF/FTC/EVG/c, TAF/FTC/BIC, 3TC/DTG).

**Results:** The observed BMI trajectories and predicted BMI change by treatment regimen differed among treatment groups. Compared to people who contemporaneous used NNRTI, people who used INSTI 0-0.5 years after ART initiation gained 1.27 BMI (95% CI 1.14 to 1.50,  $p < 0.001$ ) more per year (Table 1), 0.5-1.5 years after ART initiation gained 0.18 BMI (95% CI 0.03 to 0.33,  $p = 0.016$ ) more per year. Compared to people who used TDF+3TC/DTG, TAF/FTC/EVG/c and TAF/FTC/BIC, people who used 3TC/DTG gained more BMI per year after ART initiation (Figure 1). There was no difference between the other three groups using.

	Coefficient	Lower 95% CI	Upper 95% CI	p-value
0-0.5 years & INSTI	1.27	1.04	1.5	0
0.5-1.5 years & INSTI	0.18	0.03	0.33	0.016
1.5-2.5 years & INSTI	0.16	0	0.32	0.052
0-0.5 years & PI	0.08	-0.23	0.38	0.622
0.5-1.5 years & PI	0.46	-0.08	1	0.098
1.5-2.5 years & PI	-0.01	-0.29	0.28	0.973

Table 1.

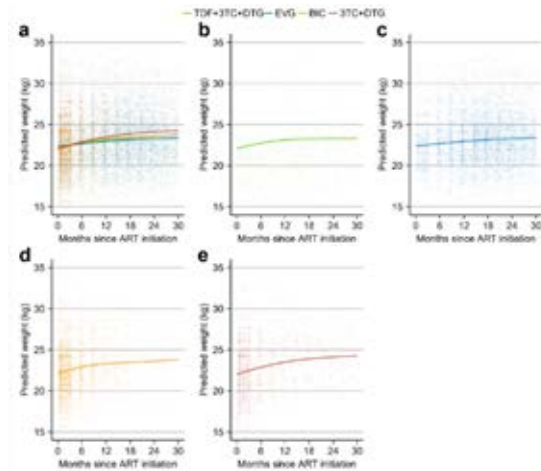


Figure 1.

**Conclusions:** Compared with NNRTIs, INSTIs can lead to an increase in BMI. Particularly, the increase in BMI caused by DTG is prominent. TDF may be associated with weight loss.

## TUPEB097

Effectiveness of bicitragravir/emtricitabine/tenofovir alafenamide fixed-dose combination in experienced people living with HIV with a history of virologic failure, M184V/I, and other resistance-associated mutations in clinical practice

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**Background:** Bicitragravir/emtricitabine/tenofovir alafenamide (B/F/TAF) fixed-dose combination showed high rates of efficacy in clinical trials and real-world cohorts. However, its effectiveness remains understudied in complex populations such as those with suspected or documented resistance-associated mutations (RAMs). We describe virologic outcomes in people living with HIV (PLWH) who were prescribed B/F/TAF and had a history of virologic failure (VF), any documented RAM, M184V/I mutation, and M184V/I + thymidine analog RAMs (TAMS). In addition, we present the findings based on the genotypic sensitivity score (GSS).

**Methods:** Sub-analysis of BICTARG study, an observational, retrospective, real-life cohort of PLWH exposed to B/F/TAF from 10/2019 to 12/2021. B/F/TAF GSS was classed as



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1-1.75 (group 1), 2-2.75 (group 2) and 3 (group 3). Virological suppression (plasma HIV-1 RNA <50 copies/mL) rates (VSR) were assessed at 24 and 48 weeks.

**Results:** Of 2356 experienced PLWH included, 185 (7.8%) had a history of VF, of whom 28 had, also, an ongoing VF (OVF). Baseline characteristics: median age (IQR) was 48 (43-54) years; 69.6% were male; 100% were of Hispanic/Latin ethnicity; 57.6% had comorbidities. Overall VSR were 96 and 94% at 24 and 48-weeks. In those with OVF, the median viral load (copies/mL) was 2235 (130-35300). This group had 94% and 85% VSR at 24 and 48-weeks, respectively.

Considering PLWH with mutations ( $n = 174$ , 7.4%), predominant RAMS were for NNRTI (77%), NRTI (64%), and PI (25%). In PLWH with any RAM, VSR were 96 and 93% at 24 and 48 weeks. M184V/I and M184V/I + TAMS were present in 92 and 31 PLWH, respectively. VSR at 24/48 weeks were 94/97% and 96/95%, respectively. Considering GSS, 77 PLWH were in group 3; 84, in group 2, and 13 in group 1. Baseline VSR were: 75%, 82%, and 55%, respectively; at 24 weeks: 95%, 97%, and 82%; and at 48 weeks: 100%, 92%, and 100%, respectively. There was no emergence of new RAMs during follow-up.

**Conclusions:** In a real-life cohort, B/F/TAF provided high levels of VS at 48 weeks in PLWH with a history of VF, as well as those harboring M184V/I and other RAMS.

## TUPEB098

Metabolic complications after initiating B/F/TAF versus DTG/3TC in ART-naïve adults with HIV: a multicenter prospective cohort study

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**Background:** Despite the widespread use of tenofovir alafenamide (TAF), more data are needed on metabolic outcomes of this therapy. We aimed to assess changes in

weight, laboratory markers, and clinical events in participants who started bictegravir/emtricitabine/TAF (B/F/TAF) vs. dolutegravir/lamivudine (DTG/3TC).

**Methods:** We used CoRIS, a Spanish multicenter prospective cohort. We included treatment-naïve adults with HIV who started B/F/TAF or DTG/3TC and had at least 96 weeks of follow-up. Participants were matched using propensity-score. We fitted generalized estimating equation (GEE) models to assess changes in weight, blood lipids, and hepatic steatosis index (HSI) and to compare the incidence of diabetes mellitus, hypertension, and lipid-lowering drug use at 96 weeks.

**Results:** In total, 340 participants were included in each group. Median age was 34 years, 95% were male, median CD4 count was 484 cell/ $\mu$ L, and median baseline weight was 71.1 kilograms. At 96 weeks, participants who started B/F/TAF had a mean weight increase of +1.37 kg (95% CI 0.93, 1.82), compared to +1.48 kg (95% CI 0.90, 2.07) in those who started DTG/3TC, with no differences between groups ( $p=0.774$ ). We found no significant differences in the occurrence of overweight or obesity. There were no between-group weight differences in subgroup analyses by sex, race, mode of HIV acquisition, education level, or CD4 count.

During follow-up, there was a modest increase in blood lipid levels (+10.6 mg/dL in total cholesterol, +3.6 mg/dL in HDL, + 5.9 mg/dL in LDL, + 5.7 mg/dL in triglycerides), but no in the total cholesterol/HDL ratio, with no differences between B/F/TAF and DTG/3TC. The table shows the incidence of clinical events at 96 weeks. No significant differences were observed between groups.

	B/F/TAF	DTG/3TC	OR (95% CI)	p-value
Overweight, n (%)	22 (6.47)	28 (8.24)	1.30 (0.73, 2.32)	0.378
Obesity, n (%)	3 (0.88)	6 (1.76)	2.02 (0.50, 8.14)	0.314
Diabetes Mellitus, n (%)	1 (0.29)	2 (0.59)	2.01 (0.18, 22.23)	0.571
Hypertension, n (%)	11 (3.24)	12 (3.53)	1.09 (0.48, 2.52)	0.832
Use of lipid-lowering therapy, n (%)	8 (2.35)	6 (1.76)	0.75 (0.26, 2.17)	0.590
NAFLD criteria (HSI $\geq 36$ ), n (%)	23 (6.76)	21 (6.18)	0.91 (0.49, 1.67)	0.755

**Conclusions:** Initiation of antiretroviral therapy with both B/F/TAF and DTG/3TC led to a modest increase in weight, total cholesterol, LDL, HDL, and triglycerides, with no differences between groups, in a prospective Spanish cohort. The incidence of overweight, obesity, and related clinical events was similar in both groups.

## TUPEB099

### D<sup>2</sup>EFT body composition sub-study week 96 results

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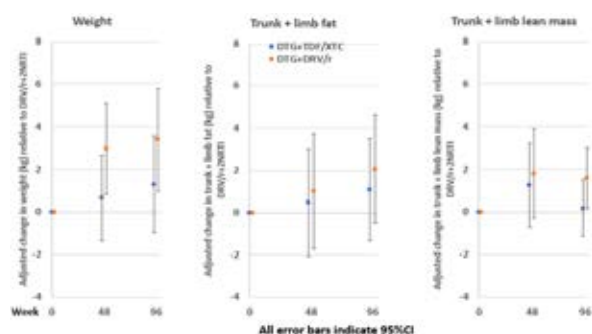
**Background:** Integrase inhibitors have been associated with greater weight increases than other anti-HIV agents. This study was conducted in a subset of adults with first line NNRTI treatment failure randomised to open-label dolutegravir (DTG) with fixed TDF and lamivudine or emtricitabine (TDF/XTC) versus DTG with darunavir/ritonavir (DRV/r) versus standard of care (DRV/r+2 NRTIs: SOC) as part of D<sup>2</sup>EFT. At 96 weeks rates of viral suppression in the DTG-containing regimens of D<sup>2</sup>EFT were superior to SOC.

**Methods:** D<sup>2</sup>EFT sites with access to whole-body dual energy x-ray absorptiometry (DXA) for body composition analysis could participate. Body habitus and body composition measures were assessed over 96 weeks. Changes from baseline were summarized by treatment arm and compared using linear regression. Models were adjusted for age, sex, baseline CD4 count and baseline outcome value.

**Results:** 149 participants from 6 sites in Africa and Asia were recruited between November 2020 and December 2021. Mean baseline variables were age 38.3 years, weight 61.9kg, BMI 23.1kg/m<sup>2</sup>, 50.3% were women and 81% black. At 96 weeks mean (SD) weight had increased 3.8kg (5.4) for SOC, 5.4kg (6.8) for DTG+TDF/XTC and 7.1kg (5.4) for DTG+DRV/r; mean (SD) BMI had increased 1.4kg/m<sup>2</sup> (2.0), 2.1kg/m<sup>2</sup> (2.6) and 2.7kg/m<sup>2</sup> (2.1), respectively.

Compared to SOC the mean changes in weight and BMI were higher at 96 weeks with DTG/DRV/r (3.4kg [95%CI 1.0,5.8]; p=0.006) and (1.3kg/m<sup>2</sup> [95%CI 0.4,2.2]; p=0.004), respectively but did not differ significantly with DTG+TDF/XTC. The change in waist-to-hip ratio did not differ significantly between arms.

Mean changes in weight and body composition measures are shown in the figure.



**Conclusions:** The greater increases in both fat and lean body mass relative to SOC may be due to an improved return to health effect. New strategies to counter the tendency to weight gain with these highly effective and robust regimens are required.

## TUPEB100

### Evaluation of the effect of Chinese medicine combined with ART in HIV immunological non-responders, a randomized, double-blind, placebo-controlled study

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**Background:** The treatment of immunological non-responders of acquired immune deficiency syndrome(AIDS) remains a challenge currently. Previous reports have indicated the potential efficacy of Chinese medicines (CM) combined with antiretroviral therapy (ART) in people living with human immunodeficiency virus (HIV).

**Methods:** This study evaluates the therapeutic effectiveness of Chinese medicines in immunological non-responders. A randomized, double-blind, placebo-controlled trial was conducted in people living with HIV who had been on ART for more than two years, had an HIV viral load below undetectable levels, and had CD4<sup>+</sup> T-lymphocyte counts below 250 cells/μL. The participants were randomly assigned to receive either CM+ART or Placebo+ART for 12 months. All study staffs and participants were masked. This study was registered on the Chinese Clinical Trial Register (CTR1900027695).

**Results:** A total of 116 participants were recruited between June 2019 and May 2021 and randomly assigned to receive either CM+ART (n=54) or Placebo+ART (n=62). There were no statistically significant differences in the demographic characteristics between the two groups ( $P>0.05$ ). In the CM+ART group, the median CD4 count was 164 cells/μL at baseline (IQR, 115, 214) and 232 cells/μL at outcome (IQR, 131, 394).

Statistical analysis indicated significant differences between baseline and outcome ( $Z=-4.851$ ,  $P<0.001$ ). The Placebo+ART group exhibited similar results ( $Z=-4.042$ ,  $P<0.001$ ). The mean change in CD4 count after 12 months was  $(112\pm142)$  cells/μL in the CM+ART and  $(56\pm98)$  cells/μL in the Placebo+ART.

The difference between the two groups was statistically significant ( $F=5.181$ ,  $P<0.05$ ) and the estimated mean difference was  $(52\pm23)$  cells/μL.

The success rate of immune reconstitution demonstrated a statistically significant distinction between the two groups ( $\chi^2=4.222$ ,  $P<0.05$ ). In the CM+ART, 24 participants on ART for 2-5 years showed the mean change in CD4 count of  $(35\pm84)$  cells/μL after treatment, and 26 on ART



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for more than 5 years showed ( $183 \pm 148$ ) cells/ $\mu$ L, that was a statistically significant difference on different ART duration ( $F=17.987$ ,  $P<0.05$ ).

**Conclusions:** Combining Chinese medicine with antiretroviral therapy can elevate CD4 T-lymphocyte levels in immunological non-responders, which assists in people living with HIV with immune reconstitution, and the baseline ART duration is longer, and the combination of Chinese medicine with antiretroviral therapy resulted in greater efficacy.\*

## TUPEB101

Real-world effectiveness and tolerability of the 2-drug regimen dolutegravir and lamivudine (DTG/3TC) in people living with HIV: a systematic literature review and meta-analysis from clinical practice

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**Background:** Clinical trials have demonstrated that dolutegravir (DTG) + lamivudine (3TC) is an efficacious, well-tolerated, and durable regimen for both treatment-naïve and -experienced people with HIV (PWH). This systematic literature review (SLR) and meta-analysis of real-world data aim to evaluate the effectiveness, durability, and tolerability of DTG+3TC in diverse populations of PWH in real-world clinical settings.

**Methods:** An SLR of PubMed, Embase, and 24 regional and international conferences conducted between January 2013 and March 2023 identified studies of DTG+3TC. Data were pooled using single-arm meta-analyses with random effects models. The estimated proportions of individuals achieving viral suppression (VS), experiencing viral failure (VF), and discontinuing treatment at weeks 48 or 96 were evaluated. Heterogeneity was assessed using  $I^2$  statistics, and publication bias was evaluated using funnel plots and Egger's tests.

**Results:** The SLR identified 187 publications reporting results from 146 studies across 67 cohorts, encompassing a total of 36,313 unique PWH. Thirty studies that reported consistently defined outcomes of interest at comparable time points (N: 7688; treatment-naïve: 1062; treatment-experienced: 6626) were included in the meta-analysis. Among treatment-naïve PWH, high proportions achieved VS at weeks 48 (0.975 [95% confidence interval (CI): 0.949-0.993]) and 96 (0.890 [CI: 0.654-1.000]).

Conversely, low proportions experienced VF at weeks 48 (0.000 [CI: 0.000-0.003]) and 96 (0.020 [CI: 0.000-0.114]). Discontinuations for any reason were low at weeks 48

(0.072 [CI: 0.031-0.124]) and 96 (0.144 [CI: 0.099-0.196]). For treatment-experienced PWH, high proportions achieved VS at weeks 48 (0.963 [CI: 0.941-0.981]) and 96 (0.977 [CI: 0.955-0.992]). Low proportions experienced VF at weeks 48 (0.007 [CI: 0.003-0.013]) and 96 (0.015 [CI: 0.005-0.029]). Discontinuations for any reason were low at weeks 48 (0.070 [CI: 0.048-0.095]) and 96 (0.123 [CI: 0.080-0.174]). Among 1062 treatment-naïve individuals, none reported treatment-emergent resistance at VF. In 6626 treatment-experienced individuals, on-treatment M184V/I mutations were reported in 2 PWH, and 1 individual had K103R+S147G mutations (treatment-emergence unknown).

**Conclusions:** This SLR and meta-analysis confirm that DTG+3TC is an effective, tolerable, and durable antiretroviral regimen through 96 weeks among diverse PWH in real-world clinical settings. On-treatment resistance development was not reported in treatment-naïve and was rarely reported in treatment-experienced PWH.

## TUPEB102

Causes of discontinuation of long acting cabotegravir and rilpivirine in clinical practice. Results from the prospective multicenter SCOLTA cohort

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**Background:** The present study aims to assess what are the causes of long-acting (LA) cabotegravir (CAB) and rilpivirine (RPV) discontinuation in clinical practice.


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**Methods:** Observational multicenter SCOLTA (Surveillance Cohort Long-Term Toxicity Antiretrovirals) cohort. Reasons for LA discontinuation were prospectively collected. Probability of discontinuation for adverse events (AEs) was assessed through log-rank test.

**Results:** Of 231 people with HIV (PWH), who started CAB+RPV, and had at least one follow-up visit available, 53 (23%) were women, 220 were Caucasian (97%), most were men who have sex with men (115, 50%) and heterosexuals (75, 32%) PWH, mainly in CDC stage A (137, 60%). Mean age at enrolment was 48.5 ( $\pm 11.9$ ) years and median time on ART was 10 (IQR 5.4-16.1) years. Before LA, the ART contained an integrase inhibitor (INSTI) in 168 (73%) people, a non-nucleoside reverse transcriptase inhibitor (NNRTI) in 111 (48%), both INSTI+NNRTI in 61 (26%) and a protease inhibitor in 3 (1%). 129 participants (66%) had at least one treatment in addition to ART (86 were taking 1-2 other drugs; 43  $\geq 3$  other drugs). Twenty-one PWH (9%) discontinued LA treatment after a median of 2 months (range 0-6), of which 15 for AEs (Table). The probability of AE leading to discontinuation was not influenced by previous ART, sex, BMI, CDC stage, age, risk factor for HIV, concomitant treatments or by oral lead-in ( $p > 0.1$  for all). Other six persons discontinued treatment, due to lost to follow up (N=1), pregnancy (N=1), virologic failure (N=2), resistance to RPV (N=1) and inconvenience with injection schedule (N=1).

Table. Adverse events leading to discontinuation of long-acting therapy with cabotegravir/rilpivirine in SCOLTA cohort.

	Sex at birth, age	Previous regimen	Painful reaction	Fever	Other	Days since first injection	Oral lead-in	Causal correlation with therapy
1	M, 61	RPV-DTG	Grade 2	No	No	56	Yes	Certain
2	M, 55	RPV-DTG	Grade 2	No	No	1	No	Certain
3	F, 59	FTC-DTG	Grade 3	No	No	132	No	Certain
4	M, 40	RPV-DTG	Grade 2	No	No	1	No	Certain
5	M, 63	FTC-DTG	Grade 2	Grade 2	No	1	Yes	Both certain
6	M, 55	FTC-TAF-RPV	Grade 1	Grade NA	No	1	Yes	Certain
7	M, 55	FTC-TAF-BIC	No	Grade 1	No	29	Yes	Certain
8	M, 49	FTC-DTG	No	Grade 2	No	1	No	Likely
9	M, 44	RPV-DTG	No	Grade 2	Arthralgia, grade 2	87	No	Possible
10	F, 65	RPV-DTG	No	Grade 1	Gastrointestinal, grade NA	148	Yes	Possible
11	M, 66	FTC-TAF-RPV	No	No	Glycemic decompensation, grade 3	63	No	Possible
12	M, 54	FTC-TAF-RPV	No	No	Acute pancreatitis, grade 4	46	Yes	Likely
13	M, 51	RPV-DTG	No	No	Rash, grade 2	125	No	Possible
14	M, 51	FTC-TAF-BIC	No	No	Arthralgia, grade 4 Emile dysfunction, grade NA	55	Yes	Certain
15	F, 61	FTC-TAF-BIC	No	No	Headache, grade 2	During lead-in	Yes	Certain

FTC: lamivudine; BIC: bictegravir; DTG: dolutegravir; F: female sex at birth; FTC: emtricitabine; M: male sex at birth; NA: not available; RPV: rilpivirine; TAF: tenofovir alafenamide.

**Conclusions:** The frequency of LA CAB+RPV interruptions for AEs in SCOLTA was higher than in clinical trials. To explore PWH perspectives and continue the active surveillance of AEs in cohort studies will be critical to understanding the key to LA persistence and the actual impact of AE in clinical practice.

## TUPEB103

### Improved immunological recovery after ART intensification with Albuvirtide in immunological non-responders living with HIV

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**Background:** Incomplete immune recovery in people living with HIV/AIDS (PLWHA) during antiretroviral therapy (ART) remains an important clinical challenge. HIV-1 envelope glycoproteins and fusion are considered determining factors in thymocyte depletion and bystander cell death.

This study aimed to evaluate the effect of Albuvirtide (ABT), a long-acting HIV-1 fusion inhibitor, on immune recovery in immunological non-responders (INRs).

**Methods:** In this prospective, open-label, controlled study, 50 INRs received intensive treatment with ABT plus the original ART regimen (intensive ABT group) or only the original ART regimen (control group) at a ratio of 1:1. Immune response and safety were examined within 24 weeks.

Laboratory analysis was carried out to evaluate the effect of enhanced treatment with ABT on the functionality of immune cells by assessing thymus function, cell apoptosis, and autophagy.

**Results:**

Treatment efficacy parameter	Intensive group	Control group	P-value
<b>CD4<sup>+</sup> cells/<math>\mu</math>L</b>			
Baseline	287 (99)	280 (105)	0.813
Week 12	356 (133)	282 (110)	0.037
Week 24	350 (168)	259 (141)	0.213
Change in CD4 <sup>+</sup> cells at week 12 from baseline	45 (24, 122)	-5 (-23, 13)	<0.001
Change in CD4 <sup>+</sup> cells at week 24 from baseline	55 (25, 110)	-5 (-16, 11)	0.012
Change in CD4 <sup>+</sup> cells at week 24 from week 12	-16 (62)	-4 (21)	0.589

Totally 50 participants with comparable age, gender, and ART history were included, with 25 in each group. A significant increase in CD4<sup>+</sup> cell count was found in the intensive ABT group compared with control cases (45 vs. -5 cells/ $\mu$ L,  $p < 0.001$ ) at week 12. After ABT discontinuation, at week 24, CD4<sup>+</sup> cell counts remained significantly higher in the intensive ABT group than in the control group (55 vs. -5 cells/ $\mu$ L,  $p = 0.012$ ).

No serious adverse events associated with ABT were detected. In laboratory analysis, participants with unsatisfactory immune response (UIR) to ABT, naïve CD4<sup>+</sup> T cell amounts were lower compared with those of patients with satisfactory immune response (sIR) to ABT, im-



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munological responders (IRs) and healthy donors (HDs) ( $p=0.001$ ). Meanwhile, elevated memory CD4 T cell content was also found in cases with UIR. The proportion of caspase 3<sup>+</sup>CD45RA<sup>+</sup>CD31<sup>+</sup>CD4<sup>+</sup> T cells was significantly lower in participants with sIR administered ABT ( $p<0.05$ ).

**Conclusions:** Significant CD4<sup>+</sup> cell count increase suggests ABT enhances immune function in INRs. Immune reconstitution achieved by ABT could be attributed to its antiviral properties as well as its ability to increase thymic cell output and decrease.

## TUPEB104

Willingness to pay for medical insurance antiretroviral drugs among people living with HIV in 18 Chinese cities: a mixed method study

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**Background:** Medical insurance antiretroviral drugs have been gradually used by some Chinese people living with human immunodeficiency virus (PLWH) in recent years. This study aimed to analyze the willingness to pay (WPT) for medical insurance antiretroviral drugs among PLWH.

**Methods:** A mixed method study design, involving a cross-sectional survey and qualitative in-depth interviews was conducted. A cross-sectional survey was used to collect the general characteristics, economic status, ART status, and WPT for medical insurance antiretroviral drugs among PLWH in 18 Chinese cities from August 2022 to February 2023.

Multivariable logistic regression was used to analyse the factors associated with the WPT. The representative PLWH was interviewed by qualitative in-depth interviews, and the data were thematically analyzed.

**Results:** According to the results of a cross-sectional survey, among 941 PLWH, 271 (28.80%) were willing to pay for medical insurance antiretroviral drugs. The senior high school or junior college degree ( $aOR=5.36$ ; 95%CI: 2.55-11.28), undergraduate or above ( $aOR=5.17$ ; 95%CI: 2.39-11.19); married ( $aOR=2.55$ ; 95%CI: 1.41-4.61); often work away from home ( $aOR=3.15$ ; 95%CI: 2.09-4.74); heterosexual transmission ( $aOR=2.79$ ; 95%CI: 1.79-4.36); personal annual income were 50,000-99,999 CNY ( $aOR=1.99$ ; 95%CI: 1.29-3.06),  $\geq 100,000$  CNY ( $aOR=2.69$ ; 95%CI: 1.57-4.61); occurred adverse drug reactions ( $aOR=1.89$ ; 95%CI: 1.30-2.77) were more willing to pay. According to the results of qualitative in-depth interviews,

The main reasons for PLWH's WPT for medical insurance antiretroviral drugs were that they had fewer adverse drug reactions and were easier to take. The main reasons for PLWH's unwillingness to pay for medical insurance antiretroviral drugs were financial difficulties and worrying about privacy disclosure.

**Conclusions:** Nearly a third PLWH are willing to pay for medical insurance antiretroviral drugs. In the future, PLWH with high WTP can be guided to use medical insurance antiretroviral drugs.

## TUPEB105

Initial ART choice among women and men living with HIV in Germany 2010-2018

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**Background:** HIV treatment guidelines in Germany do not include gender-specific recommendations for choice of first-line ART among men and women unless women are pregnant. Gender differences of first-line ART between men and women are insufficiently investigated.

**Methods:** We analysed data of first-line ART among therapy naïve men and women included in the ClinSurv-HIV cohort study in Germany between 2010 and 2018. ART prescription by gender was compared using  $\chi^2$ -tests.

**Results:** We included 1,062 women and 4,564 men in our analysis, who initiated ART between 2010 and 2018. Overall, 24.2% persons received an NNRTI with their first-line regimen (women: 18.6%, men: 25.5%,  $p<0.001$ ), 38.3% received a PI (women: 54.2%, men: 34.6%,  $p<0.001$ ), and 36.7% received an INSTI (women: 27.7%, men: 38.7%,  $p<0.001$ ). Among NNRTI-substances, women less likely received a therapy containing EFV (6.8% vs. 14.0%,  $p<0.001$ ) or RPV (6.0% vs. 8.2%,  $p=0.020$ ) and more likely received NVP (5.8% vs. 3.0%,  $p<0.001$ ) compared to men. Regarding PI, women more likely received a therapy containing ATV (20.7% vs. 7.4%,  $p<0.001$ ) or LPV (13.7% vs. 3.1%,  $p<0.001$ ) and less likely received DRV (19.4% vs. 23.8%,  $p=0.002$ ). Among INSTI, women less likely received a DTG-containing (10.8% vs. 17.8%,  $p<0.001$ ) or EVG-containing (4.8% vs. 10.0%,  $p<0.001$ ) regimen, but were comparably likely to receive a RAL-containing regimen (11.4% vs. 9.6%,  $p=0.086$ ).

We compared gender differences within transmission groups. Among: 836 women and 707 men with heterosexual HIV transmission or from high-prevalence countries the observed differences were similar (NNRTI: women: 19.0%, men: 24.0%,  $p=0.016$ , PI: women: 57.4%, men: 34.9%,  $p<0.001$ , INSTI: women: 24.4%, men: 41.2%,  $p<0.001$ ). Among 79 women and 193 men with intravenous drug use, NNRTI-prescription was comparable (women: 17.7%, men: 17.1%,  $p=0.902$ ) while PI were less often prescribed among

women (women: 38.0%, men: 56.5%,  $p=0.006$ ). INSTI were numerically more often prescribed (women: 41.8%, men: 30.6%,  $p=0.076$ ) although the numbers are small and the differences might be due to chance.

**Conclusions:** We detected differences among prescribed first-line regimens between men and women overall and within transmission groups. While some differences might be due to ART-prescription during planned or concurrent pregnancy, further reasons for differential prescribing need to be explored.

## TUPEB106

### Study of a randomised switch to DTG/RPV in subjects with HIV RNA <50c/ml and archived K103N (Wisard study): week 96 results

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**Background:** Two-drug regimen DTG/RPV has been studied in virologically suppressed patients with no prior treatment failure history or resistance. As viruses with NN-RTI resistance mutation K103N retain in-vitro RPV susceptibility, we investigated viral suppression maintenance potential of switching currently suppressed patients with documented K103N to DTG/RPV.

**Methods:** This 96-week European, open-label, multi-centre, exploratory study in treatment-experienced, HIV-1 participants with documented prior K103N mutation switched participants to DTG/RPV either immediately (DTG/RPV-I) or deferred switch until week 48 (DTG/RPV-D, previously referred to as CSR [continued suppressive regimen]) [randomised 2:1, DTG/RPV-I: DTG/RPV-D]. Prior PI and NRTI mutations were permitted.

**Results:** Week 48 primary endpoint confirmed virological failure (CVF) has previously been published for 140 randomised subjects. By week 96, in each arm, 2 further patients had CVF.

	DTG/RPV-I Immediate switch at Baseline N=95		CSR <sup>1</sup> : DTG/RPV-D <sup>2</sup> Deferred switch until Week 48 N=45	
	N	% (95% CI)	N	% (95% CI)
Week 0 to Week 48	3/95	3.2 (0.7-9.0)	1/45	2.2 (0.1-11.8)
Switch to DTG/RPV occurred at Week 48				
Week 0 to Week 96	5/95	5.3 (1.7-11.9)	3/45	6.7 (1.4-18.3)
Week 48 to Week 96	2/87	2.3 (0.3-8.1)	2/40	5.0 (0.6-16.9)
Confirmed Virological failure (CVF) = 2 consecutive viral loads >50 copies at least 2 weeks apart				

1 – known as continued suppressive regimen (CSR) from week 0 to week 48

2 – known as the DTG/RPV deferred switch (DTG/RPV-D) from week 48 to week 96

Table 1: Protocol defined confirmed virological failure (CVF) at week 48 and week 96.

Of the 8 CVFs through week 96, HIV-1 RNA was <200 copies/ml in 4; only 2 samples amplified, no DTG or RPV resistance mutations observed.

Week 96 treatment success proportion (HIV1 -RNA<50 copies/mL) by ITT FDA Snapshot DTG/RPV-I 84.2% vs DTG/RPV-D 73.3% (+10.9% 95% CI -4 to +25.8).

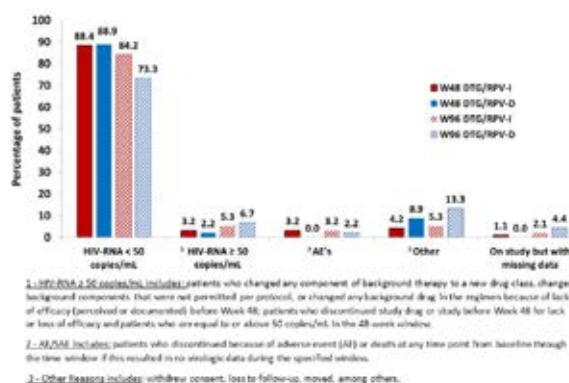


Figure 1. Proportion of participants with HIV-RNA <50 copies/mL at week 48 vs at week 96, with the ITT FDA Snapshot method.

DTG/RPV-I drug-related AE rate was 38 events in 22 participants (23.2%) (1 grade 3-4) between baseline/week 48; 2 events (0 grade 3-4) between week 48/96. There were 11 drug-related AEs in 5 (12.5%) DTG/RPV-D participants (0 grade 3-4) between week 48/96. No fatalities reported. Between week 48/96, 1 DTG/RPV-I (4 in first 48 weeks) and 1 DTG/RPV-D permanently discontinued due to AE/SAEs.

**Conclusions:** Week 96 data continues to show that switching to DTG/RPV maintains virological suppression in the majority of participants. No resistance emergence to DTG/RPV observed.



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## TUPEB107

Efficacy of TLD regimen in viral suppression among HIV patients in Venezuela: the "Plan Maestro" initiative

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**Background:** With a critical shortage of antiretrovirals in Venezuela, reaching 99% in 2017, the "Plan Maestro" was initiated in June 2018. This collaborative strategy, led by UNAIDS, WHO, scientific societies, and civil society, aimed to ensure continuous access to comprehensive health-care for people living with HIV, tuberculosis, and malaria. The initiative, funded by the Global Fund, introduced the TLD (Tenofovir/Lamivudine/Dolutegravir) regimen. Proyecto Once Trece, recognizing the need for improved viral load testing, acquired GeneXpert equipment to assess the response to the TLD regimen provided through the Global Fund.

**Methods:** A prospective, cross-sectional, descriptive study was conducted from April 2022 to December 2023 at the Once Trece Foundation Medical Service laboratory. Using GeneXpert technology, HIV-1 viral load tests were performed on individuals living with HIV who had been on TLD treatment for over 3 months. These tests were conducted free of charge, with informed consent, maintaining confidentiality, on a voluntary basis and included a total of 2256 individuals (W:413, M:1878, TW:15).

**Results:** Viral suppression (<40 copies/ml) was observed in 1774 individuals (78.6%), and 2077 (92.1%) maintained viral loads <1000 copies/ml, meeting WHO criteria. A total of 179 individuals (7.9%) had viral loads >1000 copies/ml. The demographic breakdown showed that 79.49% were MSM (97.66% of males), 0.55% were transgender women, and 19.95% did not belong to any key population.

The TLD regimen demonstrated high efficacy, achieving viral suppression rates above 92.1%, suggesting its suitability as a treatment option. The average age of participants was 40 years.

**Conclusions:** The adoption of the "Plan Maestro" initiative, along with the TLD (Tenofovir/Lamivudine/Dolutegravir) regimen, significantly improved viral suppression rates among people living with HIV in Venezuela. The effectiveness of this strategy highlights its potential as a model for addressing HIV treatment challenges in similar contexts. Furthermore, the incorporation of GeneXpert technology by Proyecto Once Trece played a crucial role in verifying viral suppression among these individuals. The involvement of organized civil society is vital in ensuring the continuity of antiretroviral regimen supplies in complex environments like Venezuela.

## TUPEB108

Social Determinants of Health (SDoH) impact on Viral Suppression (VS) in a 48-week Low Barrier Care (LBC) study for rapid Antiretroviral Therapy (ART) reinitiation among persons with HIV (PWH) lost-to-care

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**Background:** Effectively interrupting the source of transmission is a critical step in ending the HIV epidemic (EHE). COMEBACK (NCT04519970) is a 48-week single-center study in Chicago implemented in September 2020, with its main objectives to reengage lost-to-care PWH and rapidly reinitiate ART in an LBC model to promote VS and favorable Patient Reported Outcomes (PROs).

**Methods:** Adults off ART ≥2 weeks, without history of significant B/F/TAF resistance or renal impairment, were rapidly started on B/F/TAF upon reengagement after same day collection of baseline labs and PROs (N=100). A screening assessment was used to stratify participants into case management (CM) tiers with a dedicated retention specialist: minimal, moderate, or advanced.

An acuity assessment tool was adapted to determine whether participants needed additional support based on retention and VS. Baseline and 48-week endpoints were reported by intention-to-treat and observed analysis.

**Results:** At baseline median age was 37 years (range, 24–68), with 91.0% Black and 68.0% cisgender male. Median CD4+ was 310 cells/mm<sup>3</sup>, with median viral load 11,084 copies/mL (range, <40–2,000,000, 16% VS). Median time off ART was 5 months (range, 0.5–242). For CM, participants self-screened into minimal (70%), moderate (28%), and advanced (1%) tiers. By intention-to-treat 50% required tier escalation. The greatest proportion of transitions occurred from minimal at baseline to advanced (40%) by end of study. Among those who advanced (N=29) 24% reported housing insecurity, 35% had food insecurity, 48% demonstrated low health literacy, 35% expressed adherence concerns, and 21% reported active substance use. Sixty-four of 100 participants (64%) completed the study, with VS in 48% (N=48/100) by intention-to-treat and 75% (N=48/64) by observed analysis. No resistance to B/F/TAF was detected. Two participants stopped the study early to switch to long-acting ART for 78% VS (N=50/64) retained-in-care clinically observed at week 48.

**Conclusions:** VS was high for PWH with rapid ART reinitiation retained-in-care, however lapses in retention and shifts toward more intense CM were impacted by SDoH challenges. Achieving VS among high-risk populations disenfranchised from care will require not only individualized CM and specialized retention approaches but in-

tegrated sustainable strategies among multiple levels of SDoH interventions to capitalize on LBC models towards EHE.

## TUPEB109

### Sex-specific impacts of maternal dolutegravir-based ART on placental and embryonic metabolome in a mouse pregnancy model

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**Background:** Metabolite shifts in pregnancy may play a role in perinatal origins of metabolic disease for offspring. Our study assessed the impact of DTG in pregnancy on the placental and embryonic metabolome.

**Methods:** Pregnant C57BL/6J mice were divided into control (water, N=10), and DTG (2.5 mg/kg, N=10, therapeutic dose), with DTG administered alongside 50mg/kg tenofovir disoproxil fumarate and 33.3mg/kg emtricitabine (TDF/FTC). From both control and DTG groups, metabolic profiles in male and female placenta (N=40, 20 males, 20 females) and embryos (N=40, 20 males, 20 females) were analyzed using liquid chromatography-mass spectrometry, with Welch's t-test identifying significant biochemical differences between groups.

**Results:** Compared to controls, DTG exposure was associated with differences in 72 metabolites (50 upregulated, 22 downregulated) in placentas of male fetuses, but only 29 metabolites (22 upregulated, 7 downregulated) in placentas of female fetuses. In male embryos DTG exposure was associated with differences in 77 metabolites (69 upregulated, 8 downregulated) compared to controls, and 73 metabolites (68 upregulated, 5 downregulated) in female embryos.

In placentas from male fetuses, most upregulated metabolites (24/50) belonged to the lipid pathway, whereas in placentas from female fetuses, they were primarily in the amino acid pathway (10/22).

In both male (39/69) and female (30/68) embryos, the lipid pathway had highest number of upregulated metabolites. In males 8 metabolites showed shared significant regulation between placenta and embryo (6 upregulated, 2 downregulated), while in the females only 3 metabolites showed shared regulation (2 upregulated, 1 downregulated).

Phenol sulfate, a microbial-dependent product, was significantly elevated in the placenta and embryos of both males and females exposed to DTG. Levels of 2-hydroxy-

butyrate, a marker of mitochondria dysfunction and oxidative stress, were higher in both the placenta and embryos of females exposed to DTG, but not in males.

**Conclusions:** Metabolites in amino acid pathway showed significant differences and sexual dimorphism in placentas and embryos of DTG+TDF/FTC-treated pregnant mice. Varied metabolite regulation was observed between placentas and embryos, except for phenol sulphate. Elevated 2-hydroxybutyrate in female embryos suggests sex-specific oxidative stress/mitochondrial dysfunction with DTG treatment.

Further research is needed to determine if these fetal metabolic changes affect later metabolic health in humans.

## TUPEB110

### A first-in-human phase 1 study of the novel nanoparticle-formulated TLC-ART 101, a single subcutaneous injection containing 3 HIV drugs, demonstrates long-acting pharmacokinetics and initial clinical safety

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**Background:** Long-acting injectable antiretroviral therapy (LAI-ART) is a significant step towards reducing HIV stigma and promoting ART adherence. The only current complete LAI regimen, LA-cabotegravir + LA-rilpivirine faces barriers to global implementation due to drug resistance, cost, distribution challenges, and clinic-required injections. The TLC-ART program has developed TLC-ART-101 composed of 3 HIV drugs - lopinavir (LPV), ritonavir (RTV), and tenofovir (TFV) - combined in drug combination nanoparticles (DcNP) and given subcutaneously. A phase 1 first-in-human study with pharmacologically guided adaptive dosing and study duration is enrolling 12-16 participants with up to two dose adjustments between cohorts (NCT06850728).

**Methods:** Cohort 1 comprised four adult participants without HIV or comorbidities. Each received a single 1.5mL subcutaneous injection of TLC-ART-101 (15.6mg LPV/ 4.1mg RTV/ 9.2mg TFV; <5% of daily oral dosing) in the abdomen. Participants were observed for clinical safety with blood



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collection at multiple timepoints on days 0-1 and on days 2, 3, 7, 10, 14, 21, 28, 35, 49, and 57. Non-compartmental and non-parametric pharmacokinetic analysis were performed on plasma.

**Results:** All four participants (3M/1F, 24-58y) completed the 57-day study. TLC-101 was well-tolerated with only mild (Grade 1) injection-site reactions including redness, bruising, localized swelling, and/or itching that resolved completely in 1-7 days (mean 4.0). No gastrointestinal side effects or serious adverse events were reported. No changes in liver enzymes, kidney function, or blood cell lines were detected. LPV and TFV were detectable in plasma for 57 and 21 days respectively; RTV was detectable for 4 days. Each component demonstrated extended half-lives ( $T_{1/2}$ ) of 228 hours (LPV), 10h (RTV), and 84h (TFV).

**Conclusions:** With a fraction of daily LPV/RTV/TFV oral dosing, the three HIV-drug TLC-ART-101, enabled by DcNP technology, appeared safe and well-tolerated. In contrast to the short half-life of each drug when given orally, TLC-ART 101 demonstrated a 38-fold, 2-fold, and 11-fold half-life extension for LPV/RTV/TFV respectively in people versus oral dosing.

Cohort 2 is in process with a dose escalation to 2.7-fold the initial dose and a longer study duration. This proof-of-concept study will support global implementation of complete subcutaneously administered LA-ART regimens, including TLC-ART-301, which contains TFV/lamivudine/dolutegravir (LA-TLD) and is currently in pre-clinical studies.

## TUPEB111

A real-world assessment of weight gain in people acquiring HIV taking second-generation integrase strand-transfer inhibitor-based regimens: a retrospective, multiple-center, observational cohort study

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**Background:** Studies have shown an increase in weight among people acquiring HIV (PAH) who have taken integrase strand-transfer inhibitor (INSTI) containing antiretroviral therapy (ART). However, limited data are available regarding analysis of risk factors of weight gain in Asia. The aim was to assess associated factors of weight gain after initiating or switching to bictegravir/emtricitabine/tenofovir alafenamide fumarate (BIC/FTC/TAF), lamivudine and dolutegravir (DTG/3TC) among PAH.

**Methods:** This was a retrospective, multiple-center, observational cohort study conducted at seven HIV-care-designated hospitals from October 2019 to October 2023. Information on body weight, clinical characteristics and HIV viral loads were collected and analyzed.

The first weight measure after the prescription of BIC/FTC/TAF or DTG/3TC, both pre- and 30 days post-index, was defined as baseline weight. The last measure at week 48 was defined as post-weight.

**Results:** A total of 2489 participants were included, and 21.7% were >50 years old, 92.4% were males and 13.8% were naïve patients at baseline. At week 48, 95.1% of patients in the DTG/3TC group and 94.5% in the BIC/FTC/TAF group achieved HIV RNA <50 copies/mL ( $p=0.15$ ).

Additionally, 192 participants (7.7%) exhibited ≥10% weight gain. Logistic regression analysis identified risk factors for ≥10% weight gain, including ART-naïve PAH (AOR 2.53, 95% CI 1.81-4.10), previous ART containing TDF, switch to BIC/FTC/TAF (AOR 2.05, 95% CI 1.40-2.98), TAF, switch to BIC/


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FTC/TAF (AOR 2.18, 95% CI 1.33–3.57), previous ART containing efavirenz (EFV) (AOR 1.93, 95% CI 1.23–3.01) and boosted protease inhibitors (PIs) (AOR 3.24, 95% CI 1.64–6.39). (Table)

Logistic regression analysis	Crude odds ratio	95% CI	p	Adjusted odds ratio	95% CI	p
age	1.00	0.99 - 1.01	0.94	0.99	0.98 - 1.01	0.23
CD4 count > 500 cells/ $\mu$ L at baseline	0.58	0.44 - 0.77	<0.01	0.65	0.48 - 0.90	0.01
naïve people	2.04	1.47 - 2.84	<0.01	2.53	1.81 - 4.10	<0.01
TDF, switch to DTG/3TC	0.71	0.28 - 1.80	0.48	0.88	0.34 - 2.32	0.80
TDF, BIC/FTC/TAF	1.88	1.36 - 2.59	<0.01	2.05	1.40 - 2.98	<0.01
TAF, switch to DTG/3TC	0.30	0.07 - 1.25	0.10	0.45	0.11 - 1.87	0.27
TAF, switch to BIC/FTC/TAF	1.33	0.88 - 2.00	0.18	2.18	1.33 - 3.57	<0.01
previous ART containing EFV	1.36	0.96 - 1.94	0.09	1.93	1.23 - 3.01	<0.01
previous ART containing boosted PIs	2.24	1.23 - 4.10	0.01	3.24	1.64 - 6.39	<0.01

**Conclusions:** In a real-world setting, BIC/FTC/TAF is associated with greater weight gain compared to DTG/3TC. Furthermore, previous antiretroviral therapy containing EFV or boosted PIs may increase the likelihood of experiencing greater weight gain.

This study has the potential to provide valuable insights for healthcare providers when making decisions about HIV treatment choices.

## TUPEB112

### Dolutegravir vs efavirenz: comparison and factors associated with viral blips in an acute HIV infection cohort study

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**Background:** Viral blips create uncertainty due to unclear pathophysiology and clinical impact. We compared blip incidence while on first-line dolutegravir vs efavirenz-based antiretroviral therapy (ART) started during acute HIV infection (AHI) and evaluated associated factors.

**Methods:** RV254/SEARCH010 participants with AHI achieving virologic suppression (<20 copies/ml) on either efavirenz or dolutegravir and maintained on their initial antiretroviral regimen  $\geq$  48 weeks were included. Parti-

cipants with HBV or HCV were excluded. HIV RNA was measured at weeks 0, 2, 4, 8, 12 and every 24 weeks thereafter. A blip was defined as transiently detectable RNA (20–999 copies/mL) after achieving suppression and categorized as "low" (20–200 copies/mL) or "high" (201–999 copies/mL). Univariate and multivariate models were used to assess factors associated with blips.

**Results:** 457 participants were analyzed, 283 starting efavirenz and 174 starting dolutegravir, predominantly MSM (93.9%) with a median age of 26 (IQR 23–32). The groups did not differ by gender, HIV risk, CD4, or HIV RNA at ART initiation (all  $p>0.05$ ).

84 blips were observed with an incidence of 8.37 (95%CI: 6.68–10.37) per 100 person-years. Most blips were low, except for one in the dolutegravir group (517 copies/mL). The median blip magnitude was higher with dolutegravir (34.5 [IQR:24–66]) than with efavirenz (27.5 [IQR:22–33],  $p=0.02$ ).

The median time to viral suppression was 8 weeks on dolutegravir (IQR 5–12) and 23 weeks on efavirenz (IQR 12–24;  $p<0.001$ ). The median time from antiretroviral initiation to the first blip was 65 and 38 weeks on dolutegravir and efavirenz, respectively ( $p=0.008$ ).

In the multivariate model, factors associated with a higher incidence rate of blips were longer time to suppression, baseline HIV RNA >6 log copies/mL, and age. Fiebig stage at ART initiation, CD4 count, and antiretroviral (efavirenz or dolutegravir) were not associated with blip incidence.

**Conclusions:** Early ART in AHI does not prevent viral blips in a highly adherent cohort. Blips are not uncommon. However, it is reassuring that most blips were less than the viral load threshold used by U=U-supporting studies. Earlier viral suppression was associated with fewer viral blips, further reinforcing early treatment, preferably with INSTI-based ART based on faster VL suppression and adherence

## TUPEB113

### Antiretroviral therapies and clinical issues in adults

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**Background:** In South Africa, approximately 6.1 million of estimated 7.2 million HIV-positive clients are receiving antiretroviral therapy (ART). Progress has been made in linking HIV-positive clients to ART, but interruption in treatment (IIT) often results in permanent client attrition and could lead to sub-optimal viral load (VL) suppression. This paper offers an initial analysis of IIT using the national longitudinal client dataset.

**Methods:** Client-level electronic health record files are routinely collected into a national database from >4,000 non-networked public health facilities.







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We selected 2,043,037 records for clients that began ART between January 2018–December 2022 and used probabilistic record matching to match similar records between facilities. Matches with a positive predictive value (PPV) of 0.9 were confirmed as true matches.

Data on client encounters, including medication, treatment dates, and dates for the next ART refill, and VL values, were sequentially arranged for all clients to create a longitudinal record (in line with national definitions, IIT is defined as >90 days without HIV medication). Final analysis was conducted using Python and Postgres SQL.

**Results:** A total of 2,043,037 clients were enrolled on ART during the analysis period. Of these, 39.9% (814,642) had at least one interruption. While male and female clients were similarly likely to interrupt treatment (39.7% vs 40.1%, respectively), children and adolescents were less likely to interrupt treatment compared to adults 31.3% vs 40.0%. In all, 184,469 (9%) of clients interrupted more than once in this period, with most interruptions occurring in the first year on ART 31.2%. In total, 212,013 (26%) clients who experienced IIT had a VL recorded within one month of ART re-engagement. Of these clients, 72% had a VL value >50 copies/ml, above the national VL suppression threshold. Over time, nearly half of IIT instances (446,294, or 43%) do not return to care.

**Conclusions:** Our analysis shows that attrition from ART is most prevalent in the first year of treatment, and that many clients who experience IIT are lost either for a significant time or permanently. Efforts to strengthen messaging and psychological support post-treatment initiation are critical for reducing attrition and its effects on VL suppression and viral transmissibility.

## TUPEB114

**CHANGE-Rx: frailty, falls, polypharmacy, and inappropriate medication use in a Canadian cohort of people aged 65 and older living with HIV**

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**Background:** Falls, frailty, and neurocognitive complications are negative outcomes in adults aging with HIV, often exacerbated by polypharmacy and potentially inappropriate medications (PIMs). Falls are associated with elevated anticholinergic (≥3) and sedative (moderate-high)

burden scores. In a cohort of older adults living with HIV, we examined the prevalence of PIMs, polypharmacy and anticholinergic and sedative burden.

**Methods:** CHANGE-Rx is a substudy of CHANGE-HIV, a Canadian cohort of people with HIV aged 65 years and older, established in 2019. Information on prescription, over-the-counter (OTC)/natural-health product (NHP) use, comorbidities, HIV-specific factors, Fried Frailty Phenotype and fall history were assessed. Proportion of people with polypharmacy (≥5 non-antiretroviral therapy (ART) drugs), severe polypharmacy (≥10 non-ART drugs), and PIMs (Beers and Screening Tool of Older People's Prescriptions criteria) were determined.

Anticholinergic burden was calculated using a combination of Anticholinergic Cognitive Burden scale and German Anticholinergic Burden Scale. Sedative burden was calculated using the Anticholinergic and Sedative Burden Catalog. Chi-square tests compared outcomes according to frailty status.

**Results:** 440 CHANGE-HIV participants were included: median age 69 years (range 65–89), 91% male, 76% white, 77% identified as men who have sex with men, 99.5% virally suppressed, median CD4 nadir 200 cells/mm<sup>3</sup>, median 26 years since HIV diagnosis, 15.5% were frail, 19.3% fell within the last six months.

Excluding ART, 93.6% were on prescribed comedications (median five, range 1–26), 53.2% had polypharmacy, 14.7% had severe polypharmacy, 46.5% had ≥1 PIM. Including self-reported OTC/NHPs, 97.5% were on comedications (median seven, range 1–28), 73.5% had polypharmacy, 30.2% had severe polypharmacy, 50.9% had ≥1 PIM. For prescribed comedications, 16.4% and 38.6% of participants had high anticholinergic and moderate-high sedative burden, respectively.

Frail participants, compared to non-frail, had more severe polypharmacy, sedative burden, and falls (p<0.05). Common PIMs included proton-pump inhibitors (19.8%), aspirin (9.8%), testosterone (9.8%) and benzodiazepines (9.1%).

Common anticholinergic drugs included metformin, lorazepam and metoprolol; most common moderate/severe sedative drugs were zopiclone, lorazepam and pregabalin.

**Conclusions:** Polypharmacy, PIMs and high anticholinergic/sedative burden are common among older adults living with HIV in Canada, particularly in those who are frail. It remains to be determined if addressing polypharmacy/PIMs would impact falls and frailty.

**TUPEB115****The perspective of health providers and people living with HIV on Darunavir use in second-line therapy: a prospective study in Nigeria**

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**Background:** Nigeria is an early adopter of the fixed-dose combination of generic ritonavir-boosted darunavir 400/50mg (DRV/r) for second-line (2L) antiretroviral therapy (ART). While the current national treatment guidelines recommend DRV/r-based regimens as alternative 2L ART, there is limited experience with its use.

This study assessed the perception of PLHIV newly initiated on DRV/r-based 2L regimen and their health providers. Findings from this study will inform the planned scale-up in-country.

**Methods:** This prospective study commenced in August 2022 in 12 ART sites across two states (Anambra and Benue). The study population included PLHIV eligible for DRV/r 400/50mg (aged  $\geq 12$  years and weighing  $\geq 40$ kg) who failed first-line ART or those on 2L with adverse reactions to ritonavir-boosted lopinavir transitioned to DRV/r, and health providers prescribing DRV/r. Separate structured questionnaires were administered to the PLHIV and health providers six months post-initiation to assess their experience with DRV/r. The questionnaires compared the DRV/r-based regimen with the previous regimen regarding side effects, pill burden, and ease of administration. Data was analyzed using MS Excel.

**Results:** A total of 48 PLHIV and 43 health providers responded to the survey. The mean age of PLHIV respondents was 41.9 years (SD 11.7), 68% were female, while that of the providers was 38.6 years (SD 7.1), and 51% were female. The commonest side effects reported among PLHIV respondents were headaches (12%), tiredness (10%), and skin rash (8%). Compared to their previous regimen, 54% reported better pill burden, 73% agreed/strongly agreed that DRV/r was easier to use, and 88% believed the DRV/r-based regimen was working better. 86% of interviewed health providers reported better side effect profiles in their clients, and 71% reported improved convenience compared to the previous regimen. All health providers agreed or strongly agreed that they would encourage others to prescribe DRV/r for 2L.

**Conclusions:** The study findings showed that DRV/r in 2L is highly acceptable among PLHIV and health providers. The improved side effect profile and reported ease of use are

enablers for the planned national scale-up. Further studies should be conducted to assess the effect of long-term use of DRV/r among PLHIV.

**TUPEB116****Perspectives of people with HIV (PWH) 12 months following a switch to cabotegravir and rilpivirine long-acting (CAB+RPV LA) in an observational real-world US study (BEYOND)**

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**Background:** CAB+RPV LA is the only complete long-acting regimen administered by a healthcare provider for treatment of virologically suppressed PWH. CAB+RPV LA may alleviate challenges associated with daily oral antiretroviral therapy (ART).

This study reports the perspectives of PWH receiving CAB+RPV LA in real-world US healthcare settings.

**Methods:** This 2-year prospective, observational study enrolled PWH following the decision to switch to CAB+RPV LA (monthly or every 2 months) across 27 US sites. Participants completed surveys at baseline (BL) before the first injection and Month 12 (M12) identifying reasons for initiating CAB+RPV LA, challenges with daily oral ART, ART preference, HIV treatment satisfaction, and benefits of more frequent clinic visits.

**Results:** 308 PWH were enrolled and completed BL surveys. Median age was 45 years, 83% identified as male, 39% as Black. The most common primary reasons CAB+RPV LA was initiated were pill fatigue (27% of participants), convenient treatment option (21%), and adherence anxiety (17%).

At BL, 49% of participants reported sometimes, often, or always hiding their prior oral ART for fear of disclosing HIV status. At M12 (N=229), participants receiving CAB+RPV LA experienced a decrease in fear of disclosure, anxiety around adherence, daily reminder of HIV, and feeling stigmatized by HIV treatment (Figure 1).

At M12, most participants preferred CAB+RPV LA (97%), <1% preferred daily oral ART, and 2% expressed no preference. Treatment satisfaction increased from BL to M12. At M12, most participants (94%) reported  $\geq 1$  additional benefit of more frequent clinic visits (eg, feel HIV is better controlled, more opportunities to discuss HIV treatment and/or other issues, better relationship with HIV care provider).



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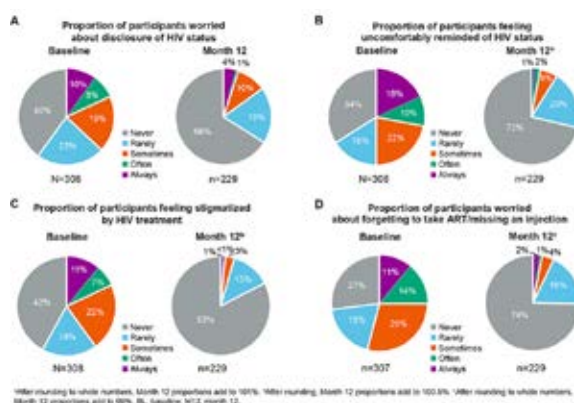


Figure. Proportion of participants (A) Worried about disclosure of their HIV status, (B) Feeling reminded of their HIV status because of their treatment, (C) Feeling stigmatized by HIV treatment, and (D) Worried about forgetting to take ART/missing an injection at BL and M12.

**Conclusions:** Switching to CAB+RPV LA demonstrated improvements in the psychological challenges at M12. PWH reported a strong preference for CAB+RPV LA, increased treatment satisfaction, and more opportunities to engage with their HIV care.

## Antiretroviral therapies and clinical issues in adolescents and young adults

### TUPEB117

Mortality and virologic outcomes of antiretroviral therapy among HIV-positive children and adolescents: a prospective, multicenter, longitudinal, cohort study in China

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**Background:** The national pediatric antiretroviral therapy (ART) program was launched in the 6 Chinese provinces with the highest HIV prevalence in 2005 and expanded to 28 provinces until 2010. The availability of ART drugs from the new classes was limited for children in developing countries.

This study began in 2008 when the recommended first-line treatment regimen was zidovudine (AZT) or stavudine (D4T) plus lamivudine (3TC) plus nevirapine (NVP) or efavirenz (EFV); second-line treatment regimen was included Lopinavir/ritonavir (LPV/r) -based regimens. So, this study aimed to evaluate the mortality and viral response in the long-term ART cohort among HIV-positive children and adolescents.

**Methods:** The prospective open-labeled multicenter cohort was conducted from January 2008 to July 2021. The participants were recruited from six representative sites in mainland China.

Participants with an HIV-positive serostatus and < 18 years old were recruited and each participant was informed consent at the time of enrollment. KM curve and Cox regression models were used for survival analysis. Virological failure (VF) was defined as failure to viral suppression or two consecutive viral load tests higher than 200 copies/mL after viral suppression. Follow-up visits were conducted for all patients every 3 months.

**Results:** There were 592 ART-naïve participants and 262 ART-experienced participants included. The median follow-up time of ART-naïve participants was 6.22 (2.07-8.99) person-years with the longest follow-up time being 13.43 person-years.

The mortality was 0.721 (0.443, 0.998) per hundred person-years, and the proportion of death was 4.39% (26/592). 173 of 592 children developed VF with an incidence of 4.83 per 100 person-years (4.11-5.56). The COX regression model showed that the baseline low CD4+T cell count and age >5 years old at HIV diagnosis were possible risk factors for death.

Among the 345 ART-naïve children vs. 113 ART-experienced children treated with LPV/r, the incidence of VF was 4.05 (3.25,4.85) and 4.98 (3.45,6.5) respectively. KM curve showed ART-experienced children were at higher risk of VF than ART-naïve children ( $P < 0.05$ ).

**Conclusions:** The longitudinal cohort study demonstrated the efficacy of China's ART program among HIV-positive children which was beneficial to countries with limited resources.

## TUPEB118

### Prevalence and associated factors of moderate-to-high suicidal risk among Thai adolescents and young adults living with HIV

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**Background:** Adolescents and young adults living with HIV (AYA-HIV) may be at increased risk for suicidality. However, this has not been well-investigated in resource-limited settings in Asia. We aimed to assess prevalence and factors associated with moderate-to-high suicidal risk among Thai AYA-HIV compared with HIV-negative AYA (AYA-HN).

**Methods:** During December 2022 to October 2023, a prospective cohort study was conducted with AYA-HIV (aged 15-24years) and age- and sex-matched AYA-HN across 3 sites in Thailand. Participants were assessed for suicidal risk using a cross-culturally validated Thai version of the Columbia-Suicide Severity Rating Scale.

Moderate-to-high suicidal risk was defined as having history of active suicidal ideations with specific method, intention, or plan (lifetime and/or within 1month) with/without history of suicide attempts (lifetime and/or within 3months).

Other psychosocial parameters (including depression, anxiety, alcohol use disorder, social support, self-esteem, resilience, HIV-related stigma) were assessed using validated Thai versions of standard questionnaires (Table).

Prevalence of moderate-to-high suicidal risk were compared using Chi-squared tests. Logistic regression analysis was performed to identify factors associated with moderate-to-high suicidal risk.

**Results:** A total of 200 AYA-HIV and 200 matched AYA-HN were enrolled (median age 22years, 59% male). Among AYA-HIV, 60% had perinatally-acquired HIV, 100% were on antiretroviral therapy (ART) (60% integrase inhibitor-based), 86% were virally suppressed, and 84% had ≥95% self-reported ART adherence. Almost all AYA-HN (98%) reported no/low self-perceived HIV-risk.

Overall, 12 (6%) AYA-HIV and 6 (3%) AYA-HN reported moderate-to-high suicidal risk ( $P=0.15$ ), of whom 1 AYA-HIV had high risk that needed emergency psychiatric referral.

On multivariable analysis, average/poor relationship with primary caregiver, documented history of depression, recent passive thoughts of death/self-harm, and low self-esteem were significantly associated with moderate-to-high suicidal risk (Table).

Parameters	Univariable analysis*		Multivariable analysis*	
	Odds ratio (95% CI)	P	Adjusted odds ratio (95% CI)	P
<b>Participant characteristics</b>				
<b>Relationship with primary caregiver</b>				
Average	Ref		Ref	
Poor: unsatisfied	10.33 (2.55-41.82)	0.001	33.09 (3.19-317.80)	0.04
Not applicable	19.63 (1.46-263.57)	0.03	143.34 (1.49-13,770.47)	0.03
Having documented history of depression	7.85 (1.21-48.15)	0.03	4.84 (0.17-134.81)	0.35
Self-reported adherence to ART, %	6.07 (1.08-33.96)	0.04	43.48 (1.25-1,517.68)	0.04
Self-reported adherence to ART, %	0.93 (0.91-0.96)	0.02	0.96 (0.91-1.04)	0.34
<b>Psychosocial parameters from standard assessments</b>				
<b>Severity of depressive symptoms<sup>†</sup></b>				
None or minimal	Ref		Ref	
Mild	1.93 (0.38-9.87)	0.43	0.11 (0.00-4.50)	0.25
Moderate to severe	12.44 (2.85-54.26)	0.001	0.11 (0.00-13.41)	0.37
Having passive thoughts of death or self-harm within 2 weeks	25.20 (6.38-100.82)	<0.001	104.00 (3.94-2,813.54)	0.006
<b>Severity of anxiety symptoms<sup>‡</sup></b>				
Minimal	Ref		Ref	
Mild	1.66 (0.38-7.22)	0.50	0.14 (0.01-3.18)	0.22
Moderate to severe	9.45 (2.21-40.37)	0.002	0.45 (0.01-13.78)	0.65
Alcohol use disorder score <sup>§</sup>	0.83 (0.68-1.07)	0.16	0.58 (0.33-1.04)	0.07
<b>Level of social support<sup>  </sup></b>				
Low	5.46 (0.61-46.25)	0.12	0.86 (0.03-28.77)	0.94
Moderate	1.58 (0.17-14.54)	0.69	0.39 (0.02-9.64)	0.57
High	Ref		Ref	
Self-esteem score <sup>¶</sup>	0.74 (0.63-0.88)	<0.001	0.74 (0.56-0.98)	0.03
Resiliency score <sup>   </sup>	0.86 (0.78-0.96)	0.006	1.00 (0.82-1.23)	0.98
<b>Level of HIV-related perceived stigma<sup>    </sup></b>				
Low	Ref		Ref	
Moderate	2.31 (0.58-9.21)	0.24	4.78 (0.26-87.34)	0.29
High	8.57 (1.22-60.09)	0.03	0.15 (0.00-7.39)	0.34

Abbreviations: ART, antiretroviral therapy; Ref, reference group; 95% CI, 95% confidence interval.

\*Univariable logistic regression was conducted. Co-variables with  $P<0.20$  were included in the multivariable logistic regression model.

<sup>†</sup>Severity of depressive symptoms was evaluated by the Patient Health Questionnaire-9 tool. The scores of 0-4, 5-9, 10-14, and 15-19, and 20-27 indicate minimal, mild, moderate, moderately severe, and severe depressive symptoms, respectively.

<sup>‡</sup>Severity of anxiety symptoms was evaluated by the Generalized Anxiety Disorder-7 item tool. The scores of 0-4, 5-9, 10-14, and 15-21 indicate minimal, mild, moderate, and severe anxiety symptoms, respectively.

<sup>§</sup>Alcohol use disorder score was evaluated by the Alcohol Use Disorders Identification Test. A score ranges from 0-4 (low to high risk of alcohol use disorder).

<sup>||</sup>Level of social support was evaluated by the Oslo Social Support Scale-3. The scores of 3-8, 9-11, and 12-14 indicate low, moderate, and high levels of social support, respectively.

<sup>¶</sup>Self-esteem score was evaluated by the Rosenberg self-esteem scale. A score ranges from 0-10 (low to high self-esteem).

<sup>|||</sup>Resiliency score was evaluated by the Ego resiliency scale. A score ranges from 14-56 (low to high resiliency).

<sup>||||</sup>Level of HIV-related perceived stigma was evaluated by the Berger HIV Stigma Scale. The scores 40-60, 61-120, and 121-160 indicate low, moderate, and high HIV-related perceived stigma.

**Table.** Associated factors of moderate-to-high suicidal risk among Thai adolescents and young adults living with HIV.

**Conclusions:** Prevalence of moderate-to-high suicidal risk among Thai AYA-HIV was twice as high as AYA-HN with no statistical significance. Suicidality is a critical mental comorbidity among AYA-HIV, requiring multidisciplinary collaborative care.



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## TUPEB119

### Virological response and antiretroviral drug resistance mutations in adolescents living with HIV in West Africa

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**Background:** Sustained virological suppression (SVS) is crucial for controlling the HIV replication. Since 2018, antiretroviral treatment (ART) based on dolutegravir has been recommended as first-line treatment. However, few data exist on SVS in adolescents living with HIV (ALHIV). We measured the proportion of ALHIV with virological failure (VF), 12 months after their inclusion in the OPTIMISE-AO project, and described their drug resistance mutation (DRM) profiles to ART.

**Methods:** OPTIMISE-AO-ANRS-12390 is a stepped-wedge trial aimed to improve HIV-disclosure and ART adherence among ALHIV aged 10-17 years, in five pediatric clinics in Burkina Faso, Côte d'Ivoire, and Togo, and nested within the leDEA West Africa cohort. VF was defined as at least one viral load >50 copies/mL at six or 12 months. Factors associated to VF were identified using logistic regression.

**Results:** A total of 449 ALHIV were included: median age 14 years (interquartile range 12-16); 50% were girls; 75% were treated with dolutegravir-based regimen.

At inclusion, 39% were fully HIV-disclosed (names his/her illness as HIV/AIDS); 73% had a viral load <50copies/mL, 13% between 50 and 1000 copies/mL and 14% a viral load ≥1000copies/mL. Twelve months after inclusion, 38% (167/439) were in VF (95% confidence interval [95%CI]: 33%-43%).

Adjusted for site of care and age, a high viral load at inclusion (50-1000 copies/mL: adjusted odds ratio [aOR]: 2.00, 95%CI: 1.10-3.64; ≥1000copies/mL: aOR: 5.78, 95%CI: 3.03-11.06) and a non-dolutegravir-based regimen (aOR: 2.01, 95% CI: 1.21-3.34) increased the probability of VF.

Of the 37 ALHIV with confirmed VF with two viral loads ≥1000 copies/mL who had a resistance genotyping, 12 (32%) were currently available: 6/12 had DRM to nucleoside reverse transcriptase inhibitors and non-nucleoside reverse transcriptase inhibitors, 1/12 had potential resis-

tance to protease inhibitors and 6/12 had resistance to integrase inhibitors. Among those with DRM to integrase inhibitors, 3/6 were resistant to all integrase inhibitors.

**Conclusions:** Despite the transition to dolutegravir, SVS remains suboptimal in ALHIV, and DRM to integrase inhibitors are not uncommon. Monitoring of DRM and implementation of interventions to strengthen adherence are essential to preserve the sustainability of ART strategies, particularly among ALHIV in West Africa, where therapeutic options are limited.

## TUPEB120

### Quantitative results from a pilot study of an automated directly observed therapy intervention using artificial intelligence with conditional economic incentives among young adults with HIV

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**Background:** Suboptimal adherence is common among youth with HIV (YWH). It can increase poor clinical outcomes and is linked to barriers such as antiretroviral therapy (ART) forgetfulness, low engagement in health, and lack of daily routines. Addressing these barriers can enhance ART adherence.

We implemented an innovative mobile app-based intervention that included automated directly observed therapy (aDOT) using artificial intelligence, along with real-time dose tracking, medication reminders, and conditional economic incentives (CEIs). The intervention used facial recognition to record daily ART adherence, and CEIs were given based on the participant's confirmed daily adherence.

**Methods:** The pilot study of the aDOT-CEI intervention was informed by the operant framework of Key Principles in Contingency Management Implementation. We recruited virally unsuppressed YWH 18-29 years of age from AIDS Healthcare Foundation clinics in California and Florida, who received the aDOT-CEI intervention for 3 months. Study outcomes included feasibility and acceptability.

**Results:** Of 28 participants enrolled, 6 (21%) were lost to follow-up at 3 months. 91% of retained participants reported they were very or extremely satisfied with the app, and 82% said aDOT helped them take their medications. Comfort with the security and privacy of the app was moderate (55%). Approximately 81% of participants said the app helped them take their medications every day


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and around 59% said the incentives were helpful. At study exit, the median self-reported adherence score was 82.7% (IQR: 74.4%, 91.7%).

**Conclusions:** Acceptability and feasibility of the aDOT-CEI intervention were high. Pilot results suggest refinements that may improve intervention outcomes including reassurances about app privacy and an increase in incentives. Even as long-acting injectables (LAIs) become increasingly available, many YWH will choose daily oral ART and will need adherence support.

Additionally, LAIs require viral suppression on oral ART before use. Therefore, adherence support to achieve viral suppression is an ongoing necessity, a gap that the aDOT-CEI intervention can fill. Additional research is recommended to test the efficacy of the aDOT-CEI intervention to improve viral suppression in a larger sample.

## TUPEB121

The spectrum of malignancies in adolescents and young adults living with HIV (AYALHIV) in Harare, Zimbabwe: a retrospective descriptive review of the cancer registry data

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**Background:** The burden of cancer in adolescents and young adults living with HIV (AYALHIV) has been increasing in low-to-middle income countries. To improve the cancer outcomes of AYALHIV a study of the spectrum and prevalence of malignancies in this subgroup was performed. The factors associated with mortality were also described.

**Methods:** A retrospective cross-sectional analytic review of cancer registers was performed. AYALHIV between the ages of 10 to 24 years with a confirmed primary incident malignancy recorded from January 2009 to December 2018 were included from the Zimbabwe National Cancer Registry. Records were cross referenced with data from the following sources: the Parirenyatwa Hospital Radiotherapy Centre, the Parirenyatwa Hospital (AIDS Healthcare Foundation) AHF Centre of Excellence Adolescent Clinic, the Parirenyatwa Paediatric Oncology Ward, the Parirenyatwa Kaposi Sarcoma (KS) Clinic and from the Newlands Clinic.

This was performed in order to collect potential missing demographic, clinical and/or laboratory data. In the event of two different malignancies, they were considered as two individual records.

**Results:** A total of 470 records were reviewed. 46.4% were female. The median age at diagnosis was 19 years (range 15-22). More cancers were noted in the 20-24-year age group (49.6%). KS was the most common cancer (77.2%). The 2<sup>nd</sup> most prevalent cancer was non-Hodgkin Lymphoma (12.6%). The other common cancers were squamous cell carcinoma (2.8%) [eye – 1.0%; gastrointestinal – 0.2%; skin – 0.6%; vulva – 0.6%; cervix – 0.2%; unknown – 0.2%] and Hodgkin lymphoma (1.9%). The median time-of-diagnosis to cancer treatment was 11 days (range 3-60). The median duration of antiretroviral therapy at time-of-cancer-diagnosis was 0.7 years (range 0-4). 155 out of the 470 (33%) died over the 10-year period.

Sepsis was the major contributing factor to mortality (5.7%). Age at cancer diagnosis was the only significant factor associated with mortality [OR=0.91; 95%CI (0.83-0.99), p=0.035].

**Conclusions:** KS was the most common malignancy found in AYALHIV in Harare, Zimbabwe from 2009 to 2018. Targeted HIV testing of AYALHIV diagnosed with cancer and subsequent immediate antiretroviral therapy should be implemented. Despite timely therapeutic intervention in AYALHIV diagnosed with cancer, the cancer mortality remains high.

## TUPEB122

Fully integrated mental health management within routine HIV adolescent and young adult services using a collaborative care model in Thailand: lessons learned

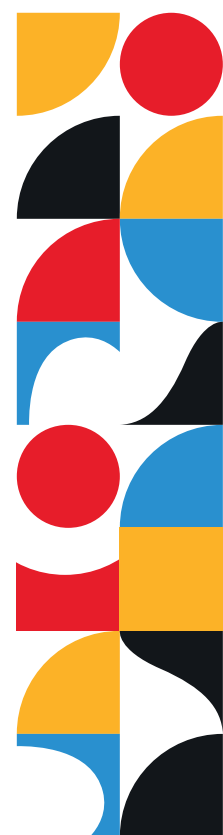
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**Background:** Approximately 20% of Thai adolescents and young adults living with HIV (ALHIV) have mental health disorders (MHDs). Thailand has only 0.94 psychiatrists per 100,000 population.

We aimed to provide a fully integrated collaborative care model (CCM) for mental healthcare in routine ALHIV clinic services to improve access.

**Description:** This program was conducted in a hospital-based clinic for ALHIV aged 15-24 years in Bangkok. Phase 1 (2018-2019): PHQ-9 screening was routinely conducted at clinic visits. If ALHIV had moderate depressive





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symptoms (PHQ-9 score > 9) or pediatricians diagnosed major depressive disorder (MDD) using DSM-4, they were referred to the psychiatrist.

Phase 2 (2020-2023): The CCM was integrated into the clinic. Initial capacity building of HIV care providers (physicians, nurses, counsellors) on basic mental healthcare (counselling, psychiatric medication) and monthly meetings (case management guidance) by a supervising psychiatrist and protocol-driven care was conducted.

All initial mental healthcare assessment and management, including emergencies was done by clinic staff. Case managers accompanied ALHIV referred to psychiatric clinic and coordinated care delivery for moderate to severe conditions.

**Lessons learned:** Between 2018-2023, 312 ALHIV were served, 57% had acquired HIV during adolescence and 43% had perinatally acquired HIV. Median age was 18 years. Eighty (25.6%) were diagnosed with MHDs, mostly MDD (83.8%) and bipolar disorder (7.5%). Of these, 19/80 (23.8%) attempted suicide, commonly triggered by: HIV diagnosis, major life events and crystal methamphetamine intoxication.

Psychiatrist-delivered care reduced from 100% in phase 1 to 37% in phase 2. Half (52.5%) achieved remission of their MHD, 38.8% receive ongoing care and 8.7% refused care but remain in follow-up.

ALHIV accessibility was improved through existing provider trust, reduced stigma in accessing psychiatric services and reduced clinic visits. Monthly meetings empowered providers. The integrated CCM for mental healthcare was feasible, sustainable, and supports WHO's fourth 90 on optimizing quality of life for people living with HIV.

**Conclusions/Next steps:** Integrated mental healthcare using CCM enabled increased ALHIV mental healthcare accessibility and sustainable mental healthcare provision by HIV staff.

This model can be adapted to other youth-focused services in middle-income countries. Cost-utility analyses are underway to explore the cost-effectiveness of this model of care.

## TUPEB123

### Psychosocial challenges in the care of adolescents and young people living with perinatal HIV/AIDS in São Paulo state, Brazil

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**Background:** Adolescents and young adults who acquired HIV perinatally (YLHAP) are at a greater risk of suffering from anxiety, depression, and suicidal ideation than their unaffected peers. Improving YLHAP care requires understanding current practices and their psychosocial situations.

**Methods:** Cross-sectional study using secondary data captured from medical records from 81 reference institutions during 2022/2023; we selected a probabilistic sample composed by YLHAP ≥ 18 years (N=336), proportional to the size of the number of inhabitants of the municipalities of São Paulo state, Brazil. We examined demographic data and psychosocial risk factors for detectable HIV viral load (HIV.VL), loss of follow-up, and mental health. We use descriptive analysis and Pearson's chi-square test to address associations, p<0.05 was considered statistically significant.

**Results:** 16.8% (95CI 13.1-21.4) YLHAP had experienced stigma, 41.8% (95CI 36.5-47.3) had reported depression or anxiety, 3.1% (95CI 1.7-5.7) had ideation or attempted suicide, 35.5% (95CI 30.5-40.8) had detectable HIV.VL and 33.4% (95CI 28.5-38.8) had a loss of follow-up. No significant associations were found between age, sexual orientation, or years of schooling. Being a woman was associated with depression or anxiety (p=0.04) and being black or having less schooling was associated with detectable HIV.VL, p=0.02 and p=0.05, respectively. Psychosocial factors were broadly associated with HIV.VL, loss of follow-up and mental health illnesses (Table 1).

	HIV (n)		Loss of follow-up		Suppression or recovery		Successful initiation or referral	
	n	%	n	%	n	%	n	%
Overall	12943	76.36	12943	76.36	12943	76.36	12943	76.36
Gender								
Male	12943	76.36	12943	76.36	12943	76.36	12943	76.36
Female	12943	76.36	12943	76.36	12943	76.36	12943	76.36
Age								
<15	12943	76.36	12943	76.36	12943	76.36	12943	76.36
15-24	12943	76.36	12943	76.36	12943	76.36	12943	76.36
25-34	12943	76.36	12943	76.36	12943	76.36	12943	76.36
35-44	12943	76.36	12943	76.36	12943	76.36	12943	76.36
45-54	12943	76.36	12943	76.36	12943	76.36	12943	76.36
55-64	12943	76.36	12943	76.36	12943	76.36	12943	76.36
65+	12943	76.36	12943	76.36	12943	76.36	12943	76.36
Education								
No school	12943	76.36	12943	76.36	12943	76.36	12943	76.36
Primary	12943	76.36	12943	76.36	12943	76.36	12943	76.36
Secondary	12943	76.36	12943	76.36	12943	76.36	12943	76.36
Tertiary	12943	76.36	12943	76.36	12943	76.36	12943	76.36
Religion								
Christian	12943	76.36	12943	76.36	12943	76.36	12943	76.36
Muslim	12943	76.36	12943	76.36	12943	76.36	12943	76.36
Other	12943	76.36	12943	76.36	12943	76.36	12943	76.36

**Table 1. Case distribution according to psychosocial factors and HIV, VL, loss of follow-up, and mental health for youth who acquired HIV perinatally, Sao Paulo, Brazil.**

**Conclusions:** The experience of stigma, violence, and orphanhood are decisive factors both for YLHAP's mental health suffering and for lack of suppressing HIV replication. Being female and social vulnerabilities, such as being black or having less schooling, should be carefully considered for care. Society's collective efforts to minimize those factors can have a positive impact on harmful outcomes for YLHAP, such as suicide ideation/attempt, and loss of follow-up.

## TUPEB124

Virtual enhanced adherence counseling and viral re-suppression among children, adolescents, and young persons living with HIV at selected HIV care and treatment facilities in Nairobi, Kenya

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**Background:** Viral Suppression of children, adolescents, and young persons living with HIV (CAYPLHIV) with high viral load (HVL) remained a challenge despite in-person increased adherence sessions or direct witness ingestion (DWI). *Fahari ya Jamii* (FYJ) USAID funded project' June 2023 data for CAYPLHIV indicated viral suppression ranging from 41% to 70%.

We implemented phone-based virtual enhanced adherence counseling (VEAC) and daily medication intake reminders for CAYPLHIV with HVL as an adaptation intervention to improve viral suppression.

**Description:** From July 2023, we implemented virtual EACs and daily medication reminders in 6 high volume FYJ-supported facilities. We developed standard operating procedures for conducting virtual EACs and medication reminders. Forty-eight healthcare personnel were trained on these, including a script for VEAC. Airtime for phones was provided. We defined VL suppression as <50 copies/ml.

We linked a case manager to each child with a detectable VL (≥51 copies/ml) after obtaining caregiver consent. Clients' and case managers' phone alarms were set to remind them the timing of medications. Case managers called clients and their caregivers daily to verify if they were taking their medications as prescribed.

We assessed clients' VL results after 3 months of successful VEAC sessions. We recorded the results in the High VL register and a live Google sheet designed for VEAC progress tracking.

**Lessons learned:** Between July and November 2023, 393 CAYPLHIV with HVL were reviewed. All 393 remained active, with 100% having VL results documented. Of those tested, 338 (86%) were re-suppressed without regimen change, showing improvement across age groups (59% for 1-4yrs, 86% for 5-9yrs, 91% for 10-14yrs, 81% for 15-19yrs, and 89% for 20-24yrs). Baseline suppression improved from 63% to a re-suppression of 86% (p<0.001). Challenges in the 1-4-years category included drug palatability, side effects, caregiver factors, stigma, forgetfulness, and medication administration difficulties.

**Conclusions/Next steps:** Daily phone-based reminders and VEAC may improve VL suppression among CALHIV. Programs experiencing similar challenges within comparable contexts may benefit from this approach.

## TUPEB125

Experience of care by adolescents with virologic failure on antiretroviral in a nomadic population in northeastern Uganda

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**Background:** Adolescence is a complex developmental phase, made more complex by chronic disease. When dealing with treatment and the health impact of chronic diseases, adolescents need to learn to self-manage an array of challenges. Human immunodeficiency virus (HIV)-positive adolescents in a rural nomadic are followed-up according to the national guidelines for the treatment of HIV.

Blood monitoring revealed that adolescents on antiretroviral (ARV) treatment were persistently not virologically suppressed despite adherence and compliance being emphasized at every visit.

**Description:** During the implementation of a quality improvement initiative to improve viral suppression among adolescents, we explored the adolescents' experiences of care. We describe the perspectives of adolescents regarding the care and support in the Karamoja region, Uganda. In October 2023, individual interviews were conducted with twelve (12) adolescents with virologic failure on antiretroviral treatment across five districts.

**Lessons learned:** The adolescents reported good experiences especially regarding the support and counselling offered by the counsellors, easy access to care and good relationship with the clinic staff.

Additionally, the adolescents experienced feelings of sadness, low mood, fear, and guilt. Stigma and discrimination of adolescents living with HIV, was common at



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school, home and from the neighbors in the community. They also experienced challenges at the health facilities including lack of privacy in the clinics, and long waiting time.

**Conclusions/Next steps:** The findings suggest practical recommendations to improve the quality of care offered to adolescents on ARVs: provision of HIV education to all adolescents and family members to help reduce stigma and offer social support; a community-based approach in service delivery to reduce the stigmatizing effects of consulting rooms for HIV services. The health workers are utilizing these findings to redesign the care offered to adolescents living with HIV in order to support them to stay in care and improve their quality of life.

## TUPEB126

Who is truly new among the KP typology "newly initiated" on antiretroviral therapy? Experiences from four HIV burdened districts of Zambia

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**Background:** Zambia is at the verge of HIV epidemic control standing at 87.7%/ 98%/96.3% against the 95/95/95 UNAIDS fast track goals (ZAMSTAT, 2021). This picture stipulates good progress, though achievement against the first 95 remains sub-optimal. While course corrective measures may be fairly attainable among the general population, the situation may be more difficult among key populations especially that there remains a paucity of information about how many KPs present as newly identified positives when they are potentially not.

**Methods:** Between October and December, 2023, we undertook to review the baseline viral load (BLV) counts for all key population groups that sought HIV testing services from 12 wellness centres and service delivery points as newly identified HIV positive clients in four of the high burdened districts of Zambia. BLV of less than 1000 viral copies were considered consistent with a silent transfer where someone has been on treatment, but has elected not to disclose that they are an old client that has just moved to the locality and are in need of ART. We labelled these as old clients at the study sites while those with BLV of over 1000 viral copies were labelled as newly diagnosed.

**Results:** 206 KP files were reviewed. With the youngest being 18 and the oldest being 60 years old. FSWs were the majority with 159 records accounting for 77.2%; while MSM and TGs accounted for 19.9% and 2.9% respectively. A total of 85 (41.2%) of all KP clients were silent transfers.

Among the FSWs, 71 (44.7%) were virally suppressed at time of presentation, while among MSMs and TGs, 31.7% and 16.7% were virally suppressed. The proportion of silent transfers was almost one and a half times higher among FSWs compared to MSMs and about three times higher than among TGs.

**Conclusions:** Non-disclosure of known HIV status among KPs seeking medication is not uncommon. Prudent counselling is needed to ensure a higher likelihood of disclosure which entails leads to better and efficient use of time and other resources, and provides for an opportunity to provide appropriate care to the client.

## Antiretroviral therapies and clinical issues in neonates, infants and children

### TUPEB127

Using audits of infants diagnosed with HIV to address missed opportunities to eliminate vertical transmission of HIV in Lusaka Province, Zambia, March 2021-June 2023

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**Background:** Despite ongoing success of the Zambian prevention of mother-to-child transmission (PMTCT) program, many children still acquire HIV vertically. We explored the missed opportunities in the PMTCT program in Lusaka Province, Zambia using preliminary data from the ongoing Audit of infants diagnosed with HIV.

**Description:** Audits are conducted routinely, on all infants (0-24 months old) diagnosed with HIV in Lusaka Province, to ascertain programmatic gaps contributing to vertical HIV transmission. Trained staff abstract data from medical records of infants diagnosed with HIV using a standardized tool. We analyzed the Zambian Ministry of Health audit data for infants diagnosed with HIV in Lusaka Province from March 2021-June 2023 using R.

We describe the programmatic interventions implemented at facility, district and provincial-levels based on the gaps identified.

**Lessons learned:** Audits provided critical information regarding PMTCT missed opportunities in Lusaka Province. Of the 154 infants diagnosed with HIV, 110 (73.3%) were di-

agnosed before their first birthdays, and 147 (97.4%) were initiated on antiretroviral treatment (ART). Fifty-six (36.8%) had not received any postnatal prophylaxis (PNP). Thirty-eight (32.2%) mothers were aged below 25 years, 75 (54%) were newly diagnosed with HIV during pregnancy, delivery, or breastfeeding, and 43 (32.1%) were not on ART. Among mothers taking ART, 51 (53.1%) had reported poor adherence. Over 80% of mothers had no documented viral load (VL) result. Among the 38 mothers with a first VL result available, 24 (63%) were unsuppressed. Further, 48% of the mothers' sexual partners had unknown HIV status. Program-level interventions were instituted targeting identified gaps (Figure 1).



Figure 1.

**Conclusions/Next steps:** The audit identified missed opportunities that included inadequate infant PNP provision, new maternal HIV acquisition, suboptimal maternal ART adherence and viral suppression, and a high proportion of infants with HIV born to young mothers. Targeted program-level interventions were implemented, and ongoing monitoring will assess progress toward eliminating vertical transmission. This analysis would be beneficial to the whole Zambian PMTCT program.

## TUPEB128

### Prenatal dolutegravir-based regimen use, and pregnancy and birth outcomes: data from the Antiretroviral Pregnancy Registry

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**Background:** The objective of this analysis is to assess pregnancy and neonatal outcomes among pregnancies with pre-natal exposure to specific dolutegravir-based regimens (DBRs) using data from the APR through 31 July 2023.

**Methods:** The APR is a prospective exposure-registration cohort study, monitoring for early warning signals of major teratogenic effects of antiretrovirals used during pregnancy. DBRs evaluated include dolutegravir+lamivudine (DTG+3TC), dolutegravir+lamivudine+abacavir (DTG+3TC+ABC), dolutegravir+tenofovir disoproxil fumarate+emtricitabine (DTG+TDF+FTC), and dolutegravir+tenofovir alafenamide+emtricitabine (DTG+TAF+FTC).

**Results:** Pregnancy and neonatal outcomes by drug exposure are presented in Table 1. There were 3 DBRs with enough pregnancies to show no increase in risk for major birth defects. There was no pattern to the defects overall or in any of the exposure groups.

	DTG+3TC	DTG+3TC+ABC	DTG+TDF+FTC	DTG+TAF+FTC
Total Pregnancy Outcomes	15*	316	328	203
Live Births	13 (86.7%)	299 (94.6%)	301 (91.8%)	187 (92.1%)
Stillbirths	0	2 (0.6%)	5 (1.5%)	4 (2.0%)
Spontaneous Abortions	1 (6.7%)	5 (1.6%)	11 (3.4%)	8 (3.9%)
Induced Abortions	1 (6.7%)	10 (3.2%)	11 (3.4%)	4 (2.0%)
Total Singleton, Live Births without Defects	13	279	273	167
Gestational Age ≥ 37 weeks	12 (92.3%)	249 (89.2%)	241 (88.3%)	144 (86.2%)
Gestational Age < 37 weeks (preterm)	1 (7.7%)	30 (10.8%)	32 (11.7%)	23 (13.8%)
Birth Weight ≥ 2500 grams	12 (92.3%)	243 (87.1%)	232 (85.0%)	136 (81.4%)
Birth Weight < 2500 grams (LBW)	1 (7.7%)	31 (11.1%)	35 (12.8%)	27 (16.2%)
Birth Weight < 1500 grams (very LBW)	0	8 (2.9%)	5 (1.8%)	3 (1.8%)
Missing	0	5 (1.8%)	6 (2.2%)	4 (2.4%)
Total Live Births	13	299	301	187
Birth Defect Cases	0	10 (3.3%, 1.62% - 6.06%)	12 (4.0%, 2.08% - 6.86%)	10 (5.3%, 2.59% - 9.61%)

\*N are mutually exclusive for each regimen

Table 1. Pregnancy and neonatal outcomes of participants exposed to DBRs using APR data through 31 July 2023.

**Conclusions:** APR data do not demonstrate an increased risk of overall birth defects with use of DTG+3TC+ABC, DTG+TDF+FTC or DTG+TAF+FTC above the population expected rate of defects (2.72-4.17 per 100 live births from



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Metropolitan Atlanta Congenital Defects Program and Texas Birth Defects Registry respectively). While no definitive conclusions can be drawn on DTG+3TC use in pregnancy due to limited number of pregnancies on the regimen, the APR data on individual drugs demonstrate no increase in risk for defects.

## TUPEB129

A novel physiologically-based pharmacokinetic (PBPK) model to guide pediatric dosing for a long-acting triple-drug-in-one injectable product candidate TLC-ART-101 (lopinavir/tenofovir/ritonavir)

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**Background:** Initial Phase 1 results of the long-acting injectable TLC-ART-101, a drug combination nanoparticle (DcNP) containing lopinavir (LPV), tenofovir (TFV), and ritonavir (RTV) injected subcutaneously, demonstrated safety and tolerability. TLC-ART-101 may be considered for global pediatric long-acting HIV treatment to increase ease of dosing and adherence in a population with challenges taking daily oral medications.

Determining safe entry doses for pediatric clinical trials from adult data is challenging. Physiological changes during maturation, which can affect drug distribution, disposition, and clearance/elimination must be considered.

**Methods:** We leveraged a suite of Physiologically-based Pharmacokinetic models (PBPK, mathematical representations of physiological, and developmental variations between adults and children) for more precision beyond weight-based (allometry) dosing. PBPK models were developed and validated by the TLC-ART team. Based on drug exposures (AUC), derived from a Phase 1 TLC-ART-101 study, the PBPK model was employed to estimate the pediatric dose needed to provide equivalent drug exposure for 1-18yrs. The PBPK-based dosing also accounts for potential drug-drug interactions between protease inhibitors and aims for detectability as observed in the Phase 1 study after subcutaneous LPV/TFV/RTV 16/9.2/4.1mg dose (60, 21, and 4 days for LPV, TFV, and RTV, respectively).

**Results:** Table 1 demonstrates the differences between PBPK- or weight-based scaling for TLC-ART-101. PBPK dosing for adolescents did not differ significantly from weight-based ones, but the model suggested that the youngest group (age 1-3 years), should receive only 20% of the weight-based recommendation (e.g., 0.65 vs 3 mg-lopinavir).

Age-weight band	lopinavir		ritonavir		tenofovir	
Adults	16 mg		4.1 mg		9.2 mg	
	BW	PBPK	BW	PBPK	BW	PBPK
10-18y, or >30kg	9.0 mg	10 mg	2.0 mg	2.0 mg	4.2 mg	4.5 mg
6-14y, or 20-30kg	7.0 mg	4.1 mg	1.9 mg	1.7 mg	3.5 mg	3.8 mg
3-6y, or 14-20kg	5.0 mg	3.5 mg	3.0 mg	2.5 mg	3.0 mg	2.0 mg
1-3 y, or 10-14kg	3.0 mg	0.65 mg	2.0 mg	0.65 mg	1.8 mg	0.8 mg

BW: body-weight dose proposals (allometry); PBPK: physiologically based PK dose projection.

Table 1. Pediatric TLC-ART-101 dose to provide equivalent AUC by PBPK modeling.

**Conclusions:** Integrating ontogeny and developmental changes in metabolic and physiological parameters, we developed a range of entry doses for equivalent exposure to TLC-ART-101 in children. The PBPK approach may serve as a starting point for advancing pediatric treatment studies to mitigate risks as we advance long-acting products for children living with HIV worldwide.

## TUPEB130

Pubertal onset in children with *in utero* HIV exposure in Botswana: results of the FLOURISH study

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**Background:** Few studies have evaluated the association between *in utero* HIV/antiretroviral (ARV) exposure and pubertal onset.

**Methods:** We assessed Tanner stage (via visualization and orchidometer) in children with *in utero* HIV/ARV exposure who were uninfected (CHEU) and children HIV-unexposed and uninfected (CHUU) ages 9-11 enrolled in the FLOURISH study in Botswana. Pubertal onset was defined as reaching Tanner stage  $\geq 2$  for each puberty indicator separately for males (genitalia, pubic hair) and females (breasts, pubic hair).

Logistic regression models for each outcome were fit to assess the association of *in utero* HIV/ARV exposure with pubertal onset, adjusting for confounders. Subgroup analyses among CHEU were performed to assess the association of *in utero* ARV exposure [3-drug antiretroviral therapy (ART) vs ZDV monotherapy] with pubertal onset.


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Sensitivity analyses were conducted additionally adjusting for body mass index (BMI) Z score at Tanner assessment.

**Results:** We evaluated 337 children (238 CHEU) at a median age of 10 years (Interquartile Range:9.5-10.6). Mothers of CHEU vs CHUU were older (31.5 vs 26 years) and reported lower monthly income (60% vs. 43%  $\leq$  75 US dollars). CHEU had lower mean birth weight Z scores (-0.21 vs 0.24) and BMI Z scores at Tanner assessment (-0.33 vs 0.19) than CHUU. Among mothers of CHEU, 65% had HIV-1 RNA <400 copies/mL at enrollment, and 74% received 3-drug ART. While CHEU had higher odds of pubertal onset according to female pubic hair, no differences in pubertal onset were observed between CHEU and CHUU for all other puberty indicators (Table). Among CHEU, no differences in pubertal onset by *in utero* ARV were observed. Findings were similar in sensitivity analyses.

Exposure	Model Outcome			
	Female Breast n=153	Female Pubic Hair n=153	Male Genitalia n=100	Male Pubic Hair n=100
CHEU vs. CHUU <sup>a</sup>	aOR (95% CI) 1.07 (0.47, 2.44)	2.66 (1.01, 6.81)	0.94 (0.46, 1.91)	0.79 (0.22, 2.75)
% with onset (CHEU/CHUU)	22.9%, 59.1%	40.7%, 20.0%	50.0%, 49.1%	7.9%, 9.1%
In utero exposure to 3-drug ART vs. ZDV monotherapy <sup>b</sup>	aOR (95% CI) 1.63 (0.54, 4.96)	0.73 (0.24, 2.19)	1.00 (0.34, 2.96)	— <sup>c</sup>
% with onset (CHEU/CHUU)	70.4%, 57.1%	36.0%, 42.9%	50.7%, 48.2%	10.7%, 0%

<sup>a</sup> Adjusted for age, household income, food insecurity; <sup>b</sup> Adjusted for age, household income, food insecurity, maternal CD4, maternal viral load; <sup>c</sup> No model convergence due to quasi-separation  
aOR=adjusted odds ratio, ART=antiretroviral therapy, CHEU=children with *in utero* HIV/ARV exposure who are uninfected, CHUU=children without *in utero* HIV/ARV exposure, CI=confidence interval

**Table.** Adjusted associations of *in utero* HIV and ARV exposures with pubertal onset (Tanner  $\geq$ 2) for each puberty indicator based on logistic regression models.

**Conclusions:** In this small cohort in Botswana, we did not observe differences in pubertal onset by *in utero* HIV/ARV exposure status, or among CHEU, by *in utero* ARV exposure. Longitudinal studies will be useful to confirm these findings.

## TUPEB131

Congenital and early post-natal cytomegalovirus acquisition decreases CD4+ T-cell counts among children who are HIV exposed and uninfected (CHEU)

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**Background:** Immune dysregulation in children who are HIV exposed and uninfected (CHEU) is thought to contribute to their increased risk of morbidity and mortality from infectious diseases.

We therefore investigated the impact of cytomegalovirus (CMV) acquisition on lymphocyte populations among CHEU.

**Methods:** CHEU enrolled in the CMIS cohort (Montreal, Canada, 1997-2010) were retrospectively evaluated for evidence of CMV acquisition by CMV PCR in serum or plasma, and serology (CMV IgG and IgM) on serum from 18 months of age. Infants were classified as CMV-positive (CMV+) if

any test (PCR and/or IgG) was positive by 2 years of age, and as having acquired congenital CMV (cCMV, PCR positive before 3 weeks of age), or early postnatal CMV (PnC-MV, PCR positive by 2 months of age). For a subgroup of infants with available samples, lymphocyte subsets were assessed by flow cytometry at 2 and 24 months of age.

**Results:** Among 396 CHEU evaluated, 72(18.2%) were CMV+ by 2 years of age including 7 cCMV acquisition, 5 early PnC-MV acquisition, and 60 CMV acquisition after 2 months of age. At 2 months of age (n=330), while total CD3+ T-cell and CD19+ B-cell frequencies were similar between CMV+ and CMV- infants (61% vs 66%, p=0.82 and 29% vs 24%, p=0.51), CMV+ infants had significantly higher frequencies of CD8+ T-cells (25% vs 15%, p<0.01), lower frequencies of CD4+ T-cells (34% vs 49%, p<0.01), and lower CD4/CD8 ratios (1.72 vs 3.25, p<0.01).

At 2 years (n=99), significant differences in lymphocyte differentiation remained between CMV+ and CMV- children, with higher frequencies of CD8+ T-cells (25% vs 17.5%, p<0.01), lower frequencies of CD4+ T-cells (36% vs 41.5%, p<0.01), and lower CD4/CD8 ratios (1.38 vs 2.33, p<0.001). At both 2 months and 2 years of age, these differences remained statistically significant after adjustment for gestational age, maternal CD4 count and viral load at delivery.

**Conclusions:** CMV acquisition was common in this cohort of non-breastfed CHEU in a low seroprevalence setting, and significantly altered lymphocyte subpopulations at 2 months and 2 years of age.

Future research is needed to determine the potential clinical impact of these changes in high CMV and HIV seroprevalence settings.

## TUPEB132

The effect of viremia, immunosuppression, and dolutegravir on risk of virologic failure in children and adolescents living with HIV on antiretroviral therapy in sub-Saharan Africa (CLOVES), a multicenter cohort study

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**Background:** Children and adolescents living with HIV (CALHIV) make up an increasing proportion of new HIV infections worldwide. Strategies to predict and prevent viremia in CALHIV are essential to limiting the spread of HIV.







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**Methods:** A retrospective chart review was performed on data collected from October 2004 to December 2022 from the Baylor College of Medicine Children's Foundation – Tanzania sites in Mbeya and Mwanza. CALHIV (0-19 years of age) on antiretroviral therapy (ART) for  $\geq 6$  months, with  $\geq 2$  total viral loads (VL), were included.

Multivariable logistic regression modeling was performed to evaluate the risk factors for virologic failure (VF) (defined as VL  $\geq 1000$  copies/mL); odds ratios (OR) with 95% confidence intervals (CI) are presented.

**Results:** A total of 2825 CALHIV were included in the analysis (median age 13.1, 52.5% female). A history of low-level viremia (LLV) (50-999 copies/mL) increased the risk of current VF (OR 2.07 [1.27, 3.38]), as did a history of VF (OR 4.38 [2.81, 6.81]). Other factors associated with increased VF risk included using an alternate 1<sup>st</sup> line ART regimen (OR 2.70 [1.64, 4.45]) or 2<sup>nd</sup> line (OR 2.25 [1.53, 3.31]) and immunosuppression with CD4 of 200-499 cells/mm<sup>3</sup> (OR 1.54 [1.01, 2.37]) or  $< 200$  cells/mm<sup>3</sup> (HR 1.96 [1.09, 3.65]). Adolescents aged 15-19 years were at higher risk of VF (OR 1.89 [1.15, 3.11]) and dolutegravir (DTG)-based ART regimens were protective (OR 0.40 [0.30, 0.54]). The incidence rates (IR) of current VF (per 1000 person-years) were 9.55 (6.55, 24.24), 16.82 (12.64, 22.39), and 30.26 (25.83, 35.43) for VL always  $< 50$ , history LLV (no VF), and VF respectively. The IR of current VF was 29.66 (18.68, 47.07) at  $< 1$  year and reached 10.75 (4.48, 25.83) by 2-3 years since last LLV. For time since VF, IR was 69.62 (56.29, 86.11) at  $< 1$  year and dropped to 8.06 (4.58, 14.20) by  $\geq 4$  years.

**Conclusions:** Risk of current VF increased with history of LLV or VF. Risk of VF returned to near-baseline in 2 years after LLV and 4 years after VF. Other factors associated with VF include non-standard or 2<sup>nd</sup> line ART regimen, being on a non-DTG regimen, immunosuppression, and age 15-19 years.

## TUPEB133

Transformation of 3 current short-acting HIV drugs, tenofovir-alafenamide, lamivudine and dolutegravir into a novel, all-in-one long-acting 3-drug-combination in a single injectable formulation that produces extended pharmacokinetics

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**Background:** Long-acting injectable antiretroviral therapy is a significant step towards reducing HIV stigma and promoting ART adherence. The current option, LA-cabotegravir and LA-rilpivirine faces challenging global im-

plementation due to clinic-required injections, drug resistance, cost, and distribution. WHO has an ongoing initiative to distribute the oral single-tablet-regimen TLD (tenofovir disoproxil fumarate, lamivudine-L & dolutegravir-D). Dolutegravir has a higher barrier to resistance than cabotegravir, but oral TLD requires daily dosing; the pro-drug tenofovir-alafenamide (TAF) provides lower tenofovir blood levels which may be safer in pediatric populations than TDF.

The goal of this study is to develop a long-acting TAF-LD 3-drug all-in-one combination.

**Methods:** The TLC-ART program's drug combination nanoparticle platform (DcNP) enables transformation of current HIV drugs into a combined single suspension. The DcNP technology stabilizes multiple HIV drugs with disparate physical-chemical properties, including water-insoluble lopinavir, ritonavir, efavirenz, atazanavir, dolutegravir, and water soluble tenofovir and lamivudine) using biocompatible lipid-excipients.

TAF-LD-DcNP product was prepared by:

1. Dissolving TAF, lamivudine, and dolutegravir with lipid-excipients (distearoyl-phosphatidyl-choline (DSPC) and distearoyl-phosphatidyl-ethanolamine derivatized with polyethylene-glycol (mPEG<sub>2000</sub>-DSPE)) in hydrated-alcohol, followed by a controlled solvent-removal process to produce TAF-LD-DcNP powder;
2. The particle-size of TAF-LD-DcNP in saline suspension was reduced via high pressure homogenization.

*M. nemestrina* (~5-8 kg, n=2) were given a single subcutaneous injection of TAF-LD-DcNP (10.6/8.5/9.3 mg/kg) and a plasma time course was determined over 8 weeks.

**Results:** The TAF-LD-DcNP suspension had a mean diameter of ~60-80 nm and a pH of 6.8, appropriate for a stable, injectable TAF-LD product. Compared to the free form of TAF, L, and D, the subcutaneous DcNP formulation demonstrated a long-acting plasma time course for all 3 drugs in non-human primate (NHP) studies.

While NHP plasma TFV (active form of TAF)-LD profile for DcNP dosage-forms were different for each drug, at the dose tested all 3 drugs sustained concentrations for 4 weeks above EC<sub>50</sub>. No injection site reactions or notable laboratory safety or blood cell anomalies were observed.

**Conclusions:** We successfully transformed TAF-LD from short-acting to long-acting utilizing DcNP technology. The TLC-ART program anticipates clinical development of this single combination subcutaneous injection, especially focused on pediatric populations.

## TUPEB134

Implementation of Directly Observed Therapy (DOTS) in Haiti using geo-localization to improve viral suppression amongst children living with HIV

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**Background:** As adherence to HIV Antiretroviral Therapy (ARVs) remains the most significant burden and common cause of unsuppressed viral load in children and adolescents living with HIV (CALHIV), community-based solutions targeting these populations combined with psycho-social support are needed. In lower-middle-income countries, like Haiti, with limited access to health centers due to long distances and socio-economic barriers, programs like DOTS which often involves in-person visits to an HIV-positive client to boost ARV adherence, should be considered.

**Description:** The USAID-funded Impact Youth project, led by Caris Foundation, collected data on the outcome of the DOTS strategy on viral suppression in CALHIV enrolled over 26 months. Viral load was used as a measurement tool. A mobile open-source smartphone app 'Commcare' was used, which enables GPS data to geo-localize the selected beneficiaries and records longitudinal data. This enabled rapid tracking of DOTS-eligible OVC when reviewing viral load results and for enrolled clients to be monitored in real-time by program managers to assess their progress.

We conducted a multicenter retrospective analysis on HIV positive children under 15 years old on ARVs with a viral load of over 1000 copies/ml in health centers in Haiti. Eligible clients were monitored via in-person visits or phone calls during three months. Virologic response was quantified and Kaplan-Meier curves were used to assess differences in viral suppression.

209 participants, mean age 6.1 years and median viral load 4.2 log<sub>10</sub> copies/ml were enrolled.

**Lessons learned:** Overall, 94% of the participants had achieved viral suppression with a mean turnaround time (TAT) of 4.4 months. After adjusting for other covariates, the factors significantly associated with shorter TAT were lower viral load at entry and being on DOTS-visits.

**Conclusions/Next steps:** This study indicates that DOTS-based adherence support is an effective way to improve suppression among pediatric clients on ARVs. The overall viral suppression rate among HIV positive children on DOTS (94%) almost meets the 95% target of UNAIDS.

Future studies could be conducted to include other aspects and community support such as psycho-social and nutritional assistance, to understand more reasons for the refusal of DOTS and/or non-adherence.

## Clinical issues specific to key populations

### TUPEB135

Sexualised substance use (chemsex) is associated with a high burden of syphilis and other sexually transmitted diseases: exploratory data from Checkpoint BLN, Berlin, Germany

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**Background:** Many mostly young people come in large numbers from all over Europe to Berlin to attend so-called "sex-positive parties" (clubs, queer parties or sex-on-premises locations) during their stay. There has been an increase in sexually transmitted infections (STI) and an increase of psychoactive substances use for sexual purposes (including chemsex) in certain queer communities in Berlin. Checkpoint BLN (CP) is a community-based voluntary counselling (CBVCT) with testing and treatment of STIs for LGBTI communities and is highly frequented by the corresponding queer community.

**Methods:** We retrospectively analysed clinical data and evaluated questionnaires completed at each CP visit between 1.1.2022 and 31.12.2022. We collected the positive STI test results from all visits and compared prevalences of chlamydial (CT), gonococcal (NG) infections, syphilis (TP) and socioeconomic and behavioural data between those who reported chemsex substance use (CSU) and those who did not (NCSU). ChemSex was defined as the use of the following substances for sexual purposes: methamphetamine, ketamine, GBH/GBL, mephedrone and cocaine.

**Results:** Of 5045 visits for STI-check ups at Checkpoint BLN in 2022, 677/5054 (13%) reported CSU on their last sexual encounter. The overall prevalence for at least one STI was 15% (769/5045) with the highest burden (30.3%, 233/769) of positive results in the chemsex group (OR 2.90, CI95%: 2.47-3.4;  $p < 0.001$ ). No difference was found between the groups with regard to PrEP use.

**Characteristics of the CSU:** The average age was 30.2 years (range: 19-57), 431/671 (64 %) stated that they were cis-male and 430/677 (64 %) stated that they were gay/bisexual. Most patients were of European and German origin (38%; 24%). Among Europeans, the country of origin was mainly the United Kingdom (34%), Spain (21%) and Italy (10%). Of these, 173/677 (27%) did not have health insurance.

**Conclusions:** Chemsex use is associated with a high burden of syphilis and other sexually transmitted diseases. To ensure a link to care for CSU as a vulnerable group for STIs, it should become an international standard to regularly address sexual habits and substance use openly and without prejudice during medical visits, thus enabling a discussion to ensure a link to care.



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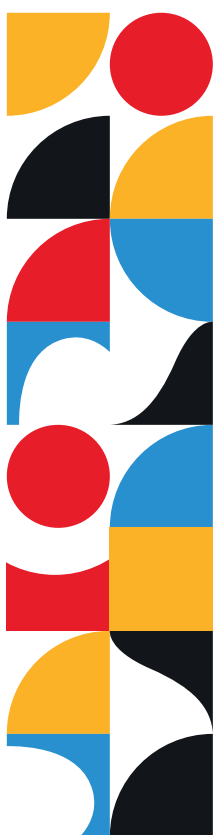
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## TUPEB136

Enhancing PrEP uptake and reducing HIV prevalence among people who inject drugs in Uganda: a community drug distribution point model

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**Background:** In Uganda, the prevalence of HIV among people who inject drugs (PWID) stands at a concerning 17%. Contributing factors include needle sharing, risky sexual behaviors, and poor health-seeking behaviors. Pre-exposure prophylaxis (PrEP) has proven highly effective, reducing the risk of HIV transmission by up to 99% through sex and by 74% among PWID.

To address this issue, the Uganda Harm Reduction Network (UHRN) implemented a novel approach called the Community Drug Distribution Point (CDDP) model at our drop-in centers.

**Description:** Our community drop-in centers serve as CD-DPs, providing PrEP refills to HIV-negative PWID. Leveraging peers from the community to distribute PrEP refills ensures accessibility and adherence monitoring. Additional support, including monitoring and psychosocial assistance, is offered to a specified client group. Those clinically stable, without side effects, opportunistic infections, and with a stable weight (a 5% loss between the last three visits), are eligible for PrEP refills at the drop-in center.

**Lessons learned:** Implementation of the CDDP model has led to a reduction in stigma and discrimination against PWID taking PrEP within the community. The program addresses self-stigma among PWID on PrEP and minimizes clients' waiting time by serving a smaller group at designated times.

**Conclusions/Next steps:** PrEP refills through the CDDP model have strengthened the provider-client relationship, empowered PWID communities to take ownership of the program, and complemented HIV/AIDS prevention efforts through condom distribution, information dissemination, and community mobilization.

This innovative approach offers a promising avenue for scaling up PrEP services and reducing HIV prevalence among PWID in Uganda.

## TUPEB137

Vulnerability and psychological distress of female sex workers in Côte d'Ivoire

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**Background:** Despite the vulnerability of female sex workers (FSW), there is limited literature on the mental health conditions of this population.

This study aims to describe the prevalence of psychological distress among FSWs in Côte d'Ivoire and identify associated factors.

**Methods:** The ANRS 12381 PRINCESSE project (2019-2023) evaluated a community-based sexual and reproductive healthcare delivery through mobile clinics operating in prostitution sites in San Pedro and surrounding areas, Côte d'Ivoire, with a single-arm intervention cohort of FSW aged ≥18. FSWs were invited to complete a socio-behavioural questionnaire.

The Patient Health Questionnaire (PHQ-4) was used to categorise signs of psychological distress (none, mild, moderate, severe) based on four questions: 2 on anxiety symptoms ('feeling nervous/anxious'; 'unable to stop worrying') and 2 on depressive symptoms ('having little interest/pleasure in doing things'; 'feeling down/depressed/hopeless').

Multivariate logistic regression was used to identify factors associated with experiencing signs of psychological distress.

**Results:** Of the 489 FSWs included, 253 completed at least one questionnaire, and 32% reported mild signs of psychological distress (68% no sign). Focusing on the 230 FSWs with no missing data, factors associated with experiencing signs of psychological distress were: older age (8% psychological distress among those aged 19-24 vs 32% among those aged 25-30 (aOR=4.8 [95% CI=1.2-26.2]), 36% among those aged 31-40 (aOR=6.3 [1.7-33.8]), and 64% among those aged ≥41 (aOR=15.4 [3.3-94.7])), perceiving their financial situation as very difficult versus just getting by (43% vs 13%, aOR=4.4 [1.4-15.4]), being HIV-positive (63% vs 28%, aOR=5.5 [1.9-17.8]), engaging in sex work irregularly vs daily (62% vs 27%, aOR=3.9 [1.4-11.3]), reporting violence from a regular partner (62% vs 29%, aOR=5.1 [1.7-15.8]) or friends/family (49% vs 29%, aOR=2.9 [1.2-7.4]), poor vs good emotional support (73% vs 29%, aOR=3.7 [1.1-13.7]), very low vs moderate or higher self-esteem (65% vs 26%, aOR=6.9 [2.0-26.7]).

**Conclusions:** Although the PHQ-4 is not a diagnostic tool, the results highlight that 1/3 of FSWs experienced signs of psychological distress.

It underlines the need to integrate targeted mental health screening and intervention into health care programmes offered to FSWs, especially for those isolated, precarious, older, HIV-positive and/or experiencing violence.

## TUPEB138

### Sexual transmitted infections among female sex workers: differences among transgender and cisgender women

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**Background:** Female sex workers (FSW) are at high risk of acquiring sexually transmitted infections (STI) due to work-related factors including multiple sexual partners, sex work initiation at early age and condomless sex. Gender-specific vulnerability, discrimination and marginalization limit access to health services.

We aimed to evaluate the prevalence and compare the differences of STI in a cohort of cisgender (CGW) and transgender (TGW) FSW.

**Methods:** "MAS por Nosotras" is an ongoing cohort aiming to evaluate the sexual and reproductive health of FSW, in Buenos Aires, Argentina. Each visit includes collection of medical and psychosocial information, including STI testing (HIV, HBV, HCV, syphilis, HPV, Neisseria gonorrhoeae -NG- and Chlamydia trachomatis -CT- infections). Data from the baseline visit is presented.

**Results:** Between June-December, 2023, 116 FSW were enrolled, 61 TGW (52.6%) and 55 CGW (47.4%). Median age was: TGW 29 [IQR 24-37], CGW 41 [IQR 33-50], ( $p<0.001$ ). Median age at sex work initiation was: TGW 18 [IQR 15-20], CGW 23 [IQR 20-30], ( $p<0.001$ ); overall median years on sex work: 12 [IQR 6-19].

In the previous month, 51.7% of TGW and 26% of CGW had >20 sexual partners ( $p=0.006$ ), while 55.7% of TGW and 47.3% of CGW reported having condomless anal or vaginal intercourse respectively. 26.8% of TGW and no CGW were on PrEP.

STI prevalence at baseline are in the table.

STI	All participants	TGW	CGW	p
Any	53.4%	70.5%	34.5%	<0.001
HIV	20.7%	37.7%	1.8%	<0.001
HBV	Chronic: 1.8%	3.4%	0%	0.5
	Resolved: 10.6%	13.6%	7.4%	0.3
Syphilis	16.1%	27.1%	3.8%	0.001
HPV	Anal: 31.3%	43.5%	14.8%	0.006
	Cervical: 16.3%	-	16.3%	-
NG	4.3%	5.0%	3.6%	>0.9
CT	1.1%	0%	2.4%	0.4

Three new HIV diagnoses but no HCV infection were detected. NG sites were: anal 3.2%, cervical 4.1%, urethral 1.9%, and oropharyngeal 0.9%. The only CT infection was anal.

**Conclusions:** We present a cross-sectional study on STI on FSW in Argentina. Use of Prep was limited and condomless sex high. TGW had a higher overall STI prevalence including HIV, syphilis and anal HPV, reflecting the need of expanding and tailoring prevention strategies with a gender-focused perspective.

## TUPEB139

### Prevalence and clinical and psychosocial factors related to use of liquid silicone injections among transgender women in the TransCITAR cohort in Argentina

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**Background:** The use of liquid silicone injections (LSI) has been widely reported by transgender women (TGW). Progress in injectable long-acting HIV prevention and treatment for key populations underline the need to better understand these practices. This work aimed at analyzing LSI prevalence and associated factors in TGW from TransCITAR in Buenos Aires, Argentina.

**Methods:** TransCITAR is a cohort designed to assess physical and mental health among transgender people in Argentina. TGW enrolled from September/2019-2022, completed a basal questionnaire on socio-demographics, substance use (AUDIT≥8; DAST-10≥3), depression (CES-D≥16), clinical variables (i.e., HIV, gender-affirming hormone therapy [GAHT]) and gender identity stigma. Bivariate analysis and a multivariate model were conducted to explore associations with LSI.



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**Results:** The sample included 413 TGW; 50.8% (n=210) reported ever LSI. LSI users had a mean age of 34.97 years (SD 8.96) vs. 29.71 years (SD 8.73) for non-users. Socio-demographics characteristics were: 50.4% incomplete high school or lower education, 31.5% foreign-born, 68.7% internal migrants, 37.4% current sex work, 85.6% public healthcare.

Regarding clinical characteristics, 36.3% were receiving GAHT and 43.3% positive for HIV and syphilis. LSI was independently associated with being foreign-born, internal migration, incomplete high school, social and income assistance, public healthcare, currently engaging in sex work, discrimination from security forces, hazardous drinking, lifetime cocaine use, and living with HIV.

LSI was negatively associated with lifetime GATH. In the multivariable model, sex work (aOR=4.609, 95%CI=1.846-11.505); internal migration (aOR=4.199, 95%CI=1.604-10.966); and age (aOR=1.121, 95%CI=1.054-1.191) remained associated with LSI.

**Conclusions:** TGW from TransCITAR presented a high prevalence of LSI. These TGW also showed significantly high psychosocial vulnerability, thus contributing to increased risk of HIV acquisition. Since this population could especially benefit from long-acting injectables for prevention or treatment it is crucial to promote educational tools about the impact of LSI use on the efficacy and effectiveness of such interventions.

## TUPEB140

Retention in care and access to preventive strategies in foreign versus Italian-born people living with HIV in an Italian public healthcare unit

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**Background:** This study aims to assess the disparities in retention in care and access to prevention strategies, specifically the vaccination program, among foreigners and Italians living with HIV.

**Methods:** Retrospective observational study conducted at the Infectious Diseases Unit of S.Paolo Hospital, Milan, Italy, from Jan-2016 to Jun-2021, including all the people with HIV (PWH) who attended at least one visit/blood test. Endpoints:

1. Incidence rate (IR) of Lost to HIV care (LC): not having a visit or lab examination for at least 12 months, excluding transfers to other centers/institutions;
  2. Probability of being re-engaged in care;
  3. Probability of accessing the unit's vaccination program.
- Unadjusted and adjusted Poisson regression models to investigate differences in incidence rate of LC and Cox regression models for compare access to vaccination program in foreigners versus Italians.

**Results:** 1600 PWH included, 416 being foreigners (26%). 346 PWH had at least one LC (21.6%) for a total of 378 events in 6292 person-years-follow-up(PYFU). The LC incidence was 98x1000PYFU for foreigners and 49x1000PYFU for Italians.

Adjusting for age, sex, AIDS, and transmission mode, foreigners exhibited twice the LC incidence compared to Italians (aIRR=1.88,95%CI 1.49-2.36).

Stratifying for area of origin, people from sub-Saharan Africa, Latin America and Eastern Europe showed a higher aIRR of LC (2.36, 2.15 and 1.63, respectively).

After a median of 1.3 years, 130/378 (34.4%) PWH were re-engaged in care, with no significant difference in re-engagement probability in the two groups (p=0.202). Upon re-engagement: 25.7% of foreigners decreased CD4 levels<350cell/mm<sup>3</sup>, as compared to 10.9% of Italians (p=0.056), HIV-RNA increased above 200cp/mL in 29.4% and 16.9%, respectively (p=0.140), overall only 5 clinical events were observed.

672 PWH (47.3%) attended the vaccination program (50.2% of the Italians and 38.6% of the foreigners,p<0.001). After adjusting for age, sex, AIDS, HIV epidemiology, the Cox regression model indicated a non-statistically significant reduced probability of entering in the vaccination program among foreigners (aHR=0.86;95%CI 0.70-1.05;p=0.131).

**Conclusions:** Foreigners with HIV face increased vulnerability, showing higher risks of loss to follow-up and lower adherence to health programs. This emphasizes the need for targeted efforts to mitigate these disparities and improve outcomes in this fragile population.

## TUPEB141

New stressors can precipitate or exacerbate post-traumatic stress disorder in persons living with HIV

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**Background:** With the onset of the COVID pandemic, many persons living with HIV were reporting symptoms suggestive of post-traumatic stress disorder (PTSD). They felt the restrictions and stigma of the COVID pandemic caused them to reflect back to stress at the time of their HIV diagnosis. The extent to which this was a concern was uncertain.



**Methods:** Participants of the two cohorts were invited to participate in a COVID sub-study at their cohort visit. As part of the sub-study they completed the PCL (PTSD checklist) - a 17-item self-report checklist of PTSD symptoms based closely on the DSM-5 criteria.

Respondents rate each item from 0 ("not at all") to 4 ("extremely") to indicate the degree to which they have been bothered by that particular symptom over the past 6 months. They were instructed to answer the questions as it related to their HIV diagnosis. For example: "how often have you felt as if a stressful experience related to your HIV were happening again or you were reliving it." The numbers are summed to indicate the degree of PTSD.

**Results:** 454 participants completed the questionnaire at the baseline visit for the COVID sub-study between February 2021 and March 2023 including 133 from CTN 314 and 321 from CTN 222.

PTSD score	CTN222= Canadian HCV Co-Infection participants	CTN314=CHANGE HIV (Aging with HIV Study) participants
None (0-17)	23 (7.2%)	17 (12.8%)
Minimum (18-20)	38 (11.8%)	28 (21.1%)
Mild (21-29)	102 (31.8%)	55 (41.4%)
Moderate (30-49)	122 (38.0%)	26 (19.5%)
Severe (50-86)	36 (11.2%)	7 (5.3%)

**Conclusions:** During the COVID pandemic the majority of persons living with HIV in our cohorts experienced symptoms of PTSD related to their previous HIV diagnosis, a substantial number in whom it was moderate-to-severe. We found PTSD symptoms to be higher in those with underlying HCV infection than those who were aging with HIV.

## Other strategies and therapies

### TUPEB142

Mental health ratings before, during and after analytical treatment interruptions in HIV cure trials

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**Background:** Limited data suggest that analytical treatment interruptions (ATIs) in HIV cure trials raise psychological concerns (e.g., worry of high viral loads and their

consequences, risk of forward transmission when U=U is broken). To overcome this informational gap, we elicited participants mental health ratings before, during, and after such ATIs.

**Methods:** Between 2020 and 2023 in San Francisco, CA, we surveyed 10 adult participants in the UCSF-amfAR Combinatorial Therapy Trial (NCT04357821), an experimental interventional study to induce sustained HIV control without antiretroviral therapy (ART); and 15 adult participants in the SCOPE-ATI Study (NCT04359186), a prospective observational study to identify biomarkers of viral rebound. ATIs lasted 4 to 52 weeks.

We planned *a priori* to pool data with an identical longitudinal survey schedule:

1. Baseline;
2. Prior to the ATI;
3. During the ATI; and,
4. At ART re-start.

We used the 7-item generalized anxiety disorder measure (past 2-week symptom measure) at baseline and the 6-item State-Trait Anxiety Inventory (a measure of present anxiety, rather than past) at subsequent visits. Depression was measured with an 8-item Patient Health Questionnaire (PHQ-9, deleting suicide ideation measurement).

**Results:** Participants (N=25) were mostly White (95%), non-Latino (70%) with at least some college or higher (78.2%) and male (96%). Baseline depression (M=7.76, SD=5.30) and anxiety (M=6.76, SD=4.98) were mild. Prior to the ATI, depression (M=7.04, SD=4.8) and anxiety (M=6.88, SD=3.17) remained mild.

During the ATI, depression (M=4.9, SD=5.18) fell just below the mild severity threshold while anxiety (M=7.71, SD=2.92) increased within this category. At ART restart, depression increased within the mild category (M=8.23, SD=4.10) and anxiety remained constant (M=7.05, SD=2.16).

Study differences were present. SCOPE-ATI ratings were higher than UCSF-amfAR ratings; however, in both studies, anxiety increased during the ATI. Sample variability and the fact that one study was observational while one was interventional may explain mean differences between them.

**Conclusions:** Overall, participants experienced mild anxiety and depression during HIV cure trials with ATIs. Whether ATIs induced mental health symptoms is yet to be determined.

However, monitoring and addressing mental health symptoms are necessary to mitigate associated ATI risks and support study retention and completion of ATI HIV cure trials.





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## ART resistance

### TUPEB144

Discordance of proviral DNA and plasma RNA genotyping for detection of drug resistance mutations (DRM) more important in persistent low-level viremia (PLLV)

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**Background:** PLLV is not uncommon among individuals receiving antiretroviral therapy (ART) and may be associated to inflammation, immune activation, and increased rates of virological failure. Antiretroviral (ARV) susceptibility may be detected by genotyping but RNA sequencing may be difficult in this setting where proviral DNA may provide an alternative source of genetic information.

**Methods:** Paired RNA/DNA sequences from samples from (i) ART naïve patients, (ii) virological failure or (iii) PLLV (two or more VL 50-1000 copies/mL) were obtained after independent RNA/DNA extractions (Qiagen), followed by retrotranscription with Superscript II (for RNA), nested PCR amplification, Big dye termination and Sanger sequencing. The sequences were edited at REcall and analyzed at Stanford HIV db for DRMs. Genetic distance were evaluated at Bioedit.

**Results:** RNA/DNA paired sequences from 72 samples were collected from 2017-2022 (Table 1)

	TOTAL 72	VL <1K N=36	VL >1K N=36	p
Age (IQR)	42 (30 – 50)	49 (40 – 54)	33 (26 – 43)	0.0001
Male (%)	46 (64%)	24 (67%)	22 (61%)	0.62
On ART	53 (74%)	35 (97%)	18 (50%)	<0.0001
Time (years) on ART	6.0 (0 – 8)	7.8 (4.1-12.6)	7.0 (1.0- 8.1)	0.06
VL*	848 (200 – 34679)	200 (112 – 339)	34679 (11582 – 247772)	<0.0001
Last CD4+** (IQR)	385 (195 – 651)	349 (242 – 778)	373 (158 – 574)	0.20
Subtype non-B***	25 (35%)	11 (31%)	14 (39%)	0.45

Results as median (IQR) or percentage; ART, antiretroviral therapy; VL, viral load \*VL results were obtained via RT-PCR (Abbott); \*\*Last CD4+ count was obtained via BD FACSCalibur; Person chi and Mann-Whitney tests were executed by Stata software; \*\*\*Subtype non-B (7C and 8F) includes recombinants (1BC and 9BF).

Table 1. Demographic information.

The genetic distance of sequences among those with VL<1K was 0.0084 (0.006-0.02) and 0.003 (0.001-0.01) for VL>1K (P=0.01). Discordance pol DRM was documented in 55% of paired sequences, 11% with more DRMs at proviral DNA, and 43% with more DRMs at plasma RNA sequences. Samples from naïve patients had a lower distance, 0.002 (0-0.007, p=0.0008) than treated cases. Discordance tends to increase with time on treatment (P=0.003). DRMs to

NRTI, used in all regimens, were discordant in 40% (1-6 discordant DRM to NRTI), of 35 samples with VL<1K and 11% of 18 with VL>1K (1-2 discordant DRMs, p=0.001). Discordance in DRM for NNRTI or PI was also higher among samples with VL <1K.

**Conclusions:** Although proviral DNA genotyping is practical and informative, discordance between plasma RNA and proviral DNA DRM identification is common and more pronounced in low-level viremia where its use could provide an alternative to RNA genotyping.

### TUPEB145

HIV drug resistance trends among 294 treatment experienced children and young adults (0-24) in the first decade of a national pediatric HIVDR program

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**Background:** Treatment-experienced clients are failing antiretroviral therapy (ART) throughout Sub-Saharan Africa. The resulting HIV Drug resistance mutations (DRMs) present an urgent need for access to genotyping, and robust treatment options, to provide successful individualized lifelong treatment in our most vulnerable clients living with HIV.

This abstract looks at early resistance trends in our treatment experienced pediatric and young adult clients in Eswatini (0-24 years).

**Methods:** This is a retrospective review of electronic medical records and genotype results from Baylor Children's Foundation-Eswatini and referrals from other facilities in Eswatini. All genotypes are from treatment-experienced clients, 0-24 years old, with at least two detectable viral loads on Protease Inhibitor (PI) or Dolutegravir (DTG)-based ART. Genotypes were done through the National Reference Laboratory in South Africa using dried blood spot (DBS) specimens in alignment with National Treatment Guidelines. Stanford HIVdb Program was used to calculate predicted activity of ART.

**Results:** Genotypes were performed in 294 clients between January 2014 and January 2024 (44% (128/294) female; 56% (166/294) male). Fifteen percent (44/285) showed intermediate level or higher resistance to LPV/r; 9% (4/44) of those also showed intermediate or higher resistance to DRV/r.



Most common PI mutations were I54V (33), V82A (32), M46I (31). Integrase Strand Transfer Inhibitor (INSTI) resistance testing was performed on 33 samples. Six percent (2/33) had intermediate or high level DTG resistance due to the following mutations: E138AK(2), G140A(1), Q148R(1), R263K(1). Intermediate or high resistance to Rilpivirine (RPV) was observed in 30% of genotypes (85/285) despite no clients being on non-nucleotide reverse transcriptase inhibitors (NNRTI) at the time of sample collection. Most common nucleotide reverse transcriptase inhibitor (NRTI) mutations were M184V (130), M41L (28), D67N (25), T215Y (24).

**Conclusions:** Trends in DRMs in Eswatini give insight into future effective ART for treatment-experienced clients and may inform national policies regarding sequencing of ART moving forward.

Pediatric surveillance resistance testing is needed in Eswatini and the region to inform national ART optimization guidelines and advocacy for access to novel treatment options for our most vulnerable clients.

## TUPEB146

Low prevalence of integrase strand transfer inhibitors resistance associated mutations in Botswana before the roll out of dolutegravir based first line antiretroviral therapy

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**Background:** The recommended first-line antiretroviral therapy for people living with HIV (PLWH) in Botswana has involved the use of Dolutegravir(DTG), an Integrase strand transfer inhibitor (INSTI), in combination with nucleoside reverse transcriptase inhibitors (NRTIs), since June 2016. The transition to DTG-based regimens necessitated an assessment of prevalence of baseline INSTI drug resistance mutations (DRMs) before wide rollout of DTG based antiretroviral therapy.

**Methods:** We analyzed HIV-1 proviral sequences to identify the presence of INSTI DRMs from INSTI-naïve people living with HIV-1 in the Botswana Combination Prevention

Project (BCPP) during the years 2013 to 2018. INSTI DRMs were defined according to the Stanford University HIV drug resistance database.

**Results:** A total of 5144 HIV-1 sequences were included into our analysis, (n = 1281 ART-naïve and n = 3863 NNRTI ART-experienced participants). The overall prevalence of major resistance mutations to INSTIs was 1.1% (57/5144). We identified participants exhibiting high-level drug resistance to cabotegravir (0.72%, 37/5144), Elvitegravir (0.16%, 8/5144), and Raltegravir (0.08%, 4/5144), while no high level resistance to DTG and Bictegravir was observed. Seventeen individuals (0.33%, 17/5144) additionally exhibited mutations in the reverse transcriptase (RT) gene, with 13 in the non-nucleoside reverse transcriptase inhibitor (NRTI), 3 in the nucleoside reverse transcriptase inhibitor (NRTI) and 1 in the Protease Inhibitor gene.

The prevalence of INSTI mutations in ART-naïve was 1.64% (21/1281), while in ART-experienced participants, was 0.93% (36/3863). Among the ART-naïve participants the following major DRMs were detected, E138K (2/1281; 0.16%), G140R (8/1281;0.62%) , E92G (2/1281; 0.16%) , E92Q (2/1281; 0.16%) , R263K (5/1281; 0.4%) , N155H (1/1281; 0.08%) , P145S (1/1281; 0.08%). Additionally, accessory mutations G163R and A128T were found in 0.08% (1/1281, each).

Among the ART-experienced individuals, major INSTI DRMs were detected were as follows: E138K (4/3863; 0.10%), G140R (25/3863;0.65%), G118R (2/3863;0.05%), R263K (4/3863, 0.10%), T66I (1/3863; 0.03), E138K+G140R (1/3863, 0.03%), G140R +R263K (1/3863, 0.03%). In addition, 6/3863 (0.16%) participants had G163R accessory mutation.

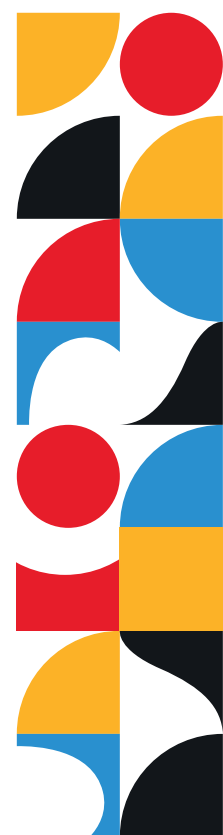
**Conclusions:** The overall prevalence of INSTI DRMs in Botswana is low. Our findings support the widespread adoption of dolutegravir-based regimes, although surveillance of INSTI DRMs is encouraged.

## TUPEB147

Acquired HIV drug resistance among adults receiving dolutegravir-based ART in Haiti: findings from a nationally representative survey 2019-2020

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**Background:** Despite the potency of dolutegravir-based antiretroviral therapy (ART), some clients will fail treatment and select for HIV drug resistance (HIVDR). We estimated the prevalence of drug resistance among virally non-suppressed (viral load of <sup>3</sup>1000 copies/ml) people living with HIV (PLWH) receiving dolutegravir-based ART in Haiti.







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**Methods:** Following WHO survey guidance, we conducted a viral load laboratory-based acquired HIVDR survey, which leveraged remnant viral load specimens obtained for clinical purposes from adults (age >15 years) receiving dolutegravir-containing regimens for at least 6 months and having a routine viral load  $\geq 1000$  copies/ml.

The HIV-1 *pol* gene was genotyped using Sanger-based sequencing methods at CHU Martinique, a WHO-designated laboratory; sequences were quality-assured following WHO recommendations.

Sequences classified as having predicted low-level, intermediate, or high-level resistance (Stanford HIVdb Version 9.09) were classified as drug-resistant.

**Results:** During the national survey period 1 October 2019 – 30 September 2020, 696 adults had viral load test results  $\geq 1000$  copies/ml, and 657 remnant specimens were sent for HIVDR testing. 457 of 657 HIV-1 PR- PRT and 451 of 657 IN sequences were established, passed quality assurance, and analyzed. 96% of the participants were receiving tenofovir+lamivudine+dolutegravir (TLD). 53.5% of those on DTG had any predicted drug resistance, primarily driven by resistance to the non-nucleoside reverse transcriptase inhibitors (NNRTIs), 49.1% (95%CI 44.5-53.7%).

The prevalence of nucleoside reverse transcriptase inhibitors (NRTI) resistance was 11.4% (95%CI 8.4-14.3%) with 9.4%, 95%CI 6.7-12.1% of sequences exhibiting lamivudine/emtricitabine resistance. The prevalence of tenofovir and zidovudine resistance was 3.5% (95%CI 1.8-5.2) and 3.3% (95% 1.6-4.9), respectively. The prevalence of protease inhibitor resistance was 0.88% (95%CI 0.18-1.7%), and resistance to DTG was 1.1% (95%CI 0.0-2.4%).

**Conclusions:** Resistance to DTG and to NRTIs was low, suggesting non-adherence as the most likely cause of treatment failure. This finding highlights the need to greatly strengthen adherence in people with viral-non-suppression to prevent unnecessary switches and ensure maximum durability of potent DTG-based regimens.

## COVID-19, conflict and climate

### TUPEB148

#### Longitudinal impact of the COVID-19 pandemic on perinatally-acquired youth living with HIV in Kenya

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**Background:** Understanding challenges experienced by youth living with HIV (YLWH) over time during COVID-19 and their impact on clinical outcomes could guide HIV care during public health crises as well as ongoing management, particularly in resource-limited settings.

**Methods:** From 2021-2023, surveys utilizing validated self-reported measures were administered bi-monthly for one year to assess intra-personal temporal trends in psychological (e.g., depression, anxiety), physical (e.g., illnesses, hospitalizations), and socioeconomic (e.g., education, food, housing instability) challenges among perinatally-acquired YLWH at the Academic Model Providing Access to Healthcare in western Kenya.

Parallely, COVID-19-related cases/deaths and Oxford Stringency Index (OSI), an estimate of stringency of restrictions, were followed. Blood was collected bi-annually for HIV-1 viral load (VL).

Associations among COVID-19 events, participant challenges, antiretroviral nonadherence, and treatment failure transitions (to/from VL>1000 copies/mL) were evaluated using regression models, fit using generalized estimating equations with AR(1)-correlation structure, accounting for subject-level repeated measures.

Effects of within-subject exposure changes on outcomes were assessed by including both prior visit measure and between-visit changes. Models were adjusted for age, gender, clinic, between-visit days, caseloads, and OSI.

**Results:** Among 441 participants (mean age 16.9 years, 59% female, 98% one-year follow-up rate), 89% experienced any challenge at baseline (48% psychological, 66% physical, 61% socioeconomic). Intra-personal challenges fluctuated throughout, as did caseload and OSI.

During highly stringent periods, intra-personal physical challenges worsened (OR=1.02 per 1-higher OSI, 95%CI=1.01-1.03, p=0.002) but socioeconomic and psychological challenges did not. Likewise, during case surges, intra-personal physical challenges worsened (OR=1.04


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per 100-higher cases/day, 95%CI=1.00-1.08,  $p=0.028$ ) but socioeconomic challenges only worsened during larger upticks in caseloads (OR=2.08 per 100 case/day change, 95%CI=1.14-3.81,  $p=0.017$ ) and psychological challenges did not.

Worse enrollment challenges were associated with worsening subsequent-visit challenges ( $p<0.001$ ). Incomplete adherence was reported by 74% and worsening adherence was associated with worsening of all three challenges ( $p<0.001$ ).

Suppression-to-failure transition was associated with worsening adherence (OR=1.26 per 1-higher nonadherence score, 95%CI=1.00-1.58,  $p=0.047$ ), but failure-to-suppression transition was not associated with improving adherence.

**Conclusions:** Kenyan YLWH experienced significant wellness challenges throughout COVID-19, possibly prompting poor adherence and viral outcomes. While stability of non-physical challenges suggests adaptation to COVID-19, targeted interventions are warranted to support this vulnerable population during pandemics.

## TUPEB149

BIC/FTC/TAF benefits for people with HIV after Omicron breakthrough acquired by shortening the duration of symptoms, enhancing specific immune response and increasing total CD4 cells

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**Background:** The clinical manifestations of variability in PLWH with SARS-CoV-2 acquired may be attributed to the use of ART drugs. However, it remains unknown whether BIC/FTC/TAF surpasses TDF-based ART regimens in improving COVID-19 symptoms and immune responses after breakthrough acquires. Our study assess efficacy of B/F/TAF and TDF+3TC+EFV in protecting against SARS-CoV-2, potentially offering enhanced protection for high-risk populations amid COVID-19 normalization.

**Methods:** We conducted a retrospective, single-center study in Southwest China from January 2023 to March 2023. The primary endpoints were the level of BA.5 specific IgG after Omicron breakthrough acquired, the duration of COVID-19 symptoms and CD4+T cells increase in PLWH after Omicron acquired.

**Results:** Enrolled were 78 PLWH aged 18-75 (79% male), with 27 on BIC/FTC/TAF and 51 on TDF+3TC+EFV (Table 1). The duration of symptoms of COVID-19 of BIC/FTC/TAF-treated was shorter. BIC/FTC/TAF-treated individuals exhibited significantly higher BA.5 IgG levels than TDF+3TC+EFV-treated ( $p<0.05$ ). The CD4+T cell count in-

crease post-Omicron acquired was significantly greater in BIC/FTC/TAF group ( $p<0.05$ ), with higher BA.5-specific CD4+T cells ( $p<0.05$ ). Breakthrough acquired symptoms were mostly mild, with no severe cases; long COVID occurred in 2 TDF+3TC+EFV users, none in BIC/FTC/TAF users.

	Bikarvy (BIC/FTC/TAF, n=27)	TDF/3TC/EFV, n=51	p value
<b>Gender(male,female)</b>			
Male, n (%)	22(81.48%)	40(78.43%)	0.751
Female, n (%)	5(18.52%)	11(21.57%)	
<b>Age(years)median(range)</b>	37[26,64]	36[19,75]	0.321
<b>Time for ART used</b>			
≤1 year, n (%)	3(11.11%)	2(3.92%)	0.487
1-3 years, n (%)	8(29.63%)	14(27.45%)	
>3 years, n (%)	15(55.56%)	34(66.67%)	
Unknown, n (%)	1(3.70%)	1(1.96%)	
<b>Plasma HIV viral load</b>			
>20 copies/mL, n (%)	0	2(3.92%)	0.408
<20 copies/mL, n (%)	14(51.85%)	31(60.78%)	
Unknown, n (%)	13(48.15%)	18(35.29%)	
<b>CD4 count(cells/uL)median(range)</b>	417.5[125,829]	487[194,1118]	0.165
<200, n (%)	5(18.52%)	3(5.88%)	0.131
200-500, n (%)	14(51.85%)	21(41.18%)	
>500, n (%)	8(29.63%)	24(47.06%)	
Unknown, n (%)	0	3(5.88%)	

Table 1. Baseline characteristics.

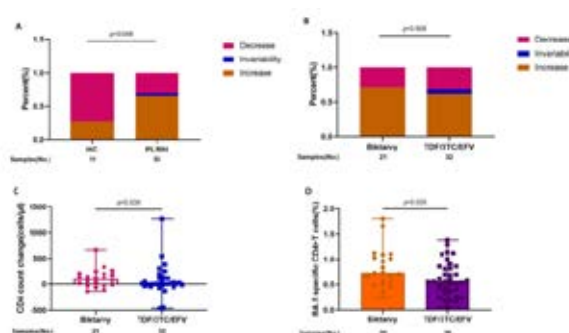


Figure 1. CD4 changes before and after breakthrough infection of PLWH using Bikarvy and TDF/3TC/EFV. A: The diagram shows the CD4 changes before and after breakthrough infection of PLWH using Bikarvy and TDF/3TC/EFV. B: The diagram shows the CD4 changes before and after breakthrough infection of PLWH using Bikarvy and TDF/3TC/EFV. C: The diagram shows the CD4 count changes before and after breakthrough infection of PLWH using Bikarvy and TDF/3TC/EFV. D: The diagram shows BA.5 specific CD4+T cells after Omicron infection of PLWH using Bikarvy and TDF/3TC/EFV.

**Conclusions:** BIC/FTC/TAF can enhance SARS-CoV-2 specific humoral and cellular immune responses and help PLWH shorten the duration of COVID-19 symptoms.

Moreover, CD4+T cells increase in PLWH after Omicron acquired, and BIC/FTC/TAF can help to expand the increase. Therefore, in the context of COVID-19 normalization, the use of BIC/FTC/TAF may be more beneficial for PLWH with high risk of SARS-CoV-2 acquired.



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## TUPEB150

### Reported uptake and perceived safety of COVID-19 vaccination among adults living with HIV in Tanzania: results from Tanzania HIV Impact Survey 2022-2023

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**Background:** People with underlying and chronic medical conditions are at greater risk for severe Coronavirus disease 2019 (COVID-19) and its sequelae. COVID-19 vaccination is an effective intervention to reduce morbidity and mortality, including among people living with HIV (PLHIV). Despite being proven to be safe and effective, COVID-19 vaccine hesitancy has been reported to be high among vulnerable populations, including PLHIV. Reasons for vaccine hesitancy include skepticism about vaccine safety and efficacy. We analyzed uptake and perceived safety of COVID-19 vaccination among PLHIV in Tanzania using data from the Tanzania HIV Impact Survey (THIS) 2022-2023, conducted from November 2022-March 2023.

**Methods:** THIS 2022-2023 was a nationally representative, cross-sectional household survey with a stratified two-stage cluster design including 33,663 participants. Participants were considered to have completed a primary COVID-19 vaccine series if they self-reported receiving one dose of a single-dose vaccine or two doses on different days (regardless of time interval) of an mRNA or protein-based vaccine. Descriptive analyses were conducted to determine the proportion of PLHIV who reported receiving COVID-19 vaccine and completed the primary vaccine series and to assess perceptions of vaccine safety. Sampling weights and Jackknife variance estimation were used to generate 95% confidence intervals (95% CI).

**Results:** Of 1,850 PLHIV aged ≥15 years confirmed as HIV-positive, 48.5% (95%CI: 45.9%-51.0%) reported receiving a COVID-19 vaccination. Of these, 84.7% (95%CI: 81.8%-87.2%) completed a primary vaccine series. Proportion of PLHIV who reported being vaccinated increased with age (from 23.1% among 15-24 years to 67.7% among ≥65

years) and duration on antiretroviral therapy (ART) (from 45.4% among <1 year to 63.8% among ≥10 years). Among all PLHIV, 74.6% (95%CI: 72.1%-77.0%) thought COVID-19 vaccination was safe: 51.5% very safe, 14.1% moderately safe, and 9.1% a little safe. Among PLHIV who perceived COVID-19 vaccination as not being safe, 92.5% reported not having been vaccinated.

**Conclusions:** Approximately one-quarter of PLHIV did not believe the COVID-19 vaccine was safe; most of these did not get vaccinated. Vaccine utilization educational interventions and collaborative and cooperative efforts to increase trust around COVID-19 vaccine, reduce hesitancy among unvaccinated PLHIV, and increase vaccine uptake are needed.

## TUPEB151

### Longitudinal changes in mental health among HIV-negative Chinese men who have sex with men during the COVID-19 pandemic: a prospective cohort study

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**Background:** Men who have sex with men (MSM) face complex mental health challenges, which increase their vulnerability to HIV acquisition, particularly during the COVID-19 pandemic.

This study aims to investigate the longitudinal changes in mental health indicators during the COVID-19 pandemic explore factors influencing mental well-being among Chinese MSM.

**Methods:** This prospective cohort study was conducted in Hohhot, China, from June 2022 to July 2023. HIV-negative MSM participants were recruited and followed up at 0, 6, and 12 months, representing three distinct periods in China's epidemic control measures: the most stringent control phase, the phase of gradual relaxation, and the phase of complete lifting of control measures.

Validated scales were used to assess mental health, including depression, mental pain, anxiety, and suicidal ideation. Participants also provided information on sexual behaviors and HIV Acquisition status.

Analysis of Variance was used to examine differences between time points, and Generalized Estimating Equations was used to analyze the longitudinal changes in mental health.

**Results:** The study included a baseline sample of 280 participants with an average age of 35.5±9.8 years. The follow-up rates for the two rounds were 91.8% and 93.6%, respectively. During the follow-up period, a total of 10 individuals (3.6%) tested positive for HIV. At baseline, more than one in ten (11.1%) participants reported experiencing



moderate to severe depressive symptoms, and the prevalence of moderate to severe anxiety symptoms and suicidal ideation was 3.9% and 6.1%, respectively. Our findings revealed a gradual reduction in depressive symptoms ( $\beta = -0.12$ ,  $SE = 0.04$ ,  $p < 0.05$ ) and anxiety symptoms ( $\beta = -0.10$ ,  $SE = 0.03$ ,  $p < 0.05$ ) as the pandemic subsided after adjusting for age, education level and sexual behavioral factors.

**Conclusions:** This study highlights the importance of prioritizing mental health support for Chinese MSM during the COVID-19 pandemic, particularly during similar emergency situations. Policy makers should address depression and anxiety symptoms and provide targeted support to ensure effective mental health interventions.

## TUPEB152

### COVID-19 Pandemic effects on HIV viral load monitoring and viral load suppression among adolescents and young people living with HIV in South Africa

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**Background:** The impact of COVID-19 on healthcare access has been widely documented, with mostly qualitative data on adolescents living with HIV (ALHIV). This study sought to assess the impact of COVID-19 on viral load frequency of monitoring and viral load suppression among ALHIV in South Africa.

**Methods:** We linked data from a social science cohort of ALHIV (N=1107) in the Eastern Cape of South Africa to the South African National Health Laboratory Service (NHLS) to obtain all available routine viral load records since 2004. We assessed differences in virologic monitoring and viral suppression by sex using four 18-months periods: two periods pre-COVID-19, COVID-19 and 18 months since, using 26 March 2020 as the first COVID-19 pandemic related lock-down start date in South Africa. All models were adjusted for duration on ART and mode of acquisition of HIV.

**Results:** 829 (75.2%) ALHIV were linked to the NHLS data warehouse: the proportion of participants with at least one VL record for each period decreased over time, indicating a decrease in access to VL testing (Period 1 70.4%, Period 2 64.1%, Period 3 58.9%, Period 4 48.8%). In total, there were 3328 VL records during the study period, with decreasing rates over time. The proportion of ALHIV with VLS among those tested was similar over time: Period 1 71.7%, Period 2 73.2%, Period 3 74.5%, and Period 4 77.8%. The odds of having a VL measurement during the COVID-19 period were lower (aOR 0.42, 95%CI 0.32-0.55) compared to pre-pre-COVID, and female ALHIV were

more likely to have VL data compared to their males (aOR 1.81, 95%CI 1.06-3.10). Older adolescents were also less likely to have VL measurements (aOR 0.86, 95%CI 0.80-0.93) during the COVID-19 period. There were no differences in viral suppression rates by age, sex, or mode of HIV acquisition.

**Conclusions:** ALHIV were less likely to have a viral load test during the COVID-19 pandemic, however, there was no difference in rates of VLS pre-COVID and during COVID among those with VL monitoring. Identifying ways to improve and minimize disruptions to virologic monitoring among ALHIV, including pandemic-responsive models of care is critical to improving VLS.



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### Epidemiology of HIV

#### TUPEC153

Progress towards UNAIDS's 95-95-95 targets among People Who Inject Drugs (PWID) and Men Who Have Sex with Men (MSM) in six Kyrgyz Republic sites, 2021

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**Background:** The Joint United Nations Programme on HIV/AIDS (UNAIDS) '95-95-95' targets provide a useful framework to assess the health system effectiveness for diagnosis, treatment, and viral suppression among people with HIV (PWHIV). As of 2022, achievement towards the '95-95-95' targets were 82%-66%-89% in the Kyrgyz Republic. Similar data for key populations (KP) are critical to inform the HIV response in the country.

**Methods:** In 2021, we conducted a biobehavioral survey using respondent-driven sampling (RDS) in the six largest sites among adult PWID (Bishkek, Tokmok, Kara-Balta, Sokuluk, Osh, and Karasu), and among MSM in two sites (Bishkek and Osh). After obtaining informed consent, interviewers collected information on demographics, risk behaviors, knowledge of HIV status, and self-reported anti-retroviral therapy (ART) uptake. Blood specimens were tested for HIV, HCV, and syphilis using rapid tests. All participants with reactive HIV or HCV tests were referred to healthcare facility and further tested for HIV viral load and HCV RNA (GeneXpert platform). Viral load suppression (VLS) was defined as less than 1000 copies/ml. Weighted, population-level estimates were generated using the "Giles SS" estimator in RDS-Analyst software.

**Results:** Among PWID with HIV, knowledge of HIV status ranged from 56.5% (Kara-Balta) to 91.8% (Bishkek). ART coverage among PWID who knew their HIV status was more than 90% in all sites; VLS among those on ART varied by site from 53.3% (Tokmok) to 91.3% (Karasuu). Among MSM with HIV in Bishkek, the largest city in the Kyrgyz Republic, 41.0% knew their status, whereas ART coverage among PWHIV aware of their status was 92.7% and VLS among those on ART was 85.2%.

**Conclusions:** This survey provides new, KP-based data on HIV service coverage and uptake that can be used

to improve HIV services by population and location. HIV case-finding among MSM is sub-optimal although treatment coverage and effectiveness was high. Variation, by location, in testing coverage and VLS among PWID indicates the need for localized focus in testing uptake and ART adherence.

#### TUPEC154

Decline in HIV-related deaths in Australia: a 24-year national cohort study

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**Background:** Global targets to end AIDS as a public health threat include a 90% reduction in HIV/AIDS-related deaths by 2030. Understanding patterns of mortality is crucial to understand the impact of HIV treatment and care interventions. We used integrated national data sources to determine changes in HIV-related death over time, in the Australian population of people with HIV.

**Methods:** Using data linkage, a national cohort of people diagnosed with HIV in Australia between 1 January 1997 and 31 December 2020 was created, from the National HIV Registry (NHR) and National Death Index (NDI). Cause of death was determined from ICD-10 codes recorded in the NDI and cause of death in the NHR and described over time. The Kaplan-Meier method with log-rank test was used to compare the probability of HIV-related and non-HIV-related death by time-period of diagnosis.

**Results:** The study included 24,270 persons aged  $\geq 20$  years; most were male (88%), and aged 30-39 (35%) at diagnosis, with half born in Australia. The number of recorded deaths after data linkage increased by 235% from 746 to 1750. Between 2010 and 2020, the number of HIV-related deaths declined by 90%. Over the study, 61% of all deaths were attributed to HIV-related causes, declining from 64% for people diagnosed in 1997-2002 to 57% in 2015-2020.

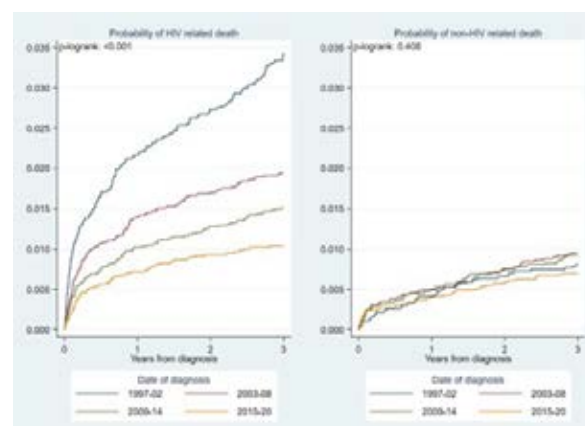


Figure 1: Kaplan-Meier curve for probability of HIV-related and non-HIV-related death, by time-period of HIV diagnosis.



The Kaplan-Meier analysis (Figure 1) demonstrated that those diagnosed earlier (1997-2002) had a higher probability of HIV-related death (1174.2 per 100,000), than those in later time-periods. There was no difference in probability of non-HIV-related deaths by time-period.

**Conclusions:** HIV-related deaths were responsible for the highest proportion of deaths but the probability declined over time. Australia should be aiming for zero HIV-related deaths, which will require enhanced and equitable access to HIV prevention, testing, treatment, and care.

## TUPEC155

### Willingness of joining online support groups among men who have sex with men living with HIV in Shandong Province of China: a mixed methods study

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**Background:** Online support groups afford new opportunities to help individuals affected by HIV/AIDS to seek social support from peers. The study aimed to understand the willingness and associated factors of joining online support groups among men who have sex with men (MSM) living with HIV in Shandong Province, China.

**Methods:** The study followed a mixed method approach, with qualitative in-depth interviews followed by a quantitative cross-sectional survey in three cities of Shandong Province from 2019 to 2020. The in-depth interviews were audio-taped, transcribed verbatim and analyzed using thematic approach.

In the quantitative analysis, explanatory variables included sociodemographic, behavioral, clinical, psychological, and demand factors. Univariate and multivariable logistic regressions were conducted to examine the associated factors of willing to join online support groups.

**Results:** A total of 576 and 20 participants were included in the quantitative survey and qualitative interviews, respectively. Only 24.7% (142/576) of participants in the quantitative study were willing to join the online support group.

Multivariable analysis showed that participants whose monthly income >3,000 CNY (AOR=2.37, 95%CI: 1.26-4.46) were more likely to join the online support group. Elder participants (AOR=0.97, 95%CI: 0.95-0.99) and those who perceived higher availability of the information that they need (AOR=0.79, 95%CI: 0.65-0.97) were less likely to join the online support group. Compared with gay men, heterosexual participants (AOR=1.89, 95%CI: 1.07-3.32) had high-

er willingness to join the online support group. Qualitative interviews showed that the barriers to joining online support groups included privacy disclosure concern and psychological pressure exposed to HIV-related information. Facilitators included information acquisition, mutual medication reminding, and emotional support.

**Conclusions:** MSM living with HIV in China had relatively low willingness to join the online support groups.

This study highlighted the importance of safeguarding privacy, involving professional mental health providers, and providing high-quality information when establishing online support groups for people living with HIV.

## TUPEC156

### Trends in advanced HIV disease, mortality and lost to follow-up among adults living with HIV in rural Tanzania

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**Background:** Data regarding improved antiretroviral treatment strategies in sub-Saharan Africa remain scarce. We determined trends of advanced HIV disease (AHD), mortality and lost to follow-up (LTFU) among PLHIV in rural Tanzania.

**Methods:** PLHIV ≥ 15 years in the Kilombero and Ulanga Antiretroviral Cohort (KIULARCO) were enrolled from 2005 - 2022. AHD was defined as CD4 count <200 cells/μL and/or WHO stage III/IV; severe AHD as CD4 count <100 cells/μL; and LTFU as being ≥60 days late for visit.

Calendar time was categorised by changes in Tanzanian guidelines in 2013 and 2017. Time to death/LTFU or death alone was estimated using Kaplan-Meier and cumulative incidence methods, associated factors were assessed using Cox regression.

**Results:** Of 9,535 PLHIV assessed, at enrollment 4,931 (52%) had AHD with range 41%-66% by calendar year although no clear trends over time were detectable. However, classification in recent years was based less frequently on CD4 only. 1,846 (25%) participants had severe AHD.

After median follow-up of 2.9 years (IQR 0.8-7.6), there were 1,109 confirmed deaths (12%) and 3,728 (39%) LTFU. One-year, 5-year and 10-year risk of death/LTFU were 26% (95%CI 25-27), 46% (95%CI 44-47) and 58% (95%CI 57-59), respectively. AHD at enrolment was associated with higher risk of death/LTFU (adjusted hazard ratio (aHR) 1.29, 95%CI 1.17-1.41, figure 1a), and death (2.20, 95%CI 1.73-2.79; those LTFU were censored, figure 1b).



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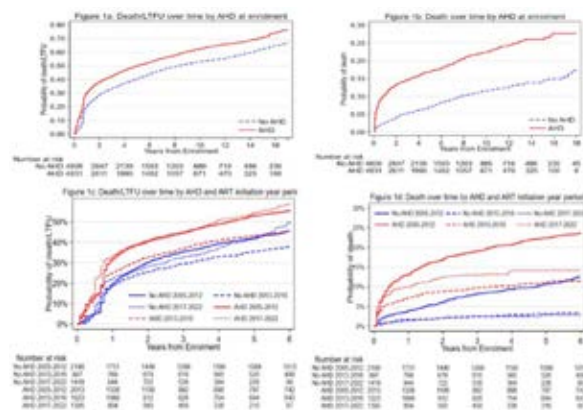


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There was no evidence of a difference in the association between AHD at baseline and death/LTFU by calendar year (interaction  $p=0.07$ , figure 1c), while the risk of death was greatest among those with AHD in the earliest calendar time period ( $p<0.001$ , figure 1d).



**Conclusions:** The prevalence of PLHIV presenting with AHD and severe AHD remains consistently high over time and is associated with higher mortality. These findings re-emphasize the need for early diagnosis and treatment to reduce HIV-associated mortality and LTFU.

## TUPEC157

### Incidence and risk factors for treatment-emergent metabolic syndrome among Zambian adults receiving antiretroviral therapy: a cohort study

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**Background:** There is limited longitudinal epidemiological data on metabolic changes among people with HIV (PWH) receiving ART in sub-Saharan Africa. We estimated the incidence of treatment-emergent metabolic syndrome (tMetS) and identified associated risk factors among adult PWH at a tertiary health facility in Zambia.

**Methods:** We enrolled PWH initiating care ( $n=12$ ) and those on ART for  $\geq 6$  months ( $n=313$ ), without prevalent MetS, at Livingstone University Teaching Hospital be-

tween April 2019 and April 2020. Participants returned for a follow-up visit between December 2022 and June 2023. Demographic, clinical and laboratory data were collected by structured questionnaire and medical chart abstraction.

The primary outcome was incident tMetS, defined as having  $\geq 3$  of the following: low high-density lipoprotein cholesterol (HDL-c,  $<1.0$  mmol/L for men,  $<1.3$  for women), elevated waist circumference (WC,  $\geq 94$  cm for men,  $\geq 80$  cm for women), elevated triglycerides (TG,  $\geq 1.7$  mmol/L), elevated fasting blood glucose (FBG,  $\geq 5.6$  mmol/L), and elevated blood pressure (BP) (systolic BP  $\geq 130$  or diastolic BP  $\geq 85$  mm Hg). Multivariable robust Poisson logistic regression was used to examine risk factors for tMetS.

**Results:** The median age was 43 years at baseline, and 61.9% were female. The prevalences of abnormal FBG (12.8% vs. 25.9%), HDL-c (31.7% vs. 71.35%), WC (29.9% vs. 44.8%) and TG (8.9% vs. 45.2%) increased significantly between baseline and follow-up ( $p<0.001$  for all comparisons).

Over a median follow-up of 43 months, the cumulative incidence of tMetS was 38.8% (126/325; 95% confidence interval (CI) 33.4, 44.3).

In multivariable analysis, factors positively associated with MetS were older age (incidence rate ratio (IRR) 1.02; 95%CI 1.01, 1.04), female sex (IRR 1.58; 95%CI 1.11, 2.24), dolutegravir (DTG)-based regimen use (IRR 1.50; 95%CI 1.01, 2.23) and higher body mass index (BMI) (IRR 1.14; 95%CI 1.10, 1.18); while larger hip circumference (HC) was inversely associated (IRR 0.98; 95%CI 0.97, 0.99).

**Conclusions:** The incidence of MetS was high among PWH and was significantly influenced by demographic and clinical factors.

The results suggest a need for targeted screening, particularly among older persons, women, those using DTG and those with higher BMI. Longitudinal studies focusing on the mechanism through which DTG induces metabolic dysregulation are warranted.



## TUPEC158

### Reduced HIV incidence after population-wide treatment of filarial helminths in a former highly endemic region in Tanzania

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**Background:** Prior to the introduction of antihelminthic treatment programs in southwestern Tanzania, our group described a 2.3-fold increase in HIV susceptibility among individuals 14 to 65 years testing positive for the *Wuchereria bancrofti* (WB) compared to WB-negative villagers. The impact of helminth elimination on HIV incidence is currently being investigated over a further eight years of surveillance.

**Methods:** Study participants in a prospective cohort study of the general population were tested annually for HIV and circulating filarial antigen, an indicator of WB burden from 2007 to 2011 and additionally in 2019. Due to the high prevalence of WB in the region in 2007, ivermectin and albendazole was distributed annually to all villagers as part of government programs annually from 2009 to 2015, virtually eliminating filarial transmission. We measured new HIV acquisitions among all villagers and compared two subgroup of individuals (WB-positive and negative) during the high and low endemicity period.

**Results:** Of the 1,299 villagers who were rescreened in 2019, 1,139 had tested HIV-negative at the end of previous surveillance in 2011. This included 848 persons who had never tested positive for WB, 272 participants who were previously – but no longer – WB-positive, and 19 individuals who were still or again WB-positive.

During the first surveillance period from 2007 to 2011, 15 HIV seroconversions occurred among WB positive individuals during 871 PYs (1.72 per 100 PY). In the second period from 2011 to 2019, the HIV incidence decreased significantly to 0.73 cases per 100 PY (17 in 2,344 PY,  $p=0.019$ ) in this group. In all-time-WB-negative individuals we documented 9 HIV seroconversions in 1,298 PY (0.69 per 100 PY) between 2007 to 2011, 39 in 5,724 PY (0.68 per 100 PY), between 2011 and 2019  $p=0.963$ ).

**Conclusions:** There was a significant decline in the incidence of HIV in the group of villagers who were previously filarial- positive but were now cured of WB. This reduction in HIV incidence was not observed among those who had never been touched WB. These results show that the elimination of unrelated pathogens, for example with filarial worms, can help to reduce the spread of HIV.

## TUPEC159

### Defining risk strata and associated HIV prevalence among men who have sex with men in nine sub-Saharan African countries: a latent class analysis

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**Background:** Gay, bisexual, and other men who have sex with men (MSM) are disproportionately affected by HIV across sub-Saharan Africa. However, HIV risks among MSM are heterogeneous given diverse sexual networks, behaviors, and legal environments. To inform delivery of differentiated HIV services for MSM, we sought to define risk strata among MSM in sub-Saharan Africa and quantify HIV burden within each stratum.

**Methods:** Using data from 17 biobehavioural surveys with MSM in 9 countries (2009-2023), we used latent class analysis (LCA) to identify clustering of potential drivers of HIV risk (inconsistent condom use (ICU) with main and casual male partners, and cisgender female partners; condom-compatible lubricant (CCL) use; injection drug use; alcohol use; transactional sex; and physical and sexual violence victimization). We used mixture models to estimate associations between LCA-identified risk strata and HIV and syphilis test results.

**Results:** We identified five risk strata among 4,409 MSM with distinct patterns of risk (Figure): 1—transactional sex, substance use, and violence ( $n=315$ ); 2—ICU with casual partners and binge drinking ( $n=1,962$ ); 3—sexual vio-



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lence( $n=681$ ); 4—ICU with main partners and binge drinking( $n=1,043$ ); and 5—ICU with main partners and rare CCL use( $n=408$ ). In multivariable mixture models relative to the fifth class, substance use and violence (PR 8.51, 95% CI 8.04–8.98); binge drinking and ICU with causal partners (PR 3.18, 95% CI 2.72–3.64); sexual violence (PR 5.73, 95% CI 4.67–5.60); and binge drinking and ICU with main partners (PR 5.13, 95% CI 4.67–5.59) were associated with increased HIV prevalence.



Figure. Results from latent class analysis and multivariable mixture model to identify clustering of potential drivers of HIV risk among men who have sex with men in nine sub-Saharan African countries, 2009 - 2023 ( $n=4,409$ ).

**Conclusions:** These analyses suggest HIV vulnerability among MSM in sub-Saharan Africa may be driven by concomitant transactional sex and substance use, along with clustering physical and sexual violence. LCA approaches are scalable with routinely collected data and can support differentiated service delivery by identifying clustering vulnerabilities that drive HIV prevalence and other outcomes among MSM and other marginalized populations.

## TUPEC160

### Stalled progress in addressing HIV among trans women in San Francisco, USA

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**Background:** Trans women in San Francisco have experienced the most severe burden of HIV of any group, similar to the situation worldwide. Efforts to prioritize care and prevention for trans women in San Francisco were showing several years of success, particularly in closing gaps in HIV testing, use of antiretrovirals (ART), viral suppression, and uptake of PrEP. To assess the current trajectory for getting to zero HIV among trans women, we analyzed trends in HIV prevention and care indicators from 2019/20 to 2023.

**Methods:** Population-based data were collected for adult trans women in 2019/2020 and 2023 in San Francisco using respondent-driven sampling (RDS). HIV prevention and care engagement, risk indicators, and HIV test results were compared. Further analysis was done to identify risk correlates with homelessness and methamphetamine use among HIV-negative trans women in 2023.

**Results:** Between 2019/20 and 2023, most epidemic indicators showed no improvement or worsened, including HIV prevalence (41% vs. 36%,  $p=0.497$ ), new HIV infections (3% vs. 4%,  $p=0.208$ ), HIV testing (91% vs. 81%,  $p=0.015$ ), PrEP use (43% vs. 40%,  $p=0.613$ ), and viral suppression (82% vs. 89%,  $p=0.280$ ).

Improvements were seen in ART use (90% vs 99%,  $p=0.026$ ), methamphetamine use (32% vs. 22%,  $p=0.027$ ), and homelessness in the last year (60% vs. 40%,  $p<0.001$ ), although current homelessness did not improve (27% vs. 29%,  $p=0.719$ ).

Among HIV-negative trans women, current homelessness was associated with sex work (OR=2.04, 95%CI=1.02–4.10), condomless receptive anal intercourse (CRAI) (OR=2.05, 95%CI=1.01–4.16), and injecting drugs (OR=7.72, 95%CI=2.57–23.25); methamphetamine use was associated with sex work (OR=2.43, 95%CI=1.14–5.18) and CRAI (OR=3.26, 95%CI=1.45–7.34).

**Conclusions:** Progress has stalled in addressing HIV and its causative factors among trans women in San Francisco. Effective prevention measures have hit a plateau, including uptake of testing, use of PrEP, and sustaining viral suppression. While homelessness and methamphetamine use have declined, HIV risk behaviors remained high among trans women in these groups.

Efforts focused on those most at risk by addressing upstream factors, such as housing insecurity and substance use, are needed to end the HIV epidemic among trans women in San Francisco.

## TUPEC161

### Classifying women at high risk of HIV in sub-Saharan Africa: a pooled latent class analysis

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**Background:** Community-led HIV programs have been successful in reaching female sex workers (FSW) with comprehensive sexual and reproductive health services across sub-Saharan Africa. However, intensified efforts are needed to identify and reach FSW that remain marginalized from existing programs.

**Methods:** We conducted a pooled multi-country analysis to characterize discrete HIV risk strata among FSW completing bio-behavioral surveys in 9 countries: Burkina Faso, Cameroon, Côte d'Ivoire, Gambia, Guinea-Bissau, Lesotho, South Africa, Senegal and Togo (2013-2017). Latent class analysis was used to classify FSW into discrete groups defined by underlying constructs of sexual and socio-structural risk including sexual frequency, client type, condomless sex, alcohol use and physical/sexual violence. Individual-level characteristics, including known determinants of HIV risk, were profiled across classes. Mixture models were used to estimate adjusted prevalence ratios (aPR) and 95% confidence intervals (CI) for the association of class membership with prior HIV testing experience and biologically-confirmed HIV status.

**Results:** Among 5548 FSW reporting ≥1 client in the last 30 days (median age:27, IQR 23-34), four risk profiles (classes) were identified by latent modeling, defined most predominantly within a class through experiences of: (Class-1) Violence and alcohol use (17% prevalence), (Class-2) High client turnover (38% prevalence), (Class-3) Lower client volume (32% prevalence), and, (Class-4) Limited use of condoms/lubricant (13% prevalence).

In mixture modeling, prior HIV testing was significantly lower among the limited condom/lubricant use class relative to the remaining classes: violence and alcohol use (aPR 0.65, 95%CI 0.58-0.72), high client turnover (aPR 0.54, 95%CI 0.48-0.61), and lower client volume (aPR 0.69, 95%CI 0.62-0.76) (Figure).



Figure.

**Conclusions:** Pooled analyses demonstrated heterogeneity in both individual and structural barriers to HIV prevention among FSW. This represents a scalable approach using commonly collected data to describe risk strata among FSW to inform differentiated service delivery strategies to optimize impact in the context of decreasing resources for HIV prevention and treatment.

## TUPEC162

### Underestimation of HIV epidemic among men who have sex with men: challenges in "Know your epidemic" in the WHO European Region

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**Background:** In Eastern Europe and Central Asia, key populations (KPs) and their sexual partners comprised 94% of new HIV infections in 2022. Even though data on KPs is vital to inform optimised HIV responses, many member states in the WHO European region continue to face challenges in generating accurate data.

In particular, HIV epidemic among men who have sex with men (MSM) is underestimated, especially in countries where homosexuality is highly stigmatised. Core epidemiological data among MSM in the selected countries was assessed to identify gaps in data on MSM in the region.

**Methods:** The data from seven countries in the WHO European region: Albania, Azerbaijan, Belarus, Republic of Moldova, Ukraine, Uzbekistan, and Tajikistan, in which WHO conducted HIV programme reviews in 2022-2023, was assessed. We calculated the estimated number of MSM living with HIV in each country by using the latest estimated MSM population size and HIV prevalence among MSM, which was compared to the cumulative reported HIV diagnoses in MSM until the end of 2022.

**Results:** The prevalence of HIV among MSM was the lowest in Albania (2.0%) and the highest in Moldova (11.4%). The estimated proportion of MSM in the adult male population used by national programmes ranged from 0.03% (Uzbekistan) to 2.0% (Moldova), with only three countries



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having a proportion above the lower limit of 1.0% recommended by WHO and UNAIDS. While six out of seven countries had a significantly lower number of reported HIV diagnoses among MSM than the estimated infections, Albania was the only country where the reported number exceeded the estimate.

**Conclusions:** The necessity of strengthening the population size estimation method was indicated for better programme planning for MSM. At the same time, considering that a significant number of HIV infections in MSM might have been misclassified in countries across the region, improvement in the ascertainment of modes of HIV transmission is urgent. Accelerated efforts are needed to acquire an accurate picture of HIV epidemics and key populations to move forward towards ending AIDS by 2030.

## TUPEC163

The profiles and treatment outcomes of people diagnosed with HIV 50 years and above at Newlands Clinic in Zimbabwe: a descriptive analysis

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**Background:** According to 2021 UNAIDS estimates, 7% of new HIV diagnoses in Eastern and Southern Africa occurred in individuals  $\geq 50$  years. Poor outcomes are common in older people with delayed diagnosis leading to presentation with advanced HIV disease (AHD) resulting in increased likelihood of mortality within a year of antiretroviral therapy (ART) initiation.

We assessed the burden of AHD and the treatment outcomes of those diagnosed of HIV from  $\geq 50$  years at a Zimbabwean facility.

**Methods:** Electronic medical records were extracted of all clients with a documented HIV diagnosis made at  $\geq 50$  years at an HIV outpatient department in Harare, Zimbabwe. Descriptive statistics and Stata BE17 were used to analyze clinical characteristics and treatment outcomes.

**Results:** A total of 883 clients (53% female) were diagnosed between 1988 and 2023. Median age at diagnosis was 54 years (IQR 51-59), the oldest at 83. At diagnosis, more men were married than women (83% versus 22%) while more women were widowed (53% versus 8.7%). CD4 count at diagnosis was documented for 470 (53%) clients, the median was 153 cells/mm<sup>3</sup> (IQR 76-265), (comparable in both sexes; women:155, men:145).

Most clients had initial CD4 counts  $< 200$  cells/mm<sup>3</sup> (303/470, 64%). 54% of clients had documented WHO stage at diagnosis: 32% with stage 1, 25% stage 2, 30% stage 3, 13% stage 4. In 2023, 544/883 (62%) clients remain in care, 213 (24%) deceased, 28 (3%) lost to follow up and 47 (5%) transferred out. For those in care, median age is 67 years (IQR 61-70) with median ART duration of 10 years

(IQR 5.6-14.4). Median CD4 count 430 cells/mm<sup>3</sup> (IQR 288-598, women:504, men:350), and mean CD4 recovery was 307 cells/mm<sup>3</sup> (95% CI 222-270). 95% have an undetectable viral load ( $\leq 50$  copies/ml).

Treatment failure was uncommon (7.9%). 114 deceased clients had baseline CD4 counts, 74% were  $< 200$  cells/mm<sup>3</sup>. 2/213 died before ART initiation, 54/213 (25%) died within a year of ART initiation.

**Conclusions:** Older people often present with AHD leading to high mortality within the first year of treatment. Of those who survive, treatment outcomes are good. Targeting earlier diagnosis in older adults should be prioritized by HIV programmes.

## Surveillance: Measuring the HIV pandemic

### TUPEC165

Estimating HIV prevalence and recent transmissions in a U.S. national cohort of sexual and gender minorities, with an emphasis on over-enrolling people who use methamphetamine

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**Background:** Sexual and gender minorities (SGM) represent 2-5% of the US population, yet continue to account for more than two-thirds of new HIV diagnoses. Cohort studies offer a robust methodology for examining behaviors that occur naturally, and capture longitudinal changes and relations.

**Methods:** In 2022-2023, using advertising on geosocial sexual networking apps, we enrolled a geographically and racially diverse cohort of 5,404 sexual and gender minorities (aged 16 to 49) and oversampling persons who use methamphetamine (52.2%). To be eligible, participants had to report meeting objective criteria for PrEP care, but not be taking PrEP. All participants completed


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an online survey and were mailed an oral fluid specimen collection kit for HIV testing (returned via mail and analyses conducted by a lab).

**Results:** Nearly all participants (84.7%) were cisgender male, 3.8% (203/5404) were transgender women, and 1.1% (61/5404) were transgender men who have sex with men. There were also  $n = 564$  (10.4%) individuals who self-identified outside of the gender binary—all reported being assigned male sex at birth. In total, 56.5% (3052/5404) were persons of color, and 31.8% (1717/5404) were younger individuals aged 16 to 29 years. In total, 4,201 HIV test kits were returned (96.6% had valid results), including  $n = 372$  HIV-reactive samples—3.5% were HIV-positive among those who did not report methamphetamine use, and 15.3% were HIV-positive among those reporting methamphetamine use.

Based on participant's HIV results as well as self-reporting when their most recent HIV-negative test was, we estimated the incidence rate in this cohort in the 12-month period leading up to study enrollment was 8.01 per 100 person-years among those reporting methamphetamine use compared with 1.83 among those not reporting methamphetamine use per 100 person-years.

**Conclusions:** A large, national, and racially diverse online cohort of SGM at high risk for HIV have been successfully enrolled and will be followed through 2027. Persons who use methamphetamine have been oversampled and demonstrated exceptionally greater risk for HIV.

## TUPEC166

Sample composition and HIV prevention indicator differences using physical vs. virtual venue recruitment of men who have sex with men in San Francisco

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**Background:** During the COVID-19 pandemic, the sampling method for the National HIV Behavioral Surveillance (NHBS) in San Francisco (i.e., "integrated bio-behavioral surveillance") changed from physical venue time-location sampling (TLS) to online or virtual venue TLS for men who have sex with men (MSM).

We present differences in the samples of MSM recruited using physical venue TLS in 2017 vs. virtual venue TLS in 2021.

**Methods:** Physical venue TLS in 2017 was conducted using formative research to create a sampling frame of venues, days, and times (VDTs) where MSM congregate throughout the city and randomly selecting 4-hour VDTs to recruit through outreach. Virtual venue TLS in 2021 was conducted by creating a sampling frame of online venues where MSM socialize (e.g., dating apps), and randomly selecting 4-hour app-day-times (ADTs) to recruit through messaging profiles, and through targeted ads.

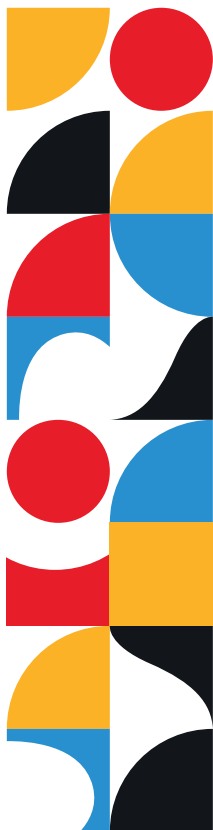
We assess changes in preventive and risk behaviors from 2017 to 2021 after controlling for differences in the sample compositions using logistic regression.

**Results:** Both methods exceeded their targeted sample size of 500 (physical venue TLS  $N=502$ , virtual venue TLS  $N=505$ ). Compared to the physical venue TLS sample, the virtual venue TLS sample had significantly fewer persons experiencing homelessness and incarceration, and more persons with health insurance and post-graduate degrees.

After adjusting for these differences and age, race, and employment status, PrEP use significantly increased from 2017 to 2021. The use of several non-injection drugs also increased, namely marijuana, poppers, ketamine, psilocybin, and LSD.

**Conclusions:** Changing recruitment of MSM from physical venues in 2017 to online venues in 2021 achieved target sample sizes with identifiable demographic differences between samples. Adjustment for sample differences suggest that we were able to track an increase in PrEP use consistent with programmatic data and in non-injection drug use consistent with the legalization of marijuana and other data.

We found virtual venue recruitment of MSM to be a viable approach for tracking trends in HIV-related behaviors, with notable appeal given possible future pandemic lockdowns of physical venues, changing socialization patterns, and for parts of the world where physical venues for MSM are few, non-existent, or vulnerable to exposure.







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## TUPEC167

### High HIV and HSV-2 incidence among young women who sell sex (YWSS) and young men who buy sex (YMBS) in Rural South Africa: a population-based study

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**Background:** In South Africa sex workers and adolescent girls and young women (AGYW) are at high risk of sexually acquiring HIV.

We aimed to understand the risk of acquiring HIV and herpes simplex virus (HSV-2) amongst Young Women Who Sell Sex (YWSS) and Young Men who Buy Sex (YMBS) to inform HIV prevention targeting in a rural setting in uMkhanyakude District in KwaZulu-Natal.

**Methods:** Between 2017-2019 we interviewed a population representative sample of AGYW and adolescent boys and young men (ABYM) aged 13-30 years annually in KwaZulu-Natal and collected dried blood spot samples for HIV and HSV-2 serology. We estimated the incidence of HIV and HSV-2 cases per 100 person-years (py).

We used Cox proportional hazards regression to estimate relative hazards of HIV and HSV-2 incidence for selling and buying sex, adjusting for various factors including age, education and employment, location and food insecurity.

**Results:** n=2761 (96.2%) of eligible AGYW and n=2487(81.6%) of eligible ABYM participated and 2463 (89.2%) AGYW and 1945(78.2%) ABYM provided data for at least one follow-up. Prevalence of selling sex (14%) and buying sex (6%).

Overall HIV incidence was 3.36/100py (95%CI:2.68-4.15) among AGYW and 0.66/100py (95%CI:0.28-1.30) among ABYM. HIV incidence was higher among YWSS compared to females who didn't sell sex (8.21 (95%CI:5.36-12.02) vs 2.66 (95%CI:2.03-3.44)/100py); adjusted Hazard Ratio (aHR)=2.35; 95%CI: 1.76-3.14. HIV incidence was higher among YMBS compared to males who didn't buy sex 2.31 (95%CI:0.48-6.76) vs 0.46 (95%CI:0.15-1.08) /100 py; aHR=5.01; 95% CI:1.03-20.4.

HSV-2 incidence among AGYW was 18.43/100py (95%CI:16.50-20.53) and 30.27/100py (95%CI:26.06-34.31) among ABYM. HSV-2 incidence was higher among young women who sold sex compared to those who didn't (29.32 (95%CI:22.09-38.16) vs 17.17 (95%CI:16.50-20.53)/100py; aHR=1.28; 95%CI:1.06-1.53. HSV-2 incidence was lower

among YMBS compared to males who didn't buy sex (26.97 (95% CI:15.69-43.13) vs 30.27 (95% CI:26.15-34.86)/100py), with no evidence of a difference after adjustment.

**Conclusions:** Buying and selling sex contributes to high incidence of HIV, suggesting young women and men who sell and buy sex are priority groups for HIV prevention, including HIV Pre-Exposure Prophylaxis. The discrepancy between similarly high incidence of HSV-2 in females and males, but lower HIV incidence among males may reflect HIV treatment amongst their female partners and VMMC.

## TUPEC168

### Estimating HIV incidence among key populations in Unguja, Zanzibar, 2023

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**Background:** No estimates of HIV incidence exist among female sex workers (≥18)/sexually exploited children (girls <18 who are given money or products for sex) (FSW/SEC), people who inject drugs (PWID), and men who have sex with men (MSM) in Unguja, Zanzibar. Information on HIV incidence is crucial to track the epidemic and assess preventive measures. An integrated bio-behavioral survey was conducted to estimate HIV incidence among these populations in 2023.

**Methods:** Using respondent-driven sampling (RDS), we recruited individuals aged ≥15 years who reported living in Unguja for ≥3 months and were FSW/SEC (exchanged sexual intercourse for money in the prior month), MSM (had sex with men in the past 3 months) or PWID (injected drugs in the past 3 months). We used Osmond's method to estimate HIV incidence. Person-years at risk were calculated from the onset of risk behavior (first selling or exploitation for sex for FSW/SEC, first sex with men for MSM, and first injecting drugs for PWID) for HIV-negative individuals and halfway from the onset of risk behavior for HIV-positive individuals. We produced crude estimates, reported as percentages with 95% confidence intervals



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(95%CI). Population size estimates (PSE) were calculated using the Anchored Multiplier method based on 3-source capture-recapture and sequential sampling (SS) PSE estimates generated in RDS-Analyst. New acquisition of HIV estimates were computed using HIV prevalence, incidence, and PSE.

**Results:** HIV incidence was 3.2% (95%CI: 2.7-3.8) among FSW/SEC, 1.2% (95%CI: 0.9-1.5) among MSM, and 0.7% (95%CI: 0.5-1.0) among PWID. PSEs were 5,800 (95%CI: 3490-8700) for FSW/SEC, 3,250 (95%CI: 1550-5630) for MSM, and 2,350 (95%CI: 1610-3240) for PWID, which indicates an estimated 146, 35, and 15 new HIV infections, respectively, in the next 12 months.

**Conclusions:** The findings highlight an increasing number of HIV infections in these populations. KP-targeted HIV prevention interventions including pre-exposure prophylaxis will be important to stop HIV transmission and achieve the UNAIDS 95-95-95 targets in these populations

## TUPEC169

Progress towards 95-95-95 and challenges with HIV diagnosis among men who have sex with men in Unguja, Zanzibar, 2023

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**Background:** Zanzibar has a concentrated HIV epidemic among key populations, including men who have sex with men (MSM). We conducted a biobehavioral survey in Unguja Island, Zanzibar to assess progress towards UNAIDS' 95-95-95 clinical cascade among MSM.

**Methods:** We recruited MSM aged ≥15 years who lived in Unguja for ≥3 months using respondent-driven sampling. We assessed HIV testing and treatment history through an interviewer-administered questionnaire and offered point-of-care HIV testing per the national testing algorithm. For those who tested HIV-positive, we measured HIV viral load (VL).

We defined viral suppression as <1,000 HIV RNA copies/mL and an undetectable VL as <50 copies/mL. MSM who disclosed a positive HIV status or were virally suppressed were categorized as knowing their status. MSM who

self-reported anti-retroviral therapy (ART) use or were virally suppressed were classified as on ART. We produced weighted estimates, presented as percentages with 95% confidence intervals (95%CI).

**Results:** We enrolled 455 MSM with a median age of 30 (inter-quartile range [IQR]: 24-39) years. HIV prevalence was 11.4% (95%CI: 8.4-14.5). Of all MSM, 87.9% (95%CI: 84.3-91.6) ever tested for HIV.

Among those, 7.2% (95%CI: 4.2-10.1) reported testing for HIV monthly, 11.5% (95%CI: 8.3-14.4) testing quarterly, 3.5% (95%CI: 1.7-5.3) testing biannually, 13.9% (95%CI: 10.2-17.9) testing annually, 61.9% (95%CI: 57.0-66.7) no pattern of HIV testing, and the remainder did not respond.

Of MSM who tested HIV-positive, 69.4% (95%CI: 57.8-82.0) knew their status, of whom 97.6% (95%CI: 80.7-100.0) were on ART, and of whom 91.7% (95%CI: 77.2-100.0) were virally suppressed. Of those who were virally suppressed, 89.8% (95%CI: 81.0-98.9) had an undetectable VL.

**Conclusions:** Our findings highlight a substantial gap in HIV diagnosis and challenges in viral suppression. Prioritizing diagnosis of MSM living with HIV through evidence-based strategies including self-testing, social network testing, and integration of frequent HIV testing into routine medical care, offered by MSM-competent providers and venues, will be critical to addressing the diagnostic gap.

## TUPEC170

Formative assessment of HIV, and reproductive health status among adolescent girls and young women in Zambia

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**Background:** Like many Sub-Saharan countries, Adolescent girls and young women (AGYW) in Zambia are disproportionately affected by poor sexual reproductive health outcomes. Despite the recognition of the rights of young people to SRH information and services, AGYW still face challenges in accessing and utilizing SHR services. The overall objective of the study was to collect baseline HIV, SRH and GBV data at district level to inform the design of interventions targeting AGYW aged 10-24 years in Zambia.

**Methods:** Using a mixed-methods approach, a cross-sectional study was conducted in 20 districts of Zambia among 12,813 AGYW participants from October to November 2022. The quantitative data analysis summarized the characteristics of study participants and differences





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in HIV and syphilis prevalence rates by district, age-group, and schooling status. Mixed effects logistic regression was used to model possible associations between factors.

**Results:** Of the total 12,813 study participants, 12.6% were aged 10-14 years, 35.4% were aged 15-19 years, and 52.0% were aged 20-24 years. Forty-seven percent were in-school while 53.3% were out-of-school. Approximately 32% of the participants had low comprehensive HIV knowledge and knowledge rates were lower among the in-school participants. Thirty percent of the respondents had their first sexual intercourse before or at age 15 years and 45.7% of all sexually active respondents reported having never used a condom. Overall, 58% of the participants had previously tested for HIV while only 11.7% had tested in the last 12 months.

The overall HIV prevalence was 3.7%, with a higher prevalence among out-of-school adolescents (5.5%) vs 2.0% (in-school adolescents). The prevalence of syphilis was also higher among the out-of-school than the in-school participants (4.1% vs 1.5%). An HIV prevalence of as high as 6.7% was estimated in 2 of the 20 districts while a syphilis prevalence rate of 7.3% was estimated in one district.

**Conclusions:** The study found that HIV and syphilis are still significant public health problems among AGYW in Zambia, emphasizing the need for increased efforts to prevent and manage these infections. It's important to note that in some of the behavioral aspects reported in this study, the out-of-school AGYW are much more disadvantaged than their counterparts.

## TUPEC171

Correlates of population-based HIV viremia among women selling sex and living with HIV in Uganda - respondent-driven sampling surveys, 2021-2023

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**Background:** Reduction of HIV viremia (HV) among female sex workers (FSW) is still suboptimal. We examined correlates of HV (defined as  $\geq 1000$  copies/ml) among FSW living with HIV (FSWLHIV) in Uganda using population-based survey data.

**Methods:** We enrolled 2,674 FSWLHIV using respondent-driven sampling surveys in Kampala and 11 up-country sites during April 2021–September 2023. Blood was tested for HIV, viral load, and active syphilis (Chembio Di-

agnostics, Medford, NY, USA); cervicovaginal swabs were tested for high-risk strains of human papilloma virus (hr-HPV); interview data were collected through audio-computer assisted self-interviews. Data were weighted for the complex sampling design, accounting for varying local population size estimates and aggregated data for analysis. We fitted logistic regression models to any variable that had a P-value  $\leq 0.2$  to examine associations between select explanatory variables and HV.

The final model was adjusted for age, syphilis status, education level, marital status, alcohol misuse, drug use, HIV status knowledge, and self-reported antiretroviral therapy (ART).

**Results:** The mean (standard error) age was 28.9 (0.1) years; almost a quarter (667/2,674, 22.6%) had HV. Statistically significant correlates of HV (Table) included age 35-49 years [adjusted odds ratio (aOR)=0.53, vs. 18-24 years], disclosure of sex work behaviour to health workers (aOR=1.48), hr-HPV (aOR=1.47), positive syphilis test (aOR=0.56), HIV status knowledge (aOR=1.43) and self-reported ART use (aOR=0.39).

Characteristic	Weighted N (%) (95% CI)	Unadjusted OR (95% CI)	Adjusted OR (95% CI)	P-value
Age group				
18-24	343 (22.6)	Ref.	Ref.	
25-29	298 (22.3)	0.70 (0.54-0.93)	1.26 (0.75-2.10)	0.744
30-34	174 (13.4)	0.41 (0.29-0.57)	0.53 (0.38-0.73)	<0.0001
35-49	225 (13.2)	Ref.	Ref.	
50-64	298 (22.3)	1.38 (0.95-1.98)	1.47 (0.95-2.25)	0.002
65-74	201 (13.2)	Ref.	Ref.	
75-84	201 (13.2)	0.84 (0.60-1.17)	0.56 (0.40-0.78)	<0.0001
85-94	201 (13.2)	Ref.	Ref.	
95-104	201 (13.2)	0.84 (0.60-1.17)	0.56 (0.40-0.78)	<0.0001
105-114	201 (13.2)	Ref.	Ref.	
115-124	201 (13.2)	0.84 (0.60-1.17)	0.56 (0.40-0.78)	<0.0001
125-134	201 (13.2)	Ref.	Ref.	
135-144	201 (13.2)	0.84 (0.60-1.17)	0.56 (0.40-0.78)	<0.0001
145-154	201 (13.2)	Ref.	Ref.	
155-164	201 (13.2)	0.84 (0.60-1.17)	0.56 (0.40-0.78)	<0.0001
165-174	201 (13.2)	Ref.	Ref.	
175-184	201 (13.2)	0.84 (0.60-1.17)	0.56 (0.40-0.78)	<0.0001
185-194	201 (13.2)	Ref.	Ref.	
195-204	201 (13.2)	0.84 (0.60-1.17)	0.56 (0.40-0.78)	<0.0001
205-214	201 (13.2)	Ref.	Ref.	
215-224	201 (13.2)	0.84 (0.60-1.17)	0.56 (0.40-0.78)	<0.0001
225-234	201 (13.2)	Ref.	Ref.	
235-244	201 (13.2)	0.84 (0.60-1.17)	0.56 (0.40-0.78)	<0.0001
245-254	201 (13.2)	Ref.	Ref.	
255-264	201 (13.2)	0.84 (0.60-1.17)	0.56 (0.40-0.78)	<0.0001
265-274	201 (13.2)	Ref.	Ref.	
275-284	201 (13.2)	0.84 (0.60-1.17)	0.56 (0.40-0.78)	<0.0001
285-294	201 (13.2)	Ref.	Ref.	
295-304	201 (13.2)	0.84 (0.60-1.17)	0.56 (0.40-0.78)	<0.0001
305-314	201 (13.2)	Ref.	Ref.	
315-324	201 (13.2)	0.84 (0.60-1.17)	0.56 (0.40-0.78)	<0.0001
325-334	201 (13.2)	Ref.	Ref.	
335-344	201 (13.2)	0.84 (0.60-1.17)	0.56 (0.40-0.78)	<0.0001
345-354	201 (13.2)	Ref.	Ref.	
355-364	201 (13.2)	0.84 (0.60-1.17)	0.56 (0.40-0.78)	<0.0001
365-374	201 (13.2)	Ref.	Ref.	
375-384	201 (13.2)	0.84 (0.60-1.17)	0.56 (0.40-0.78)	<0.0001
385-394	201 (13.2)	Ref.	Ref.	
395-404	201 (13.2)	0.84 (0.60-1.17)	0.56 (0.40-0.78)	<0.0001
405-414	201 (13.2)	Ref.	Ref.	
415-424	201 (13.2)	0.84 (0.60-1.17)	0.56 (0.40-0.78)	<0.0001
425-434	201 (13.2)	Ref.	Ref.	
435-444	201 (13.2)	0.84 (0.60-1.17)	0.56 (0.40-0.78)	<0.0001
445-454	201 (13.2)	Ref.	Ref.	
455-464	201 (13.2)	0.84 (0.60-1.17)	0.56 (0.40-0.78)	<0.0001
465-474	201 (13.2)	Ref.	Ref.	
475-484	201 (13.2)	0.84 (0.60-1.17)	0.56 (0.40-0.78)	<0.0001
485-494	201 (13.2)	Ref.	Ref.	
495-504	201 (13.2)	0.84 (0.60-1.17)	0.56 (0.40-0.78)	<0.0001
505-514	201 (13.2)	Ref.	Ref.	
515-524	201 (13.2)	0.84 (0.60-1.17)	0.56 (0.40-0.78)	<0.0001
525-534	201 (13.2)	Ref.	Ref.	
535-544	201 (13.2)	0.84 (0.60-1.17)	0.56 (0.40-0.78)	<0.0001
545-554	201 (13.2)	Ref.	Ref.	
555-564	201 (13.2)	0.84 (0.60-1.17)	0.56 (0.40-0.78)	<0.0001
565-574	201 (13.2)	Ref.	Ref.	
575-584	201 (13.2)	0.84 (0.60-1.17)	0.56 (0.40-0.78)	<0.0001
585-594	201 (13.2)	Ref.	Ref.	
595-604	201 (13.2)	0.84 (0.60-1.17)	0.56 (0.40-0.78)	<0.0001
605-614	201 (13.2)	Ref.	Ref.	
615-624	201 (13.2)	0.84 (0.60-1.17)	0.56 (0.40-0.78)	<0.0001
625-634	201 (13.2)	Ref.	Ref.	
635-644	201 (13.2)	0.84 (0.60-1.17)	0.56 (0.40-0.78)	<0.0001
645-654	201 (13.2)	Ref.	Ref.	
655-664	201 (13.2)	0.84 (0.60-1.17)	0.56 (0.40-0.78)	<0.0001
665-674	201 (13.2)	Ref.	Ref.	
675-684	201 (13.2)	0.84 (0.60-1.17)	0.56 (0.40-0.78)	<0.0001
685-694	201 (13.2)	Ref.	Ref.	
695-704	201 (13.2)	0.84 (0.60-1.17)	0.56 (0.40-0.78)	<0.0001
705-714	201 (13.2)	Ref.	Ref.	
715-724	201 (13.2)	0.84 (0.60-1.17)	0.56 (0.40-0.78)	<0.0001
725-734	201 (13.2)	Ref.	Ref.	
735-744	201 (13.2)	0.84 (0.60-1.17)	0.56 (0.40-0.78)	<0.0001
745-754	201 (13.2)	Ref.	Ref.	
755-764	201 (13.2)	0.84 (0.60-1.17)	0.56 (0.40-0.78)	<0.0001
765-774	201 (13.2)	Ref.	Ref.	
775-784	201 (13.2)	0.84 (0.60-1.17)	0.56 (0.40-0.78)	<0.0001
785-794	201 (13.2)	Ref.	Ref.	
795-804	201 (13.2)	0.84 (0.60-1.17)	0.56 (0.40-0.78)	<0.0001
805-814	201 (13.2)	Ref.	Ref.	
815-824	201 (13.2)	0.84 (0.60-1.17)	0.56 (0.40-0.78)	<0.0001
825-834	201 (13.2)	Ref.	Ref.	
835-844	201 (13.2)	0.84 (0.60-1.17)	0.56 (0.40-0.78)	<0.0001
845-854	201 (13.2)	Ref.	Ref.	
855-864	201 (13.2)	0.84 (0.60-1.17)	0.56 (0.40-0.78)	<0.0001
865-874	201 (13.2)	Ref.	Ref.	
875-884	201 (13.2)	0.84 (0.60-1.17)	0.56 (0.40-0.78)	<0.0001
885-894	201 (13.2)	Ref.	Ref.	
895-904	201 (13.2)	0.84 (0.60-1.17)	0.56 (0.40-0.78)	<0.0001
905-914	201 (13.2)	Ref.	Ref.	
915-924	201 (13.2)	0.84 (0.60-1.17)	0.56 (0.40-0.78)	<0.0001
925-934	201 (13.2)	Ref.	Ref.	
935-944	201 (13.2)	0.84 (0.60-1.17)	0.56 (0.40-0.78)	<0.0001
945-954	201 (13.2)	Ref.	Ref.	
955-964	201 (13.2)	0.84 (0.60-1.17)	0.56 (0.40-0.78)	<0.0001
965-974	201 (13.2)	Ref.	Ref.	
975-984	201 (13.2)	0.84 (0.60-1.17)	0.56 (0.40-0.78)	<0.0001
985-994	201 (13.2)	Ref.	Ref.	
995-1004	201 (13.2)	0.84 (0.60-1.17)	0.56 (0.40-0.78)	<0.0001

Table. Correlates of HIV viremia among female sex workers living with HIV in Uganda, 2021-23.

**Conclusions:** The study findings reveal factors linked to HV among FSWLHIV in Uganda. Follow-up initiatives to combat HV and onward transmission might focus on under 30-year-olds, those diagnosed with hr-HPV, and those who do not self-report ART use.



## TUPEC172

### Spatial patterns of HIV seropositivity in the transboundary areas of Senegal

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**Background:** In the West African region, borders have been since long classified as areas at high risk of HIV transmission due to the mobility of the population. In Senegal, the spread of the virus has always been associated with internal and external movement of persons within corridors and borders even if the geographical dynamic of HIV in those areas is poorly documented. This study proposes a spatial patterns' analysis of HIV seropositivity in the Trans boundary regions of Senegal from 2019 to 2022.

**Methods:** Our study targeted 8 regions (Fatick, Kaolack, Kaffrine, Tambacounda, Kedougou, Kolda, Sedhiou and Ziguinchor) sharing boundaries with neighborhood countries as Mali, Gambia, Guinea Bissau and Guinea Republic. The HIV Testing Services (HTS) were used as the main source of data to determine the seropositivity of selected areas at districts level.

The spatiotemporal pattern of HIV seropositivity was determined through ArcGIS 10.1 software using Index Distance Weighting (IDW) and Trend tools. Finally, the Getis-Ord Gi\* statistic tool was utilized to identify statistically significant hot spots and cold spots of HIV seropositivity in the selected areas.

**Results:** The major hotspots have been identified within 5 major transboundary regions namely Kolda (3%), Ziguinchor (3.5%), Sedhiou (1.8%), Tambacounda (1.1%) and Kedougou (1%). From 2019-2020, 10 hotspot districts have been located within the regions of Kolda, Sedhiou and Ziguinchor, all sharing boundaries with Gambia and Guinea Bissau. From 2021 to 2022, 11 hotspots have been detected from Kolda, Sedhiou and Ziguinchor and 2 hotspots in Tambacounda and Kedougou sharing boundaries with Mali and Guinea Republic.

Moreover, at the local level, the trend analysis showed that the districts close to the boundaries present the highest rate of seropositivity.

**Conclusions:** Our study showed evidence of serious concentration of the HIV seropositivity in the transboundary areas of Senegal. From 2019 to 2020, the major hotspots were generally localized in 3 regions (Ziguinchor, Kolda, Sedhiou). However, from 2021-2022, new emerging hotspots have been identified in Tambacounda and Kedougou. HIV/AIDS is therefore a trans-boundary health threat that cannot be contained or addressed solely within one country and thus requires action across governance levels.

## TUPEC173

### Not getting to zero HIV among men who have sex with men in San Francisco despite high care continuum and prevention targets

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**Background:** New HIV diagnoses among men who have sex with men (MSM) in San Francisco decreased by 77% over the decade from 2012 to 2021, presenting an encouraging trajectory toward zero infections by 2030. Unfortunately, the trajectory has slowed in recent years, with an uptick in new diagnoses from 2021 to 2022. Using data from National HIV Behavioral Surveillance (NHBS), we assessed the current HIV epidemic status and progress towards achieving UNAIDS 95-95-95 targets among MSM in San Francisco.

**Methods:** NHBS comprises serial cross-sectional surveys of populations at risk for HIV in 23 cities in the USA. Time-location sampling (TLS) was used to recruit MSM, intercepting them at physical and online venues at randomly chosen venue-day-time periods between June and November 2023. HIV status was obtained by rapid testing; HIV care and prevention engagement were self-reported.

**Results:** Among 545 MSM, HIV prevalence was 24.4%. Prevalence was highest at 48.8% among Black/African American MSM. Three of 132 MSM living with HIV had not been previously diagnosed, yielding 97.7% aware of their status. Of those previously diagnosed, 96.1% were on ART. Of those on ART, 91.9% reported being virally suppressed on their last viral load test. MSM in the 30-39 age group were the least likely to report viral suppression (77.3% vs. >92%, p=0.017). Among MSM not known to have HIV, 80.1% had an HIV test, 56.5% used PrEP, 27.9% consistently used condoms, and 9.2% used PEP in the past 12 months.

**Conclusions:** MSM has high levels of HIV care engagement in San Francisco in 2023, exceeding the first (status awareness) and second (ART use) of the 95-95-95 UNAIDS targets and greater than 90% for the third (viral suppression). The slowing reduction and possible increase in new HIV cases are discouraging, given our sustained high levels of ART and PrEP use among MSM in San Francisco over many years.

Our data suggest we are entering a new era of the HIV epidemic in which our current prevention tools are hitting diminishing returns. If we are to get to zero HIV, we need to re-strategize how to best deploy our current effective interventions.



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## TUPEC174

Annual temporal trends in recent HIV infections among FSWs in Ethiopia; a guide to prioritization of HIV resources

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**Background:** HIV recency surveillance although not beneficial at an individual level, guides resource prioritization at a geo-spatial level towards highest transmission zones. The recency assay in Ethiopia (*Asanté*® HIV-1 Rapid Recency) differentiates recently acquired HIV infection (within a year prior), from infections acquired more than a year. We examine trends in recent HIV infections among female sex workers (FSWs) in a community led HIV program. FSWs who newly test HIV positive through conventional national algorithm also undergo HIV recency testing.

**Methods:** We reviewed HIV Testing data for PEPFAR fiscal years of 2022 and 2023 to determine trends in probable recent HIV infection among FSWs in a comprehensive community HIV prevention, care, and treatment program. Additionally, we compared HIV case yield from indexing FSWs with recent infections, against yield from indexing FSWs infected more than a year prior.

**Results:** In 2022, 8% of FSWs in 12 sub-national units (SNUs) of Addis Ababa had probable recent infection. FSWs in two SNUs (Riche and Kasanchis) had a two - to - three-fold higher rate of recent HIV infection (RRs=2.2 and 2.8, respectively) compared to FSWs in other SNUs. In 2023 recency surveillance was expanded to regions outside of Addis Ababa.

FSWs living outside of Addis Ababa had significantly higher rates of HIV recency averaging 31%. FSWs in four SNUs in the South of Ethiopia (Robe, Nekmte, Hawassa, Arba-minch) and Humera in the North of Ethiopia, were seven times more likely to have recent infection compared to FSW living in Addis Ababa which had recency rate of 5.1% (RR =7.1).

Acceptance to Index Testing and partner elicitation ratios were similar across FSWs, regardless of the recency of their HIV infection. HIV case yield from indexing FSWs with recent infection, was however consistently 20% higher (OR =0.79) over the two years, when compared to indexing among FSWs who were infected for more than a year.

**Conclusions:** HIV recency surveillance remains critical to national-level planning and resource prioritization. Index testing is the most efficient HIV testing modality in mitigating further risk of HIV transmission within active sexual networks.

## TUPEC175

Monitoring trends in mother-to-child transmission of HIV in Nigeria: a retrospective six-year study

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**Background:** According to UNAIDS' 2019 report, Nigeria accounts for 41% of vertically transmitted HIV among children in the West and Central African region This study delves into the evolving trends in transmission rates among infants exposed to HIV.

**Methods:** A retrospective study was conducted using aggregate data from 539 primary, secondary, and tertiary healthcare facilities across 17 states in Nigeria between July 2017 to September 2022. The analysis focused on the infants exposed to HIV (IEH) (IEH load) and the proportion of those infants with a documented HIV status (transmission rate). The transmission rate was assessed across both urban and rural population settings. Inferential statistics (Kendall's Tau correlation and Kruskal-Wallis H Test) were employed to determine the correlation between the transmission rate, the service level (primary, secondary, and tertiary), and IEH load.

**Results:** Among the 53,318 IEH, 2,300 were diagnosed with HIV, yielding a transmission rate of 4.3%. In urban health facilities, comprising 68.4% (1,573 infants) of the IEH, the transmission rate was 4.5% (1,573 out of 34,764), while rural health facilities showed a lower rate of 3.9% (727 out of 18,554). Secondary health facilities accounted for 51% (1,178 infants) of HIV cases but had the lowest transmission rate at 3.7% (1,178 out of 31,498). Tertiary facilities exhibited the highest transmission rate at 6.5% (495 out of 7,626), and primary health facilities recorded a rate of 4.4% (627 out of 14,194). Significant differences were observed across service levels (H = 16.8, p = 0.0002246).

The transmission rate peaked in 2021 at 6.0% (660 out of 11,004 infants) and decreased to 1.9% (240 out of 12,735 infants) in 2022. A moderate negative correlation was found between IEH load and transmission rate (tau = -0.3405849, p = 8.3e-17).

**Conclusions:** Urban settings and secondary facilities had the highest number of IEH, but the tertiary facilities had the highest transmission rate. The service level had an impact on the transmission rate. The facilities with lower IEH loads recorded higher transmission rates and this may



suggest the need for more resources to care for these infants. To curb vertical transmission of HIV, strategic and focused interventions are essential.

## TUPEC176

The CIPHR Project (Community Insights in Phylogenetic HIV Research); a key population-led knowledge exchange program on HIV molecular science

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**Background:** The field of HIV molecular epidemiology has gained considerable popularity. However, HIV sequences are often analyzed without the involvement of communities most affected by HIV. Guidelines and procedures to engage affected communities are noticeably absent from the HIV molecular epidemiology literature.

Our program aims at building connections between how scientific knowledge is shared with communities through co-designing a pilot HIV molecular surveillance and improving the affected communities' understanding of biomedical research on them.

**Description:** The CIPHR project engaged a working group, including community health activists representing community-based organizations led by gay, bisexual, and other men who have sex with men, and female sex workers in Nairobi, Kenya, to meaningfully and collaboratively develop the methods for a community-led molecular HIV pilot project.

Through a series of in-person and virtual discussions beginning in June 2022, the CIPHR working group of community health activists and basic and social scientists, which includes experts working in the field of molecular HIV research:

1. Learned about and interrogated phylogenetic research terminologies, methods, and past research findings;
2. Co-explored the possibilities and limitations of HIV molecular epidemiology for key population programs; and
3. Co-developed a protocol for a pilot community-based HIV molecular study.

**Lessons learned:** Placing communities at the center of scientific research and personalizing the research process has enabled us to move from an unknown scientific concept (phylogenetics) to a deep community understanding of HIV molecular surveillance.

Bringing scientists and communities together to break down the terminology and build scientific literacy, while interrogating how and whether community-based programs can integrate phylogenetic data into their organizational planning and outreach shows great promise in ensuring that communities can reclaim spaces in the scientific space in the spirit of 'nothing about us without us'.

Traditional methods of communicating scientific information do not adequately serve communities, there's a need to purposefully involve communities in co-developing awareness materials for their communities.

**Conclusions/Next steps:** Following the implementation of the community-developed pilot study that combines molecular network data with community knowledge, we'll critically assess emergent ethical issues, advantages, and disadvantages of HIV molecular research to develop a policy framework to guide its benefit in the global HIV response.

## TUPEC177

Recent HIV infection surveillance in Uganda, 2020-2022

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**Background:** The Uganda Ministry of Health and stakeholders launched recent HIV infection surveillance in October 2019. Surveillance data monitors and describes trends in recent infections among those newly diagnosed to detect signals of potential elevated HIV acquisition among geographical areas and sub-populations. Recent infection refers to the acquisition of HIV infection within the last 12 months as determined by Recent Infection Testing Algorithm (RITA), confirmed by a recent result on rapid test for recent infection (RTRI) and a viral load (VL) of  $\geq 1000$  copies/ml.



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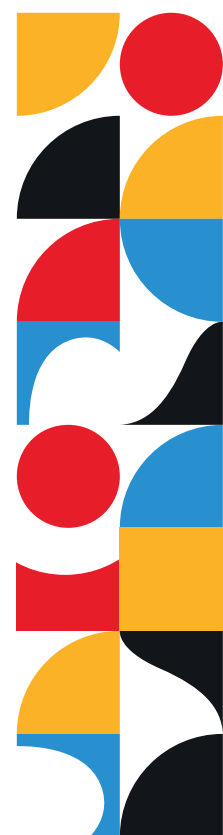
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**Methods:** We analysed national surveillance data from 2020-2022. Consenting persons aged 15 years and above with no reported history of antiretroviral therapy are tested for RITA. We conducted descriptive analyses and logistic regression to determine factors associated with RITA-recent. RITA data merged with the HIV testing electronic medical records was used in analysis. We summarized results as proportions and adjusted odds ratios with 95% confidence intervals.

**Results:** Among the 4,803 persons living with HIV tested by RTIR, 700 (14.6%) tested positive for recent infection and 473 (9.8%) met criteria for recent infection by RITA. Majorities of RITA recent infections were female (329; 69.6%) and 15-34 years (338; 71.5%). and were from Kampala (23.7%), Ankole in South West (15.6%) and South Central (15.0%) regions. Being 15-24 year-old (aOR=1.88, CI 1.30-2.71), testing HIV positive using community HTS delivery models (aOR=1.40, CI 1.01-1.94), and residing in Ankole (aOR=1.6, CI 1.09-2.70), and Kigezi (aOR=1.7, CI: 1.12-2.62) in the Southwest, (compared to Kampala) were associated with RITA recent results. Although not significant, among 15-24-year-olds, males had a higher proportion (18.0%) of RITA recent infections than females (13.2%).

Characteristic	Total	RITA Recent %	cOR	95%CI	aOR	95%CI
15-24	1218	13.7	1.96	1.38-2.78	1.88	1.32-2.71
25-34	1873	9.1	1.24	0.88-1.74	1.23	0.87-1.76
35-44	1050	9.3	1.17	0.80-1.70	1.17	0.80-1.71
45+	586	7.5	Ref		Ref	
Male	1675	8.6	Ref		Ref	
Female	3052	10.8	1.29	1.05-1.58	1.15	0.92-1.43
Facility	4309	9.6	Ref		Ref	
Community	418	14.6	1.62	1.21-2.11	1.40	1.01-1.95

**Conclusions:** RITA results potentially signal HIV acquisition among adolescents and young men and women and may warrant further data triangulation to better understand and programmatically address gaps in HIV prevention and treatment programs.

## Modelling the HIV pandemic

### TUPEC178

Effects of reducing consultations for Pre-Exposure Prophylaxis Program on HIV and gonorrhea among MSM in the Netherlands: a modelling study

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**Background:** Pre-exposure prophylaxis (PrEP) is highly effective in reducing HIV acquisition. In 2019, a five-year PrEP pilot program started in the Netherlands that provides PrEP medication and care in the form of 3-monthly consultations including HIV and STI tests to a maximum of 8,500 individuals.

We investigated the impact on HIV and *N. gonorrhoeae* (NG) transmission among men who have sex with men (MSM) of possible variations in PrEP program capacity and PrEP consultation frequency after 2024.

**Methods:** We extended an earlier developed agent-based model that describes the transmission of HIV and NG via sexual partnerships among MSM.

In four scenarios, we assumed a maximum capacity after 2024 of either continuing of 8,500 individuals or increasing to 16,000 individuals, and simultaneously either continuing consultation frequency at 3-monthly; or changing to 6-monthly. The numbers of new HIV and NG acquisitions and PrEP consultations over 2024-2034 in the four scenarios were compared relative to the baseline scenario where the PrEP program was discontinued in 2024.

**Results:** For a maximum capacity of 8,500 individuals with 3-monthly consultations, the cumulative number of averted acquisitions over the years 2024-2034 could be 3,140 (95%CrI: 2,710 – 3,660) and 27,930 (95%CrI: 23,700 – 33,730) for HIV and NG respectively, while resulting in 316,050 (95%CrI: 315,440 – 346,530) consultations.



Increasing the maximum capacity to 16,000 individuals with 3-monthly consultations could result in 3,940 (95%CrI: 3460 – 4420) and 29,970 (95%CrI: 25,390 – 36,420) acquisitions averted for HIV and NG respectively, while resulting in 589,330 (95%CrI: 588,350 – 589,910) consultations.

Decreasing the consultation frequency to 6-monthly with a capacity of 16,000 could result in 3,900 (95%CrI: 3,400 – 4,450) and 29,960 (95%CrI: 24,790 – 36,490) acquisitions averted for HIV and NG respectively, while resulting in 272,590 (95%CrI: 272,330 – 272,810) consultations.

**Conclusions:** Increasing the capacity of the PrEP program and decreasing the frequency of PrEP consultations could be an effective and efficient extension of the current PrEP program, since it enhances the impact of PrEP in reducing HIV transmission with a rather moderate increase in consultations and no effect on NG. However, a health-economic evaluation will be needed to further assess the cost-effectiveness of these scenarios.

## TUPEC179

**Closing the gender gap in primary health care: did the only dedicated male clinic in Mozambique increase the uptake of health services for HIV by men?**

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**Background:** Men engage less in healthcare services, and delay seeking care, leading to notable gender disparities in health outcomes. UNAIDS 95-95-95 achievements are lower in men than women in Mozambique (e.g., first 95: 73.3% of women and 68.5% of men). To address the need of male-friendly healthcare, the MoH and Jhpiego established the first Integrated Men's Clinic (MC) at Dondo Health Center (DHC) in Mozambique, in March 2022, providing a comprehensive package of male services (including sexual and reproductive health and reduction of HIV risk behaviors). The MC was announced in TV and radio broadcasts. We assessed how the MC affected men's utilization of health services, focusing on HIV testing, care and treatment.

**Methods:** Two facilities near DHC, with similar catchment areas and not offering the package were included for comparison: Mafambisse (MaHC, 10 Km away) and Mutua (MuHC) (25 Km away). Facility annual data were from the National Health Information System, before (April 2021-March 2022 or Y0) and after establishing DHCMC (April 2022-March 2023 or Y1). Data elements were related to HIV service delivery.

**Results:** At DHC, indicators that increased from Y0 to Y1 were "men tested for HIV" (3,092 to 5,695; +84%); "newly diagnosed HIV positive men" (480 to 784; +63%); "new enrollments in HIV care" (460 to 515; +12%); "total men in HIV

care" (24,433 to 32,116; +31%); and "men on PrEP" (31 to 198; +539%). From Y0 to Y1, the mean monthly number of men attended increased from 2,094 to 2,710 at DHC, 2,327 to 2,597 at MaHC and 412 to 486 at MuHC, corresponding to increases of 27%, 12% and 18%, respectively.

**Conclusions:** Establishing a MC resulted in notable improvements in several key HIV-related indicators at DHC. Integrated male clinics can lead to increased HIV testing, earlier diagnoses, and better male access to HIV care and prevention services. Continued analysis and monitoring are recommended to fully assess the effectiveness and sustainability of this MC strategy.

## TUPEC180

**Cost-effectiveness of pretreatment HIV drug resistance testing in people living with HIV in Iran**

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**Background:** HIV drug resistance (HIVDR) is an important challenge in the fight against HIV/AIDS and can threaten progress toward achieving the target of HIV elimination by 2030. Genotyping pretreatment HIVDR testing (DRT) has been proposed as a potential solution. However, the cost-effectiveness of this intervention needs to be evaluated to determine its feasibility and potential impact on healthcare systems. This study aimed to assess the cost-effectiveness of DRT among people living with HIV (PLHIV) in Iran.

**Methods:** 1000 hypothetical PLHIV were simulated in terms of cost and effectiveness based on quality-adjusted life Years (QALY). The Markov Model was developed to calculate incremental cost-effectiveness ratio (ICER) using TreeAge Pro 2020. Deterministic and probabilistic analyses were performed for sensitivity analyses.

**Results:** Results showed that compared to not performing pretreatment HIVDR testing this intervention gained 0.035999 QALY with an incremental cost of 1,695.32 USD. The ICER was calculated as 47,093.53 USD, indicating that



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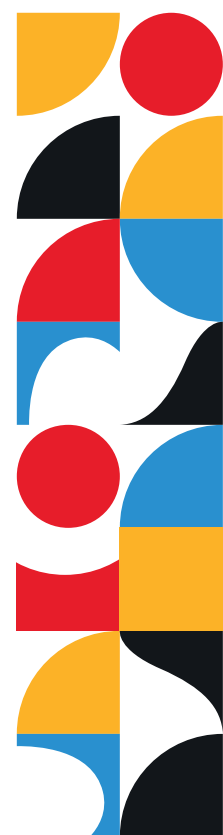
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pretreatment DRT was not cost-effective. The probability of opportunistic infection in people with viral failure, the effectiveness of Dolutegravir in people without drug resistance, and the quality of life of people in the AIDS stage were found to be the most important variables affecting ICER. With an increasing willingness to pay more than 53,000 USD, pretreatment DRT testing will become cost-effective.

**Conclusions:** Based on our findings, pretreatment HIVDR testing is not currently cost-effective in Iran as it imposes high costs on healthcare systems with few benefits for PLHIV. However, if resources are available, drug resistance testing can be a valuable tool in generating HIV molecular data and molecular surveillance of HIV.

## TUPEC181

**On the compounding manifestations of racism shaping the US HIV/AIDS epidemic: why ending the HIV epidemic must address these factors for success**

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**Background:** Growing racial/ethnic inequities in healthcare access as well as racially segregated sexual mixing both contribute to disparities in HIV incidence, posing a major barrier to the efforts to end the HIV epidemic in the US. We demonstrate the compounding effects of these two manifestations of racism on the trajectories of HIV incidence and racial/ethnic disparities with two simulation models, using Atlanta Georgia as a case study.

**Methods:** We used two independently developed HIV transmission models (LEM and TITAN) to estimate the annual number and rate of HIV new infections and incidence rate ratios between racial/ethnic groups among men who have sex with men (MSM) between 2020 to 2030. Compared to a status quo scenario of maintaining current disparities in health services access and assortative sexual mixing by race/ethnicity, we assessed three alternative scenarios: equalizing health service access across racial/ethnic groups with observed assortative sexual mixing; equalizing health service access with sexual mixing at random; and equalizing health service access with fully assortative sexual mixing. We standardized both models regarding setting, population, and calibration to enhance model comparability.

**Results:** Under the status quo, the LEM and TITAN models projected annual HIV new infections among MSM would decrease by 5.0% and 6.9% from 2020 to 2030, respective-

ly; however, the racial/ethnic disparities in HIV incidence rate would persist. Compared to the status quo, equalizing health service access only resulted in a moderate reduction in incidence rate ratios in 2030. Equalizing health service access when sexual mixing was at random yielded the greatest reduction in both the annual new HIV infections (23.6% and 54.3% in LEM and TITAN, respectively) and the incidence rate ratios (LEM: 33.3% [Black/White], 24.3% [Hispanic/White]; TITAN: 58.2% [Black/White], 32.1% [Hispanic/White]) in 2030.

**Conclusions:** The enduring racial/ethnic disparities in HIV incidence indicate that our current approaches are inadequate. While differences in the HIV incidence trajectories can be attributable to variations in target populations, model design and parameters, this study reaffirms the importance of addressing inequitable HIV service access and sexual racism in our efforts to improve equity and move toward ending the HIV epidemic.

## HIV prevention research

### TUPEC182

**HIV-PrEP use and care in Germany - data from HIV specialty care centers within the national PrEP-Surveillance**

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**Background:** HIV pre-exposure prophylaxis (PrEP) has been funded by statutory health insurance in Germany for people at risk of acquiring HIV since 09/2019. As part of the national PrEP-Surveillance, surveys on PrEP use and care were conducted.

**Methods:** Between 01/2022-12/2023, semi-annual retrospective, anonymous online surveys were conducted among PrEP providers in 29 HIV specialty care centers reflecting Germany's various geographical regions and health care settings. Aggregated data and assessments of the centers were collected.

**Results:** At the end of 2022, n=12,525 PrEP users received care at 29 centers. 99% of PrEP users were male, 98% were men who have sex with men (MSM) and 88% had statutory health insurance.

In 2022, 11 HIV infections were reported after PrEP initiation (0.09%). A similar proportion was observed across various surveys of German cohorts. The suspected reasons were almost exclusively low adherence, often in combination



with event-driven use and PrEP interruption. The proportion of daily PrEP users was 67%; PrEP breaks and PrEP discontinuations were reported for 19% and 7% respectively. 31 HIV-infections were newly diagnosed during screening before PrEP initiation in 2022.

Fear of side effects was one of the most common reasons for not starting PrEP. However, only 2% of PrEP users interrupted/discontinued PrEP due to adverse reactions.

The majority of centers stated that the incidences of chlamydia/gonococci (72% of centers, 74% of prep users) and syphilis (69% of centers, 67% of prep users) among PrEP users had increased in 2021-2022.

**Conclusions:** PrEP continues to be highly effective in the prevention of HIV infection in everyday clinical practice. Maintenance of adherence, PrEP interruptions and event-driven PrEP use remain challenging for optimal prevention. PrEP counseling and guidance should take this into account, especially considering that one-third did not use PrEP daily.

Screening at PrEP initiation or re-initiation led to earlier detection of unknown HIV infections. Statutory health insurance plays an important role in PrEP provision. PrEP is almost exclusively used by MSM in Germany. Specific education and information should address side effects and target other key groups at risk for HIV. STI incidences should be further monitored and analyzed.

## TUPEC183

### A scoping review of PEP (under-) use among health care workers

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**Background:** Post-exposure prophylaxis (PEP) is a highly efficacious prevention method following HIV exposure. Yet PEP has been underutilized, even among health care workers (HCWs) with occupational exposure in sites with PEP policies and procedures and access to PEP medications.

It is important to understand the dynamics of uneven use of PEP in what appears to be an optimal context to better protect the health and well-being of HCWs.

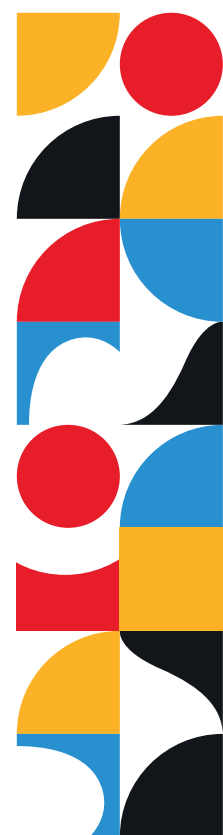
**Methods:** We conducted a scoping review, using Arksey & O'Malley's (2005) guidelines, to elucidate the values and preferences influencing HCWs use of PEP after occupational exposure. We searched PubMed, PsychInfo, and Google Scholar for peer reviewed literature published in English from 2014 to 2022 using the terms *HIV, postexposure/post-exposure prophylaxis, acceptability, health care workers, and values and preferences*. This yielded 63 articles of relevance of which we undertook a narrative review.

**Results:** All studies occurred in Africa and Asia, involved various HCWs and settings, and used a range of methodologies. Emergent themes arrayed along the trajectory of the PEP use experience: awareness/knowledge; acceptability; availability/access; uptake/use; adherence/completion.

On average across studies, although awareness of PEP for HIV prevention was high (81%), knowledge about drug regimens and healthcare facility policies was moderate to low (58%).

Acceptability of PEP was moderate to high (77%). PEP's perceived accessibility/availability was inconsistent and varied by geographic location and setting. HCWs' uptake of PEP was low (40%), affected by not knowing how to report an exposure and being unaware of PEP availability. Adherence/completion of PEP regimens was moderate to low (58%), impeded by side effects and a belief that completing regimens was unnecessary to avert infection. HCWs consistently expressed concern about HIV stigma. Findings are limited by the inconsistent use of constructs across studies and a lack of clarity about the reporting of exposure events.

**Conclusions:** A multi-level approach is needed to address the interplay of individual, social, and structural barriers that diminish HCWs' PEP use after occupational exposure. Improved training, incident reporting, 24-hour access to non-stigmatizing PEP services, and monitoring of adherence and completion are essential to optimizing HCWs' PEP use.





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## TUPEC184

### Pre-Exposure Prophylaxis product choice of participants in HPTN 083

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**Background:** The HPTN 083 study demonstrated superiority of long-acting injectable cabotegravir (CAB-LA) compared to daily oral tenofovir disoproxil fumarate-emtricitabine (TDF/FTC) for HIV pre-exposure prophylaxis (PrEP) in cisgender men and transgender women who have sex with men. In the study's open-label extension (OLE), participants were offered choice of CAB-LA or to complete study participation with TDF/FTC.

We report on OLE product choice for all participants by region to investigate presence of any regional or cultural differences in product preference.

**Methods:** We provide a breakdown of product choice among participants overall and within four regions globally and describe participants' reported reasons for regimen choice. Participants' reasons for declining OLE participation and for study termination are also reported.

**Results:** Among 4566 participants enrolled, 533 (11.7%) were ineligible for the OLE, 547 (12.0%) were lost-to-follow-up, and 431 (9.4%) were terminated.

Additionally, 337 (7.4%) declined participation in the OLE and 126 (2.8%) remain OLE-eligible. Of the remaining 2592 participants entering the OLE, 2488 (96.0%) chose CAB-LA and 104 (4.0%) chose TDF/FTC.

Among regions, the proportion choosing CAB-LA was similar: 1142/1193 (95.7%) in Latin America, 501/515 (97.3%) in Asia, 75/81 (92.6%) in Africa, and 770/803 (95.9%) in the United States. Reported reasons for product choice are listed in the Table.

The most common reason for terminating prior to the OLE or declining participation in the OLE was lack of continued study interest (186/431 [43.2%] and 168/337 [49.9%], respectively).

	Overall (n=2592)	US* (n=803)	Latin America (n=1193)	Asia (n=515)	Africa (n=81)
Reason for choosing CAB-LA	n=2488 (%)	n=770 (%)	n=1142 (%)	n=501 (%)	n=75 (%)
Prefer injection and/or don't like pills	1774 (71.3)	541 (70.3)	784 (68.7)	405 (80.8)	44 (58.7)
CAB-LA shown to be superior to TDF/FTC for HIV prevention	431 (17.3)	112 (14.5)	237 (20.8)	78 (15.6)	4 (5.3)
CAB more convenient, discreet, or easier to adhere to	115 (4.6)	37 (4.8)	52 (4.6)	8 (1.6)	18 (24.0)
Other	168 (6.8)	52 (6.6)	89 (8.0)	10 (2.0)	9 (12.0)
Reason for choosing TDF/FTC	n=104 (%)	n=33 (%)	n=51 (%)	n=14 (%)	n=6 (%)
Don't like injections and/or prefer pills	63 (60.6)	17 (51.5)	30 (58.8)	12 (86.7)	4 (66.7)
The potential side effects of TDF/FTC are better understood or preferable to those of CAB-LA	19 (18.6)	4 (12.1)	4 (7.8)	1 (7.1)	1 (17.7)
Concerned about resistance if injectable PrEP fails	8 (7.7)	4 (12.1)	4 (7.8)	1 (7.1)	1 (17.7)
Other	23 (22.1)	8 (24.2)	13 (25.5)	0 (0.0)	0 (0.0)

Table. Reported reasons for choosing an HIV PrEP regimen at the time of HPTN 083 open label extension entry.

**Conclusions:** In the OLE phase of HPTN 083, nearly all participants globally chose CAB-LA over TDF/FTC. Participants' choice of regimen was largely driven by a general preference for injections or pills. Study visit fatigue was a large contributor to declined OLE participation and to study termination. These results should be interpreted with the lens that individuals preferring an oral PrEP regimen may have opted not to participate in HPTN 083.

## TUPEC185

### Healthcare worker's attitudes towards PrEP and the implications towards PrEP rollout

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**Background:** HIV pre-exposure prophylaxis (PrEP) is an essential prevention strategy. Healthcare workers are key to informing both the healthcare clients and for healthcare provision. Successful implementation of PrEP depends on healthcare workers attitudes and views that significantly impact on the public perceptions, acceptability, and uptake.

**Methods:** A cross-sectional survey was conducted amongst healthcare workers from ten primary health care facilities in Tshwane, Pretoria, to assess the attitudes towards the program. Convenience sampling technique was employed to recruit 114 healthcare workers, who consented to participate. Data was collected over three months from September to November 2019. Univariate, bivariate and logistic regressions estimated the association between the attitudes and the demographic characteristics of the healthcare workers.

**Results:** Largely, PrEP was viewed negatively by 84.3% of respondents. Healthcare workers reported negative attitudes regarding PrEP use for the following reasons: PrEP could lead to increased sexual risk-taking behaviour (53.7%), promotes HIV resistance (45.4%), and that potential ARV resistance (64.8%), and medication side effects


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(56.5%) would be potential barriers to PrEP use. Additionally, majority (66.7%) of the respondents believed that behavioural interventions were more effective (66.7%). Although the overall attitude towards PrEP was negative, majority (90.7%) of the respondents believed that PrEP education for HIV prevention is essential, 88.9% reported willingness to counsel potential users about HIV-PrEP for prevention, and 91.7 % reported willingness to recommend PrEP to potential users.

The odds of a positive attitude towards PrEP as an HIV preventive measure were 1.92 times higher among males versus females (OR = 1.92; 95% CI 0.54–6.83;  $p = 0.311$ ) and 1.24 times higher among those with a bachelor's degree versus respondents with a diploma (OR = 1.24; 95% CI 0.51–3.01;  $p = 0.636$ ).

**Conclusions:** Success and feasibility of PrEP implementation requires positive attitudes by healthcare workers as they will likely promote the programs to their healthcare clients. Addressing educational and training needs of healthcare workers on PREP guidelines and benefits are imperative for successful implementation of PrEP. Healthcare workers' perceptions and positive attitudes could influence the willingness to provide PrEP as part of the HIV prevention strategies.

## TUPEC186

Technology-based Interventions, with a stepped care approach, for reducing sexual risk behaviors and increasing PrEP initiation among Transgender and Gender Expansive Youth and Young Adults (ATN 160)

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**Background:** TechStep was a technology-based trial, with a stepped care approach, to reduce cumulative condomless encounters (CCEs) and increase PrEP uptake among

transgender and gender expansive youth and young adults (TGE-YYA) in the US.

**Methods:** From October 2019 to September 2021, 254 TGE-YYA (16–24 years) were randomized into:

- 1) *Text* (n=82), or
- 2) *Webapp* (n=87), or
- 3) *Control* (n=85).

At month 3, those randomized to *Text* and *Webapp* who did not demonstrate improvement on the primary outcomes were re-randomized to receive virtual eCoaching (grounded in Motivational Interviewing/CBT; referred to as *Text+* or *Webapp+* conditions) or remain in their initial condition without eCoaching. Participants were followed for 9 months. The efficacy of the *Text+* and *Webapp+* stepped care interventions at improving outcomes compared to the *Control* intervention was assessed by estimating the additive effect of the interventions on each of the primary outcomes of interest.

**Results:** Participant follow-up rates for all conditions were 89.8% (3-month), 80.7% (6-month), and 83.1% (9-month). Most (66.5%) participants were 21–24 years old and White (57.9%; 10.2% Black; 7.1% Latinx). Nonbinary and assigned female at birth (44.5%) and trans man/masculine (34.6%) were the most common gender identities. At baseline, 55% of participants engaged in condomless sex in the past 3 months, but only 7% were prescribed PrEP. At month 6, the *Text+* and *Webapp+* interventions had lower estimated average CCEs compared to the *Control* (see Table), however differences were not statistically significant for any of the primary outcomes. In secondary analyses, participants who received *Text* only (with no eCoaching) had statistically fewer CCEs than those in the *Control* (2.05 vs. 2.54,  $p < .05$ ), however a lower percentage of *Text* only participants discussed PrEP with their provider compared to all other study conditions.

Primary Outcomes	Comparison Groups	Estimated 6 Month Difference (95% CI)	p-value
Cumulative Condomless Encounters (CCEs; possible range = 1–6 CCEs)	<i>Text+</i> vs. <i>Control</i> (2.27 vs. 2.54)	-0.27 (-0.68, 0.13)	0.181
	<i>Webapp+</i> vs. <i>Control</i> (2.21 vs. 2.54)	-0.33 (-0.67, 0.01)	0.057
CCEs while High on Drugs or Alcohol (possible range = 1–6 CCEs)	<i>Text+</i> vs. <i>Control</i> (0.67 vs. 0.73)	-0.06 (-0.24, 0.12)	0.531
	<i>Webapp+</i> vs. <i>Control</i> (0.76 vs. 0.73)	0.04 (-0.16, 0.24)	0.714
PrEP Uptake	<i>Text+</i> vs. <i>Control</i> (11% vs. 10%)	0.00 (-0.08, 0.09)	0.913
	<i>Webapp+</i> vs. <i>Control</i> (4% vs. 10%)	-0.06 (-0.13, 0.01)	0.083

**Conclusions:** Although CCEs were reduced, findings suggest that these approaches may not be sufficient to increase PrEP uptake. However, different combinations of technology-based interventions may have differential impact on HIV prevention outcomes for TGE-YYA.





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## TUPEC187

### Key informant preferences for characteristics of a long-acting HIV pre-exposure prophylaxis (PrEP) implant

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**Background:** A long-acting PrEP implant that delivers sustained, extended-release drug is under development and could address challenges with daily and on-demand prevention options. To inform design of an implant acceptable to intended users, we explored implant characteristic preferences from key informants (KIs) of HIV services, including potential end-users, PrEP providers/counselors, and public-health-workers, early in the product development stage.

**Methods:** Using a quota sampling frame targeting men-who-have-sex-with-men (MSM), transgender women (TGW) and cisgender women (CGW), KIs were purposively recruited in California and Alabama between 09/2021 and 04/2022. Qualitative interviews used a semi-structured guide and included implant prototypes and an interactive importance ranking activity for implant characteristics. After each interview, a report summarized key findings, which were extracted into an analysis matrix organized by participant type and implant characteristic. Results were analyzed thematically and synthesized into summary reports to describe preferences. Quantitative data from the ranking activity were analyzed overall and by participant type.

**Results:** Twenty-eight KIs were interviewed (11 CGW, 10 MSM, 7 TGW), of which 11 had prior PrEP experience. Most KIs (n=24) ranked removability of an implant before drugs are fully delivered as important. They highlighted the importance of removing the implant early if experiencing side effects. Acceptable locations for implant insertion included the arm and thigh for all KIs, with CGW and TGW also suggesting insertion under the breast. KIs preferred a small, flexible, single rod implant because these characteristics were perceived as more comfortable and less visible after insertion. KIs highlighted the importance of discretion given concerns about potential implant stigma. However, several KIs thought a larger implant with multiple rods would be acceptable if it provided longer duration of protection. Most KIs (n=24) ranked duration of protection as important, citing 1-3 years as acceptable.

**Conclusions:** Preferences for implant characteristics raised by KIs provide important considerations for design of future implants. KIs raised questions about the acceptability of a larger implant or multiple rods to achieve longer duration of protection, which is being explored in further research among intended users. Ultimately, integrating insights from HIV prevention stakeholders early in new HIV prevention product development could help improve design and implant acceptability.

## TUPEC188

### Mozambique's voluntary medical male circumcision program for HIV prevention: progress towards sustainability

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**Background:** Since 2010, the Mozambique Ministry of Health (MoH) with support from the U.S. President's Emergency Plan for AIDS Relief (PEPFAR) through the Centers for Disease Control and Prevention (CDC) has implemented voluntary medical male circumcision (VMMC) for HIV prevention.

Sustainable VMMC services has been a priority of WHO and PEPFAR who define sustainability as a health system that can provide six building blocks ranging from financing to integration with other health services.

We describe Mozambique MoH's approach to integrating VMMC services into the public health system.

**Description:** In 2021, six VMMC sites transitioned from CDC financial support to MoH. Sites were selected in both rural and urban areas with high male circumcision coverage. Roles were established for a transition team and included MoH to lead, ongoing technical assistance from CDC, regular communication between all partners, and site compliance with quality and safety standards.

**Lessons learned:** At the beginning of the transition, VMMC administrative, workforce, and infrastructure systems were integrated into MoH services.

Active technical support from CDC and MoH were essential to ensure provincial and site level ownership and effective community engagement. Commodities have not yet been integrated. VMMC volume and performance against targets dropped across all transitioned sites.

Actions were taken to address challenges based on community feedback with technical support from CDC. As the transition team adjusted their approach, including enhancing community outreach, volume of circumcisions increased after the first year.



**Conclusions/Next steps:** The pilot phase of the transition is ongoing, however, it informed the development of the "Key Strategic Vision 2024–2026" providing a roadmap to transition the entire VMMC portfolio, over 100 sites, to the MoH by 2029. Lessons learned from the pilot emphasized in the roadmap include strong community engagement, adjusting service delivery approaches as needed, and ongoing technical support from partners. Mozambique has made important progress towards sustainability and demonstrated application of the WHO framework for sustaining VMMC, however additional work is needed to define a sustainable package of VMMC services.

## TUPEC189

### Genital inflammation and microflora in Kenyan female sex workers who have undergone female genital mutilation/cutting (FGM/C)

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**Background:** Female genital mutilation/cutting (FGM/C) is harmful to physical, mental, and reproductive health, though the effect of this practice on a woman's HIV susceptibility is poorly understood. Despite the known associations of FGM/C with short-term vaginal epithelial damage, neither genital inflammation nor the genital microbiome have been explored in women who have undergone FGM/C.

Here we hypothesize that these biological factors are dysregulated in women who have undergone FGM/C, heightening their risk of HIV acquisition.

**Methods:** Levels of proinflammatory cytokines and soluble E-cadherin (sE-cad), a biomarker of epithelial barrier disruption, were measured in cervicovaginal secretion samples from a cohort of 746 HIV-negative female sex workers (FSWs) in Nairobi, Kenya in 2019 by multiplex immunoassay. Sociodemographic factors were compared between participants who reported undergoing FGM/C and those who did not. Genital inflammation was defined using a composite score of inflammatory cytokines previously associated with HIV acquisition.

The presence of inflammation was compared cross-sectionally between groups using logistic regression models to control for potential confounders including age, bacterial vaginosis (BV) status, and others.

**Results:** 27 of 746 (4%) HIV-negative Maisha Fiti participants self-reported FGM/C exposure. 24 participants reported Type I FGM/C (clitoridectomy) and 3 participants reported Type II FGM/C (excision of the labia).

These participants tended to be in early adolescence when they underwent FGM/C (median age = 14, range: 5–25) and were older than women that had not undergone FGM/C (median age 35 vs. 30,  $p = 0.03$ ). Genital inflammation was not associated with FGM/C status after controlling for potential confounders ( $aOR = 0.83$ ; 95% CI: 0.36 – 1.87;  $p = 0.66$ ).

In adjusted analyses, we also found no difference in BV status, as defined by Nugent score, between participants who have and have not undergone FGM/C ( $aOR = 0.71$ ; 95% CI: 0.32 – 1.57;  $p = 0.40$ ).

**Conclusions:** FGM/C was not associated with genital inflammation or microbial dysregulation in the long-term among this cohort of HIV-negative FSWs. This may be due to the length of time that elapsed since FGM/C occurred or the lowered mucosal immune activation previously observed in FSWs. Future studies should confirm these findings in a cohort of non-FSWs.

## TUPEC190

### Condom use among sexually active men who know their HIV status: findings from the 2022 cross-sectional Kenya Demographic and Health Survey (KDHS)

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**Background:** Condoms remain an integral part of a comprehensive prevention package, offering triple protection: against HIV, other sexually transmitted infections, and unintended pregnancy. As Kenya nears epidemic control, it is important to understand condom use determinants among people aware of their HIV status to inform targeted prevention strategies, and thereby reducing disparities in HIV transmission risk and promoting health equity. We explored sociodemographic and behavioral factors associated with higher odds of condom use.

**Methods:** We analyzed data from the 2022 Kenya Demographic and Health Survey to identify factors associated with self-reported condom use during the most recent sexual intercourse. Descriptive analysis using frequencies and percentages was generated, and to determine association with condom use, we performed logistic regression at 95% confidence level and 5% statistical significance. All analyses were weighted and generated using SAS statistical software.



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**Results:** Among 6,738 sexually active men who knew their HIV status, mean age was 32 years, 48% were married, 56% lived in rural areas, and 63% were circumcised. Only 35% reported condom use, 1.10% tested HIV-positive, 46% reported  $\geq 1$  non-spousal sexual partners, 33% completed primary education and 26% attained higher education. Logistic regression results showed condom use being positively correlated with being married (aOR: 1.625, 95% CI: 1.254-2.106, p-value:  $<0.0002$ ), and recent sexual activity (aOR: 1.358, 95% CI: 1.088-1.696, p-value: 0.0069). Primary education (aOR: 0.394, 95% CI: 0.222-0.699, p-value: 0.0015), higher education (aOR: 0.210, 95% CI: 0.116-0.378, p-value:  $<0.0001$ ), HIV-positivity (aOR: 0.233, 95% CI: 0.120-0.452, p-value:  $<0.0001$ ), and having one (aOR: 0.065, 95% CI: 0.053-0.081, p-value:  $<0.0001$ ) or more non-spousal sexual partners (aOR: 0.039, 95% CI: 0.029-0.053, p-value:  $<0.0001$ ) were all negatively correlated with condom use. No significant association was observed between condom use and age or urban/rural residence.

**Conclusions:** Higher education, HIV-positive results, and increased number of sexual partners were unexpectedly associated with lower condom use. These findings underscore the need for enhanced HIV prevention education to promote safer sexual practices. As countries strive for epidemic control, effective investment in condom programs with person-centered demand creation and differentiated delivery systems aligned with Total Market Approach is essential for a national combined prevention strategy.

## TUPEC191

Correlates of oral PrEP uptake among young men who have sex with men in Nigeria: findings from the iCARE Nigeria-testing study

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**Background:** In Nigeria, men who have sex with men (MSM) are disproportionately affected by HIV and are a priority population for oral pre-exposure prophylaxis (PrEP) implementation. Despite the efficacy and availability of PrEP, uptake remains low among young MSM (YMSM) in Nigeria. We examined factors associated with PrEP uptake among YMSM in the HIV testing arm of the iCARE

Nigeria study, which used the combination of social media and peer navigation to promote HIV testing, linkage to care, and awareness and uptake of oral PrEP among YMSM aged 15-24 years.

**Methods:** The multi-phased stepped-wedge trial was conducted in six sites across Nigeria. Trained peer navigators (PNs) leveraged social media platforms including Facebook, Grindr, and WhatsApp to engage peers on sexual health-related topics and navigated them to HIV counselling and rapid testing in clinical, community, or home settings based on personal preferences. YMSM with non-reactive results were informed about PrEP and referred for PrEP services if desired.

Individuals who completed HIV testing consented to an anonymous questionnaire reporting demographic characteristics, HIV testing behaviour (first vs. repeat testers), testing location, and awareness, uptake, and history of PrEP. We examined factors associated with PrEP uptake (defined as completing a PrEP initiation visit) using logistic regression.

**Results:** From April 2021 to March 2023, 2,479 YMSM were tested for HIV; of these, 2,076 (83.7%) tested HIV negative and had never taken PrEP or were not currently on PrEP. Among this group, 80.6% (1,674) were aged 20-24 years, 19.7% (409) identified as bisexual, and 56.2% (1,167) were first-time testers. The location of HIV testing was 2.9%, 30.6%, 66.5% in clinical, community-based, and home-based settings respectively. The majority were aware of PrEP (81.8%), and only 6.7% had ever taken PrEP. PrEP uptake was 6.6% (136). Factors associated with PrEP uptake were ever taken PrEP (aOR 0.31, 95% C.I (0.12-0.82)), testing in either a clinical (aOR 14.40, 95% C.I (7.43-27.94)) or community-based (aOR 3.45, 95% C.I (2.26-5.27)) settings compared to home-based settings.

**Conclusions:** We found high awareness, but low uptake of PrEP among YMSM. Our findings underscore the need for tailored interventions to promote PrEP uptake among YMSM in Nigeria.

## TUPEC192

Acceptability of a dual prevention pill versus PrEP and oral contraceptives taken separately: women's baseline preferences in Johannesburg, South Africa

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**Background:** Oral pre-exposure prophylaxis (PrEP) use has been sub-optimal among sub-Saharan African women. A dual prevention pill (DPP) combining PrEP and an

oral contraceptive (OC) may be preferable, acceptable and increase adherence vs PrEP alone. Accordingly we are assessing the acceptability of, preferences about, and adherence to the DPP compared to PrEP and OCs taken separately among women in South Africa.

**Methods:** We recruited HIV-negative, non-pregnant females aged 16-40 years old who had used OCs for ≥3 months before screening. In a 6-month crossover design, participants used both regimens (DPP or separate PrEP and OC) for 3 28-day cycles; the regimen order was randomized. As part of a baseline computer-assisted self-interview (CASI), participants were asked which regimen they anticipated preferring.

We used chi-squared and Fisher's exact tests to explore associations between anticipated regimen preference and self-reported demographics, sexual behaviors, and worry about HIV. Variables associated with regimen preference at  $p < 0.1$  were included in a logistic regression model controlling for age.

**Results:** We enrolled 96 participants (September 2022-June 2023); 9 were excluded from this analysis (no preference [ $n=4$ ], missing data [ $n=5$ ]). Mean age was 27.5 years (range 18-40); 18% completed secondary school, 76% had ≥1 child. Median number of sex partners in the last 3 months was 2 (range 1-30). 69% and 31% anticipated preferring the DPP and 2 separate pills, respectively.

Only potential recent HIV exposure was significantly associated with regimen preference in bivariate analysis; it remained significant after adjusting for age.

Participants who didn't know or who thought they were somewhat/very likely to have been exposed to HIV had 2.7 times the odds of expecting to prefer the DPP versus those who thought recent HIV exposure was unlikely [95% CI: 1.05-6.84;  $p=0.04$ ].

**Conclusions:** This analysis suggests that recent HIV exposure concern may predict initial preference for the DPP. Our results may highlight a particularly vulnerable population who may be interested in using a multipurpose prevention technology for HIV risk reduction-and may be an optimal cohort of early DPP adopters.

This study is poised to provide important data on the potential for the DPP to improve PrEP uptake, adherence, and persistence.

## TUPEC193

### Impact of HIV prevention interventions on the triple burden of HIV, teenage pregnancy and intimate partner violence among adolescent girls and young women in Uganda

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**Background:** Implementation of targeted socio-structural, educational and behavioral interventions can reduce the risk of HIV, teenage pregnancy and intimate partner violence (IPV) among adolescent girls and young women (AGYW). We assessed the effect of HIV prevention interventions on the triple burdens among AGYW aged 10-24 years in Uganda.

**Methods:** We conducted serial cross-sectional analyses to assess the impact of AGYW interventions (skills-based training; enterprise development assistance, or educational subsidies; reinforced by social and behavior change communication messages) on HIV, teenage pregnancy, and IPV. We used data from eight intervention and six comparison districts, collected in July 2018 ( $n=8,236$ ) and July 2023 ( $n=5,449$ ). Blood samples were collected for HIV and syphilis testing. Exposure to the interventions was defined as participation in or receipt of at least one intervention. Impact was measured using a difference in difference approach to determine the net effect of the interventions. Data analysis was performed using STATA (version 16.0).

**Results:** Half of the AGYW were in school; 60-70% were aged 18-24 years. Between 2019 and 2023, intervention coverage increased from 31 to 60% of targeted sub-counties in the intervention districts; however, intervention exposure was moderate (48%,  $n=2,639$ ). Exposure to the interventions improved teenage pregnancy and intimate partner violence (in the expected direction) but weighted HIV prevalence was higher among exposed (1.56% [95%CI: 0.73, 3.34]) than unexposed AGYW (0.94% [95%CI: 0.49, 1.78]). Teenage pregnancy reduced from 16.5% to 10.9% in the intervention districts but increased from 11.9% to 13.1% in the comparison districts (net effect: -6.8%). Sexual IPV reduced from 6.2% to 3.7% in the intervention and 9.8% to 4.5% in the comparison districts (net effect: 2.8%) while physical IPV reduced from 14.9% to 4.0% in the intervention and 18.2% to 4.1% in the comparison districts (net effect: 3.2%). At district level, weighted HIV prevalence increased from 1.0% to 1.4% in the intervention and 1.1% to 1.3% in the non-intervention districts (net effect: 0.2%).

**Conclusions:** AGYW interventions had a small net effect on teenage pregnancy and intimate partner violence but did not impact on HIV prevalence, suggesting a need for increased exposure and coverage of interventions targeting AGYW in Uganda.



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## TUPEC194

PrEPing to end the HIV epidemic: describing PrEP need and missed opportunities for HIV prevention using five population-based surveys from Southern Africa, 2019-2021

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**Background:** To end the HIV epidemic, UNAIDS estimates that 95% of those needing HIV prevention, including pre-exposure prophylaxis (PrEP), should receive it by 2030. However, operationalizing "need" is challenging. Using nationally representative survey data, we assessed existing PrEP-need definitions and described missed opportunities for HIV prevention in five Sub-Saharan African countries.

**Methods:** We used 2019-2021 population-based HIV impact assessment data from Eswatini, Lesotho, Malawi, Mozambique, and Zimbabwe. We compared the accuracy of World Health Organization (WHO) 2016 and 2021 guidelines for predicting PrEP need via area-under-the-curve measurement (AUC) for those recently HIV-infected (RHI) (LAg-avidity). We assessed the association between those meeting the more accurate 2021 PrEP-need criteria, RHI, and newly diagnosed (self-report negative/unknown status, HIV-serology-positive) (ND) and PrEP knowledge, use, and willingness. Analyses were weighted.



Figure 1. PrEP indicators for individuals without HIV, those identified by the WHO 2021 criteria, those recently infected, and those newly diagnosed with 95% confidence intervals, 2019 - 2021 (weighted).

**Results:** Among individuals with complete data (N=83,233), 14,049 (18%) had HIV, 96 (0.11%) were RHI (range 16-22 per country), and 1,734 (3%) were ND. WHO 2016 and 2021 criteria estimated 33% and 47% of PrEP need, respectively, and had AUCs of 0.61 and 0.66 for identifying those RHI, respectively. Of individuals meeting 2021 criteria, 10% had heard of PrEP, 16% of those who heard of PrEP had taken it, and 70% said they would take PrEP to prevent HIV.

Of individuals RHI or ND, respectively, 20% and 10% had heard of PrEP, none and 19% of those who heard of it had taken it, and 77% and 69% reported they would take PrEP (Figure 1).

**Conclusions:** WHO 2021 criteria were superior to 2016's at predicting individuals RHI. Although confidence intervals overlapped, more individuals RHI said they would take PrEP compared to those ND or meeting WHO 2021 criteria, suggesting increased PrEP knowledge would lead to increased use by those who would otherwise acquire HIV. We recommend expanding PrEP knowledge and increasing the accuracy of PrEP criteria.

## TUPEC195

PrEP modalities and implementation preferences among Black cisgender emerging and older adult women in Baltimore, Maryland

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**Background:** Black cisgender women are disproportionately affected by HIV in the United States (US). Moreover, emerging Americans continue to be significantly affected compared to women in other age groups. Yet in 2024, Black cisgender women and emerging adult women comprise a small fraction of pre-exposure prophylaxis (PrEP) users in the United States (US). This study sought to examine PrEP modality and implementation preferences by age among Black cisgender women in Baltimore, Maryland.

**Methods:** Between December 2021 and April 2023, Black cisgender PrEP-inexperienced emerging (18 to 29 years) and older (30 to 44 years) adult women were purposively recruited to participate in a one-time, in-depth interview. Interview topics included questions regarding PrEP modality and implementation preferences among the two currently approved methods (e.g., pill and long-acting injectable) and the two currently in development (e.g., ring and implant). Interviews were audio-recorded, transcribed verbatim, and analyzed using a grounded theory approach. Six follow-up, member-checking interviews were also conducted.

**Results:** Our sample included 12 emerging and 14 older adult Black women, with an average age of 29. Whereas emerging adult women preferred the pill, older adult women preferred the long-acting injectable. The pill was preferred because it was considered the most common medication modality for other medications, whereas the


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injectable was preferred because of its longevity (i.e., no daily administration). Emerging adult women reported challenges with adhering to the routine PrEP three-month follow-up period for all four methods, such as transportation, scheduling appointments, conflicts with school engagements, and being in a period of transition into adulthood where they experience structural changes (e.g., health insurance). Transportation was the only reported challenge for older adult women for follow-up. Both age groups preferred longer follow-up time periods to refill their PrEP prescriptions and to obtain PrEP by a trusted physician (e.g., primary care doctor or OBGYN). Women expressed a preference for PrEP to be advertised through social media campaigns and sexual health forums, on college campuses, and by including Black women in PrEP commercials.

**Conclusions:** It is critical to better integrate lived realities and also improve representation as central strategies to improve PrEP equity among existing and emerging PrEP modalities.

## TUPEC196

Factors affecting prevention-effective adherence to HIV Pre-Exposure Prophylaxis (PrEP) among Australian gay and bisexual men: results from the PrEPARE Project 2023

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**Background:** Oral HIV pre-exposure prophylaxis (PrEP) is highly effective when taken appropriately at times of HIV risk, termed "prevention-effective adherence". To understand suboptimal adherence, we assessed characteristics of PrEP users who reported condomless anal intercourse with casual partners (CLAIC) that was not protected by their own PrEP use ("PrEP-unprotected CLAIC").

**Methods:** A national online survey of gay and bisexual men (GBM) was conducted in June–July 2023. PrEP users were asked how many times they had PrEP-unprotected CLAIC (i.e., they missed >1 required dose). We examined characteristics associated with PrEP-unprotected CLAIC using logistic regression.

**Results:** Of 2,046 total respondents, 771 cisgender male, current PrEP users who had any CLAIC in the past 6 months were included (81.4% of 947 current users). Median age was 37, 88.1% identified as gay, 79.6% were full-time employed, 73.9% were Australian-born, and 94% had access to government-subsidised healthcare. 65.5% used daily PrEP, 31.3% on demand, and 3.2% periodic PrEP.

193 PrEP users reported PrEP-unprotected CLAIC in the last six months (20.4% of all PrEP users, 25% of those reporting any CLAIC), of whom, 68.4% reported 1–2 episodes, 19.2% reported 3–5 episodes, 3.6% reported 6–10 episodes, and 8.8% reported >10 episodes. Among the same group, 11.4% reported PrEP-unprotected CLAIC limited to PrEP users or people with undetectable viral loads, while 88.6% reported ≥1 PrEP-unprotected CLAIC episode with an assumed HIV-negative or unknown-status partner.

Participants who reported PrEP-unprotected CLAIC were more likely to: be <30 years old ( $aOR=1.78$ , 95%CI=1.16–2.72), be born overseas ( $aOR=1.94$ , 95%CI=1.25–3.01), use on-demand ( $aOR=2.78$ , 95%CI=1.90–4.08) or periodic PrEP ( $aOR=4.19$ , 95%CI=1.74–10.11) compared to daily pills, find it difficult to get PrEP ( $aOR=1.70$ , 95%CI=1.09–2.64), experience side effects from PrEP ( $aOR=1.81$ , 95%CI=1.00–3.28), and report any sexualised drug use in the past 6 months ( $aOR=1.95$ , 95%CI=1.28–2.97).

**Conclusions:** This first national estimate of prevention-effective adherence found that 20.4% of PrEP users had PrEP-unprotected CLAIC. Targeted interventions in subgroups with more frequent PrEP-unprotected episodes must address side effects and other adherence barriers. Long-acting PrEP presents a potential solution to improve prevention-effective adherence with careful attention to user preferences while also addressing difficulties accessing PrEP.





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## TUPEC197

Safety outcomes among infants whose mothers used dapivirine vaginal ring or oral PrEP during pregnancy (MTN- 042/DELIVER)

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**Background:** Dapivirine vaginal ring (DVR) is registered for HIV prevention in 11 African countries and available for use in six. MTN-042/DELIVER, conducted in Malawi, South Africa, Uganda and Zimbabwe, is the first study of DVR use during pregnancy and provides data on daily oral tenofovir disoproxil fumarate/emtricitabine (TDF/FTC) pre-exposure prophylaxis (oral PrEP). We report infant birth and safety outcomes following in-utero exposure to these products.

**Methods:** Pregnant individuals were enrolled at 36-37 weeks' gestation (cohort 1), 30-35 weeks (cohort 2) and 12-29 weeks (cohort 3). In cohorts 1 and 2, women were randomised 2:1, in cohort 3, 4:1, to receive DVR or TDF/FTC. Infant visits were conducted at <2 weeks, 6-weeks, 6- and 12-months after delivery. Birth outcomes, Serious Adverse Events (SAEs), ≥Grade 3 AEs, growth parameters and infant development (assessed using Ages and Stages questionnaire) up to 12-months for cohorts 1 and 2 and 6-months for cohort 3 are included.

	Cohort 1		Cohort 2		Cohort 3	
	DVR	Oral PrEP	DVR	Oral PrEP	DVR	Oral PrEP
Preterm births	1/99 (1%)	2/49 (4%)	6/103 (6%)	4/51 (8%)	8/200 (4%)	3/48 (6%)
Low birthweight	2/94 (2%)	3/47 (6%)	6/101 (6%)	3/50 (6%)	12/193 (6%)	3/48 (6%)
SAEs or ≥ Grade 3 AEs	23/99 (23%)	15/48 (31%)	30/103 (29%)	10/51 (20%)	41/197 (21%)	6/48 (13%)
Infant deaths	0/99 (0%)	1/48 (2%)	4/103 (4%)	0/51 (0%)	4/197 (2%)	0/48 (0%)
6-week WFL z-score (median, IQR)	1.04 (-0.27 - 1.87)	0.53 (-0.38 - 2.23)	0.62 (-0.63 - 1.43)	0.65 (-0.06 - 1.63)	0.80 (-0.08 - 1.68)	0.97 (-0.30 - 1.96)

Table 1. Birth outcomes, adverse events, infant deaths and early growth on the MTN study by cohort and product.

**Results:** In total 546 infants enrolled (cohort 1=147, cohort 2=154, cohort 3=245), median intrauterine exposure 3.4, 9.1 and 16.0 weeks respectively. Across all 3 cohorts, 99% of deliveries were live births, and there were no ≥grade 3 AEs/

SAEs related to either product. Low birth weight (<2500g) was recorded in 5% of infants. Congenital anomalies occurred in 25 children (12 umbilical hernias), none considered related to product. SAEs were reported in 61/399 (15%) infants exposed to DVR and 14/147 (9.5%) to TDF/FTC, including 9 infant deaths, none considered related to product use. Development was in the "typical development" range for almost all children in all cohorts, across both products.

**Conclusions:** Through 6 and 12-month follow-up of infants, no safety concerns were observed following maternal use of DVR or oral TDF/FTC. Combined with previously reported maternal safety findings, this analysis supports use of DVR and oral TDF/FTC by pregnant individuals to prevent HIV.

## TUPEC198

Interest and intention to use long-acting injectable PrEP for HIV (LA-PrEP) among MSM and trans people in the Netherlands – results from the PROTECT survey

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**Background:** Long-acting injectable PrEP for HIV (LA-PrEP), Cabotegravir, has been approved for use in Europe. Understanding who demonstrates interest and intent to use LA-PrEP is critical to help end HIV. In the Netherlands men-who-have-sex-with-men (MSM) and trans\* people are key populations for whom continued engagement with new HIV prevention options is important.

**Methods:** The Understanding Pre-exposure pRophylaxis mOdalities for HIV preventiOn in the European Communities (PROTECT) Survey is a cross sectional online survey that collected data in 20 European countries. Data collection occurred in the Netherlands from October to December 2023 among MSM and trans\* people greater than 18 years old. Data from participants residing in the Netherlands were analysed to produce descriptive data and to undertake multivariate regression analyses to determine factors associated with intention to use LA-PrEP.

**Results:** 1195 participants were included in this analysis, most were MSM (97.4%), with others identifying as trans\* or non-binary. Most participants were interested in using LA-PrEP (78.1%) and intended to use it (75.4%).

Higher interest in taking LA-PrEP was reported in participants who had between 11 and 50 (aOR 3.00; 1.31-6.88) or more than 150 sex partners (aOR 3.93; 1.60-9.68) in the past six months, and in participants reporting a belief that they are likely to acquire HIV (aOR 1.24; 1.04-1.48) and frequent worry that they will acquire HIV (aOR 1.45; 1.18-

1.80). Higher intention was also reported in participants with less concern about injection pain (aOR 0.67; 0.60-0.75) and less concern about side effects from LA-PrEP use (aOR 0.83; 0.73-0.95).

Compared with current and former PrEP users, participants who were PrEP naive were significantly less likely to intend to use LA-PrEP (aOR 0.61; 0.44-0.85).

For current oral PrEP users, neither the type of regimen they use (daily or on-demand), nor their level of adherence, predicted higher intention to use LA-PrEP.

**Conclusions:** High interest and intent to use LA-PrEP exists among MSM and trans\* people in the Netherlands. People who are concerned about HIV, who have many sexual partners and who are currently taking oral PrEP could be engaged with this new PrEP modality.

## TUPEC199

Community peer-led approach to improve access to pre-exposure prophylaxis among HIV high-risk populations in Bunyoro region, mid-western Uganda

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**Background:** In June 2011, Uganda adopted the HIV combination prevention strategy that includes the use of pre-exposure prophylaxis (PrEP) to reduce the acquisition of HIV and eradicate AIDS by 2030. Bunyoro region in mid-western Uganda started PrEP implementation in 2017 at selected health facilities. By 2021, PrEP uptake in the Bunyoro region was poor at 14% of the eligible clients.

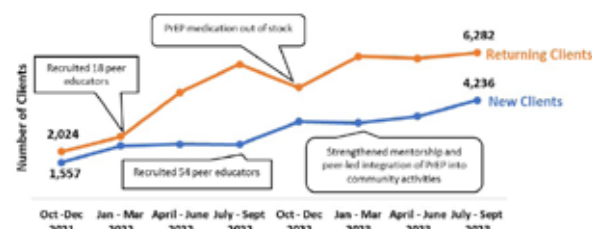
A Root cause analysis conducted revealed that; pill burden, poor access to facilities offering PrEP, unfriendly health workers and support structures, and fear of being seen taking antiretroviral drugs (ARVs) are key barriers to PrEP access.

We describe lessons learned from a community-based approach to improve PrEP uptake among HIV high-risk populations in Bunyoro, mid-western Uganda.

**Description:** The Baylor Uganda Project supports community peer educators (PEs) and health care workers (HCWs) to offer PrEP services to HIV at-risk populations. During October 2021 to September 2023, we identified and trained 54 community Peer Educators (PEs) on PrEP mobilization skills and 48 HCWs across accredited 43 health facilities on PrEP as HIV prevention for key and priority populations; attached peers to mapped hotspots for routine mobilization, education, and PrEP pre-screening; and provided PEs with bags to carry information, education, and communication materials focused on engaging individuals at the community, including HIV self-tests for

distribution, and access to a toll-free telephone number for PrEP enrollment, while HCWs supervised PEs with quarterly mentorship.

**Lessons learned:** The increases in PrEP New enrolments and clients returning for refills are attributed to; the recruitment of PEs, and Integration of peer-led PrEP services into community activities.



**Conclusions/Next steps:** The use of committed, trained, and mentored community PEs with knowledge and skills in mobilization and PrEP service delivery working with HCWs can improve PrEP access and use among high-risk populations, especially key populations despite low uptake for MSM.

## TUPEC200

Pre-Exposure Prophylaxis for HIV in Brazil's Unified Health System: current stage and assessment of pharmacist prescription initiatives

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**Background:** Oral Pre-Exposure Prophylaxis (PrEP) is a combination of antiretroviral drugs taken either daily or using an "on-demand" regimen. It has been provided free of charge by the Brazilian Unified Health System (SUS) since 2018, targeting individuals at higher risk of acquiring the HIV virus. Pharmacists can play a strategic role in monitoring pharmacotherapy and promoting the well-being, recovery, and care of users to achieve positive outcomes.

Therefore, the objective of this study was to characterize and describe PrEP users and the initial interventions conducted by pharmacists in Brazil.

**Methods:** This is an exploratory and descriptive study based on secondary data, covering the period from January 2018 to December 2023, using the PrEP dashboard provided by the Ministry of Health, (<https://www.gov.br/aids/pt-br/assuntos/prevencao-combinada/prep-profilaxia-pre-exposicao/painel-prep>). The dashboard presents aggregated data, without any user identification.

**Results:** Desde janeiro de 2018, 149.023 indivíduos iniciaram a PrEP. Até dezembro de 2023, 110.429 (74,1%) receberam pelo menos uma dispensa nos últimos 12 meses.



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A maioria dos usuários da PrEP eram homens que fazem sexo com homens (82,0%), autoidentificados como brancos (55,5%), com 12 anos ou mais de estudo (71,4%), atendidos no sistema público de saúde (90%), e com idade entre 30 e 39 anos (42%). No Brasil, os farmacêuticos começaram a prescrever a PrEP em março de 2023, com exceção da cidade de São Paulo, onde começou em 2020. Assim, de março a dezembro de 2023, foram realizadas 6.282 dispensações de PrEP por farmacêuticos para 3.540 usuários em 183 farmácias em 126 municípios brasileiros.

**Conclusions:** Despite the relatively small number, pharmacist-led PrEP prescription in Brazil is promising. It is expected that pharmacists may improve access to PrEP beyond white, educated individuals in large cities. Additionally, it may serve as an example for broadening the prescription of other medications under the clinical protocols of SUS.

## TUPEC201

Demographic and behavioral characteristics of sexually active, HIV-negative transgender and gender-diverse adults in the United States interested in HIV pre-exposure prophylaxis initiation

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**Background:** PrEP implementation in the United States (US) is not equitable for transgender and gender-diverse (TGD) people and is seldom explicitly inclusive of transmasculine and nonbinary people. We examined factors associated with interest in PrEP initiation among TGD adults in the US.

**Methods:** We conducted a national online survey between April 2022 and June 2022 with 304 HIV-negative TGD adults in the US. Self-administered surveys assessed participants' sexual behaviors and PrEP preferences and experiences. Logistic regression was used to estimate associations between participant characteristics and interest in taking PrEP in the next six months.

**Results:** Overall, 233 (77%) participants were aware of and not taking PrEP: median age was 23 years [range 18-51, SD: 5.4]; 133 (57%) were transmasculine or trans men; 73 (31%) were nonbinary; 27 (12%) were transfeminine or trans women; 144 (62%) were white; 32 (14%) were Latine; 19 (8%) were Black; and 38 (16%) were non-Latine another race. Interest in taking PrEP was associated with degree of concern about contracting HIV (adjusted odds ratio, aOR: 2.09 [95% CI 1.54, 2.83]); prior STI diagnosis (aOR: 2.89 [95% CI 1.11, 7.54]; transmasculine or trans man gender identity

(aOR: 3.30 [95% CI 1.04, 10.4]); and known partner with HIV in past 6 months (aOR: 4.66 [95% CI 1.02, 21.4]; all p-values < 0.05. Age, race/ethnicity, condomless anal and/or vaginal sex and a partner with unknown HIV status in past 6 months were not associated with interest in taking PrEP.

Characteristic	Unadjusted Odds Ratio [95% confidence interval]	p-value	Adjusted Odds Ratio [95% confidence interval]	p-value
Age (years)	1.03 [0.98, 1.08]	0.31	0.98 [0.93, 1.05]	0.62
Gender identity (Reference: Transfeminine or trans woman)				
Transmasculine or trans man	1.37 [0.57, 3.27]	0.48	3.30 [1.04, 10.4]	<0.05
Nonbinary, genderqueer, or another gender identity	1.24 [0.49, 3.15]	0.64	3.10 [0.95, 10.1]	0.06
Race and ethnicity (Reference: Non-Latine white)				
Non-Latine Black	1.97 [0.75, 5.15]	0.17	0.87 [0.27, 2.80]	0.81
Non-Latine Another race	0.82 [0.38, 1.75]	0.60	0.74 [0.32, 1.68]	0.47
Latine, Any race	2.01 [0.93, 4.34]	0.08	1.59 [0.65, 3.91]	0.31
Prior lifetime Chlamydia trachomatis, Neisseria gonorrhoeae, or Treponema pallidum diagnosis	2.31 [1.04, 5.15]	0.04	2.89 [1.11, 7.54]	<0.05
Condomless anal and/or vaginal sex in past 6 months	1.66 [0.92, 2.97]	0.09	1.49 [0.77, 2.87]	0.24
Known HIV-positive sexual partner in past 6 months	5.09 [1.34, 19.3]	0.02	4.66 [1.02, 21.4]	<0.05
Sexual partner with unknown HIV status in past 6 months	1.36 [0.76, 2.44]	0.31	0.93 [0.47, 1.83]	0.84
Degree of concern about contracting with HIV <sup>‡</sup>	1.92 [1.48, 2.51]	<0.001	2.09 [1.54, 2.83]	<0.001

<sup>‡</sup> Likert scale: 1-5; not at all concerned, slightly concerned, somewhat concerned, moderately concerned, extremely concerned.

**Table 1. Multivariable logistic regression analysis of factors associated with interest in taking PrEP among a national online sample of sexually-active, HIV-negative transgender and gender-diverse adults in the United States (n = 233).**

**Dichotomized outcome:** "How likely would you be to take PrEP in the next 6 months?"; Interested = Somewhat likely or very likely; Not interested = Not at all likely or unsure.

**Conclusions:** Despite high PrEP awareness, current PrEP use was low among this cohort. Future research should prioritize the development of implementation strategies that strengthen trans-inclusive low-barrier PrEP services for TGD people with known partners with HIV, transmasculine people, and trans men interested in taking PrEP. Future research should examine ways to equitably integrate comprehensive gender-affirming care into PrEP service delivery for TGD people.

## TUPEC202

Factors influencing timely antenatal care booking among pregnant women living with HIV: a study at Kinoni Health Center IV in Rwampara District, Uganda

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**Background:** In many developing countries, including Uganda, delayed initiation of antenatal care (ANC) among pregnant women, particularly those living with HIV, remains a concern. The World Health Organization

recommends starting ANC within the first trimester, yet adherence to this guideline is often suboptimal. Understanding the factors influencing the timing of ANC initiation is crucial for improving maternal and child health outcomes.

**Methods:** A cross-sectional study was conducted at Kinoni Health Center IV in Rwampara District, Uganda, from October 1st to December 30th, 2022. The study included 217 pregnant women living with HIV attending the Antenatal clinic. Consecutive sampling was employed, and both qualitative and quantitative data were collected through structured questionnaires and focus group discussions. Quantitative data were analyzed using Stata Version 14, employing bivariate and multivariate logistic regression analyses. Focus group discussions provided additional insights into barriers faced by pregnant women.

**Results:** Out of the 217 participants, only 22.58% attended ANC within the first trimester. Factors associated with delayed ANC initiation included unplanned pregnancies (aOR=0.27, 95% CI 0.12-0.43, p=0.003), residing 1-2km (aOR=0.06, 95% CI 0.009-0.43, p=0.005) or ≥5km away (aOR=0.08, 95% CI 0.009-0.81, p=0.033) from the health facility, and the misconception that ANC should start between 4 and 6 months of pregnancy (aOR=0.17, 95% CI 0.04-0.66, p=0.011). Focus group discussions identified financial challenges, long distances, delayed pregnancy diagnosis, multiparity, unfavorable healthcare worker attitudes, and inadequate knowledge as barriers to first-trimester ANC visits.

**Conclusions:** Pregnant women living 1-2km or >5km away, those with unplanned pregnancies, and those with misconceptions about the ideal timing for ANC were less likely to initiate ANC within the first trimester. Barriers identified include inadequate knowledge, financial constraints, and geographical distances. To address these challenges, the study recommends implementing community ANC outreach programs, emphasizing health education during antenatal talks, and strengthening family planning services to reduce unplanned pregnancies. These interventions aim to enhance ANC utilization, improve maternal and child health outcomes, and mitigate the risk of mother-to-child transmission of HIV.

## TUPEC203

### Persistence in Pre-Exposure Prophylaxis (PrEP) receipt post-prescription among people who inject drugs

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**Background:** The opioid crisis in the United States has led to not only increasing overdose rates but also HIV outbreaks among people who inject drugs (PWID). One aspect of the pre-exposure prophylaxis (PrEP) cascade that has received little attention includes the post-prescription phase of PrEP, where PWID obtain PrEP from pharmacies or other PrEP-dispensing facilities.

To address this gap, this study investigated persistence in PrEP receipt after prescription and associated factors among PWID.

**Methods:** Between December 2020 and July 2022, 100 opioid-dependent PWID were enrolled in the biobehavioral HIV prevention study, titled "Expanding PrEP Implementation in Communities of PWID". Eligibility criteria included age ≥18, HIV-negative, injection drug use (past 6 months), and meeting DSM-V criteria for opioid dependence. Participants meeting clinical criteria received a 90-day supply of PrEP from a community-based syringe services program. Participants were followed up quarterly for 9 months. Sociodemographic characteristics, prior PrEP use, and sex- and drug-related behaviors were assessed. PrEP receipt was measured ordinally by the number of times PWID picked up PrEP medication.

**Results:** On average, participants were in their early 40s, male (63.0%), non-Hispanic White (52.0%), heterosexual (79.0%), and unemployed (89.0%). Participants reported injecting drugs at least once per week (64.0%) in the past month. Most participants (79.0%) reported never using PrEP before. Overall, 60 participants picked up PrEP medication at least once, with 42 of them (70.0%) retrieving it only once, 16 (26.7%) twice, and only 2 participants (3.3%) doing so three times. In the multivariable model, unemployed participants (aOR=7.819; 95% CI: 1.538-39.751) and those who had previously used PrEP (aOR=3.381; 95% CI: 1.210-9.443) had higher persistence in PrEP receipt, whereas those who engaged in IDU once a week or less (aOR=0.039; 95% CI: 0.008-0.182) or more than once a week in the past month (aOR=0.098; 95% CI: 0.029-0.329) were less likely to retrieve PrEP consistently.

**Conclusions:** Despite a strong willingness to use PrEP, its adoption was notably low among opioid-dependent PWID, a marginalized group facing significant HIV risk. These results underscore the need for comprehensive strategies to enhance the PrEP continuum of care, particularly in high-priority populations such as PWID.



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## TUPEC204

### Persistence of transgender women in oral PrEP in Buenos Aires, Argentina: survival analysis of the first 2 years of the program

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**Background:** In 2021, oral PrEP with TDF/FTC was implemented in a non-governmental organization in Buenos Aires with access to key populations including TGW, according to national guidelines. We aimed to analyze PrEP program persistence (PPP) for TGW and explore its correlates in a real-world setting.

**Methods:** PPP was defined as time to first PrEP discontinuation (TFD): medical or client decision. In those clients without a definite date of complete discontinuation, we calculated the end date as the date the prescribed supply of pills would be depleted if taken daily. TFD was assessed using survival analysis. Cox proportional hazard models examined associations between PrEP discontinuation and baseline demographics, sex practices, and substance use.

**Results:** From September 2021-December 2023 191 TGW started PrEP: median age 28 years (IQR:24-34); 87(47%) had incomplete high school or lower; 50(33%) reported cocaine use in the last month and 163 (86%) were currently engaged in sex work. After a median follow-up time of 9 months (3-17), 86 (45%) discontinued. PPP at months 1, 6, 12, 18 and 24 was 87.7%, 74.4%, 62.6%, 47.3% and 36.9%, respectively. Use of gender-affirming hormone therapy (GAHT) in the same facility was significantly associated with higher persistence (79.9% vs 67.6% by month 6; 71.1% vs 47.4% by month 12;  $p=0.005$ ) (Figure A).

In a Cox regression model controlling for age, education level, and GAHT, probability of discontinuation decreased with age [4% per year (0.4%-7%)] and GAHT [51% (23%-69%)] (Figure B).

There were 4 HIV seroconversions, all after PrEP discontinuation.

Figure A. Persistence on PrEP among TGW according to gender affirming hormone therapy (GAHT)

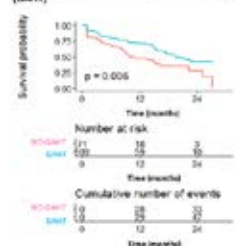


Figure B: Cox regression model

Variable	N	Hazard ratio	95% CI	p
age	176	0.96 (0.93, 0.99)		0.008
edu				
Incomplete secondary school or less	80	Reference		
Secondary School (completed or more)	97	1.54 (0.67, 3.53)		0.383
sexw	85	Reference		
No	107	0.45 (0.31, 0.67)		0.000

**Conclusions:** Maximizing efforts to support younger TGW is needed to expand PrEP benefits and retention. Future qualitative studies should dig deeper into aspects leading to PrEP discontinuation to design comprehensive and tailored implementation strategies.

## TUPEC205

### Implementation of the first biomedical HIV prevention protocol in Romania: towards national PrEP rollout

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**Background:** HIV pre-exposure prophylaxis (PrEP) is nearing formal rollout in Romania, a country with increasing HIV incidence among gay and bisexual men (GBM), high structural anti-LGBTQ stigma, and normative lack of sexual and mental health supports. This study presents interim results from a trial evaluating the introduction of PrEP in Romania.

**Methods:** *Prepare Romania*, an evidence-based PrEP counseling and adherence protocol adapted to local needs, is being implemented in Bucharest and Cluj-Napoca, where 120 GBM have been enrolled to receive a PrEP prescription and randomized to either a PrEP education control or an affirming PrEP counseling condition accompanied by an adherence support app. While the trial is ongoing, interim analyses conducted across both conditions examined participants' PrEP knowledge, stigma, and mental health from baseline to 3-months post-PrEP initiation. Self-reported PrEP adherence was measured via a weekly diary post-PrEP initiation. One-sample *t*-tests and chi-square tests were used to assess differences between baseline and 3-month data. Correlational analyses explored the relationship between mental health and PrEP adherence.

**Results:** Participants ( $N=99$ ,  $M$  age=29.83,  $SD=9.42$ ) reported an average of 6.67 ( $SD=0.71$ ) days of PrEP use per week across 3-months. PrEP knowledge was high at baseline and increased marginally at 3-months (89% vs. 98% of



sample). PrEP stigma, although low at baseline, also decreased marginally at 3-months ( $M=1.82$  vs.  $M=1.72$ ). Both depression ( $M=4.58$  vs.  $M=3.40$ ,  $p<0.01$ ) and anxiety ( $M=3.72$  vs.  $M=2.59$ ,  $p<0.01$ ) scores decreased significantly, while lower levels of anxiety were associated with higher levels of PrEP adherence at 3-months ( $r=-0.29$ ,  $p<0.01$ ).

**Conclusions:** Results indicate high PrEP adherence and knowledge, as well as low levels of PrEP stigma. Findings corroborate research in other settings indicating that PrEP use, in addition to providing protection against HIV, may have mental health benefits for stigmatized GBM, which may, in turn, be related to improved adherence. Pending efficacy analyses upon trial completion in July 2024, including dried blood spot testing to measure PrEP adherence, *Prepare Romania* may offer an effective tool to support PrEP rollout in countries with similar contextual features and a high need for biopsychosocial HIV prevention.

## TUPEC206

Safety and acceptability of Shang Ring device for VMMC in younger adolescents in Zimbabwe

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**Background:** Voluntary medical male circumcision decreases the risk of HIV acquisition through heterosexual transition among males by 60%. We conducted a clinical observational study to evaluate the safety, acceptability, and technical efficiency of the Shang Ring (SR) male circumcision device among younger (13 – 14 years) and older (15 – 16 years) adolescent males in Zimbabwe

**Methods:** Between June 2022 and May 2023, 5,878 adolescent boys at 93 sites across 9 rural districts were recruited into two age group cohorts 13 –14 years (offered SR only) and 15-16 years (offered either SR or surgical dorsal slit (DS) procedure). Participants were followed up on days 2, 14, and 42 (DS) and days 7, 14, and 49 for SR post-procedure to assess adverse events and the wound healing process. An interviewer-administered questionnaire was used to collect data on client satisfaction and acceptability on days 14 and 49 post-procedure. We collected data on mild, moderate, and severe adverse events (AEs) in both cohorts and analyzed data using SPSS. Interim analysis to assess adverse events rates in the two groups was conducted.

**Results:** 5,878 adolescents, 4,076 and 1802 from the age groups 13-14 and 15-16 years respectively were recruited. Among the older age group, 1,089/1802 (60.4 %) had been circumcised with the SR device. Six moderate/severe AEs were observed, translating to an overall AE rate of 1.36 per

1,000 among both groups. Four AEs occurred in the 13-14 age cohort (1.47 per 1,000 circumcisions (95% CI 0.54; 3.20)) and 2 AEs in the 15-16 years age cohort (incidence of 1.11 per 1,000 MCs (95% CI 0.13; 4.01)). All AEs were resolved successfully. 97.6% (3756/3845) of clients interviewed were satisfied/ very satisfied with the procedure; 89.1% (3426/3845) were likely to recommend the procedure to their peers.

**Conclusions:** SR was highly acceptable among younger adolescents. Moderate/severe AE rates were low in both age groups, and not different between age groups. This was the largest study to evaluate the safety and acceptability of SR among <15-year-old adolescents in Africa. The data may inform evidence for WHO and countries' guidance on SR device use as an option for circumcision for younger adolescents.

## TUPEC207

Early experiences with usage of injectable cabotegravir (CAB-LA) among Kenyan and Ugandan adults participating in the SEARCH Dynamic Choice HIV Prevention trial: a qualitative study

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**Background:** The ongoing SEARCH study in Kenya and Uganda evaluated HIV prevention uptake through a structured, person-centered HIV 'dynamic choice prevention model' (DCP). Men and women were offered choice of oral PrEP(TDF/XTC), PEP(TLD) and injectable cabotegravir(CA-LA), with option to stop or switch. This qualitative study explored early experiences with CAB-LA.

**Methods:** In-depth interviews were conducted July-October 2023 with a purposively-selected sample of 48 participants who initiated CAB-LA. Interviews explored experiences with counseling, reasons for CAB-LA preference, and factors in decision-making, including perceived HIV risk, partner/family support, stigma/disclosure, prior experiences with PrEP, expectations of/experiences with CAB-LA, quality of care, and barriers/facilitators to persistence. We analyzed data using inductive coding and memoing.



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**Results:** Participants were enthusiastic about initiating CAB-LA, which was perceived as novel, efficacious, and advantageous relative to oral daily PrEP. Two major themes emerged regarding advantages of CAB-LA over oral PrEP: improved protection from HIV stigma and from HIV acquisition due to easier adherence. CAB-LA was seen as clearly distinguishable from ART, and not a product that could mark an individual (mistakenly) as HIV-positive ("...when they see the pill bottle, they conclude that I have HIV.")

Among women, clandestine use to guard against stigma from partners or in-laws was important, and more achievable compared to PrEP. ("I was getting issues with my husband after seeing the pills.")

Appointments for injections were rare enough that they could be kept, especially with reminders from providers. For some, prior use of oral PrEP was hindered by stigma, side effects, pill size/smell, and interruptions due to work and travel ("I had to travel and would forget to take my pills with me. The injection is much easier— when I take it, I become free.")

Some participants reported pain and swelling at injection site, but hoped to continue usage if side effects could be managed.

**Conclusions:** In a context of continued HIV-related stigma, CAB-LA met some clients' preferences for a product that permitted prevention to be visibly distinguishable from treatment, enabling prevention uptake to feel safer. Adherence was more easily achieved with CAB-LA compared to PrEP, boosting clients' confidence in prevention efficacy.

## TUPEC208

High incidence of syphilis among PrEP users under Thailand's Universal Health Coverage (UHC) scheme provided by key population-led and hospital-based services at baseline compared during follow-up; What's next?

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**Background:** UHC scheme had initiated to pilot free of charge for HIV pre-exposure prophylaxis (PrEP) services for high-risk population in Thailand since 2020. In 2022, there were several Key Population-Led Health Services (KPLHS) run by Community Based Organizations (CBOs) and hospital-based facilities distributed throughout the country to provide PrEP services for KPs.

**Methods:** PrEP services under UHC were recorded under National AIDS Program (NAP) through online system. We used the data from NAP for newly registered PrEP users in 2022 then followed up to December 2023.

We used linked de-identified PrEP users and Syphilis screening results who newly registered under NAP and initiated PrEP in 2022 and follow up them till December 2023.

**Results:** There were 10,938 people who initiated PrEP under UHC which 9,237(84.45%) were newly PrEP users and 1,701(15.55%) who ever used PrEP and restarted to use PrEP again. From 10,938 users, 8,295(75.84%) received PrEP services by KPLHS and 2,643(24.16%) by hospitals. Most common key-population were MSM (78.13%) and TGW(9.54%) by KPLHS and MSM(72.34%) and partner of PLHIV(14.30%) by hospital-based services. From KPLHS, there were 5.39% found positive for Syphilis at baseline and those who were negative at baseline became to be positive for Syphilis 14.59% during follow up visit for PrEP while for hospital-based PrEP services, there were 11.80% found positive for Syphilis at baseline and those who were negative became to be positive for Syphilis 6.44% during follow up for PrEP. For newly Syphilis cases occurred during follow up visit by KPLHS, 51.53% were aged 21-30 years, 41.66% were aged 31-45 years, 80.52% were MSM and 9.96% were TGW. For newly Syphilis cases occurred during follow up visit by hospitals, 50.0% were aged 21-30 years, 31.33% were aged 31-45 years, 66.67% were MSM and 27.73% were general population.

**Conclusions:** PrEP implementation under UHC had demonstrated the increasing number of newly Syphilis cases during follow-up visit for PrEP services especially by KPLHS. Multiple effective interventions must be considered to stem the rising rates of STIs among KPs who engaged in high-risk behaviours during PrEP included behavioural modification and other clinical strategies such as more frequent STI testing and antibacterial prophylaxis.

## TUPEC209

Exploring interest in long-acting antiretroviral injections: perspectives of people living with HIV in Egypt

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**Background:** People living with HIV (PLHIV) have to receive a daily oral dosage of antiretroviral treatment (ART) that could be challenging in several cases.

**Objective:** this study was carried to identify willingness of PLHIV to use the long-acting antiretroviral injections (LAI), and explore the factors associated with interest in trying a LAI among PLHIV.

**Methods:** A cross sectional study was conducted using a validated survey questionnaire after customization to fit PLHIV in Egypt. An overview of the LAI was provided, consent form was taken, and data was gathered from 135 PLHIV between October–December 2023 at Cairo University Hospitals HIV Clinic, Egypt.

**Results:** Of the enrolled PLHIV, 77% (104) were males, and 61.5% were in the age group of 18 to 39 years. All participants were on ART; most of them using Dolutegravir-based therapy (124, 93.2%). Among participants, 76.3% (103) expressed a high interest in the LAI.

The majority of study participants had confidentiality concerns about their condition and negative feelings towards ART; as 116 (85.9%) of PLHIV informed only limited persons in their very close circle of contacts about their condition, and 13 (9.6%) expressed their fear of self-disclosure. Moreover, 45 (33.6%) reported negative feelings towards ART, and 72 (53.7%) were neutral. Therefore, PLHIV with confidentiality concerns were significantly interested in receiving LAI ( $X^2 = 17.736, p = 0.00$ ).

More than 90% of the PLHIV were anxious about swallowing pills every day. Therefore, there was a significant interest in LAI among PLHIV who cannot take HIV pills every day, those suffering of other medical conditions ( $X^2 = 5.567, p = 0.018$ ) and those who suffer from emotional burden associated with taking pills every day ( $X^2 = 9.573, p = 0.002$ ).

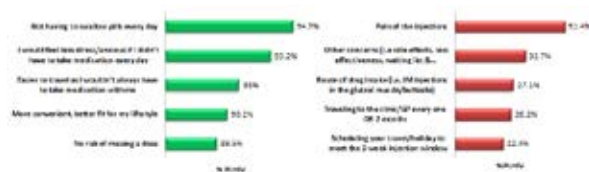


Figure 1. Top 5 perceived benefits and constraints to using a LAI, PLHIV's perspective.

**Conclusions:** Our findings indicated that LAI may help address PLHIV unmet needs and may be more convenient for many of them.

## TUPEC210

Centering community leadership with PURPOSE: inclusion of adolescents, ciswomen, and pregnant and lactating individuals in a Phase 3 clinical trial evaluating lenacapavir (LEN) and emtricitabine/tenofovir alafenamide (F/TAF) for PrEP

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**Background:** Adolescent girls and young women (AGYW) and pregnant and lactating individuals (PLI) are disproportionately vulnerable to HIV-1 acquisition due to complex biological, social, and structural circumstances; both groups have been historically excluded from participation in clinical trials, limiting their human right to benefit from scientific advances of research. Global advocacy, largely led by AGYW and PLI (e.g., the PHASES Working Group, African Women Prevention Community Accountability Board's HIV Prevention Choice Manifesto, and the APHA Policy Statement on Support for Women's Inclusion in HIV-Related Clinical Research), developed evidence-based recommendations for protecting AGYW and PLI through meaningful inclusion in HIV-1 research, rather than exclusion.

**Description:** PURPOSE-1 (NCT04994509) is an ongoing Phase 3 study evaluating twice-yearly subcutaneous LEN and daily oral F/TAF for PrEP in cisgender AGYW ages 16–25 in South Africa and Uganda.

The study's Global Community Accountability Group (GCAG) includes people who may benefit from PrEP (PWPB), AGYW and PLI, and the advocates who represent them. The GCAG, guided by clear terms of reference and workplans, ensured community representation from the trial conceptualization, including reviewing, and advising on study design and protocol development, through supporting trial implementation.



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**Lessons learned:** Intentionality is necessary to reconceptualize research paradigms that center communities of AGYW and PLI and advance evidentiary gaps. Informed by the robust GCAG consultation, PURPOSE-1 supports:

1. Inclusion of adolescents with tailored informed assent and consent process;
  2. Reproductive choice of participants with no requirement for contraception (and provided free of cost for those who do not desire pregnancy);
  3. Continued participation of those who become pregnant and lactating while on study; and,
  4. Assessment, support, and referral for intimate partner violence and/or social harm from study participation.
- GCAG members championed the importance of understanding LEN drug exposure during pregnancy, postpartum, in infants, and breastmilk, or among those on contraception.

**Conclusions/Next steps:** By centering the voices of AGYW and PLI in the GCAG, we can intentionally and meaningfully include the most disproportionately affected and vulnerable to HIV acquisition in Phase 3 PrEP trials. Bidirectional engagement is essential to the meaningful inclusion of AGYW and PLI in HIV-1 prevention research.

## TUPEC211

PrEP uptake in pregnant and postpartum women in two districts in KwaZulu-Natal, South Africa

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**Background:** KwaZulu-Natal, South Africa, faces a persistent high prevalence of HIV, particularly among pregnant and postpartum women. Pre-exposure prophylaxis (PrEP) is a critical tool in vertical transmission prevention (VTP) and protecting maternal health. Understanding PrEP uptake in this population is crucial for optimizing HIV prevention efforts.

This study aimed to measure PrEP uptake among pregnant and postpartum women in two districts in KwaZulu-Natal, South Africa.

**Methods:** Quantitative data were collected using a cross-sectional survey conducted among pregnant and postpartum women attending antenatal and postnatal

clinics in 40 primary healthcare facilities in two districts (eThekweni and Ilembe) in KwaZulu-Natal, South Africa. We conducted univariate and multivariable logistic regression to determine behavioral and demographic factors associated with PrEP uptake.

**Results:** 2039 pregnant and postpartum women underwent structured interviews (November 2022 and July 2023). Although majority (93.67%) had perceived high HIV acquisition risk, only 40.46% reported to have initiated PrEP. Married women living with their partners (adjusted odd ratio (AOR) 0.36; 95% CI 0.23-0.55), women aged 25-34 years (0.78; 95% CI 0.62-0.98), having other illnesses (AOR 0.46; 95% CI 0.25-0.84) and those with a shared flush toilet (AOR 0.69; 95% CI 0.55-0.87) were less likely to be take PrEP. Having a planned pregnancy (AOR 1.26; 95% CI 1.01 - 1.55), consuming alcohol (AOR 2.77; 95% CI 1.26- 6.07), being self-employed (AOR 1.97; 95% 1.23-3.16), and having condomless sex with an unknown partner (AOR 1.97; 95% CI 1.59-2.44) increased the odds of taking PrEP. For every additional live birth, the odds of taking PrEP increased by 18% (AOR 1.18; 95% CI 1.04-1.33).

**Conclusions:** PrEP uptake among pregnant and postpartum women in KwaZulu-Natal is influenced by a complex interplay of individual, social, and structural factors. Addressing these barriers and enhancing awareness, education, and accessibility to PrEP services is essential to improving uptake and, ultimately, reducing HIV transmission in this vulnerable population.

## TUPEC212

HIV-1 subtype C long terminal repeat sequence exhibiting single-nucleotide polymorphism in Sp1 site III may impact transcription activity and binding affinity of Sp1 transcription factor

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**Background:** There is higher viral load in the CSF than plasma of ART-naïve people living with HIV and tuberculous meningitis (TBM). However, the mechanisms that govern high viral load in the CSF compared to plasma of ART-naïve individuals with HIV and TBM remain to be determined. The HIV-1 LTR exhibits numerous transcription factor binding sites and is the viral promoter that drives

viral gene transcription. Genetic variation within the LTR translates to functional differences. Preliminary data from this project show that CSF-derived LTR exhibits a single polymorphism, Thymine to Adenine at position five of the Sp1III bind site (Sp1III5A). Therefore, the major aim of this study was to investigate the effect of Sp1III5A mutation alone or in combination with other mutations on LTR transcription activity.

**Methods:** The gene block containing Adenine (A) instead of Thymine (A) at position five of Sp1 site III (Sp1III5A) was cloned into the pGL3 vector to produce the LTR-Sp1III5A-pGL3 recombinant, which was then sequenced to confirm the mutation. The mutant LTR-Sp1III5A-pGL3 and wild-type LTR-Sp1III5T-pGL3 recombinants were independently transfected into central nervous system (CNS) derived astrocytes and lymphocyte T-derived Jurkat cell lines to access the transcription activity. Lastly, expression levels of the Sp1 transcription factor in astrocytes and Jurkat cells were measured by the Western blot.

**Results:** The mutant LTR-Sp1III5A showed a significantly increased basal and Tat-mediated LTR transcription activity compared to the consensus LTR-Sp1III5T in both astrocytes and Jurkat cell lines. Although mutant LTR-Sp1III5A exhibited higher transcription activity compared to LTR-Sp1III5T in both cell lines, it showed a more pronounced effect in Astrocytes. Consistently, our data show that Sp1 expression levels were higher in astrocytes compared to Jurkat cell lines.

**Conclusions:** Mutant LTR-Sp1III5A exhibits higher transcription activity in Astrocytes compared to Jurkat cells. Astrocytes were also associated with higher Sp1 Transcription factor expression levels compared to Jurkat cells. These could explain the higher transcription activity in astrocytes. Future studies should assess the effect of mutant Sp1III5A on the binding affinity of Sp1 binding affinity.

## TUPEC213

Assessment of longitudinal changes in renal function of HIV-1 oral pre-exposure prophylaxis (PrEP) users using real-world data in the United States

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**Background:** In the DISCOVER trial, F/TAF for HIV-1 oral PrEP demonstrated an improved renal safety profile versus F/TDF through Week 96. We evaluated real-world renal safety of F/TAF versus F/TDF.

**Methods:** Individuals without HIV-1 who initiated F/TAF or F/TDF (2015–2023) and had  $\geq 1$  glomerular filtration rate (eGFR) measurements within 1 year pre- and post-PrEP initiation were identified using HealthVerity Marketplace. For individuals who switched regimens (4% F/TDF users, 2% F/TAF users), eGFR measurements taken after

switching were excluded. eGFR changes were calculated by subtracting post-PrEP initiation measurements from the pre-initiation 1-year average eGFR and analyzed using mixed-effects modeling. Odds ratios of eGFR  $<60$  mL/min/1.73 m<sup>2</sup> over 96 weeks post-PrEP initiation were compared for F/TAF versus F/TDF using logistic regression, overall and by individual characteristics. Both mixed and logistic models were adjusted for potential confounders: age, baseline eGFR, comorbidities, and medications.

**Results:** At baseline, F/TAF (n=2,323) and F/TDF (n=9,860) users had an average eGFR of 101.2 and 103.6 mL/min/1.73 m<sup>2</sup>, respectively, with 593 (25.5%) and 2,088 (21.2%) within the 60–90 mL/min/1.73 m<sup>2</sup> range. There was a 40% reduced risk of eGFR falling  $<60$  mL/min/1.73 m<sup>2</sup> in F/TAF versus F/TDF users (Figure 1). The trajectories of eGFR for users of F/TAF and F/TDF are illustrated in Figure 2.

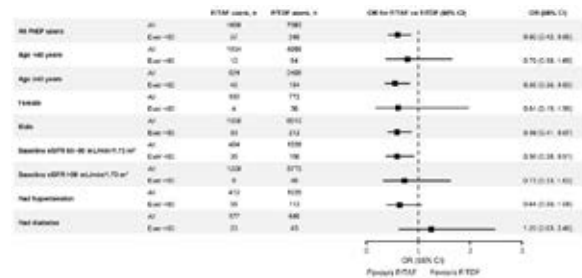


Figure 1. Odds ratios (95% CI) of eGFR  $<60$  mL/min/1.73 m<sup>2</sup> for F/TAF users versus F/TDF users through 96 weeks after PrEP initiation\*

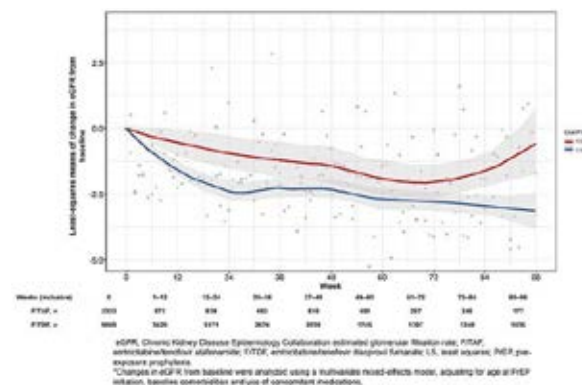


Figure 2. Least-squares mean eGFR change\* from baseline over time for F/TAF or F/TDF for HIV-1 oral PrEP users.

**Conclusions:** This is the first real-world study validating DISCOVER findings that F/TAF for HIV-1 PrEP has an improved renal safety profile versus F/TDF; however, real-world data limitations hinder complete bias control.



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## TUPEC214

### High syphilis incidence among PrEP-adherent men who have sex with men and trans women PrEP users

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**Background:** Syphilis remains as a public health concern. PrEP implementation programs in Latin America need to assess, along testing their feasibility, the impact on STIs. We evaluated the relationship between PrEP adherence and Syphilis incidence among men who have sex with men (MSM) and Trans women (TW) enrolled in ImPrEP, a multi-country PrEP demonstration project

**Methods:** From April 2018 to June 2021, 2,293 MSM/TW attending STI clinics from Peru were enrolled in ImPrEP. Participants were  $\geq 18$  yo, HIV-negative, and reported recent (previous 6 months): condomless anal sex, sex with HIV positive/unknown status partner, STI history (diagnosis or signs/symptoms) or transactional sex.

Follow-up visits and PrEP dispensation were quarterly, included syphilis testing (rapid treponemal test and RPR, if syphilis-negative at enrolment, RPR only if rapid treponemal test was reactive at baseline), and behavioral assessment. PrEP adherence assessment included medication possession ratio (MPR: number of pills prescribed/number of days between visits) for each visit. GEE Poisson regression models were used to evaluate factors related to syphilis incidence, and changes in syphilis incidence due to lockdown for COVID-19 emergency (declared on March 15, 2020)

**Results:** Overall syphilis incidence was 9.1 (95%CI: 7.9-10.4)/100 person-years (p.y.) (205 syphilis cases over 185 participants); 10.0 (8.3-12.1)/100 p.y. and 8.1 (6.6-10.0)/100 p.y. before and during/after lockdown, respectively.

Syphilis incidence was 14.7 (10.5 - 20.1)/100 p.y. for TW and 8.3 (7.1 - 9.7)/100 p.y. for cisgender-MSM. Syphilis incidence was higher among PrEP-adherent participants (MPR $\geq 0.6$ ) (IRR: 1.5 [IC: 1.1 - 2.0]), among TW (IRR: 1.6 [1.1 - 2.5]) and for participants reporting condomless anal sex (IRR: 1.5 [1.1 - 2.1]). Syphilis incidence was related to condomless anal sex (IRR: 2.4 [1.4 - 3.9]) before lockdown, but was related with syphilis diagnosis at enrolment (IRR: 2.7 [1.7 - 4.4]) during/after lockdown.

**Conclusions:** Syphilis incidence was high among Prep-adherent MSM/TW, was strongly related to condomless sex and being trans.

Health systems incorporating PrEP should reinforce the importance of periodical check-ups for those on PrEP, especially TW, who had a higher syphilis incidence com-

pared to cis-gender MSM; Interventions to prevent STIs among TW using PrEP are needed to sustain trans-focused services.

## TUPEC215

### Optimizing PrEP service delivery amongst AGYW in Tebelopele Wellness Centers to accelerate access and retention

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**Background:** The Fifth Botswana AIDS Impact Survey 2021 (BAIS V) report indicates that Botswana is well on its way to reaching epidemic control having surpassed the UN-AIDS 95-95-95 target at 95-98-98. The survey depicts a gap among people living with HIV 15-24 years, 84.5% were aware of their status, 98.5% of those aware were on Anti-Retroviral Therapy, and 91.6% of those on Anti-Retroviral Therapy achieved Viral Suppression.

To sustain epidemic control, Tebelopele Wellness Centers (TWC) as a community-based facilities and DREAMS clinical partner continues to be challenged with reaching AGYW with HIV prevention services and reduce their susceptibility to contract HIV due to variety of factors including low PrEP awareness and poor perception of HIV exposure.

**Description:** To accelerate PrEP uptake, TWC adopted facility- and community-based service provision models targeting 2 groups with different susceptibility profiles: the in-school and out-of-school. TWC collaborated with tertiary schools including vocational training institution (in-school) to raise awareness through DREAMS screening to provide comprehensive prevention package: HTS, PrEP, contraceptive methods, condom education and distribution, STI screening and treatment, post GBV care, and referrals for DREAMS primary package. In collaboration with TWC, community-based organizations actively mobilize out-of-school AGYW to access services during community outreaches at AGYW area of foci as well as DREAMS safe spaces.

**Lessons learned:** From October 1<sup>st</sup>, 2021, to 30<sup>th</sup> September 2023, a total of 3320 AGYW were initiated on PrEP. 2253 (68%) were initiated in the community while 1067 (32%) were initiated in the facility. Of the 1279 clients who were reviewed during this period, 882 (69%) and 397 (31%) were reviewed in the community and facility respectively. Through decentralizing PrEP services, TWC achieved 110% (3320/3017) AGYW initiation on PrEP against the target.

**Conclusions/Next steps:** 1. Successful PrEP scale up for AGYW requires PrEP integration into the young women's daily lives.

2. Scale up PrEP decentralization to improve access and continuity.



Significant Strides are made to access PrEP from community-based initiation and reviews, this may be attributed to effective community health promotion, quick access to care and lack of stigmatization experienced. Improvement of HIV education from lower age levels would increase uptake of PrEP for AGYM.

## TUPEC216

### VMMC scale-up in SA: key lessons

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**Background:** South Africa (SA) is among fifteen Sub-Saharan African nations intensifying efforts to expand Voluntary Medical Male Circumcision (VMMC) due to the high HIV burden and inadequate circumcision coverage. Scientific evidence supports VMMC as a measure to reduce HIV transmission by 60%. Despite circumcising around 5.5 million males, SA's national circumcision saturation stands at 49.9%, falling short of the 80% target.

This study examines the outcomes of a major VMMC initiative in SA's selected districts, supported by Right to Care (RTC) through the CDC-funded VMMC program.

**Methods:** A retrospective data analysis utilized de-identified program data collected between April 2018 and September 2023 from 15 CDC-supported districts across six provinces. Focused on males aged 10 and above, a semi-structured questionnaire explored reasons for seeking VMMC and information sources. Standard tools from RTC and the National Department of Health (NDoH) facilitated data collection and were stored securely in a cloud-based Monitoring and Evaluation (M&E) system. Descriptive analysis, Pearson's chi-square, and Fischer's exact test were applied to the dataset.

**Results:** Over six years, 465,188 clients received HIV prevention services at program sites. Whilst 113 females (0.02%) received HIV testing services, among 465,075 male consultees, an impressive 99% (459,367) underwent successful circumcision. Tradition/Customary Male Initiation provinces, namely Eastern Cape and Mpumalanga, contributed significantly (28% and 33%). FY2 and FY5 saw peak circumcision rates at 22% and 25%. Most circumcisions were among individuals aged 15 to 34. HIV uptake was 85%, with a 7% refusal rate and a 1% yield.

The 87% follow-up rate aided early identification and management of adverse events (0.19%), with Gauteng province contributing the most severe cases. Swelling, bleeding and infection were the commonly identified AEs at 28%, 26% and 23% respectively.

**Conclusions:** Despite facing challenges, the six-year VMMC program in SA demonstrated adaptability, with the number of circumcised men ranging from 38,393 to 116,012. Investments in Traditional Male Initiation were beneficial but would require further strengthening over

time for more coverage. Collaborative efforts in client recruitment, counselling, and surgical processes could enhance the follow-up rate, improving the early identification and management of adverse events.

## TUPEC217

### Time to Diagnosis of notifiable adverse events resulting from Voluntary Medical Male Circumcision in select countries, 2012-2021

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**Background:** Voluntary medical male circumcision (VMMC) has been a primary strategy for HIV prevention in high HIV burden countries in Southern and Eastern Africa since 2008. Monitoring of adverse events (AE) is essential for VMMC program safety. VMMC sites supported by the United States President's Emergency Plan for AIDS Relief (PEPFAR) require follow-up of VMMC clients within 14 days post-surgery for AE assessment.

Notifiable AEs (NAEs) are monitored using PEPFAR's Notifiable Adverse Events Reporting System (NAERS). Circumcision procedure to NAE diagnosis time (i.e., time to diagnosis or TTD) for different types of NAEs in NAERS has not been studied and may occur outside the recommended 14-day period.

**Methods:** We analyzed NAEs reported in NAERS between fiscal year (FY)2012 and FY2021 across the 15 Southern and Eastern African countries with PEPFAR-funded VMMC programs. Frequency of different types of NAEs were assessed. Key variables included in the analysis were date of circumcision, date of NAE diagnosis, NAE type, and client age. Range and median TTD for the various types of AEs were compared.

**Results:** From 2012-2021, 472 NAE cases were reported from 14 of the 15 countries. Fifty-three percent (n = 248) of NAEs were diagnosed within 7 days of circumcision, 21.8%(n=103) between 8 and 14 days, 23.1%(n=109) more than 14 days after VMMC and 2.5% (n=12) had missing information.

Overall median TTD was 7 days but variable by NAE type: hospital admissions 7.0 (0-339), anatomic deformity 22.5(0-347), permanent disability 23.0(0-114), amputation of the glans or shaft of penis 0.0(0-366), death 5.0(0-19), device displacement 0.0(0-1), tetanus 11.0(3-22). Median TTD for clients <15 years old was 8.0(0-366) and 6.0(0-105) for clients ≥ 15 years old (Mann-Whitney U=21093, p=.004).



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**Conclusions:** Although most NAEs are diagnosed within 14 days, some take longer to develop and may present outside the standard 14-day follow-up window. It is essential to ensure mechanisms are in place for timely AE diagnosis and management beyond scheduled follow up period. Understanding reasons for extended TTDs and identifying clients who may be at risk for AEs beyond the traditional follow-up period is important for AE prevention and optimal management.

## Integration of HIV services with other services, including sexual and reproductive health

### TUPEC218

Child sexual assault: a public health threat.  
Review of program data at UTH One-Stop Centre, Lusaka Zambia

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**Background:** The impact of sexual violence against children goes far beyond the initial incident, both severe short to long-term health and social consequences. In Zambia Child Sexual Abuse is very common but largely under-reported due to social stigma and access to services.

**Methods:** Reviewed program data of reported cases of suspected child defilement at the University Teaching Hospital from January to June 2021 in children below the age of 16 years. Reviewed all the cases in this period by age and sex, alleged perpetrators, where offence took place and medical services offered.

Results of tests including HIV, RPR, Hep B, swabs for sperm analysis and pregnancies, eligibility and access to Post Exposure Prophylaxis (PEP) and Emergency Contraception (EC).

**Results:** Total 467 cases were reported over 6 months. Majority cases were female (404) and 72 % were adolescents. Age ranges included the following: 0 to 4yrs - 46 (11%); 6 to 10yrs - 70 (17%) and 11 to 15 - 297 (72%).

Perpetrators were known to the survivor 371 (89%) the commonest being a boyfriend 27% or a neighbor 11%. Location of the abuse known in 309 cases. Majority of abuse took place in the abusers home (43 %) or in the survivors' home (24%). Nine children tested positive for HIV (2%); 2 (0.5%) for syphilis and 4 (1%) for Hep B. Of the 256 adolescent girls who were sexually mature, 15% (39) tested positive for pregnancy.

Genital swabs for spermatozoa were collected from 233 girls 107 (46%) tested positive. 100% of the clients received PEP for HIV prophylaxis if they were eligible, however many

(45%) presented late (after 72 hours) missed the opportunity to get PEP. Missed opportunity for Emergency Contraception was 44% (after 120 hours).

**Conclusions:** Child Sexual Abuse remains a public health threat with many young children and adolescents, vulnerable within their "protected environment" close to home. Late presentation to the One-Stop Centre resulted in missed opportunity to prevent pregnancies HIV and other STI's. The high rates of positive smears for spermatozoa from vaginal swabs, presents an opportunity to work closely with the newly established DNA laboratory in Zambia.

### TUPEC219

Integrating mental health support in HIV treatment programs: the ICARE model's impact on vulnerable populations in Uganda

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**Background:** Uganda faces a dual burden of mental health challenges and HIV prevalence, with 35% of the population experiencing mental health issues and a 5.8% HIV prevalence rate. Vulnerable populations, including adolescents living with HIV (ALHIV) and survivors of sexual violence against children (SVAC), experience disproportionate mental health struggles that negatively impact HIV outcomes.

This study sought to address this interplay by integrating mental health interventions into HIV treatment programs through the ICARE model.

Project Goals and Objectives were to expand the implementation of interpersonal group therapy for adolescents affected by HIV in the districts of Kamuli, Bugiri, Namayingo, Jinja, Buikwe, and Kayunga, ensuring broader reach and impact.

**Description:** The ICARE Mental Health integration into the HIV pilot took place in the Districts of Bugiri, Kamuli, Namayingo, Buikwe, and Mukono in East Central Uganda, targeting vulnerable HIV+. A phased approach involving: **Awareness Raising of Stakeholders** from clinical, education, and community sectors; **Depression Screening by using** the PHQ9 tool; **Group Therapy by community social workers**; **Sports Integration** to promote well-being and social engagement; **Community Conversations to enhance** Open dialogues with caregivers and local leaders for sustaining mental health services.

**Lessons learned: Findings:** Better disclosure: MH status @94% & HIV status @100%; Better coping skills; reduced stigma, functional limitations & suicidal thoughts; Reduced IIT: 97% PLHIV (12-24 years) treatment adherence; Improved VLS: 86% PLHIV (12-24 years) attributing VLS partly to MH integration. The ICARE model demonstrates a promising approach for integrating mental health support into HIV treatment programs in low-resource set-



tings, with potential for replication in other countries. Further research is needed to evaluate its long-term impact on HIV outcomes and overall well-being.

Integration of mental health services into HIV care has the potential to significantly improve treatment adherence, viral load suppression, and quality of life for PLWHA.

**Conclusions/Next steps:** The pilot successfully reached a large number of vulnerable AYP with mental health services, highlighting the effectiveness of the integrated approach and its potential for long-term sustainability. The ICARE model highlights an innovative approach to addressing the complex interplay between mental health and HIV, contributing to the fight against the HIV/AIDS epidemic in Uganda and beyond.

## TUPEC220

Retrospective analysis of cervical cancer screening rates among women living with HIV enrolled in differentiated service delivery models in Nigeria

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**Background:** Women living with HIV (WLHIV) have a higher risk of developing cervical cancer. To improve early detection and treatment, the U.S. President's Emergency Plan for AIDS Relief (PEPFAR) through the United States Agency for International Development (USAID)-funded Meeting Targets and Maintaining Epidemic Control (EpiC) and Accelerating Control of HIV Epidemic (ACE 5) projects, integrated cervical cancer screening and treatment in HIV programs across the differentiated service delivery models (DSD) in 2020.

This study assessed the uptake of cervical cancer (CC) screening among WLHIV enrolled on DSD models in Cross River State, Nigeria.

**Methods:** This was a retrospective cross-sectional analysis of the electronic medical records at 53 health facilities in Cross River State between April 2020 and March 2023. WLHIV ages 25–49 years were categorized by eligibility for CC screening.

We abstracted their CC screening status, categorized as screened and not screened, and DSD status, categorized based on location of antiretroviral therapy (ART) refill pickup into facility-based (FBM) and community-based (CBM) DSD models. All women in DSD were offered screening. Those in FBM who accepted were screened during the

same clinic visit at the health facility, and those in CBM who accepted were referred to the nearest health facility with the capacity to conduct CC screening. The proportion of women screened for CC was compared between the FBM and the CBM using chi-square with a significance level set at 0.05.

**Results:** A total of 16,441 WLHIV were eligible for CC screening, with a median age of 37±7.4; 60.0% (9,862) were enrolled on DSD (FBM = 56.3%, 5,548/9,862; CBM = 43.7%, 4,314/9,862). Overall, 41.4% (6,806/16,441) received CC screening, with a positivity rate of 0.7% (48/6,806). Of the 6,806 women screened for cervical cancer, 59.2% (4,026) were enrolled in a DSD model. The proportion of women screened was higher in the FBM at 57.3% (2,307/4,026) compared to the CBM at 42.7% (1,719/4,026) ( $p < 0.05$ ).

**Conclusions:** Though cervical cancer screening rates were suboptimal, WLHIV enrolled in FBM had better screening rates than those in CBM. Interventions that identify and address the reasons for the suboptimal screening rates in both models are recommended.

## TUPEC221

Sexually transmitted infections and seeking care behaviour among sexually active adolescent girls and young women (AGYW) in Zimbabwe: a respondent driven sampling survey

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**Background:** Uptake of sexual and reproductive health services (SRH) among adolescent girls and young women (AGYW) is poor. We aimed to estimate the prevalence of sexually transmitted infections (STIs) and describe uptake of STI treatment amongst sexually active AGYW (SA-AGYW).

**Methods:** A cross-sectional respondent driven sampling survey of SA-AGYW, aged 15–24 years was conducted in May–July 2023 in six urban and peri-urban districts in Zimbabwe. Participants self-completed an audio computer-assisted questionnaire focusing on sexual behaviour, STI symptoms and uptake of SRH services. A random third self-collected vaginal swabs that were tested for Chla-



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mydia (CT), Gonorrhoea (NG), and *Trichomonas vaginalis* (TV) using a multiplex polymerase chain reaction test. Individuals with positive results were notified by phone call (up to six attempts) and offered free treatment at their clinic of choice.

**Results:** Of 900 SA-AGYW, 68% (614/900), reported having condomless sex in the last three months, with 17% (157/900) reporting having genital sores, genital warts, or an unusual vaginal discharge in the last 12 months; 41% (64/157) reported not doing anything about these symptoms. During the survey 8% (72/900) reported current symptoms. Among the 300 that collected vaginal swabs 31% (93/300) tested positive to at least one of CT, NG, or TV; however, 89% (82/92) reported no current symptoms. Of note 9% (26/294) reported current symptoms and among these 38% (10/26) tested positive to at least one STI compared to 31% (82/268) in those who did not. Of those with a positive result 76% (71/93) were successfully notified. However, 51% (36/71) came forward to receive treatment (Figure).

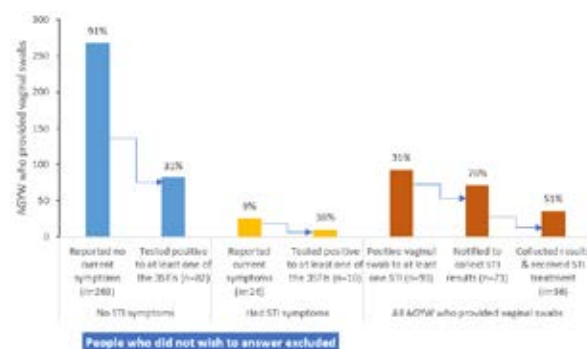


Figure 1. STI cascade of care among sexually active AGYW in Zimbabwe.

**Conclusions:** High STI prevalence continues to be seen amongst SA-AGYW. Despite offering free treatment at local clinics only half of them accessed it. Better provision for screening and treatment of STIs is required coupled with education to raise awareness of STIs and the fact that they are often asymptomatic.

## TUPEC222

### Are we making progress in cervical cancer prevention among women within reproductive age group living with HIV & AIDS? Experience from North Central Nigeria

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**Background:** Cervical cancer is the fourth most common cancer in women globally with an estimated 604 000 new cases and 342 000 deaths in 2020. Women living with HIV are 6 times more likely to develop cervical cancer compared to women without HIV.

This study assessed awareness and knowledge of cervical cancer and uptake of cervical cancer screening and prevention services among women of reproductive age living with HIV and AIDS in Nigeria.

**Methods:** A cross sectional study was conducted among women living with HIV accessing care and treatment services in two states of North Central Region of Nigeria (N



= 1,030) with average age of 36.5. years. Multistage sampling technique was used for selection of study zones, local government areas and facilities. Purposive sampling was adopted to select women age 24 – 49 years who met other inclusion criteria. Quantitative data collection was done using validated questionnaire with Cronbach's Alpha coefficient of 0.8. Data were analysed with SPSS version 16.0 and data were presented in frequency and percentages.

**Results:** Only 279 (36.5%) of the 765 have ever been screened for cervical cancer, while 486 (63.5%) have never been screened and 222 (79.6%) of the 279 have only been screened once. Unfortunately, 737 (96.3%) of the 765 had never been vaccinated for cervical cancer. More than 60% of the participants have good knowledge of cervical cancer as 62.3% know that having multiple sexual partners and early sexual activities are risk factors.

Also, 57.6% knows that Human Papilloma Virus is a causative agent of cervical cancer and 67.6% also know that cervical cancer is preventable and that pre-cancerous lesion can be treated. However, only 34.2% have heard that pap smear test can help in early detection.

**Conclusions:** Awareness, screening and vaccination against cervical cancer are not optimal among women of reproductive age living with HIV in North Central, Nigeria. Although knowledge among those who are aware is above average, responsibilities are placed on all Public Health Experts to develop interventions that will increase awareness and uptake of screening and vaccination against cervical cancer among women of reproductive age living with HIV in North Central Nigeria.

## TUPEC223

**An evaluation of the impact of HIV/Syphilis combo test kit on equity of access to syphilis screening of pregnant women presenting for ANC in Enugu State, Nigeria**

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**Background:** Pregnant women are screened for syphilis when they present at Antenatal Clinics (ANC), failure of which risks the health of the unborn children. We sought to understand if there was inequity in access to syphilis screening across different populations and if the introduction of an HIV Combo test kit (a rapid test kit that screens for both HIV and syphilis) in January 2023 led to improvement in equity.

**Methods:** We analyzed the aggregate data reported by health facilities on syphilis and HIV screening among pregnant women who presented for ANC on the DHIS2 platform between January 2021 and December 2023 to determine coverage rates in urban, semi-urban, and rural populations in Enugu state, Nigeria. After that, we calculated the absolute and relative inequity in screening coverage for both diseases between the urban and rural populations.

**Results:** Pregnant women presenting for ANC in urban areas were eleven times more likely to be screened for syphilis than their rural counterparts in 2021, five times more likely in 2022, and two times more likely in 2023. The HIV screening rate was similar across populations for 2021, 2022, and 2023.

Year	Coverage				Absolute inequity = (Urban - Rural)		Relative inequity = (Urban/Rural)	
	Rural		Urban					
	Syphilis	HIV	Syphilis	HIV	Syphilis	HIV	Syphilis	HIV
2021	7%	100%	79%	100%	72%	0%	11	1
2022	18%	100%	84%	100%	66%	0%	5	1
2023	49%	100%	100%	100%	51%	0%	2	1

Table. Syphilis and HIV screening rates among pregnant women presenting for ANC in Enugu State.

**Conclusions:** Inequity exists in access to syphilis screening but not in HIV screening. However, inequity in syphilis screening has reduced over the last three years, with the introduction of the HIV-Syphilis Combo test kit contributing to this. This suggests that integrating other disease intervention programs into the HIV/AIDS program could lead to a greater increase in access as the HIV/AIDS program is disproportionately well-funded in the country, enabling its saturation across populations within the state. Further research should investigate other factors that contribute to a decrease in inequity in access to syphilis screening.





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## TUPEC224

Choice matters! Youth-led research in Uganda on acceptability, preferences, and feasibility of HIV pre-exposure prophylaxis (PrEP) and family planning (FP) integrated models of care

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**Background:** In Uganda, 1 in 4 adolescent girls (aged 15-19) is pregnant or has a child, and 29% of new HIV infections occur among AGYW (aged 15-24). Although PrEP is a highly-effective prevention method, awareness, access, and adherence among AGYW in Uganda remain low.

With the Ministry of Health, PATH and AGYW peer researchers applied human-centered design to co-create integrated PrEP and FP service delivery models tailored to AGYW preferences and needs in Uganda.

**Methods:** Ugandan AGYW researchers and PATH collected 128 in-depth interviews (IDIs) from 60 AGYW (aged 15-24), 24 public and 24 private health care providers, 10 policymakers, and 10 community leaders plus 4 focus group discussions with AGYW and FP and PrEP Providers from Nakasongola and Masaka districts from May to September 2023 to identify access barriers and preferences for integrated PrEP-FP service models.

**Results:** Participants across all categories strongly favored integrating PrEP within existing FP services through a range of integration models; reasons given included possible reduced transport costs, reduced waiting time at facilities, improved privacy, and improved PrEP awareness and understanding among AGYW who use FP and may also have a need for PrEP.

*"If I can come to hospital and I receive my PrEP and injection (for contraception) then I can save on transport." (Young Woman from Masaka).*

PrEP-FP models recommended by participants were: midwives at public facilities (most preferred model); community health workers; and pharmacy-based PrEP/FP services.

Potential challenges for suggested models to be addressed include PrEP availability outside of government facilities, end-user costs at pharmacies, human resource shortages, stockouts of PrEP and FP products, and fears and misconceptions related to PrEP and FP. To mitigate potential challenges, participants recommended policy and workflow changes to enable PrEP delivery by addi-

tional cadres, provider training, supportive supervision, supply chains strengthening, and communication campaigns.

**Conclusions:** Ugandan AGYW and health workers call upon policymakers and donors to integrate PrEP and FP services, with three models identified as acceptable and feasible. If potential challenges are addressed, differentiated PrEP-FP models could lead to increased dual uptake and cost efficiencies, sustainably contributing to improved choice, agency, and health.

## TUPEC225

Integrated service delivery for people who inject drugs: a program implementation study from India

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**Background:** The 2021 Programmatic Mapping and Population Size Estimation (p-MPSE) conducted by the National AIDS Control Organisation revealed an estimated 280,000 People Who Inject Drugs (PWIDs) in India. These individuals face heightened risks of diseases like Tuberculosis, HIV, Hepatitis, and sexually transmitted infections due to unsafe practices and poor quality of life. The absence of a formal institutional mechanism for cross-referrals necessitated a shift from fragmented, provider-centred models of care to integrated, person-centred approaches.

**Description:** One Stop Centres (OSCs), a novel initiative with inter-ministerial coordination involving the Ministry of Social Justice & Empowerment, emerged as a solution. These OSCs aimed to provide comprehensive services to PWIDs through a community-based, single-window approach. Services, both health and non-health related, were offered directly or through accompanied referrals. Staff recruitment from within the community enhanced effectiveness in client outreach and service delivery. Drop-in centres were established, offering a safe space for clients to engage in recreational activities and peer-led motivational discussions. Flexi-timings were adopted to reach clients at more convenient times, and intensive counselling along with family engagement was sought to improve treatment adherence.

**Lessons learned:** Within months, 9244 clients were enrolled, with over 90% undergoing HIV screening (4.7% positivity). Unprecedentedly high HIV positivity was noted in states like Haryana, Delhi, Assam, Tripura, and Mizoram. A 9.3% positivity for Hepatitis C was observed, with identification of tuberculosis and syphilis cases. Over 3000 clients were screened for non-communicable diseases, and 146 were linked with social protection and welfare schemes. The pan-India implementation of OSCs unveiled varying risk profiles among PWIDs in different states. For example, in North-Eastern states, a majority of clients were aged 19-27, while in Delhi and Haryana, entire families were in-

volved in drug use. Contrasts also emerged in drug injection practices, with undiluted heroin use prevalent in the North-East, while in the North, dilution with pharmaceutical substances and high needle-sharing behaviour were noted.

**Conclusions/Next steps:** Integrated service delivery centres like OSCs have underscored the significance of person-centric, single-window service delivery models for HIV elimination. The successful outcomes showcased immense potential for scaling up such initiatives nationwide.

## TUPEC226

### Integrating mobile SMS PrEP navigation services into a nationwide home HIV/STI self-testing program in the US

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**Background:** TakeMeHome.org is an online program enabling state/local health departments to offer free HIV/STI self-testing. Since its inception in March-2020, >42,000 kits have been ordered, with 31% testers reporting never testing. As <5% of TakeMeHome users have used PrEP, there is an opportunity of linking TakeMeHome users to PrEP information and services.

**Description:** PrEPmate, a CDC-endorsed bi-directional texting platform, demonstrated increased PrEP retention/adherence. We developed a novel program of linking TakeMeHome testers to mobile SMS PrEP navigation via PrEPmate. We conducted focus groups (FGs) among TakeMeHome.org users to elicit preferences for linkage from TakeMeHome to PrEPmate. Through these FGs and input from local health departments and community advisory groups, we revised content and functionality for this linkage. In October-2023, we launched a pilot in two US Ending the HIV Epidemic (EHE) jurisdictions: Sacramento, California and Tarrant, Texas.

**Lessons learned:** 13 TakeMeHome users participated in four FGs (mean age 31.5; 31% Latinx, 15% Black; 69% never used PrEP). When shown wireframes of TakeMeHome/PrEPmate linkage, most thought they were easy to navigate and user-friendly. They liked the privacy of connecting with a PrEP navigator using SMS. Participants recommended providing a clear description of PrEP and

PrEPmate's services and indicating PrEP is low/no-cost. On PrEPmate landing page, they recommended adding language on confidentiality and the partnership with TakeMeHome to show both services are connected. Once enrolled, they recommended weekly/bi-weekly check-ins to assist with PrEP navigation.

Overall, 92% of FG participants were likely to use PrEPmate to learn more about PrEP and/or link to PrEP services. From October-December-2023, among 252 individuals who ordered test kits, 62 were linked to PrEPmate page, and 29 enrolled in PrEPmate. PrEP navigation has been provided via SMS/phone, with several new PrEP starts at local clinics. Navigators suggested adding PrEP information to onboarding messages, using open-ended questions to address broader client needs, and including clinic website links to facilitate appointment scheduling.

**Conclusions/Next steps:** Through local public health and community input, we successfully developed a program to link TakeMeHome testers to PrEP navigation via PrEPmate. Next steps will be to evaluate pilot outcomes and if successful, expand PrEPmate navigation to all EHE jurisdictions using TakeMeHome.

## TUPEC227

### Co-creating an integrated gonorrhea and chlamydia testing program at community-based HIV testing centers for men who have sex with men in China

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**Background:** Many Chinese men who have sex with men (MSM) rarely access care through traditional healthcare channels due to social stigma. Community-based organizations (CBOs) have emerged as an important provider of HIV testing services for MSM. However, few CBOs offer integrated testing for *Neisseria gonorrhea* (NG) or *Chlamydia trachomatis* (CT). We co-created and implemented a CT/NG testing program in partnership with six CBOs in Guangdong Province that normally provide rapid HIV, syphilis, and HCV testing for MSM as part of the PIONEER RCT (NCT05723263).

**Description:** From February to November 2023, we co-created a program for CT/NG testing along with 12 community MSM and 4 CBO staff members. The program was implemented from July to December 2023. CBO staff approached MSM presenting for routine HIV testing 18 years old who had not tested for CT/NG in the past year. At baseline, sociodemographic information and prior STI



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testing history were collected. Participants were offered pooled urethral, pharyngeal, and rectal CT/NG nucleic acid amplification testing. CBO implementors collected and pooled all samples and shipped samples to an external lab weekly. They also provided results notification for participants through WeChat and referred positive testers for treatment at local hospitals.

**Lessons learned:** 393 MSM were approached from July to December 2023. The mean age was 32.9 years (SD 10.2). At baseline, 374 (95%) reported ever testing for HIV, 372 (95%) for syphilis, and 349 (89%) for hepatitis C. Only 216 (54%) reported ever testing for NG and 211 (54%) for CT. Across all sites, 291 (74%) participants received CT/NG testing. 10 (3.4%) tested positive for NG and 60 (20.6%) for CT, including 5 CT/NG co-infections.

With support from the research team, CBO staff successfully integrated CT/NG testing procedures, including counseling for results and referrals for further care, with routine workflows for HIV rapid testing. CBO leadership was critical for reaching and maintaining the trust of community MSM.

**Conclusions/Next steps:** Through an integrated CT/NG testing program, CBOs reached new CT/NG testers and diagnosed high rates of CT/NG in MSM at risk for HIV. Next steps include optimizing follow-up and treatment and analyzing costs so that these programs can be sustained.

## TUPEC228

**Acceptability and feasibility of a one-stop home-based genital self-sampling for female genital schistosomiasis, human papilloma virus and trichomonas and HIV self-testing: baseline data from a longitudinal cohort study in Zambia**

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**Background:** Female genital schistosomiasis (FGS) is a neglected gynecological disorder that affects 56 million girls and women in Sub-Saharan Africa, caused by the waterborne parasite *Schistosoma (S.) haematobium*. FGS is associated with infertility, dyspareunia and symptoms mimicking sexually transmitted infections (STIs), is a risk factor for HIV transmission and is associated with human papillomavirus (HPV) and cervical cancer. Diagnosis is bottlenecked, but studies have shown acceptability of genital self-sampling, for STI, FGS and HPV.

We aim to determine the acceptability and feasibility of a multi-genital self-sampling method in a large cohort in Zambia.

**Methods:** The Zipime Weka Schista study is a longitudinal cohort (April 2021- January 2025) which is integrating a one-stop home-based genital self-sampling for *S. haematobium* and HPV DNA and self-testing for HIV and *Trichomonas vaginalis* (Tv) in three communities in Zambia. Sexually active women aged 15-50 years were randomly selected by community health workers and during a home visit two cervicovaginal self-swabs, a urine sample were obtained and HIV and Tv self-test were provided. Information was collected on acceptability and feasibility of the multi-pathogen genital self-sampling. We present baseline data collected at home between January 2022 – March 2023.

**Results:** A total of 2,701 women were approached by community health workers and 2,531 (93.7%) were enrolled. All women enrolled provided two cervicovaginal I self-swab and a urine sample. Approximately 2,389 (94.3%) and 1,404 (55.4%) women had self-swabs for Tv and HIV test respectively. There was high acceptability of the home multi-genital self-sampling (2,208/2531; 87.2%). Participants preferred to be seen at home than clinic.

Some reasons stated were that it is more convenient 1585 (71.8%); there was more privacy at home 1215 (55.0%); going to the clinic was not convenient 264 (12.0%); lack of transport to go to the clinic 208 (9.4%); unavailability due to work 118 (5.3%) and lack of childcare, 69 (3.1%).

**Conclusions:** A home-based multi-pathogen self-sampling and testing is highly acceptable and feasible in three communities in Zambia. This represents an evidence-based novel direction for national policy to increase access to diagnosis, treatment and care for HIV and other genital infections co-existing in women of childbearing age.

## TUPEC229

**Assessing comorbid conditions in people with HIV/AIDS: insights from the CHAO (Comorbidities of HIV/AIDS Outpatients) study in Meru County, Kenya and their role in shaping integrated health care approaches**

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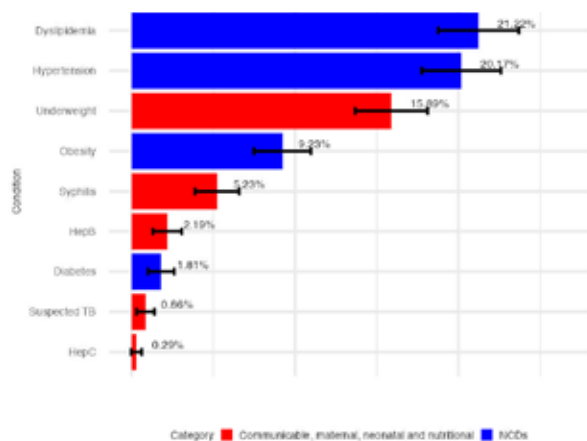
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**Background:** Co-morbidities among people living with HIV (PLWH) pose a public health challenge, impacting clinical management and quality of life. Understanding their prevalence is crucial for tailored healthcare strategies.

The Comorbidities in HIV/AIDS Outpatients (CHAO) project, in Meru County, Kenya, is a cross-sectional epidemiological study aimed to ascertain the prevalence of comorbid conditions in PLWH, with a particular focus on non-communicable diseases (NCDs).

**Methods:** Comprehensive screenings for non-communicable and infectious diseases were conducted in 25 HIV clinics. Participants underwent comprehensive clinical and laboratory evaluations. Data on demographics, clinical history, and lifestyle factors were collected. The primary outcome was the prevalence of comorbidities, including hypertension, diabetes, dyslipidemias, obesity, syphilis, and hepatitis.

**Results:** Data analysis included 1,051 PLWH, 75% female and a median age of 47 years (IQR 38,54); 96% of the participants were on antiretroviral treatment for more than 12 months. The majority of individuals (n=582, 55.4%) were affected by one or more comorbidity, 352 individuals (33.5%) were affected by one or more NCD, 157 individuals (14.9%) by one or more communicable, and 73 individuals (6.9%) by both NCDs and communicable diseases. Hypertension affected 20.17% of the individuals, and dyslipidemia 21.22%. Among infectious diseases, the prevalence of presumptive TB was 0.9%, HbsAg positivity was 2.2%, HCV-ag positivity was 0.3%, and syphilis was 5.3%. Furthermore, 16% of PLWH were underweight, 54% had a normal weight, 21% were overweight, and 9.2% were obese. Hypertension prevalence increased from 19.9% in under-40s to 33.1% in over-60s. Overweight rates halved from 16.0% in younger adults to 8.3% in seniors. Underweight was more common in younger individuals (27.6%) than in the elderly (15.9%). Diabetes prevalence grew from 0.6% in the youngest group to 5.5% in those over 60.



**Conclusions:** Burden of co-morbidities, in particular NCDs, among PLWH is high. Tailored healthcare strategies integrating routine screenings, health promotion, and surveillance are essential.

## TUPEC230

### Evaluating a self-care intervention to promote uptake of HIV and contraception services among tertiary education students: a pilot study

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**Background:** Self-care is critical for achieving universal health coverage, however there is limited knowledge to inform optimal implementation. We piloted a co-developed self-care intervention for HIV self-tests (HIVST), HIV Post-exposure prophylaxis (PEP), emergency contraception (EC), and condoms among students – a group with suboptimal uptake/access but high literacy and self-efficacy suggesting optimal conditions for self-care.

**Methods:** In two workshops with students and relevant stakeholders and bi-weekly meetings with other key stakeholders over three months, we developed an intervention for peer-led promotion/distribution of HIVST, PEP, EC and condoms.

The agreed intervention was piloted in three Zimbabwean colleges/universities in Dec/2023-Jan/2024. Student peers distributed HIVST and condoms directly, and vouchers for PEP and EC that were redeemed at college/nearby clinics. Vouchers were additionally placed in public access points for self-collection.

During co-development students strongly preferred peer distribution of all commodities but this was restricted by regulatory requirements for PEP and EC. Peer distributors (n=15) kept daily audio diaries of their experiences; these data were analysed thematically.

**Results:** Co-development workshops and audio diaries showed hunger and unmet need for pregnancy and HIV prevention (...“this intervention is overdue!”). There was no easy access to condoms before the study and students had no prior knowledge of PEP or PrEP.

During the first two weeks of intervention implementation, 299/2,896 (10.3%) students collected HIVST kits; with 79/2,896 (2.7%) of all students and 101/1,049 (9.6%) of female students collecting PEP and EC vouchers respectively. At college/nearby clinics, 17/79 (17.9%) and 38/101 (37.6%) PEP and EC vouchers were redeemed, respectively.

There was 100% redemption of vouchers collected from public access points (n=3). 1,071 male condoms were collected by 221 students; 77 students collected 309 female condoms. Audio diaries showed that many students felt too shy to redeem vouchers at clinics – some female stu-



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dents asked their boyfriends to redeem EC for them (this was confirmed by health workers). Students also requested PrEP to be added to the package.

**Conclusions:** We found that peer-led distribution of HIVST, PEP, EC, and condoms is feasible and acceptable; the model can be optimised by making it fully peer-led/community-based. This work informs an upcoming large trial of the intervention.

## TUPEC231

**Sexually transmitted infection screening rates did not recover following COVID-19 shelter in place in a multi-site cohort of U.S. HIV primary care clinics**

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**Background:** Following COVID-19 shelter-in-place orders, access to non-essential services, including asymptomatic STI screening, decreased, potentially contributing to the worsening STI epidemic.

**Methods:** We assessed the incidence of bacterial STIs (*Chlamydia trachomatis* [CT], *Neisseria gonorrhoeae* [NG], and syphilis) and STI testing. Syphilis reinfections were defined as a fourfold increase in titer. Using interrupted time series approaches, we compared changes in testing rates between March 2018 and March 2022.

Data were collected from 11,030 PWH with a clinical visit both before and after COVID-19 from the Center for AIDS Research Network of Integrated Clinical Systems (CNICS) cohort, a multi-site cohort of 8 HIV clinics across the U.S.

**Results:** 11,030 participants contributed data from 135,862 assessments. After COVID-19, there were fewer tests conducted for CT ( $p<.001$ ) and NG ( $p<.001$ ) compared to pre COVID-19 (Figure 1).

Similarly, when examining incident infections, there was a decrease in positive tests ( $p=.026$ ; Figure 2). There was a decrease in the proportion of positive tests for syphilis ( $p<.001$ ), but no change for CT and NG

In a subset of the sample ( $n=2,673$ ), 31% reported having the same amount of sex as before COVID-19 and 53% reported no changes to sexual health behaviors.

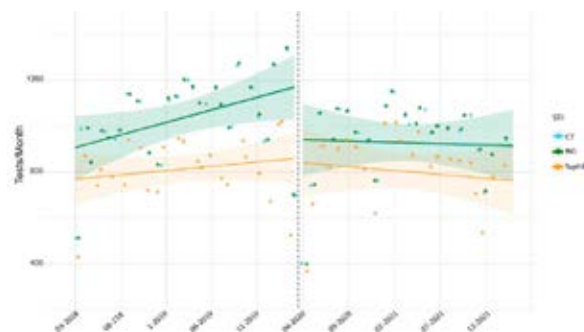


Figure 1. Total number of STI tests between March 2018 and March 2022.

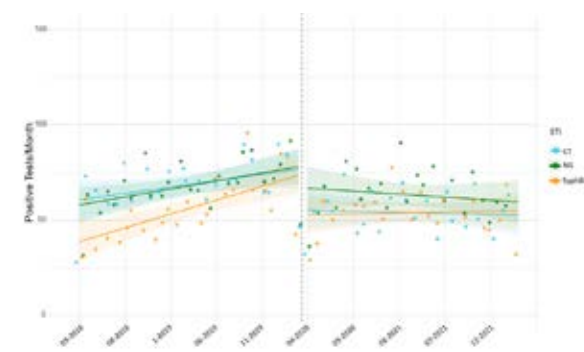


Figure 2. Positive STI incidence between March 2018 and March 2022.

**Conclusions:** Despite a worsening STI epidemic, STI screening decreased in the 2-years following COVID-19 and has yet to resume previous levels. Although the rate of incident STIs decreased post-COVID-19, this is likely driven by underscreening.

This study underscores the need for reinvestment in STI services and consideration of novel STI prevention approaches in addressing the STI epidemic.

## TUPEC232

### Retention of people who inject drugs enrolled in a 'Medications for opioid use disorder' (MOUD) treatment programme in Uganda

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**Background:** Injection Drug use is associated with increased HIV risk behaviour that may result in the transmission of HIV, and poor access to HIV prevention and treatment. In 2020, Uganda, with PEPFAR support, introduced the 'medication for opioid use disorder treatment' (MOUDT) for People who inject drugs (PWID).

We analysed the 12-month retention and associated factors among PWID enrolled on MOUD treatment in Kampala, Uganda.

**Methods:** We conducted a retrospective analysis of 343 PWID enrolled in the MOUDT programme between September 2020 and July 2022. Retention was defined as the number of individuals still in the programme divided by the total number enrolled, computed at 3-, 6-, 9- and 12 months using lifetable and Kaplan-Meier survival analyses. Cox proportional regression analyses were conducted to assess factors associated with retention in the programme in the first 12 months

**Results:** Overall, 243 (71%) of 343 participants took a high methadone dose (60mg or more). The majority of participants were males (n=284, 82.8%), and the median (interquartile range, IQR) age was 31 (26-38) years. Most participants (n=276, 80.5%) were living 5km or more away from the MOUDT clinic. Thirty (8.8%) were HIV-positive, 52 (15.7%) had a major mental illness and 96 (27.9%) had a history of taking alcohol three months prior to enrollment.

The cumulative retention significantly declined from 83.4% (95%CI=79.0 - 87.0) at 3 months to 71.9% (95%CI=67.2-76.6) at 6months, 64% 95%CI=58.7-68.9) at 9 months, and 55.2%; 95% CI (49.8- 60.3% at 12 months. The 12-month retention was significantly higher for clients on methadone doses of 60mg or more (adj.HR=2.1, 95%CI=1.41-3.22), while patients resident within 5km of the MOUDT clinic were 4.9 times more likely to be retained at 12 months compared

to those residing 5km or more, (adj. HR=4.81, 95%CI=1.54-15). Other factors, including predisposing, need, and enabling factors, were not associated with retention.

**Conclusions:** Our study demonstrates acceptable 12-month retention rates comparable to studies performed elsewhere in developing and developed countries. Sustaining and improving retention may require enhanced scaling up of MOUDT dose to optimal level in the first 3months and reducing the distance between client locale and MOUDT clinics.

## TUPEC233

### Brief alcohol E-intervention reduces hazardous alcohol use and improves PrEP adherence among men who have sex with men: results from a pilot randomized controlled trial

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**Background:** Although oral HIV Pre-Exposure Prophylaxis (PrEP) is highly effective at preventing HIV acquisition, its effectiveness is contingent upon regimen adherence. Recognizing that alcohol-related issues may hinder one's ability and/or motivation to take PrEP as prescribed, the present investigation entailed an NIH/NIAAA-funded pilot randomized controlled trial (RCT) to explore whether the delivery of a brief, alcohol-focused e-intervention could reduce hazardous alcohol consumption and in turn improve PrEP adherence among a sample of PrEP-prescribed men-who-have-sex-with-men (MSM).



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**Methods:** From Oct-2021 to May-2022, MSM (age $\geq$ 18; pre-scribed daily oral PrEP  $\geq$ 3 months; hazardous drinking (AUDIT-C score $\geq$ 4)) were recruited from two PrEP-delivery sites in Toronto, Canada. Following their baseline assessment, participants were randomly assigned to receive either "Check-Your-Drinking," a brief, single-session, alcohol-focused, normative feedback e-intervention; or standard-of-care (control). Self-report and biomarker outcomes pertaining to alcohol consumption (i.e., AUDIT-C hazardous drinking; weekly consumption; binge drinking; phosphatidylethanol  $\geq$ 35 ng/ml) and PrEP nonadherence (i.e., any missed doses,  $\geq$ 4 missed doses – past 7 days;  $<$ 100% adherence,  $<$ 60% adherence – past month; Tenofovir  $<$ 1250,  $<$ 700 fmol/punch) were administered at baseline, 3-months, and 6-months post-baseline. Intervention efficacy was assessed through general linear modelling that compared changes in outcomes over time.

**Results:** A total of 122 PrEP-prescribed MSM (Mean age=33.6, White=55.7%) participated in the RCT. Retention was very high, with 95.1% and 97.5% completing 3-month and 6-month assessments, respectively.

In support of the hypotheses, at the 3-month follow-up, hazardous drinking (intervention=77.8% vs. control=92.7%;  $F=4.33$ ,  $p=.040$ ); missing any PrEP doses over the past seven days (intervention=18.5% vs. control=43.9%;  $F=7.45$ ,  $p=.007$ ); and suboptimal (i.e.,  $<$ 60%) PrEP adherence over the past month (intervention=2.5% vs. control=14.6%;  $F=9.41$ ,  $p=.003$ ) were all significantly lower for intervention vs. control participants.

These intervention effects were not sustained at the 6-month follow-up, and effects involving the other alcohol- and adherence-related outcomes were not significant.

**Conclusions:** Findings from this novel pilot RCT suggest that a brief, stand-alone e-intervention can reduce hazardous drinking and improve PrEP adherence among MSM.

However, as such intervention effects were only short-lived, further trials are needed to evaluate whether the provision of "booster" intervention sessions, delivered at set intervals or on-demand, could lead to sustained alcohol- and PrEP adherence-related improvements.

## TUPEC234

### Innovative approaches in HIV outreach for transgender populations: a case study of the GLAM project at Amos Tara Community Center

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**Background:** Despite global advances in HIV prevention and treatment, transgender women remain disproportionately affected by HIV, facing systemic barriers to healthcare access and enduring social stigma. The Amos Tara Community Center recognized the urgent need for tailored interventions and launched the GLAM (Glamorous Livelihood, Advocacy and Mental Health) project aimed at transgender women.

**Description:** The GLAM project is an innovative initiative designed to engage transgender women in HIV prevention and care while simultaneously providing opportunities for personal and professional development. The project integrates HIV screening with referral services and combines it with livelihood workshops. These workshops not only equip participants with practical skills for economic empowerment but also create a supportive community for advocacy and mental health support.

The program utilizes a peer-led model, leveraging the power of shared experiences and trust within the transgender community to encourage participation and HIV screening.

**Lessons learned:** The GLAM project has demonstrated that integrating HIV services with livelihood training and mental health support resonates well with transgender women. The peer-led approach fosters a sense of belonging and empowerment, which is crucial in overcoming the fear and discrimination that often deter transgender individuals from seeking HIV-related services.

A key lesson is the importance of providing comprehensive, culturally competent, and stigma-free services to effectively reach and engage this key population in HIV prevention and care.

**Conclusions/Next steps:** The success of the GLAM project illustrates the potential of innovative, community-led, and integrated approaches to address the HIV epidemic among transgender women. As a next step, the Amos Tara Community Center plans to scale up the project to reach a broader segment of the transgender community.

Additionally, the project serves as a replicable model that can be adapted by other organizations seeking to reduce HIV disparities among transgender populations. Evaluation of long-term outcomes and sustainability of the project will be critical in informing future initiatives and policy directions.

## TUPEC235

### Drug use and needle sharing among adolescents and young adults in Nigeria: secondary analysis of data from a multi-site HIV self-testing clinical trial

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**Background:** Adolescents and young adults (AYA, 14-24 years old) have the highest rates of drug use in most low and middle-income countries. Little is known about the drivers of drug use among AYA in Nigeria.

The purpose of this secondary analysis was to examine drug use and needle sharing among AYA enrolled in a multi-site clinical trial in Nigeria.

**Methods:** Our stepped-wedge, cluster RCT (NCT04710784) enrolled AYA in thirty-two local government areas across four geopolitical zones of Nigeria. The primary purpose of the RCT was to enhance uptake of HIV self-testing. This secondary analysis focused on drug use and needle sharing.

Drug use was defined as having ever used drugs. Needle sharing was defined as having shared needles or other injection equipment. Socio-demographic characteristics, including age, sex, ethnicity, education and geopolitical zone were exposures.

Univariate and multivariate logistic regression analyses were performed to obtain odds ratios for the correlations between exposure and outcome variables. Likelihood ratio tests were performed to calculate p-values.

**Results:** 1,500 AYA were recruited. AYA were mostly unemployed students living in southern Nigeria. Drug use was reported by 301/1500 (20.3%) AYA. Among these, 213/301 (71.5%) reported needle sharing.

Rates of drug use did not vary by age (OR:0.94, 95%CI:0.73-1.22), sex (OR:1.00 95%CI:0.77-1.28) or ethnicity (Yoruba OR:0.94 95%CI:0.68-1.30), (Other OR:1.17 95%CI:0.87-1.58). AYA in the North-Central zone had higher odds of drug use compared to AYA in the South-West (OR:1.86 95%CI:1.28-2.69).

AYA aged 14-19 had higher odds of needle sharing compared to those aged 20-24 (OR:3.49, 95%CI:1.94-6.26). Female AYA had higher odds of needle sharing compared to males (OR:5.05, 95%CI:2.85-8.95).

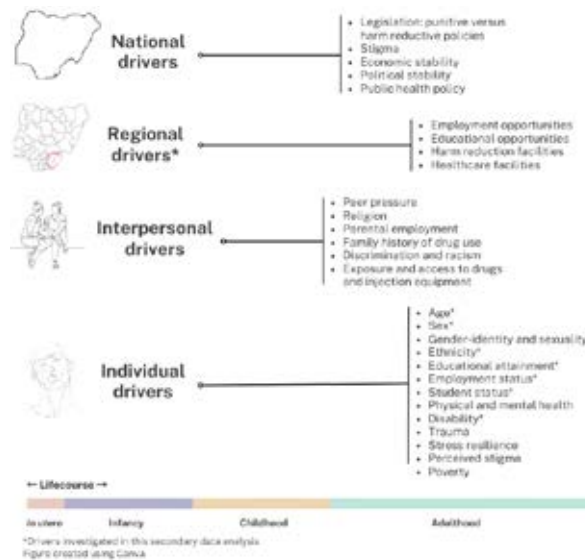


Figure. Proposed drivers of drug use among adolescents and young adults in Nigeria.

**Conclusions:** Drug use and needle sharing are common among AYA in Nigeria, potentially contributing to the growing population of AYA in Nigeria living with HIV. Harm reduction services, informed by AYA who use drugs, should be expanded in Nigeria.

## TUPEC236

### Factors associated with PTSD symptom severity among pregnant persons at risk for HIV acquisition in Cape Town, South Africa

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**Background:** In South Africa (SA), pregnant persons are disproportionately affected by HIV. Mental health symptoms, including those specific to post-traumatic stress disorder (PTSD), are associated with decreased engagement in HIV prevention behaviors. This is particularly relevant to women of reproductive age because HIV acquisition risk increases during the pregnancy period. Multi-level factors at the individual, dyadic, and community levels associated with PTSD symptom severity during pregnancy are poorly understood in this context.

**Methods:** HIV-negative pregnant persons were recruited for a study investigating mental health barriers to PrEP uptake during pregnancy. Participants completed the PTSD Checklist for DSM-5 (PCL-5) among other validated measures. Using hierarchical regression, we examined individual- (alcohol use, shame/blame, perceived risk of



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HIV), dyadic- (reproductive autonomy, relationship power, dyadic trust), and community-level (enacted stigma, social support, shame/blame) factors as predictors of PTSD symptom severity (controlling for age, gestational age, education, number of previous pregnancies).

**Results:** The sample included 110 participants with a mean age of 25 (IQR 18-39) and a mean gestational age of 29 weeks (SD = 0.83). Overall, 13.6% (n=15) had PCL-5 scores above the clinical cutoff ( $\geq 32$ ), indicative of likely PTSD. At dyadic-level, age and decreased relationship power were associated with increased PTSD symptoms. In the final model, which included community-level variables, decreased relationship power ( $\mu = -6.39$ , CI= -11.99 - -0.79,  $p=0.02$ ), enacted stigma ( $\mu = 1.60$ , CI= 0.62 - 2.58,  $p<0.01$ ) and decreased social support ( $\mu = -0.52$ , CI= -0.99 - -0.05,  $p=0.02$ ) were associated with increased PTSD symptoms, accounting for a significant proportion of the variance ( $R^2 = 0.4257$ ,  $F(15, 88) = 4.35$ ,  $p < 0.01$ ). Decreased reproductive autonomy ( $p=0.06$ ) and community blame ( $p=0.06$ ) were marginally significant.

**Conclusions:** These findings offer preliminary insights on factors that may contribute to meaningful targeted transdiagnostic prevention programs for pregnant persons in the context of HIV prevention. Dyadic and community factors like relationship power and social support are not often addressed in antenatal care and may have important implications for HIV prevention. Further studies are needed to develop or adapt interventions that address these elements in culturally meaningful ways.

## TUPEC237

**Lesson learned: Tanzania's resilient journey to expand Needle and Syringe programs as effective HIV prevention**

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**Background:** In 2014 Tanzania drug use become widespread, with estimated 300,00 people who use drug (PWUD) and 30,000 people who inject drugs (PWID) correlating with a surge in HIV prevalence among PWIDs reaching 36%. Needle and Syringe program (NSP) has been growing as an effective harm reduction program to reduce blood borne infections to PWID.

**Description:** November 2010, Tanzania marked a groundbreaking milestone in sub-Saharan Africa by launching a Needle and Syringe Program (NSP) in a small scale, initially

covering only two districts in Dar es Salaam. These initiatives, were guided by the Drug Control and Enforcement Authority (DCEA) and international organisation Mdm under the National strategic framework for HIV prevention efforts among PWID. The program underwent a significant transition in 2018 when its implementation was handed over to local civil society organisation, signalling a shift towards community-led initiatives.

Subsequently, the NSP's reach expanded to cover five districts in Dar es Salaam. In 2022 and 2023, we scaled up NSP to Arusha, Pwani and Tanga respectively. The program integrated a continuum of services aligning NSP with broader HIV prevention, care, and treatment initiatives.

**Lessons learned:** From June 2018 to December 2023, Tanzania's NSP reached 46,600 PWIDs, distributing 47,393,036 needles and syringes. In average each person used 3-5 needles a day. Of the enrolled persons, 20,182 stopped or dropped from follow up to services, 5,182 opted treatment services such as MAT and 312 opted for rehabilitation homes. Condom programming as preventive measures for those in need was distributed and a total of 98,394,859 condoms were distributed for HIV prevention. HIV testing services showed a decline in positivity rates from 35% in 2010 to 12% in 2018 and less than 9% in 2023. Negative clients were linked to preventive measures like PrEP, and positive cases were linked to care and treatment.

**Conclusions/Next steps:** Tanzania's NSP stands as a noteworthy model for HIV/AIDS harm reduction, emphasizing the transformative impact of community-led initiatives. The program's success is attributed to the contextualization of NSP, proving paramount in achieving effective HIV prevention. Effort to expand NSP to 26 regions is ongoing, further solidifying its dedication to widespread harm reduction strategies.

## TUPEC238

**A transgender clinic in Yangon, Myanmar, with tailored services for transgender women**

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**Background:** In Yangon, Myanmar's largest city, MSM and TGW have an HIV prevalence of 26.6%, the highest prevalence in a specific location in the Asia-Pacific region. Transgender women (TGW) were 49 times more likely to have HIV than other adults of reproductive age, according to a global 2012 study that included six countries from Asia and the Pacific region. In 2018, Medical Action Myanmar (MAM), a medical aid organization, started HIV prevention and treatment services for MSM and TGW in Yangon. Subsequently, in March 2022, MAM started a clinic ("Daisy") specifically designed to target TGW with the aim to enhance the uptake of HIV prevention and treatment services among this community.



**Description:** The "Daisy" clinic provides routine HIV services, including prevention and treatment of HIV, sexually transmitted diseases, viral hepatitis B and C and, pre-exposure prophylaxis of HIV transmission and provides condoms. In addition, specific services for diagnosis and treatment of gender dysphoria and gender-affirming hormone therapy. To reduce the threshold of accessing the clinic, we established a transgender-oriented medical team including a medical doctor and TGW-peer counselors.

**Lessons learned:** The average number of monthly TGW consultations increased from 36 (January 2021 - February 2022) to 216 per month following the opening of the TGW clinic (March - December 2022). The percentage of TGW tested for HIV before and after the clinic opening was 79.3% and 90.4% respectively, and the percentage of HIV-positive TGW who started on ART rose from 44.9% to 86.7%. In addition, the number of TGW on PrEP increased from 72 to 211.

**Conclusions/Next steps:** TGW individuals have unique needs and concerns when interacting with the health care system. In our setting, offering TGW-specific care to improve communication and establish a more supporting environment for transgender people improved the uptake of HIV prevention and treatment services. PrEP and ART initiation increased substantially after the introduction of TGW-specific care. It is now crucial to ensure longer-term retention and monitoring HIV viral load suppression will be essential.

## TUPEC239

### Role of mentor mothers in the elimination of mother-to-child transmission of HIV in military health units in Mozambique

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**Background:** Despite national efforts to prevent mother-to-child transmission (PMTCT) of HIV and a reduction in vertical transmission rates from 14% in 2019 to 10% in 2023, challenges remain. Associated factors include poor treatment continuation among pregnant women living with HIV, as well as cultural, economic, social and structural factors. Jhpiego and the FADM (Armed Forces of Mozambique) introduced the Mentor Mothers (MM) strategy in 2019 in 10 medium or high-volume FADM-supported health facilities (HFs).

**Methods:** This is a retrospective analysis of the role of MM in reducing MTCT of HIV. The PMTCT cascade was assessed using data from 10 military HFs with MM and 12 HFs with-

out mentor mothers, between the period of 2021 to 2023. Data included 3,116 HIV-exposed infants from HFs with the MM strategy, 190 HIV exposed infants in HFs without the MM strategy. MM are trained HIV-positive women in care who provide support and share experiences and healthy practices with other HIV-positive pregnant or breastfeeding women (PBFW) with HIV-exposed children.

**Results:** Of 3,116 children exposed to HIV in HFs with MM, 84% (2,626/3,116) of children had PCR tests administered at 4-8 weeks of age. Of these children, 3.1% (99/2626) had a positive PCR result for HIV and of these, 92.9% (93/99) started ART. In comparison, at the HFs without MM, of the 190 HIV exposed children, 67% (128/190) had PCR tests at 4-8 weeks of age. Of these children, 2.6% (5/128) had a positive PCR result for HIV and of these, 60% (3/5) started ART. In HFs with MM, 58% (18,200/30,081) of the partners of PBFW came in for HIV testing, compared to 45% (1,136/2,527) among HFs without MM.

**Conclusions:** These preliminary findings show an increased coverage of testing for HIV exposed infants, ART initiation for children who tested HIV-positive, and increased coverage of partner testing in HFs using the MM approach. Additional follow-up time and research in more HFs are needed to assess long-term impact and scale up of the intervention.

## TUPEC240

### Trends in PEPFAR-supported HIV self-testing and PrEP among key populations

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**Background:** PEPFAR programs have prioritized scale-up of HIV Self-Testing (HIVST) and PrEP as key interventions for key populations (KPs). New guidance for PEPFAR's KP prevention service indicator (KP\_PREV) further promotes access to these interventions. We must understand the current reach and progress of these interventions to guide future expansion.

**Methods:** PEPFAR Monitoring, Evaluation, and Reporting (MER) indicators for HIVST distribution (HTS\_SELF) and new initiations on PrEP (PrEP\_NEW) for fiscal years 2020 through 2023 were downloaded and limited to key populations disaggregates. Totals for each key population group per year and PEPFAR Operating Unit (OU) per year were calculated and trends across time were assessed. Analysis excluded the final two quarters of FY2023 data for Nigeria (implementing a data review) and Uganda (paused KP data collection after passage of the Anti-Homosexuality Act).

**Results:** HTS\_SELF for KPs increased from 265,252 in FY2020 to 963,597 in FY2023, while PrEP\_NEW for KPs increased from 126,371 in FY2020 to 552,841 in FY2023. Female sex workers (FSW) received the largest numbers of each inter-



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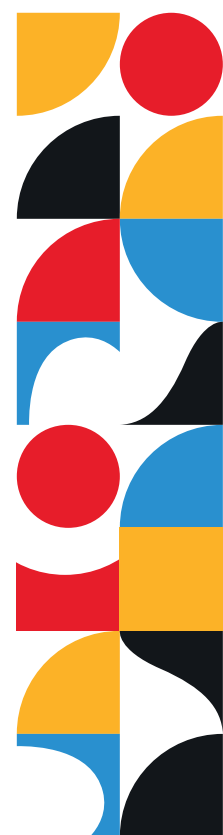
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vention. HTS\_SELF for KPs was greatest in FY2023 in Tanzania at 274,172, up from 38,639 in FY2020. PrEP\_NEW for KPs was greatest in FY2022 in Nigeria at 151,670, up from 24,829 in FY2020.

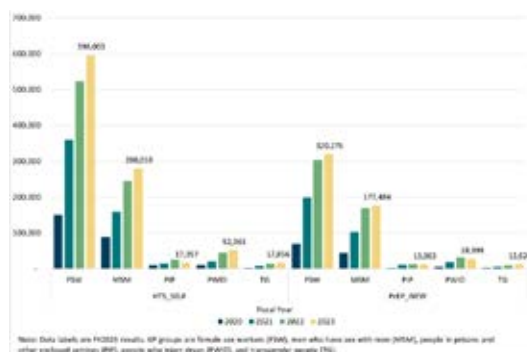


Figure 1. HTS\_SELF and PrEP\_NEW, by KP group.

**Conclusions:** Both interventions have been scaled quickly for key populations, with especially notable progress in Tanzania and Nigeria. In 2023, WHO recommended offering HIVST for PrEP initiation, re-initiation and continuation, building on previously issued simplified PrEP service delivery guidance. Gaps remain in access to these services, with HIV incidence among KPs continually exceeding other populations. As new PEPFAR guidance on linking key populations to HIVST and PrEP is implemented, countries should update national guidelines and train providers on how to create demand for these services to further increase access.

## TUPEC241

Fostering access to HIV and sexual violence prevention among adolescent boys and young men aged 15- 24 through 12-week interactive sessions in four districts of Zambia

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**Background:** In Zambia, adolescent boys and young men (ABYM) are less likely to access HIV and sexual violence interventions than adolescent girls and young women (AGYW). Results from ZAMPHIA, (ZAMSTAT 2021) survey provided data-driven strategies on how to bridge health gaps and address unmet needs among ABYM. To foster access to HIV and sexual violence prevention among ABYM, the USAID Controlling HIV Epidemic for Key and Underserved Populations (CHEKUP II) Activity, implemented by John Snow Health, designed 12-week interactive sessions, evidence-based curriculum, aimed at educating ABYM on HIV and sexual violence prevention.

**Methods:** From June to September 2023, we trained 24 master trainers in HIV and sexual violence prevention using 12-week interactive sessions in four districts of Zam-

bia. The master trainers further recruited and trained 160 teachers and community members, as coaches in HIV and sexual violence prevention, using the 12-week interactive sessions. Using the snowball approach, each coach was assigned to reach 25 ABYM. Through the 160 coaches, 4,000 ABYM were provided with 12-week interactive sessions. A register was used to monitor the attendance of ABYM.

**Results:** A total of 4,000 ABYM were enrolled and provided with 12-week interactive sessions, from which 3,464 completed the interactive sessions. Out of the 3,464 ABYM, 3,228 were provided with HIV counseling and testing, of which 89(2.7%) tested positive for HIV and were linked to ART. Of the ABYM who tested negative, 3,139 were offered PrEP, and 2,411 (77%) were eligible and were initiated on PrEP. The remaining 728(23%) were not eligible for PrEP, however, condoms were provided and other HIV prevention measures. 206 ABYM were discovered to have experienced sexual violence, and immediate mental health and psychosocial support services were provided. Out of the 206 ABYM, 19 showed signs of fear because of post-violence experience and comprehensive post-violence care was provided by healthcare providers. According to the the post-coach survey conducted, the ABYM's confidence and communication skills improved, ready to navigate adolescence healthily.

**Conclusions:** The 12-week interactive sessions approach is an effective intervention in fostering access to HIV and sexual violence prevention among ABYM and ultimately addressing the gaps and unmet needs among ABYM.

## TUPEC242

PrEP uptake, persistence, and adherence among incarcerated people in Zambia: initial results from a prospective cohort study

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**Background:** For justice-involved people, the times during and immediately after incarceration can be high-risk periods for HIV acquisition since these periods afford limited



access to effective HIV prevention. In 2019, Zambia began offering HIV pre-exposure prophylaxis (PrEP) in correctional facilities. We report initial results from one of the first longitudinal studies to characterize PrEP use among justice-involved people in sub-Saharan Africa.

**Methods:** In August 2023, we launched a cohort study of PrEP users and non-users in three correctional facilities in Lusaka, Zambia. Following HIV testing, HIV-negative incarcerated persons were offered oral tenofovir (TFV)-based PrEP by the corrections health system, and then approached by study staff for participation. Consenting participants were followed from incarceration through community release for PrEP outcomes, including uptake, persistence, and adherence. A randomly selected sub-cohort of participants on PrEP underwent urine tenofovir (TFV) screening for adherence at each visit.

**Results:** From August 2023–January 2024, we screened 421 incarcerated persons; 396 (94%) were eligible, consented, and enrolled. Participants were 27 years old, on average (range:18–56 years), a majority 370 (93%) male, less than half (115, 29%) completed secondary education, and 26 (7%) indicated previous incarceration. Of the 258 eligible to start PrEP, 205 (79%) initiated PrEP at enrollment. As of January 2024, 341 were eligible for one-month study follow-up and 55% (186/341) had completed a visit, including 176 (95%) who were still incarcerated and 10 (5%) who had been released. Of the 122 who initiated PrEP at enrollment and had a one-month visit, 97/122 (80%) were still on PrEP, and all were HIV-negative; 16 (13%) who had initiated PrEP at enrollment chose to discontinue at follow-up. 11 of 64 (17%) who had not initiated PrEP at enrollment chose to initiate at follow-up. Of the 122 who initiated PrEP at enrollment and had ≥1 follow-up visit, 70 (61%) were in the sub-cohort with urine TFV testing. Of these, 47% (33/70) demonstrated TFV assay results consistent with adherence.

**Conclusions:** Initial results suggest high demand for, and uptake of, PrEP among incarcerated persons in Zambia, but sub-optimal persistence and adherence (measured objectively). Although preliminary, our findings suggest a need for interventions to support prevention-effective PrEP use in this population.

## TUPEC243

### Including pregnant and breast-feeding mothers in HIV prevention trials - ethical and equitable engagement of communities

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**Background:** Mother-to-child transmission rate of HIV continues to be high globally and it is critical to advance HIV prevention options for Pregnant and Breast-feeding Mothers (PBFMs). Historically this population has been underrepresented in clinical trials to protect them and their fetuses from research-related risks.

The recent guidance by the World Health Organization and U.S Food and Drug Administration highlight the need and considerations to ensure equity and protect PBFMs through research.

**Description:** A virtual co-learning workshop was conducted in Dec 2023, engaging 16 domain-experts including bioethicists, regulators, clinical researchers, and policy-makers from India, Africa and globally, to discuss considerations for adopting global guidance in the local context. Data from the workshop were explored through thematic analysis.

**Lessons learned:** While key ethical considerations in the global guidance may be applicable in the local context, including balancing risk to benefit ratio for the mother and fetus, elaborating study procedures and related risks during consenting and rigorous follow-up for adverse effects in mother and fetus, additional considerations may include:

- *Relevance of inclusion* – Relevance of including this population in trials must be well-understood by key stakeholders, including communities, participants, ethics/regulatory bodies, media to prevent any misconceptions and enhance participant engagement.
- *Equity and ethics in conducting trials*– In the context of global trials, Standard of Care used must be ethically acceptable and scientifically beneficial to the local population to ensure equity in trial designs.
- *Deeper understanding of communities* – It is imperative to understand in-country power relations in a family (e.g. in India, partners and elders in the family may be the key decision makers and in Africa, in addition to family members, traditional health care providers also play a key role) and conduct informed consent process in presence of relevant family members to ensure buy-in. Additionally, formative research to understand baseline pregnancy outcomes in the trial community is essential.
- *Post-trial access* – It is important to ensure mechanisms of post-trial access to trial participants and focus on strengthening health-system capacities for timely introduction.



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**Conclusions/Next steps:** There is a need for shifting from whether this population can be included in future trials to how to ethically, and effectively conduct trials in this population.

## TUPEC244

Leaving no adolescent behind: lessons learned from PrEP provision for adolescent girls and boys, aged 10-14 in Mozambique

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**Background:** Little is known about the HIV epidemic among young adolescents aged 10-14 in Mozambique. Estimates of HIV acquisition among young adolescents are not available because Spectrum/EPP modeling tools, used to estimate the acquisition of HIV, do not permit sexual transmission for those under the age of 15.

However, 14% of women report having been married or in a union before the age of 15, and more than 15,000 births in 2023 were to mothers aged 10-14.

**Description:** In July 2021, Mozambique rolled out pre-exposure prophylaxis (PrEP) nationally. Young adolescents were eligible for PrEP if they were at substantial risk for HIV acquisition, defined as being a member of a key population group (men who have sex with men, sex worker, people who inject drugs, and/or transgender people), in a serodiscordant relationship, pregnant or lactating young adolescent girl with unknown HIV status of sexual partner, and/or reported transactional or intergenerational sex.

**Lessons learned:** National roll-out demonstrated the feasibility of PrEP provision in this young population. From 2022-2023, 745 young adolescents initiated PrEP (of which 89% were girls); there was a 109% increase in PrEP initiations from 2022 to 2023. The vast majority of PrEP uptake occurred at co-located ANC and youth-friendly services, where 34,111 young adolescent girls received antenatal care (ANC) services during the same period. PrEP provision largely followed the geographic distribution of child marriage and early pregnancy, highlighting that cultural beliefs and practices potentially influence the screening practices of service providers.

**Conclusions/Next steps:** PrEP uptake by this subpopulation highlights the importance of increasing screening at all entry points serving adolescents, not simply at ANC services. The low number of young adolescent girls initiating PrEP, compared to the large numbers of those receiving antenatal services, represents a missed opportunity that requires more focused PrEP screening and demand creation efforts to reduce the risk for HIV acquisition and

subsequent vertical transmission to their children. Finally, young adolescent boys at risk are potentially being left behind when PrEP screening and provision largely occurs at ANC youth-friendly services.

## TUPEC245

Prevalence of HIV and sexually transmitted infections among female sex workers in a rural setting in KwaZulu-Natal, South Africa

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**Background:** In South Africa, high HIV prevalence among female sex workers (FSWs) is well-documented in major cities, but less well-studied elsewhere. We therefore estimated the prevalence of transmissible and acquirable HIV, and of sexually transmitted infections (STI) among FSWs in a South African rural and small town setting where over 14% of young women are selling sex.

**Methods:** We conducted a respondent-driven sampling (RDS) bio-behavioural survey among FSWs in the uMkhanyakude district in northern KwaZulu-Natal (KZN) between November 2021 and June 2022. We recruited 193 participants from eight seeds, measuring sociodemographic, psychosocial, sex work, and sexual behaviours. We evaluated HIV serostatus from dry blood spots and bacterial STIs from self-taken vaginal swabs.

We present the RDS-weighted prevalence of chlamydia trachomatis, Neisseria gonorrhoea, trichomonas vaginalis, transmissible HIV (HIV viral load > 50 copies per ml) and acquirable HIV (HIV negative, any condomless sex in the past 12 months and not on HIV Pre-Exposure Prophylaxis).

**Results:** The 201 FSWs had a median age of 31 and 32% had initiated sex work in the last three years. HIV prevention behaviours were limited, with 21% and 53% reporting condomless sex with clients and intimate partners respectively, and only 8% ever using PrEP.

One-quarter (25%) consumed alcohol four or more times a week. Over half (55%) experienced STI symptoms in the past 12 months, with 43% of these completing treatment. Weighted prevalence of any STI, excluding HIV, was 29% (95% CI: 23-36%) in the past 12 months. Specific bacterial STI prevalences ranged from 7% to 17%. HIV prevalence was substantial at 59% (95% CI: 52% - 67%), but 61% (95%



CI: 52% - 69%) were virally suppressed. Transmissible HIV was 12% (95% CI: 4% - 27%) and acquirable HIV among the HIV-negative FSWs was 80% (95% CI: 70% - 89%).

**Conclusions:** HIV prevalence amongst FSWs in this rural setting was just as high as in urban South Africa. However, in the absence of effective sex worker programming, rural FSWs have an alarmingly high prevalence of STIs and risk of acquiring HIV. There is an urgent need for comprehensive FSW programmes that extend into rural communities in South Africa.

## TUPEC246

### A program to empower women who use drugs in South Africa

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**Background:** Women who use drugs (WWUDs) are at higher risk of HIV and hepatitis C infection, facing discrimination, homelessness, and serious violation of their human rights. In South Africa, the number of people who use drugs (PWUDs) is rapidly increasing. According to the Johannesburg Health District program data, approximately 10% of PWUDs are women. Among them, about 15% of WWUDs have infants to look after.

However, existing interventions only partially acknowledge gender differences in service delivery. To address this gap, we have piloted an empowerment program specifically targeting the needs and challenges of WWUDs.

**Description:** The program was piloted in the Johannesburg Health District in 2023. Working with Social Workers, we recorded individuals' case history, noted capabilities, explored aspirations and needs, and ranked support needs for WWUD with infants, living with HIV and on Opioid Substitution Therapy.

A support group of 18 women was created. Group members received six capacity-building sessions of 60 minutes each encompassing health literacy, human rights, managing stress, coping skills, activities of daily living, and resiliency over seven weeks. Women selected vocational courses they were interested in pursuing. The 18 women received motivational counselling and were enrolled into

vocational courses (6 sewing; 4 manicure and pedicure; 8 makeup and beauty therapy). Social workers engaged with support structures to look after the infants of women attending classes. All women completed their vocational courses and received business start-up kits enabling them to venture into business.

**Lessons learned:** An integrated capacity-building approach including communication, interpersonal interactions, listening, and vocational skills is imperative. Training on entrepreneurship is essential for successful creation of WWUDs-led viable enterprises. Empowerment actions are important in addressing intersectional stigma amongst WWUDs. Empowering WWUDs helps with assertiveness, resiliency, self-sufficiency and generating income. Integrating harm reduction services with capacity building is vital in ending the HIV epidemic amongst WWUDs.

**Conclusions/Next steps:** This piloted program provides practical insights for future intervention development and implementation for the key population of women who use drugs (WWUDs). Building on these insights, we plan to incorporate business management training into the current women's vocational program. Additionally, we will continue exploring other empowerment avenues.

## TUPEC247

### Research on drug use and barriers to opioid substitution therapy in Tajikistan

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**Background:** According to the 2022 IBBS the estimated number of people who inject drugs (PWID) in Tajikistan is 18200. Despite the network of 15 opioid substitution therapy (OST) sites operating in all regions of the country the OST program coverage remains low - around 660 people. To explore the reasons behind suboptimal coverage of PWID with OST services UNDP Tajikistan in February-April 2023 undertook a study on drug use and barriers to opioid substitution therapy in Tajikistan.

**Methods:** The research was based on focus group discussions with PWID aimed at establishing a) changes in drug use that could have potentially led to decrease in demand for OST and b) level of correspondence of existing OST program to PWID needs.

Participants who are 18 years or older and who either injected drugs or received OST within the past 3 months were selected via purposive sampling method taking into account their gender, enrollment to OST program and coverage with other harm reduction services.

In total 16 focus group discussions were held in 8 cities that covered 65 people both receiving (30 people) and not receiving OST (35 people) living in all regions of Tajikistan (except remote GBAO region).



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**Results:** A moderate reduction in injection drug use was confirmed by the respondents due to decrease in access to opioids and emergence of new psychoactive substances. The most common reasons mentioned by PWID that negatively impact enrollment and adherence to the OST may be grouped into 3 categories:

1. Lack of appeal of the OST program, e.g. need for everyday visits to the OST site, registration at narcology as a pre-condition for enrollment to OST, etc. (55 respondents),
2. Lack of the capacity of OST sites staff (25 respondents),
3. Misinformation circulated among PWID on OST (15 respondents).

**Conclusions:** The research suggests that despite a certain decrease in total number of PWID, the demand for quality OST services among PWID remains high in Tajikistan. Introduction of take-home OST options, development of OST sites staff capacity and raising awareness of PWID and healthcare professionals on OST should lead to increase in OST program coverage.

## TUPEC248

**SPrEP – Online PrEP and PEP: breaking down access barriers to HIV prophylaxes in the city of São Paulo**

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**Background:** The city of São Paulo has an HIV epidemic specific to some populations, with a higher incidence among men and young people aged 15 to 29. São Paulo has the largest distribution hub in Brazil and the STI/Aids Coordination has several ways of accessing pre- (PrEP) and post-exposure (PEP) HIV prophylaxes.

**Description:** SPrEP – Online PrEP and PEP is the first online service in Brazil for HIV prophylaxes. SPrEP is hosted in the e-saúdeSP application, from the Municipal Health Department, which allows PrEP and PEP services every day from 6pm to 10pm, including on weekends and holidays, via online appointment. The user signs up or logs in the application and, in the case of PrEP, uploads the image or PDF file of a negative HIV test result within 7 consecutive days. An appointment is generated for the medical professionals and the user is video-called that same day, within a few minutes. Upon medical advice, the medication is prescribed, which can be picked up at 17 24-hour units or at 28 municipal health units specialized in STIs/Aids.

**Lessons learned:** From June to December 2023, SPrEP had 187,000 accesses, with 970 services requested, 148 prescriptions for PrEP, 210 for PEP, 126 follow-up appointments and 486 appointments for other benefits. Out of the total number of appointments, 41% were for people aged between 15 and 29; 78.3% were born male; 54.7%

white people, 36.1% black people and 2.4% yellow people. Regarding the medication pick up, 48% did so in 24-hour units; 28% in units with regular hours and 25% in a unit that operates with an alternative schedule and opens on Saturdays.

**Conclusions/Next steps:** The city of São Paulo registered more than 36,000 people on PrEP from 2018 to 2023. SPrEP is another option for the population to have access to prophylaxes at alternative hours and at various medication pick-up points at any time of the day in the capital São Paulo, via online appointment, which offers access to a medical prescription and to online medical examination requests.

## TUPEC249

**Opioid substitution therapy (OST): a harm reduction strategy among people who inject drug (PWIDs) under National AIDS and STD Control Programme (NACP) in India**

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**Background:** The National AIDS and STD Control Programme (NACP) has adopted Opioid Substitution Therapy (OST) as key harm-reduction strategy to prevent HIV and other blood-borne infections among IDUs since 2007. Amongst all key populations, positivity of IDUs is highest at 9.83% (HSS, 2021), hence the need OST. OST program involves treatment of patients with opioid dependence with long-acting opioid-agonist medication for certain duration of time through sublingual route, in dose which effectively minimizes craving and withdrawals, thereby enabling patient to stop injecting drugs. Combined with extensive psycho-social intervention, OST program has proved to be relatively successful in reducing drug-related harms including transmission of HIV, HCV and opioid overdose.

**Description:** OST as a key harm-reduction strategy is demonstrated as successful intervention in reducing drug-related harms including transmission of HIV, HBV and HCV. NACP provides OST as a "Directly Observed Treatment" in clinic-based setting known as OST Centre under supervision of Medical Officer. There is also provision for take-home dosage for clinically-stable clients satisfying all criteria provided. OST program is provided through three models: Collaborative model at public-health facilities, NGO-based model provided at Targeted Intervention (TI) and Satellite Model which includes provision of OST at Prison and other-closed settings. Progress under OST Programme has been analyzed since 2018-19 to 2022-23 as in table below:


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Year	OST Centres	Clients on-OST (in Thousand)	% of PWIDs on OST
2018-19	215	29.1	19
2019-20	226	36.4	22
2020-21	232	42.2	25
2021-22	238	42.6	24
2022-23	244	44.6	23

**Lessons learned:** OST as part of NACP is a highly successful strategy with (52000 number of clients covered). It assists IDUs in mainstreaming to regular life and society. It also leads to strengthening their economic situation by providing opportunities for employment. The program has also made efforts to scale up the service through different models ensuring access to the community wherever they are.

**Conclusions/Next steps:** The scale up of OST Centres and increased coverage of IDUs on OST will lead to minimising HIV and viral hepatitis transmission as well as motivate IDUs to adopt a healthy life with dignity free of stigma and discrimination.

## TUPEC250

Comparison of new HIV diagnosis, adolescent pregnancy, and gender-based violence in DREAMS and non-DREAMS districts in two regions in Tanzania, 2018–2023

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**Background:** HIV incidence among adolescent girls and young women (AGYW) remains high compared to male peers. The DREAMS program provides a combination of interventions to reduce HIV incidence in AGYW. In Tanzania, DREAMS was introduced in Muleba district, Kagera region, in 2018 and Nyamagana district, Mwanza region, in 2021.

We compared the association of DREAMS on HIV and related outcomes among AGYW in two regions over 5 years of implementation.

**Methods:** Using PEPFAR MER data and Tanzania's District Health Information System data, we conducted a two-sample test of proportions on positive HIV tests, reported GBV, and adolescent pregnancy for DREAMS districts (Muleba, Nyamagana) compared to non-DREAMS (6 Kagera districts, 7 Mwanza districts) to determine if proportions between timepoints (2018 to 2023) or populations (DREAMS and non-DREAMS) changed.

Results were stratified by age (15-19 years, 20-24 years) and region (Kagera, Mwanza).

**Results:** Among AGYW aged 15-19 in Muleba, the proportion of positive HIV tests decreased from 1.50% at baseline to 0.80%, a change of 46.6% ( $p<0.05$ ); among those aged 20-24, there was a decrease of 55.6% ( $p<0.05$ ), from 2.52% to 1.12%. Among AGYW in Kagera non-DREAMS districts, there was no significant difference between timepoints. In AGYW aged 15-19 in Nyamagana, positive HIV tests decreased by 49.8% ( $p<0.05$ ) from 2.58% to 1.29%; among those aged 20-24, there was a decrease of 50.1% ( $p<0.05$ ) from 4.08% to 2.03%. AGYW in non-DREAMS Mwanza districts saw a significant decrease between timepoints: for ages 15-19, 57.4% (1.96% to 0.84%,  $p<0.05$ ) and for ages 20-24, 51.3% (3.37% to 1.64%,  $p<0.05$ ).

GBV reports significantly declined among AGYW aged 20-24 in all Kagera districts (68.4% decline in non-DREAMS districts and 77.8% decline in Muleba). However, GBV reports among other age bands and in Mwanza districts increased. Adolescent pregnancy rates in Muleba did not significantly change and decreased in non-DREAMS Kagera districts by 8.1%. Adolescent pregnancy significantly increased in all Mwanza districts ( $p<0.05$ ).

**Conclusions:** Overall the proportion of positive HIV tests declined. Trends were mixed for adolescent pregnancy and GBV, indicating challenges remain in tackling these issues. Continued monitoring is needed to improve non-HIV outcomes and substantiate DREAMS intervention effects on all objectives.

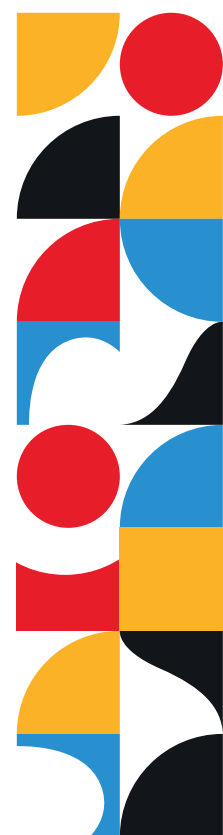
## TUPEC251

Rethinking HIV prevention among refugees: a case study from West Africa's largest settlement

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**Background:** Amidst the global crisis of 70.8 million forcibly displaced individuals, of whom 25.9 million are refugees as of 2019, the need for accessible HIV prevention services in humanitarian settings has become increasingly urgent, particularly among young refugees. Leveraging funding from the International AIDS Society Seed Grant, we established a comprehensive HIV prevention and harm reduction service hub within the Adagom refugee settlement in Nigeria, catering specifically to the needs of young Cameroonian refugees.

**Description:** In collaboration with a local NGO (Today For Tomorrow Foundation) and settlement authorities, a walk-in center was constructed in the heart of the refugee settlement, comprising 41 communities. One young person from each community was selected based on pre-





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defined criteria and trained as an HIV peer educator. The training encompassed comprehensive sexuality education, HIV testing methodologies, harm reduction service provision, and other related services. These certified peer educators subsequently returned to their communities to educate peers and gather data using the Kobo Collect app.

**Lessons learned:** During the initial six-month implementation phase ending in December, the hub serviced 1,500 young refugees, with a notable 63% female attendance. Strikingly, 90% of these individuals had never undergone HIV testing prior. The hub recorded a low HIV-positive rate of 0.45%, with about 31% of the female being teenage mothers. Although quantitatively challenging to measure, the hub witnessed an overwhelming demand post-public sensitization, exhausting supplies intended for a 2,500-population size twice within six months.

**Conclusions/Next steps:** The peer-to-peer model has proven remarkably effective in HIV prevention efforts among young refugees in the Adagom settlement. It not only facilitated increased awareness and service uptake but also demonstrated a sustainable, community-driven approach to health education.

Building on this success, the next phase aims to scale up the project to other refugee settlements and Internally Displaced Persons camps across Nigeria, potentially amplifying the model's impact on a national scale.

## TUPEC252

### Factors associated with non-use of sexual and reproductive health services by sex workers in DRC

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**Background:** Using reproductive health services during pregnancy, childbirth and postpartum constitutes an important opportunity for the prevention of mother-to-child transmission of HIV. However, there is low use of these Services by sex workers. Key populations and their sexual partners are at higher risk of HIV infection. In the DRC, the HIV epidemic remains more concentrated in key populations with a prevalence in 2019 of 7.7% among SWs. This study was conducted to determine the factors associated with the non-use of reproductive health services by FSWs.

**Methods:** The study was conducted in ten provinces of the DRC. A mixed approach was used, the quantitative part focused on an analytical cross-sectional study and the qualitative part on in-depth interviews with key infor-

nants who were SPs responsible for the associations. The study population consisted of SWs who had given birth in the last two years preceding the survey; they were selected by snowball sampling. The Chi-square and Student's t tests were used to compare proportions and means, respectively. Logistic regression was used to identify factors independently associated with low use of reproductive health services by FSWs. The statistical significance threshold was set at 0.05.

**Results:** Of 1263 SWs surveyed, only 24% had used the recommended reproductive health service. The factors associated with this non-use were: drug consumption ORA 1.64 (95% CI: 1.13-2.36); non-knowledge of the transmission of syphilis from mother to child ORA (95% CI: 2.9(1.1-7.7); having suffered sexual violence in the last 12 months ORA 0.71 (95% CI: 0.53-0.95); non-carrying a desired pregnancy ORA 1.55(95% CI: 1.16-2.06); recruiting clients on the street ORA 1.49 (IC95% : 1.11-2.00); the fact of not recruiting clients by telephone ORA 1.92 (IC95% : 1.44-2.56); the fact of non - having been tested for HIV at the CPN ORA 1.94(IC95% : 1.45-2.60)..

**Conclusions:** In terms of use of reproductive health services, there is a delay to start of the prenatal consultation by sex workers which results in a lower proportion of prenatal consultation. The sex workers are very vulnerable people and this vulnerability is associated with the use of maternal health services. It is therefore important to consider interventions that include factors of vulnerability.

## TUPEC253

### Subnational certification of HIV vertical transmission elimination in Brazil in the years 2022 and 2023: toward elimination

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**Background:** The scientific community and health assessment organizations have committed to eliminating vertical transmission (VT) of HIV, syphilis, hepatitis B, and Chagas disease as public health problems. In Brazil, this commitment has led to the subnational certification process for VT elimination in municipalities with ≥100,000 inhabitants. This process recognizes, strengthens, and promotes local efforts to reduce HIV vertical transmission (HIV-VT) and syphilis cases, fostering healthy births.



This study presents results obtained from the certification process of VT-Elimination in 2022 and 2023 through analyses of impact and process indicators from the Global Guidance on criteria and processes for validation: Elimination of mother-to-child transmission of HIV, syphilis, and hepatitis B virus, adapted to the Brazilian context in the National Guide.

**Methods:** Descriptive study based on the analysis of municipal reports applying for HIV-VT certification in the years 2022 and 2023. The stages involve the preparation of a municipal report by the Municipal Validation Committee, followed by the evaluation of the State Validation Committee, and the analysis and approval of the Ministry of Health (MH). The MH organizes on-site technical visits to the applying municipality by the National Validation Team (NVT).

Following this, the National Validation Committee analyzes and validates the reports and the certification process.

Finally, the MH officially certifies the municipalities. Minimum criteria for national certification: achieving impact and process indicators outlined in the National Guide; having a surveillance system for monitoring HIV-VT cases; implementing an HIV-VT Municipal Investigation Committee; and demonstrating all HIV-VT preventive measures for elimination while safeguarding human rights.

**Results:** A total of 28 municipalities were awarded HIV-VT elimination certificates in 2022 and 37 in 2023. Additionally, 10 good practices certificates were awarded in 2022 and 33 in 2023. Overall, 108 municipalities were certified, with an approximate population of 53.546.759 inhabitants.

**Conclusions:** The awarded certificates reflect the outcomes of improved processes, restructuring its flows, and population access to health services for promotion and prevention, surveillance, and care, enhancing the quality of life for women and children.

Successfully achieving the goals of eliminating VT-related diseases requires shared responsibility among the Ministry of Health, states, and municipalities.

## TUPEC254

### Mapping key populations in Nigeria: hotspots for targeted interventions

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**Background:** Nigeria has the fourth-highest HIV burden in the world and is known for having a mixed HIV epidemic with high HIV prevalence among key populations (UNAIDS 2020).

Mapping locations with evidence of high HIV prevalence gives access to greater knowledge and evidence-based KP data.

To strategically place services and allocate scarce resources for focused interventions, in response to HIV/AIDS, reliable and accurate mapping of key population hotspots is required.

**Methods:** Secondary data analysis of programmatic mapping and size estimation of KP groups across 20 states in Nigeria. The study was conducted using mapping methodology based on a geographic approach that identified the key locations including virtual locations where key population members are found. The mapping methodology was in two sequential steps: Level 1 – Systematic information-gathering from secondary informants and Level 2 – Site validation and in-depth profiling of sites identified from Level 1.

**Results:** The mapping exercise validated 55,418 active hotspots for all KP typologies across the 20 states. Hotspots validated by typologies were FSW 18,711(34%), PWID 18,419(33%), MSM 10,192(18%) and TG 8,096(15%) with FSW 254,613 being the highest TG 64,182 lowest in population. Katsina state 5,672 is the highest in active hotspots while Plateau 1,299 is the lowest. A total of 629,741 KPs were estimated with FSW 254,613 highest and TG 64,182 lowest. Generally, Fridays, Sundays, and Saturdays stand out as the days with the most activity and the peak is evening and nighttime.

**Conclusions:** The findings of this study show a sizeable number of key population hotspots which underscores the need for targeted interventions and deeper-dives into KPSE data. Nationwide coverage of KPSE (across 36+1 states) is necessary for the next round to facilitate the harvest of national-level estimates.

A study on social network engagement of other sexual partners at spots other than physical will be useful for developing innovative virtual platform intervention programs.

## TUPEC255

### Substance use patterns among PrEP users at the University Medical Center Hamburg-Eppendorf: implications for sexual health

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**Background:** The prevalence of sexualized drug use, commonly referred to as "Chemsex," remains a topic of discussion, particularly among men who have sex with



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men (MSM) and transgender individuals. This study investigates sexualized drug use among PrEP users at the University Medical Center Hamburg-Eppendorf, examining associated social parameters and the risk of sexually transmitted diseases (STDs).

**Methods:** Our ongoing prospective observational study, the PrEP-Cohort, initiated in October 2020, employs recurring online questionnaires (RedCap), standard blood tests, and STD screenings to assess sexualized drug and alcohol consumption among PrEP users. Data include sexual orientation, behavior, socio-economic information, and a sexual transmitted diseases history up to January 2024.

**Results:** Among 345 individuals completing the principal questionnaire, 40 (11.5%) reported frequent substance use, while 179 (52%) reported occasional use. Overall, 219 (63%) PrEP users acknowledged using one or more substances during sexual encounters, including alcohol, impotence medication, poppers, GBL/GHB, ecstasy/MDMA, cocaine, amphetamines, cannabis, methadone, benzodiazepines, mephedrone, and others.

The majority of our cohort consumed alcohol ( $n=196$ , 57%, mean age  $37 \pm 9.3$ ), followed by poppers ( $n=110$ , 32%, mean age  $38 \pm 9.0$ ). Higher age correlates with impotence medication use ( $n=37$ , 11%, mean age  $43 \pm 10.7$ ). Cannabis is used by 49 participants (14%, mean age  $36 \pm 10$ ). Hard drugs (GBL/GHB, ecstasy/MDMA, cocaine, amphetamines, methadone, benzodiazepines, mephedrone, opioids, and others) are used by 53 participants (15%, mean age  $37 \pm 9$ ), and this subgroup exhibits higher rates of STD ( $p=0.0015$ ) and more frequently involved in group sex ( $p<0.0001$ ).

**Conclusions:** A notable percentage of our participants, irrespective of job qualification and age, engage in alcohol and soft drug use in sexual contexts. However, hard drug use is more prevalent among younger PrEP users, correlating with significantly higher rates of STDs. These findings underscore the importance of targeted prevention programs to address sexual health within the PrEP user population

## TUPEC703

Female Sex Workers' (FSWs') knowledge, attitude and self-efficacy on Pre-Exposure Prophylaxis (PrEP) in Yangon Region, Myanmar

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**Background:** This study investigates the factors influencing FSWs' utilization of PrEP services which is essential to effectively use PrEP and keep adherence.

**Methods:** This study is a community-based cross-sectional survey targeting the FSWs with random proportionate sampling. The survey was conducted in 2023, among 373 FSWs and a focus group discussion was conducted with 20 FSWs from Insein and South Okkalapa Townships.

The questionnaires included socio-demographics, HIV and PrEP knowledge, sources of PrEP information, attitude, and self-efficacy on PrEP utilization.

The study employs descriptive and inferential statistics using JASP software for quantitative analysis and NVivo 10 for qualitative analysis.

**Results:** The mean age of the respondents was 34 years ( $SD=8.991$ ) and the majority were street-based FSWs ( $n=308$ , 82.6%) with low education ( $n=289$ , 77.5% below secondary education) and low-income levels ( $n=241$ , 64.6% earned below 200,000 MMK, approximately 100 USD, monthly). Most of them regularly used condoms ( $n=309$ , 82.8%), but had experiences of unprotected sex in the last 12 months ( $n=238$ , 63.8%).

The respondents had moderate knowledge of HIV and low knowledge levels about PrEP (an average of 61% and 30%, respectively, correctly answered the knowledge assessment). The main sources of PrEP information were friends, relatives, and acquaintances ( $n=161$ , 40.7%), while 41.4% ( $n=164$ ) reported no source of information. The respondents expressed positive attitudes toward PrEP, with 276 (74%) expressing willingness to use PrEP with more information, and 278 (74.5%) expressing willingness if it were free, respectively. However, they also reported concerns about the cost, accessibility, and stigma.

The respondents' self-efficacy to utilize PrEP varied according to their type of sex work (35.4% street-based and 18.5% venue-based sex workers had high self-efficacy). The main challenges they faced were seeking the right information, talking with their owners, finding a way to pay, and adhering to their daily regimen.

**Conclusions:** There are significant gaps in PrEP knowledge among FSWs in the Yangon Region. Despite a positive attitude towards PrEP, FSWs, especially venue-based FSWs, had a lot of challenges in accessing PrEP. To address these issues, targeted awareness sessions, coordination efforts with venue owners, and partnerships with health-care professionals are recommended.

## TUPEC256

HIV retesting uptake and incidence during pregnancy and postpartum period among women in sub-Saharan Africa: a systematic review and meta-analysis

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**Background:** To reduce mother-to-child transmission of HIV and maternal morbidity and mortality, most HIV programs recommend retesting for HIV every three months during pregnancy and postpartum periods. Data on HIV retesting uptake is limited; therefore, we aimed to estimate the pooled prevalence of HIV retesting uptake and HIV incidence among women during pregnancy and the postpartum period in sub-Saharan Africa (SSA).

**Methods:** We conducted a systematic review and meta-analysis of women attending antenatal and postnatal clinics in SSA. PubMed, Cochrane Library, Embase, and Google Scholar were searched for articles published between January 2002 and December 2023. Retesting uptake was defined as the number of women who retested for HIV following an initial HIV-negative test during the antenatal and/or postnatal periods.

Using random effects models, we computed the pooled prevalence of HIV retesting uptake, incidence rates (IR) and 95% confidence intervals (CI).

**Results:** A total of 31 studies (19-cohorts, 10-cross-sectional, and 2-mixed methods) with 411,130 women were included in the final analysis. Overall, the pooled prevalence of HIV retesting uptake was 72.6% (95%CI:72.4-72.8%). Retesting uptake was significantly higher during postpartum compared to during pregnancy (89.3% vs 70.8%;  $p<0.001$ ), higher before the rollout of test and treat compared to after test and treat (79.4% vs 70.9%;  $p<0.001$ ), and higher in Eastern compared to Southern Africa (78.2% vs 70.5%;  $p<0.001$ ). A total of 2,392 (0.6%) women acquired HIV. Twenty-one studies reported an IR, and the overall pooled IR was 4.3/100 person-year (PY; 95%CI:4.0-4.6/100PY). The HIV incidence rate was significantly higher during pregnancy compared to postpartum periods (6.0/100 vs 3.5/100PY;  $p<0.001$ ), higher after test and treat compared to before test and treat (7.3/100 vs 4.0/100PY;  $p<0.001$ ), and higher in Southern compared to Eastern Africa (5.5/100 vs 3.5/100PY;  $p<0.001$ ).

**Conclusions:** Nearly three in ten women in SSA do not retest for HIV during pregnancy or postpartum periods. The risk of HIV acquisition was significantly higher during pregnancy compared to postpartum periods. Emphasizing HIV retesting during these periods is critical to eliminate pediatric HIV given that the overall IR is beyond the World Health Organization threshold (3.0/100 PY) for substantial risk of HIV transmission

## TUPEC257

Lessons learned from retesting of pregnant and breastfeeding women

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**Background:** Incident HIV infection in pregnant and breastfeeding women (PBFW) is contributing to pediatric HIV infection. Re-testing of PBFW after the first antenatal visit is key in early diagnosis, treatment and prevention of Mother-To-Child-transmission of HIV.

The PEPFAR-supported program: Leveraging Health Service Equity through supporting the health care needs of mothers and their HIV-exposed infants has successfully incorporated retesting of PBFW in its "One-Stop" Differentiated Service Delivery model.

**Description:** This initiative is being conducted in Maternal and Child Health Units (MCH) of four high volume, Level-one Hospitals in Lusaka from October 2022 to date. A person-centered team embedded in MCH provides care for PBFW living with HIV and their children under 2-years-old. They provide health education and screen all PBFW to identify those due for retesting (3-monthly according to Zambia Ministry of Health Guidelines) at all service points in MCH: antenatal, postnatal, immunization, family planning and cervical cancer screening.

Those identified are tested and results and next test date are documented in the client's booklet, the paper register and the electronic health record, SmartCare. Eligible clients are offered Pre-exposure prophylaxis. Retesting data from October 2022 to September 2023 were reviewed.

**Lessons learned:** Out of an expected 46,930 retests, 36,202 were performed (77%). The retesting rates were 86% and 75% for pregnant and breastfeeding women respectively. The positivity yield was 0.4% (146 clients, 94 breastfeeding). 62 breastfeeding women (67%) received a positive test result within the first month postpartum (Range 1 to 180 days), while for pregnant women 42 (81%) were diagnosed in the third trimester (Range 14 to 39 weeks). 98% of clients who tested positive were linked to treatment and paired with mentor mothers for psychosocial sup-



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port. Having dedicated staff screening PBFW for retesting eligibility at all service points and health education contributed to increased retesting rates while clients silently electing to be retested at other health facilities and incomplete data entry into paper records lowered them.

**Conclusions/Next steps:** Strengthening of retesting through deliberate screening and health education particularly in the third trimester to 6 months postpartum is recommended in detecting the majority of incident HIV infections.

## TUPEC258

Prevalence of sexual violence and HIV screening services for survivors in selected tertiary in Ogun State, Nigeria

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**Background:** Sexual exploitation and abuse within higher education institutions in Nigeria is a pressing issue that demands immediate attention and comprehensive action. It is also an issue which is prevalent in tertiary institutions in Ogun State, Nigeria. Rape has often emerged as a predominant form of sexual violence among female students. The health repercussions of such incidents are profound. Survivors of rape in Nigerian tertiary institutions must have prompt access to HIV screening and counselling to prevent negative health outcomes.

**Methods:** A cross-sectional mixed survey, combining qualitative and quantitative approaches was employed for this study. A total of 300 students were randomly recruited from four tertiary institutions for the quantitative aspect of the study while 14 key informant interviews were conducted. The quantitative data was collected through kobo and analyzed using SPSS v 25.

Results were presented as frequencies, percentages and means, while inferential statistical analysis such as chi-square and binary logistic regression was also employed. For the qualitative aspect, audio recording was transcribed verbatim and thematic analyses were conducted to identify patterns and recurring themes.

**Results:** The mean age of participants was 21 years and the majority (56.7%) were between 20-25 years. A greater number (75.7%) were in their 2<sup>nd</sup> year (33%) of tertiary education. The study found a 5% prevalence of sexual violence with (28.5%) rape and (35.7%) sexual harassment being the most prevalent.

Furthermore, all forms of sexual violence perpetuated were significantly higher among females ( $p < 0.05$ ).

In terms of access to HIV screening services, results found that the majority of survivors (83%) failed to report cases of sexual violence which was a major factor hindering prompt HIV screening and other medical services to survivors.

**Conclusions:** This study found that sexual violence exists in institutions assessed. Furthermore, the prevalent form of sexual abuse was rape and it was mostly perpetuated against women. Under-reporting of cases associated with fear, stigma and victim blaming was also a major issue which continues to limit the understanding of the issue at hand within the institutions. This also prevent timely access to care for survivors most especially in the area of timely HIV screening and counselling.

## TUPEC260

Promotion of primary HIV testing amidst internal migration challenges

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**Background:** Russia's war in Ukraine resulted in 4 million IDPs. The East and South of Ukraine, being a combat zone or partially occupied, have been historically the most affected by HIV. The war caused the population to move to safer Central and Western regions. The Lviv region has become one of resettlement hubs, hosting 700,000 IDPs. The health system had to respond quickly to new challenges posed by the influx of healthcare clients, to prevent the possible spread of the epidemic to the west by expanding HIV screening programs.

**Description:** Family doctors, as the entry point into the health system, became the target population for the intervention. A unique 5-hour training for family doctors on rapid HIV testing and counseling was developed. The goal was to increase the number of tests performed in polyclinics. In January-July 2023, 28 training workshops were held for 500+ doctors. Upon completion, participants were awarded continuing education credits that doctors earn annually for certification.

**Lessons learned:** In 6 months of 2023, Lviv family doctors exceeded last year's testing rates by testing 20,288 people for HIV. 88 people living with HIV were identified. The six-month detection rate in 2023 was three times higher than in 2022. The intervention also created an active "Your Family Doctor" community, whose ambassadors develop a culture of HIV testing and anti-stigma. The interactive workshop combined with visual and promotional communications, involving the media and government officials, increased doctors' motivation, as evidenced by community feedback. Combining the HealthLink project's expertise in HIV testing with the practice of the medical community created a demand for training that reached all 500+ family doctors in Lviv. For many, communicating with a person living with HIV was their first such experience contributing to an understanding of people living with HIV needs.



**Conclusions/Next steps:** WHO recommends testing as many people as possible. The intervention demonstrated the feasibility of new prevention and support programs in western Ukraine. Currently, "100% Life" and the association "Your Family Doctor" expand the training program for family doctors throughout Ukraine.

## TUPEC261

### Successes and challenges in expanding access to HIV treatment for key populations in Uzbekistan

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<sup>1</sup>NGO ISHONCH VA HAYOT, Tashkent, Uzbekistan

**Background:** The goal of the project is to ensure effective access of key populations (KP) to HIV testing and treatment as part of achieving global 95-95-95 targets through community-led efforts. Project implemented in Tashkent, Uzbekistan from May 2021 to April 2023, focusing on people who use drugs (PUD), sex workers (SW) and men who have sex with men (MSM).

**Description:** Project was implemented by the community of people living with HIV "ISHONCH VA HAYOT" and included assisted HIV self-testing (OraQuick), psychosocial and legal assistance (support groups, consultations of psychologists and lawyers), support for adherence to ART, training of outreach workers and creating a project monitoring system.

**Lessons learned:** Over 24 months, 8409 people (12.28% MSM, 25.94% SW, 61.78% PWUD) were tested for HIV. Of them, HIV was detected for the first time in 825 people (9.8%): 12.4% in the KP of PUD, SW - 4.7%, MSM - 7.7%. 445 clients were D-registered and initiated ART.

However, 380 people were lost from the program's radar. Being tied to the place of residential registration significantly complicated the process of D-registration for internal migrants living in Tashkent. Fear of disclosing HIV status and identity is a prominent barrier among MSM (HIV transmission and homosexual relations are criminalized in Uzbekistan).

The project team also worked with PLHIV who had previously dropped out of the HIV treatment, and managed to return 702 PLHIV to ART. To solve the problems of D-registering people living without registration in Tashkent, the project team carried out advocacy activities.

As a result, the Republican AIDS Center took responsibility for registering HIV-positive internal migrants located in Tashkent. This decision played an important role in simplifying the D-registration process, significantly reducing barriers to treatment initiation.

**Conclusions/Next steps:** The project has been continued in 2024 and the team focuses on increasing the number of people who test positive for HIV, become D-registered and receive ART. The project showed that to improve access to HIV treatment, it is necessary to address HIV stigmatization, criminalization and provide comprehensive

psychosocial support to key populations after a positive HIV test, as well as eliminating structural barriers for internal migrants.

## TUPEC262

### Linkage to care and prevention after HIV self-testing: a systematic review and meta-analysis

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**Background:** Effective linkage to prevention and care is a crucial step following HIV testing services. This systematic review aimed to determine the proportion of individuals who are linked to prevention and care after HIV self-testing (HIVST) and describe factors associated with linkage.

**Methods:** An initial search was conducted across eight databases, including conference abstracts, up to October 2023. Linkage to care after HIVST was defined as getting a confirmatory test or antiretroviral therapy (ART) if the self-test was reactive, and/or pre-exposure prophylaxis (PrEP) if the self-test was non-reactive. A random-effects meta-analysis was performed to summarize the linkage to prevention and care.

**Results:** A total of 10,071 studies were screened, of which, 174 were included in this meta-analysis. Most studies examining linkage to confirmatory testing or ART initiation were conducted in the African region among key populations who used oral fluid-based HIVST kits.

Overall, 92% (95% confidence interval (CI): 89-96) of those whose HIVST was reactive were linked to confirmatory testing, and 89% (95% CI: 84-93) of those newly diagnosed with HIV initiated ART. Eighty-four percent (95% CI: 74-93) of those tested were linked to care.

Of the individuals whose HIVST was non-reactive, 9% (95% CI: 2-19) were linked to PrEP. Studies utilising assisted HIVST demonstrated a higher linkage to confirmatory testing 98% (95% CI: 88-100), ART initiation (91% (95% CI: 84-96)) and engagement in HIV care (100% (95% CI: 100-100)) compared to studies using unassisted self-testing (91% (95% CI: 86-95), 89% (95% CI: 83-95), 83% (95% CI: 71-93), respectively).



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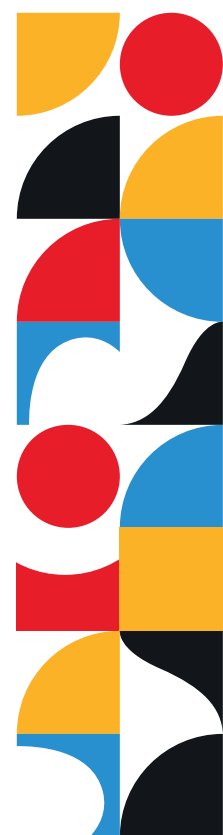
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Our meta-regression analysis found that the type of delivery model for the HIVST kits influenced linkage and that individuals who obtained their HIVST kits through a social network-based approach (SNA) were more likely to be linked to confirmatory testing (adjusted odds ratio (aOR) = 1.28 (95% CI: 1.10-1.50),  $p = 0.001$ ) compared to non-SNA service delivery model.

**Conclusions:** In the context of expanding HIVST services globally, we found that linkage to confirmatory testing and ART initiation after HIVST is generally high, particularly with assisted HIVST and when SNA was used to obtain the HIVST kits.

## TUPEC263

Improving early HIV diagnosis in Taiwan: uptake and challenges of HIV-self-testing among people living with HIV

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**Background:** The uptake and attrition of an HIV self-testing (HIV-ST) cascade among people living with HIV (PLWH) in Taiwan and the factors influencing self-testing uptake remain unclear. Besides, the proportion of individuals undergoing confirmatory tests after positive HIV-ST results and the degree of delay between positive self-testing and confirmatory testing remain unclear.

**Methods:** This multicenter cross-sectional survey was conducted among 443 participants (53.27% aged  $\leq 30$  years; 99.1% men; 92.33% MSM) in Taiwan.

We designed a 5-tier continuum—named the HIV-ST cascade—based on the participants' levels of engagement with the HIV-ST continuum: starting with HIV-positive participants (Tier 1), advancing to those who ever heard of HIV-ST pre-diagnosis (Tier 2), those contemplating HIV-ST (Tier 3), those who ever used HIV-ST before diagnosis (Tier 4), and finally those who self-tested annually (Tier 5). Exploratory factor analysis identified five domains hindering progress in the HIV-ST continuum: indifference or apathy towards HIV risk (domain 1), fear of HIV diagnosis (domain 2), fear of discrimination with a positive result (domain 3), fear of stigmatization with a positive result (domain 4), and structural barriers to HIV-ST (domain 5).

**Results:** Our findings indicated a consistent annual increase in the rate of HIV-ST acceptance among HIV-positive individuals from 2017 to 2023 (11.9% to 30.4%,  $P$  for trend  $< .001$ ). A marginal decline was observed in the proportion of people who had never heard of HIV-ST; however, this remained the most significant loss in the HIV-ST continuum from 2017 to 2023 (39.1% to 59.6%). The fear of negative consequences of a positive HIV test result is not only a major impediment to progressing along the

HIV-ST continuum but also a primary reason for the delay in seeking diagnostic confirmation after a positive test result. Multivariate analysis indicated that older age (vs. age  $\leq 30$  years), employment, and year of diagnosis (2021, 2023 vs. 2017) were significantly correlated with higher acceptance of HIV-ST.

**Conclusions:** The increasing trend in the acceptance of HIV-ST indicates progress in Taiwan; however, a lack of awareness and fear of adverse outcomes remain considerable barriers that necessitate strategies to promote regular HIV-ST and timely follow-up after a positive result.

## TUPEC264

Enhancing HIV prevention among young key populations through digital distribution of self-testing kits: a SWING foundation initiative

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**Background:** Recognizing the heightened HIV risk and barriers to testing services among young key populations, particularly those using dating apps or engaged in online sexual services, the Service Worker In Group Foundation (SWING) initiated an innovative approach. This approach involved the distribution of HIV self-testing kits (HIVST) via online platforms, aimed at facilitating easier access to testing and encouraging the maintenance of HIV-negative status.

**Description:** From October 2022 to September 2023, SWING's program distributed 478 HIVST kits, both blood-based and oral fluid-based, targeting various key populations, with a focus on different age groups. The intervention began with a risk assessment questionnaire, followed by kit distribution through the 'Testmenow' booking system. Follow-up processes, conducted via phone and the Line app, allowed users to self-report their results. The follow-up protocol varied from providing prevention information and emotional support to guiding users towards confirmatory testing and treatment initiation for reactive results.

**Lessons learned:** Of the 478 kits distributed, 95% were blood-based, with the 15-24 age group receiving 40% of these kits and showing the highest utilization rate (41%). The high rate of reactive results, especially in this age group, where 11 of 15 reactive cases were confirmed HIV positive, underscores the effectiveness of this outreach method. Key lessons include the efficacy of digital platforms in reaching and engaging young high-risk populations and the critical role of tailored follow-up support in facilitating immediate care and treatment.

**Conclusions/Next steps:** The success of this program in engaging young key populations and identifying new HIV cases demonstrates the potential of HIV self-testing as a cornerstone in HIV prevention strategies. Moving for-



ward, it is essential to expand the reach of self-testing to a broader range of demographics within key populations. Strengthening the integration of these community-led initiatives with the larger healthcare system will ensure comprehensive care and support for those diagnosed with HIV. This approach, if replicated and scaled, could significantly contribute to global efforts in HIV prevention and treatment.

## TUPEC265

Improving HIV case identification in adolescents and young people (AYP) through index case testing: a quantitative study on tracing partners of HIV - positive adolescents in Kabwe District, Central Zambia

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**Background:** Over twice as many AYP, in comparison to the general population, do not know their HIV status in Zambia which has derailed progress on the 95-95-95 goals for this age cohort (Zamstat, 2021).

Furthermore, the incidence of HIV acquisition AYP stood at 14,000 per year. We sought to investigate the feasibility of index case testing as a model of identifying partners of HIV-positive adolescents in Kabwe District, Central Zambia.

**Methods:** A quantitative study was conducted using secondary data from DataSync, a database established by the USAID CHEKUP II Activity, between April and December, 2023. During that period, we reached out and offered index case testing services to AYP aged 15 – 24 years, within the Activity's facilities in the district, using the client advisor model.

Thereafter, a detailed analysis of the contribution of index case identification was conducted. The indicators utilized to establish the effectiveness of index case testing were the number of contacts elicited and offered HIV testing services, and the number of HIV-positive AYP who were linked to antiretroviral therapy (ART).

**Results:** 208 AYP accepted indexing and from those 388 contacts aged 15-24 were elicited using the index case identification model representing an elicitation ratio of 1: 2. Of these, 342 AYP were tested through the index case testing. This represented 88.1% of the total number of AYP elicited between April and December, 2023. A total of 61 HIV-positive AYP were identified, and 59 of these were linked to ART. This represented a 17.8 % positivity yield (61/342) among AYP, with a 96.7% linkage rate (59/61). The positivity yield was the highest amongst females than

males at 21% and 9.5% respectively. The linkage rate was higher amongst males than females at 100% and 96.2% respectively. Those that tested negative and were eligible were offered PrEP, condoms, sexual reproductive health talks and lubricants among other interventions.

**Conclusions:** Index case identification has proven to be a very effective strategy for identifying, testing and linking to treatment AYP at increased risk of HIV infection. It is also one of the surest strategies for increasing adolescents' access to HIV testing services.

## TUPEC266

Navigating the final mile to epidemic control, a case study of strategic weekend approach to HIV testing, North Central Nigeria

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**Background:** There are appreciable efforts towards achieving HIV epidemic control in Nigeria and globally, but we are short of achieving epidemic control. More concerted efforts and innovative strategies are required to achieve it. Strategic Weekend Approach to HIV Testing (SWEAT) is an innovative, targeted, and efficient community HIV testing and case finding strategy.

The purpose of the study is to evaluate the impact of SWEAT in HIV epidemic control, North Central Nigeria.

**Methods:** We conducted a retrospective review of the HIV testing records from SWEAT conducted by 20 testers over the weekends (Saturdays and Sundays) from December 2022 to January 2023 across 8 randomly selected local government areas (LGAs) and compared the achievements with the community testing conducted on week-



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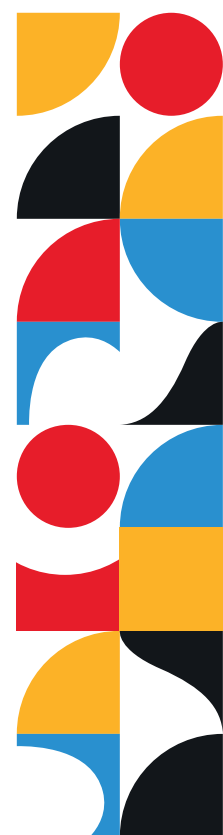
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days (Mondays-Fridays) within the same period across the same LGAs by another set of 20 testers to evaluate the impact of SWEAT on achieving HIV epidemic control.

**Results:** From our results, a total of 10,393 people were tested for HIV, 249 (3.0%) tested positive from SWEAT (Saturdays & Sundays) and initiated on ART in comparison to 19,388 people tested, with 208 (1%) identified positives and initiated on ART from community weekday (Mondays-Fridays) testing. The peak case finding efficiency recorded across the same LGAs were 5.1%, 4.6% and 4.3% for SWEAT and 2.0%, 1.5% and 1.3% for community weekday testing.

**Conclusions:** SWEAT is a more targeted and efficient HIV case finding strategy, with improved case finding and linkage on ART. It is an innovative strategy for accelerating case finding and linkage on ART to achieve epidemic control. We recommend the SWEAT strategy. Future research is needed to compare weekend and weekday testing in health facilities, across urban and rural areas, the insight will be useful in strengthening facility HIV services.

## TUPEC267

Comparative analysis of people living with HIV identified by community-based organizations and health care facilities in Bishkek and Osh, Kyrgyzstan

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**Background:** Community-based organizations (CBOs) have been essential to the HIV response, but as countries near epidemic control, CBO support is diminishing. Launched in 2019 and funded by the U.S. President's Emergency Plan for AIDS Relief, EpiC Kyrgyzstan aims to maintain epidemic control by focusing on innovative testing approaches.

The study examined the characteristics of people living with HIV (PLHIV) receiving care from health care facilities (HCFs) and CBOs in Bishkek and Osh cities, Kyrgyzstan. The analysis aimed to uncover the contribution of CBOs to HIV case identification, explore differences in age distribution, identification of high-risk populations, and demographic factors between CBOs and HCFs.

**Methods:** Using the electronic databases of EpiC and the Republican AIDS Center (RAC), we generated a dataset with sociodemographic and risk characteristics of all clients diagnosed between October 1, 2020, and September 31, 2023, in Bishkek and Osh. We divided the sample into two groups: those identified by HCFs and by CBOs. Using descriptive statistics and logistic regression, we explored client characteristics and organizational settings.

**Results:** CBOs contributed to the identification of 18.8% of PLHIV in Bishkek and Osh. The average age of PLHIV identified in CBOs was significantly lower than in HCFs (34.5 vs. 37.9,  $p < 0.001$ ). CBOs also reached a higher proportion of

men (76% vs 60%,  $p < 0.001$ ), homeless people (6.7% vs 2.7%,  $p = 0.001$ ), single individuals (71.8% vs 54.6%,  $p < 0.001$ ), and drug users (9.0% vs 4.3%,  $p = 0.002$ ). CBOs covered more people with previous HIV tests (51.4% vs 42.8%,  $p = 0.02$ ), and those identified in CBOs were more likely to be initiated on ART within 30 days (97.0 vs 95.1,  $p = 0.06$ ).

In the multivariate model, CBOs showed a specific identification profile with significantly more homeless people (OR=2.9, CI=1.3-6.4), individuals from key populations (OR=4.3, CI=3.0-6.0), and PLHIV in earlier stages of infection (OR=0.5, CI=0.3-0.8).

**Conclusions:** This analysis highlights the significant contribution of CBOs in identifying PLHIV from high-risk groups, especially homeless people, and key populations. The findings underscore the need for collaborative strategies between CBOs and HCFs that emphasize an individualized approach to addressing risk factors among PLHIV and expand coverage of testing and treatment services among women.

## TUPEC268

Different post-COVID-19 recovery in HIV testing according to PrEP use among gay and bisexual men attending clinics in a surveillance network in Australia

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**Background:** Quarterly HIV/STI testing is recommended for all gay and bisexual men (GBM) in Australia, and typically required for GBM accessing PrEP. Interruptions to service delivery and regular HIV testing during COVID-19 may have ongoing impacts on community-level testing rates. We examine recovery in HIV testing among Australian GBM stratified by PrEP use.

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**Methods:** Data on HIV testing and PrEP prescription among GBM  $\geq 16$  years were extracted from 22 Victorian and New South Wales clinics in the ACCESS network for the period 01/01/2019 to 30/06/2023. Quarterly numbers of HIV tests were stratified by PrEP status (PrEP-linked testing defined as PrEP prescription within 28 days of HIV test). We used Poisson regression to compute rate ratios comparing mean quarterly tests in each year from 2020–2023 with 2019. We also calculated the median time between tests and proportion of people tested in 2019 who did not return for a subsequent test.

**Results:** In total, 176,297 HIV tests were performed among 49,480 GBM during the study period. The quarterly number of HIV tests declined from 18,688 in Q1 2019 to 9,951 in Q2 2020 (first COVID-19 lockdowns), increasing to 13,656 by Q2 2023.

The reduction in HIV testing in Q1 2019 relative to Q2 2020 was greater for non-PrEP-linked HIV tests (52%, 11,253–5,387) than PrEP-linked tests (39%, 7,435–4,564). In 2023, mean quarterly HIV testing remained 20% lower compared to 2019 (RR=0.80, CI:0.79–0.81); the relative reduction was greater for HIV tests not linked to PrEP (RR=0.72, CI:0.71–0.73) than PrEP-linked tests (RR=0.91, 95%CI:0.89–0.93). Median days since last HIV test was 99 (range 91–114) for PrEP-linked tests, compared to 147 (range 127–181) for non-PrEP-linked tests.

Of the 33,646 people tested in 2019, 9,393 (28%) did not return for testing by 30/06/2023; 8,664 (92%) of which were not linked to PrEP at their last test in 2019.

**Conclusions:** Sustained drops in HIV testing since COVID-19 restrictions eased are being driven by a lack of recovery in HIV testing not associated with PrEP prescriptions among GBM. Re-engaging non-PrEP users in HIV testing and care will be crucial to achieving targets for eliminating HIV transmission.

## TUPEC269

A peer-led outreach approach is effective in finding and linking to treatment internally displaced populations living with HIV in Mali

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**Background:** Internally displaced people (IDP) are vulnerable to HIV due to conflict, displacement, poverty; lack of access to care, all resulting in low HIV testing and treatment access. The security crisis in Mali resulted in over 400,000 IDP and although the HIV prevalence

and incidence is 0.9% and 0.28 per 1,000 among general population, there are no data among IDP. Though, we know that HIV case finding among IDP in Africa, ranges between 1.5% in Nigeria and 6% in Cameroon. U.S. President's Emergency Plan for AIDS Relief (PEPFAR) through U.S. Agency for International Development (USAID)-funded Meeting Targets and Maintaining Epidemic Control (EpiC) project offers HIV prevention, care, and treatment to IDP in Mali.

**Description:** EpiC Mali, through a community-based organization, offered community-based peer-led HIV services to IDP in 4 districts. Peer outreach workers provided HIV education; offered HIV rapid test; navigated clients to HIV prevention and treatment services, as per "status neutral" approach.

We analyzed aggregated IDP data by sex and by age from an individual level database (DHIS2) from October 2022 to September 2023 to assess HIV testing coverage and case finding and to assess HIV prevention needs.

**Lessons learned:** EpiC project reached 4,705 IDP with HIV education and tested 2,454 (52%) at 4% case finding and 97% treatment initiation. The highest case finding was in the age group 45–49 years (7%). The IDP who tested HIV negative, were offered condoms, lubricants, and linkage to voluntary medical male circumcision, while pre-exposure prophylaxis (PrEP) was not available to IDP in the geographic areas of the project.

**Conclusions/Next steps:** An outreach approach effectively identified IDP living with HIV and ensured linkage to treatment. HIV case finding was within the range reported by other African countries, and higher than the national prevalence in Mali. These findings suggest a high degree of vulnerability among IDP.

Furthermore, the low testing coverage and the highest case finding in older ages, calls for consultations with IDP to understand barriers and enablers to increase HIV testing coverage and to design strategies to effectively reach higher-risk age groups. PrEP should be made available as additional prevention choice for IDP in EpiC project areas.

## TUPEC270

The impact of distributing HIV self-test kits in achieving the first 95

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**Background:** Conventional HIV testing faces resistance from a considerable proportion of high-risk individuals. HIV self-testing, recommended as an additional approach by the WHO in 2019, has proven effective in reducing missed HIV testing opportunities and promoting the diagnosis of PLHIV among affected Key Populations (KPs) in the CHILL project.







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**Methods:** This cross-sectional, descriptive study utilized program data from community distribution of HIV self-test kits between June and September 2023 under the PEPFAR-funded CHILL project. The study population comprised Men who have Sex with Men (MSM), Female Sex Workers (SW), Injecting Drug Users (IDU), and Transgender individuals (TG). OraQuick HIV self-test kits, involving a non-invasive oral swab, were distributed to clients who declined conventional HIV tests for personal use. KPs received in-person demonstrations from peer educators trained to PEPFAR standards, supplemented by manufacturer-provided instructions.

A follow-up call two days after distribution ensured kit usage and collection of test results. Those with a reactive test were directed for confirmation per national guidelines to a project drop-in-center or health facility.

**Results:** Risk assessment of 40,390 KPs revealed 76% (30,739) at elevated HIV risk, eligible for HIV testing. Among the eligible, 72% (22,043) accepted conventional health-care professional-led testing, while 28% (8,696) declined. Refusal demographics included 53% (4,593) FSW, 42% (3,613) MSM, 4% IDU, and 2% TG.

Self-test kits were systematically offered to all KPs who declined conventional HIV testing, with an overall acceptance rate of 86% (7,486) [100% for FSW, 74% for MSM, 56% for IDU, and 31% for TG].

Of the 7,486 who accepted self-tests, 94% (7,034) used the kits, with utilization rates of 99% for FSW, 85% for MSM, and 100% for IDU and TG. Among the 7,034 tests, 83 were reactive, of which 60 (72%) were confirmed positive.

**Conclusions:** HIV self-testing emerges as a pivotal innovation, empowering people and significantly contributing to awareness of serological status among KPs. In our study, it acted as the catalyst for knowing serological status in a stigma free, convenient and confidential way; particularly for clients who declined conventional finger prick HIV testing.

## TUPEC271

**Sustainable supply of HIV, HBV, HCV viral load, molecular detection of chlamydia/gonorrhea and CD4+ count tests in Brazil: an innovative and effective service contracting model**

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**Background:** The Brazilian MoH provides universal coverage, comprehensive care, and free access to healthcare through the Brazilian Unified Health System. Since 1997, the MoH has maintained, in partnership with the Federative Units and municipalities, the National Network of Laboratories for HIV-VL and CD4+ T-Lymphocyte Count.

In 2011 and 2012, the HBV and HCV VL were incorporated into the network, followed by the inclusion of the CT/NG molecular detection test in 2023.

**Description:** The MoH implemented an innovative contract model for continuous service maintenance, integrating four tests (HIV/HBV/HCV-VL and detection of CT/NG) on a single automated platform in 82 laboratories, and the CD4+ test also on an automated platform in 72 laboratories (standard-of-care) and 53 health facilities (point-of-care). The company is responsible for supplying necessary inputs for exams. Monthly payment is based on the number of tests released by laboratories in the MoH information systems. Figure 1 presents some specifications of the service contracting modality.



Figure 1. Specifications of the Brazilian service contracting modality.

**Lessons learned:** With this model, there is shared responsibility for the maintenance and quality of exams among the laboratory/health facilities, governmental managers, and the contracted supplier.

Furthermore, in this type of contracting, the supplier manages the validity and resupply of inputs, in addition, there is no need to purchase equipment and it allows you to always have platforms with up-to-date technologies. Finally, the aim is to integrate the largest number of tests for different health issues on these platforms, ensuring the possibility of obtaining timely test results, maximum productivity and the decentralization of access to tests.

**Conclusions/Next steps:** The laboratory services contract model has proven to be effective and advantageous for users by ensuring continuous care, prompt, and high-quality feedback. It is strongly recommended that other countries adopt a similar contractual model to ensure collective responsibility among all involved parties, promoting integrated service and user-focused actions within the health system.

## TUPEC272

### Revolutionizing HIV testing: Maritime Life Precious Foundation's success with index testing in reaching high-risk clients

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**Background:** In the past, Maritime Life Precious Foundation (MLPF) has implemented various testing strategies to identify individuals living with HIV (PLHIV), but these strategies have yielded a low number of positive cases among men who have sex with men (MSM). MLPF introduced community-based index testing as an effective strategy in the Western region of Ghana.

**Description:** Community-based Index testing is a testing strategy where people living with HIV are encouraged to voluntarily refer their sexual partners for HIV testing. MLPF started two variations of index testing known as the group index testing and individualized index testing under the USAID Strengthening the Care Continuum Project. Group index testing involved inviting one or two sexual partners of a maximum of 10 PLHIV clients to participate in group activities. Individualized index testing focused on testing partners in comfortable locations, facilitated by nurses.

To increase case finding, MLPF introduced two additional variants of index testing known as the Viral Load Result-Based Index Testing and ART Defaulted index testing. These approaches utilized clients with a high viral load or those who had discontinued HIV medication for over a year as index cases to encourage testing among their partners. MLPF analyzed viral load results for high viral loads as well as client's defaulter records to identify treatment interrupted clients as index cases, as they pose a higher risk to their partners.

This approach was implemented from October 2019 to June 2023 across selected MLPF sites. MLPF adopted the four types of referrals for index testing implementation: contract referral, client referral, provider referral, and dual referral.

**Lessons learned:** Between April 2017 and June 2023, MLPF conducted 2,275 index testing sessions, revealing 693 HIV-positive cases (30.4% yield). In contrast, other testing strategies, with 15,930 tests, identified 589 positives. Obviously, index testing alone accounted for 54% of the total positive cases (1,282) during this period.

**Conclusions/Next steps:** This approach showcases the strategy's effectiveness in case finding. MLPF recommends the adoption and implementation of index testing by all HIV prevention projects, as it contributes significantly to achieving the UNAIDS objective of the first 95.

## TUPEC273

### Reasons for re-taking the HIV test after a previously positive result: findings from a rapid test program in Latin America

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**Background:** Aids Healthcare Foundation's rapid test program aims to promote universal access to HIV diagnosis, focusing on key populations who still do not know their HIV status.

However, clients may occasionally seek testing despite having a prior reactive HIV serology. Motivations for recurrent test seeking are poorly understood.

**Methods:** The rapid test program was carried out by trained lay personnel from 01/01/2023 to 12/31/2023 in facilities and community centers in Argentina, Brazil, Chile, Colombia, Dominican Republic, El Salvador, Guatemala, Haiti, Jamaica, Mexico, Panama, and Peru. Prior to sample collection for HIV rapid tests, the program included group counselling and a self-administered risk survey addressing age, sex at birth, gender, possible mode of HIV transmission, reason for taking the test, condom use, previous tests and results, and reason for recurrent testing among participants with a previously positive HIV test result. The rapid test result was informed with individual counselling and linkage to the HIV care when applicable.

**Results:** Of 337,148 HIV rapid tests performed, 13,526 (4.1%) yielded positive results. There were 186,338 people who had previously been tested for HIV, of whom 8,045 (4.3%) were positive; 3,251 of them (40.4%) already knew their HIV diagnosis. Of those, 2,455 (75.5%) provided reasons for repeating the HIV test despite knowing their diagnosis.

We identified five response categories:

1. Need for referral to treatment and care (80.3%);
2. Difficulty in accepting the HIV diagnosis (denial, 7.8%);
3. Curiosity about the rapid test results relative to the previous test (5.5%);
4. Distrust about the test carried out previously (3.9%); and,
5. Other reasons, including social pressure from friends, sexual partner, or job application (2.4%).

**Conclusions:** We found a significant number of people who, despite knowing their HIV diagnosis, are still not on treatment and seek to repeat their HIV test. This underscores that existing programs for HIV diagnosis, counselling and linkage to care have important gaps, failing to provide sufficient support for patients following diagnosis. Studies are needed to explore potential solutions for this concerning issue.



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## TUPEC274

### Transition to 3-test HIV testing algorithm saves 371 individuals from potential misdiagnosis: lessons from Malawi's HIV testing program

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**Background:** Following WHO recommendations, Malawi revised its guidelines in 2023 and became the first country to adopt and transition to a new HIV 3-test diagnostic algorithm to reduce the risk of false positive diagnoses, due to declining positivity rates. The national HIV Testing Services (HTS) program in Malawi rolled out three sequential rapid diagnostic tests – Determine HIV1/2, Uni-Gold HIV1/2, and SD Bioline HIV1/2 – and concurrently introduced advanced monitoring & evaluation (M&E) tools to capture essential protocol decisions and HTS outcomes. These paper registers are scannable with ScanForm technology, which uses artificial intelligence to automatically transcribe handwriting into digital data with a smartphone picture.

**Description:** The ongoing transition from the 2-test HIV testing algorithm in Malawi is coordinated by the Ministry of Health as a phased nationwide initiative which started in November 2022. As of January 23, 2024, the program successfully activated 545 facilities across all 28 districts, representing 78% of access points. National quarterly supervision and ScanForm's daily automated data quality assessment reports are pivotal in ensuring data accuracy, 3-test algorithm concordance and driving continuous quality improvement at each site.

**Lessons learned:** Data from November 1, 2022 to January 23, 2024 shows that 3,082,406 HTS records have been collected. Of the total tested, the 3-test algorithm concordance rate was 99.96% (2,605,324 / 2,606,280).

Of these, 371 individuals (239 females and 132 males) received inconclusive results after test 3, with initial reactive test 1 and test 2 tests. Under the previous 2-test algorithm, these individuals would have likely been misdiagnosed as HIV positive and started on antiretroviral therapy immediately.

An additional 448 individuals (281 females and 167 males) were diagnosed as HIV negative, instead of requiring re-testing after two weeks under the previous 2-test algorithm.

**Conclusions/Next steps:** With declining HIV positivity rates globally, adopting the WHO-recommended 3-test algorithm is crucial for reducing misdiagnoses. Malawi's experience demonstrates that through effective provider

training and robust M&E tools such as ScanForm, accurate implementation of this algorithm can be achieved swiftly. The full transition is expected by June 2024 with ongoing site support to ensure sustained success.

## TUPEC275

### Walking the last mile towards achieving the first 95: an analysis of HIV Self Testing scale up in Uganda

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**Background:** HIV Testing Services (HTS) programs are operating within increasingly complex environments with more limited resources and declining number of people living with HIV identified. Identifying and linking the remaining people living with HIV (PLHIV) remains the major limiting factor to the achievement of the 95-95-95 targets in Uganda. The World Health Organization recommends HIV Self Testing (HIVST) as an additional HTS approach. HIVST has been proven to increase testing coverage among populations that are not being reached with conventional HTS. The Uganda HTS program is prioritizing integration and scale up of HIVST as part of case finding efforts.

**Methods:** Following initial pilot implementation, the Ministry of Health in Uganda opened up for large scale deployment of HIVST as part of the national PLHIV identification efforts. Between January 2022 to December 2023, HIVST was scaled up from the initial 21 priority districts to all the 145 districts across the country covering more than 3,500 public health facilities. Priority distribution channels included both facility-based and community-based models.

Clients were reached with both primary and secondary HIVST distribution modalities. HIVST was also integrated into other HTS approaches such as assisted partner notification and social network testing strategy.

**Results:** A total of 1,432,464 HIVST kits were distributed to the clients with 926,900 (64.7%) clients doing directly assisted HIVST and 505,564 (35.3%) doing unassisted HIVST. Majority of the kits were distributed to females (55.9%). Of those that used the HIVST kits, 16,884 report a positive HIVST result and 9,803 (58%) were confirmed with the national algorithm as HIV positive.

**Conclusions:** Scale up and integration of HIVST as part of the HTS program can lead to efficiencies in case identification. Opportunities exist for further optimization of HIVST distribution.

### TUPEC276

Characteristics and associations of adverse pediatric outcomes in the prevention of Mother-to-Child HIV Transmission program, selected regions of Tanzania, 2018–2023

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**Background:** Prevention of mother-to-child transmission programs aim to eliminate HIV transmission from pregnant and/or breastfeeding mothers living with HIV to their infants. Infants are clinically monitored, routinely tested for HIV, and given preventive medications.

We analyzed program data from Tanzania to identify programmatic gaps and assess risks of adverse pediatric outcomes.

**Methods:** Using de-identified client-level data from a national HIV clinical database, we created a retrospective cohort of mother-infant pairs in the Dar es Salaam, Geita, Tabora, and Kagera regions, where adult HIV prevalence is 4.2%–5.7%. We followed infants born between 2018–2021 from birth to 24 months or until their last documented clinical interaction.

We excluded infants without documentation of services during and after birth. We documented compliance with HIV testing guidelines and program delivery. We categorized death and HIV positivity as adverse outcomes.

We grouped mothers into high and low programmatic vertical transmission risk categories based on HIV diagnosis timing, antiretroviral therapy regimen, and viral load.

We reported proportions and relative risks (RR) with 95% confidence intervals for bivariate analyses assessing the association of risk factors with adverse outcomes.

**Results:** Of 57,385 infants, we excluded 1,415 (2.5%) as lost to follow-up. Among 55,970 infants in the analysis, 1,183 (2.1%) died and 939 (1.7%) were diagnosed with HIV. Median (IQR) infant follow-up time was 9 (4–14) months. Among 1,700 (3.0%) infants who completed the full HIV testing cascade according to the national algorithm, all remained HIV-negative.

Risk of adverse outcome was higher for infants not prescribed the recommended antiretroviral prophylaxis (RR=2.1, 1.8–2.2), not exclusively breastfed (RR=3.1, 2.7–3.5),

not prescribed cotrimoxazole preventive therapy (CPT) (RR=1.7, 1.6–1.9), and born to high-risk mothers (RR=4.9, 4.4–5.3) compared to infants receiving antiretroviral prophylaxis, exclusive breastfeeding, and CPT, and born to low-risk mothers, respectively.

**Conclusions:** Infant HIV positivity was lower than UNAIDS' 2022 estimated national vertical transmission rate (7%). Programmatic follow-up time and full adherence to testing and prophylaxis guidelines for most infants were not followed and adverse outcome risks were higher among infants who did not receive program interventions. Improved programmatic tracking and targeted support for mother-infant pairs with risk factors might reduce adverse pediatric outcomes in Tanzania.

### TUPEC277

Sustained viral suppression among Australian people living with HIV in the era of U=U

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**Background:** In Australia, people living with HIV (PLHIV) have a reported viral suppression rate of >95%. However, this reflects the latest viral load (VL) test within a reporting period and does not account for earlier tests. Sustained suppression is critical for overall health of PLHIV and reducing transmission risk.

This study identified the level of sustained viral suppression (SVS) (i.e., VL<1000 in all the tests within the last three years) among Australian PLHIV and factors contributing to inconsistent suppression.

**Methods:** Data were from a national sentinel surveillance system, ACCESS. A total of 6,444 PLHIV (95% male, >16 years) who attended one of the 60 health services within the ACCESS network in 2022, and had consistently taken anti-retroviral therapy (ART) and had undertaken at least two VL tests over the last three years were included in this study. Multivariable logistic regression determined the effects of demographics and medical history on SVS.

**Results:** Out of 6,444 PLHIV (mean age=51.04), 6,090 (95.5%) had SVS, whereas 98.4% achieved viral suppression based on the last VL alone. Multivariable logistic regression showed that lower odd of SVS is associated with



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living in an inner/outer regional area (OR-0.61,CI-0.44,0.84) or remote/very remote area (OR-0.16,CI-0.04,0.63) (versus major cities), young age (<30years) (OR-0.45,CI-0.44,0.84), receiving care at a publicly-funded sexual health clinic or hospital-based clinic (OR-0.52,CI-0.39,0.69) (versus general practices), higher number of gonorrhea diagnoses during the last three years (OR-0.87,CI-0.76,0.99), co-infection with hepatitis-C in the last three years (OR-0.44,CI-0.29,0.65), and ever co-infected with hepatitis-B (OR-0.74,CI-0.56,0.98) while being from a culturally and linguistically-diverse background (OR-2.00,CI-1.43,2.81) and higher first CD4 count (OR-1.0009,CI-1.0004,1.001) are associated with a higher odd of SVS ( $p<0.05$ ).

**Conclusions:** SVS is higher than 95% among Australian PLHIV taking ART and not largely different from viral suppression rate based on the last VL test. Targeted supports to improve ART adherence may help to achieve SVS among those who are young, who are likely to engage in unprotected sex or share injecting equipment (i.e., those with a higher number of gonorrhea infections or with a history of hepatitis B or C infection), those living in non-metropolitan areas, and those receiving care at publicly-funded health services.

## TUPEC278

Real-world utilization and effectiveness of long-acting Ccbotegravir + rilpivirine in virologically suppressed treatment experienced individuals in Europe: data from COMBINE-2 cohort study

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**Background:** Cabotegravir (CAB) + rilpivirine (RPV) is the first complete long-acting (LA) regimen for treatment experienced virologically suppressed (HIV-1 RNA <50 copies/mL) people with HIV (PWH) without present or past evidence of viral resistance to, and no prior virological failure with NNRTI and INI class agents.

This study assessed the utilization and virologic effectiveness among individuals initiating CAB+RPV LA regimen in real-world setting in Europe.

**Methods:** Adult PWH who were treatment experienced, virologically suppressed and received CAB+RPV between December 2020 and September 2023 were enrolled at NEAT ID Network sites across seven European countries. Viral loads (VLs) were assessed from first injection until CAB+RPV discontinuation or at analysis.

**Results:** A total of 477 individuals initiating CAB+RPV are included in the analysis. All were treatment experienced, had VL <50 copies/mL at initiation, had no previous virologic failure and five individuals had history of either NN-RTI or INSTI mutations but were sensitive to these classes. The median age was 44 years (IQR: 37-53), 89% were males and median BMI at initiation was 24.7 kg/m<sup>2</sup> (IQR: 22.7-27.4). Adherence to CAB+RPV LA regimen was high, 2% individuals having delayed doses with a median delay of 7 days (IQR: 7-8) and one individual with missed doses. 96% of individuals remained on CAB+RPV LA regimen with a median follow-up of 3.0 months (IQR: 2.8, 7.1). Of 378 individuals with follow-up VLs, 98% had last VL measured <50 copies/mL. Three individuals had confirmed virologic failure (CVF) after initiation of CAB+RPV LA regimen. One individual had low-level resistance to rilpivirine and no resistance to the INSTI class at failure.

		Treatment experienced Undetectable VL (<50 copies/mL) at initiation (N=477)
Duration of follow-up	Median months (IQR)	3.0 (2.8, 7.1)
On CAB+RPV LA at end of follow-up	n (%)	458 (96)
≥1 VL after first injection	n (%)	378 (79)
	Last VL <50 copies/mL, n (%)	369/378 (98)
Confirmed virologic failure*	n (%)	3/378 (0.8)

\*Two consecutive VLs ≥200 copies/mL, or one VL ≥200 copies/mL, followed by discontinuation

Table 1. Virologic outcomes among individuals initiating CAB+RPV LA regimen.

**Conclusions:** The real-world data of PWH who received CAB+RPV LA in Europe, suggest that the regimen is effective among individuals virologically suppressed at initiation. High levels of virologic control were observed with low CVF (<1%), consistent with clinical trial data.

## TUPEC279

Detecting potential barriers in health units to prevent interruptions in HIV treatment: a self-report measure of care engagement in three Brazilian cities - Campo Grande, Curitiba, and Florianópolis

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**Background:** Antiretroviral treatment (ART) has many benefits, but one of the main issues associated with it is a lack of adherence, which can lead to interruptions. Non-adherence to ART in Brazil varies from 18% to 74.3%, stressing the need for an adaptable approach. This study is part of "A Hora é Agora" project, which aims to identify client engagement and barriers to treatment interruption.

**Methods:** We conducted a self-report questionnaire adapted from Johnson MO et al., 2019 using Google Forms in six AHA-supported healthcare facilities across three cities - Campo Grande, Curitiba, and Florianópolis. The survey was conducted between November 2022 and March 2023, with 571 participants.

Additionally, data was collected from REDCap to assess reasons for treatment interruption. Health professionals contacted 2005 clients (28% Campo Grande, 10% Curitiba, 62% Florianópolis) who were without treatment between Oct 2022 and Sep 2023.

**Results:** The survey showed that most respondents (26.8%) were between 25 and 29 years old, 78% were cis-gender men, 70.7% were homosexual, 61% were white, and 53.7% had completed higher education. 43.6% of the responses came from Campo Grande, 42.2% from Florianópolis, and 14.2% from Curitiba. Most clients expressed confidence in health professionals and services, as indicated in Table 1.

Reasons for discontinuing HIV treatment: Campo Grande - Non-acceptance of HIV/negative beliefs (19%); Curitiba - Mental health issues (16.3%); Florianópolis - Difficulty in personal organization for treatment (45.8%) (Table 2).

	Total (n)	Not at all	A little	A moderate	A lot	A great deal
How much do you trust your HIV care provider?	572	0.3%	1.0%	8.2%	27.6%	62.9%
How much does your HIV care provider respect what you say?	571	0.2%	0.2%	1.4%	26.1%	72.2%
How much do you think your healthcare professionals understand what you say and feel?	572	0.2%	1.2%	8.7%	39.8%	50.1%
How satisfied are you with the level of healthcare provided by your health unit to meet your health needs?	572	0.4%	1.8%	7.7%	56.8%	33.3%
How open do you feel you can be with your HIV care provider?	570	0.4%	2.8%	10.4%	51.2%	35.1%
How much can you comprehend the information provided by your healthcare provider?	572	0.2%	0.9%	4.2%	33.1%	60.8%
		Not at all	Slightly	Moderately	Very	Extremely
How important is it to set goals for health?	572	0.2%	0.9%	4.3%	26.5%	67.7%
How much do you believe it is to stay up-to-date on the latest research about HIV?	564	0.3%	0.9%	0.9%	14.8%	83.1%
		Never	Sometimes	Most of the time	Always	
How comfortable do you feel asking questions during appointments?	568	0.2%	1.4%	1.8%	38.8%	57.8%
In different phases of your life, how well were you able to adhere to the prescribed treatment and medication?	571	0.3%	1.2%	3.0%	31.5%	63.7%
How important is your involvement in decisions making processes regarding your HIV prevention or treatments?	565	0.3%	1.1%	1.9%	17.4%	79.3%
How often do you leave your HIV care appointments feeling like you got really good care?	564	0.3%	0.3%	0.3%	15.9%	82.4%
Do you refill HIV medications on time?	564	1.3%	0.0%	0.5%	10.7%	87.5%

Table 1. Client relationship/satisfaction with services and professionals\*, in Campo Grande, Curitiba and Florianópolis, Brazil, November 22 to March 23.

Causes for discontinuing the treatment	Campo Grande	Curitiba	Florianópolis
Financial difficulty	2.8%	3.4%	1.3%
Difficulty moving around	5.7%	2.4%	2.8%
Didn't see the need for treatment	1.3%	1.0%	2.0%
"Healing" (religious beliefs)	0.9%	1.0%	0.1%
Alcohol and drug abuse	12.3%	12.0%	2.6%
Homeless person	1.8%	3.4%	1.2%
Adverse effects of medication	1.4%	7.2%	2.9%
Complexity of ART (not understanding dosage)	0.7%	2.9%	0.8%
Difficulty in personal organization for treatment	16.7%	11.1%	45.8%
Non-acceptance of HIV/negative beliefs - stigma and discrimination	19.6%	4.2%	2.6%
Mental health issues	1.1%	16.3%	2.4%
Dissatisfaction with professionals/services	1.1%	3.4%	0.6%
Couldn't access/didn't know how to access the network	1.1%	6.7%	2.1%
Travel	8.4%	1.0%	4.5%
Lack of time to withdraw the medication	4.1%	18.2%	4.5%
Moving to another city, state or country	1.8%	18.6%	1.9%
Others	10.5%	0.0%	0.0%

Table 2. Causes for discontinuing the treatment in Campo Grande, Curitiba and Florianópolis, Brazil - October 22 to September 23.

**Conclusions:** The study's results can help local managers improve services and enhance customer-centered care, thereby contributing to stronger treatment adherence.

## TUPEC280

Enhancing retention in ART care: the impact of flexible people first approaches

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**Background:** AIDS Healthcare Foundation - India implements the Centre of Excellence ART Clinics - The People's Clinic in Delhi and Mumbai. Client retention in Antiretroviral Therapy (ART) care remains a formidable challenge, necessitating a departure from conventional, one-size-fits-all methodologies.

This study, conducted in Delhi with 2200 clients and Mumbai with 1100 clients, delves into the efficacy of innovative and flexible approaches to address client needs. The research focuses on personalized strategies, aiming to re-define the landscape of ART care and improve long-term client retention.



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**Description:** The research advocates for tailored solutions by introducing multi-month dispensation of medicines, allowing clients to receive up to six months' supply at once. Leveraging modern conveniences, medications are dispatched via courier, Proxy medicine collection by friends or relatives offers an additional layer of flexibility. Walk-in services without prior appointments reduce barriers to access, catering to the diverse needs of the clientele.

For outstation clients, telephonic consultations and decentralized blood workups were done. This empowers clients to receive medical advice remotely and receive necessary medication refills via courier, minimizing burden of frequent travels.

Mental health aspects were addressed comprehensively, with a qualified Psychiatrist providing treatment for mental illnesses and substance use disorders. Collaboration with specialty doctors ensures seamless integration of services for clients availing multiple medical treatments.

**Lessons learned:** The research underscores the significance of flexibility in healthcare delivery. Multi-month dispensation, courier services, proxy collections, and telephonic consultations emerge as effective tools in this pursuit. In a span of 2 years from the end of 2021 to 2023, the retention rates in Delhi have improved from 87% to 99%, in Mumbai from 49% to 97%.

**Conclusions/Next steps:** The study concludes by emphasizing the pivotal role of extended clinic hours (9 am - 10 pm, Monday to Friday, and 12 pm to 10 pm on Saturdays) in accommodating the needs of working clients and marginalized communities.

The findings suggest that adopting flexible approaches in healthcare settings significantly improves client retention, offering a blueprint for the future design of ART care programs.

The research contributes valuable insights for global efforts in enhancing effectiveness of ART care programs, emphasizing the importance of adaptable, client-centric approaches.

## TUPEC281

### Adolescent mothers' engagement in HIV testing and prevention of vertical transmission services in the Eastern Cape Province, South Africa: insights from dyadic data linkage

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**Background:** Adolescent mothers have a higher risk of HIV acquisition, poorer access to HIV testing services and increased vertical transmission, compared to adult mothers. However, few studies have linked adolescents' self-report and clinical data to better understand engagement in HIV testing and subsequent retention in care.

We examine engagement in prevention of vertical transmission services and socio-economic predictors of HIV-test timing among adolescent mothers, through linkage with national laboratory test results in South Africa.

**Methods:** We analysed data from 1,044 adolescent mothers from the UPLIFT cohort and their first-born children in a peri-urban, high HIV prevalence setting in the Eastern Cape Province, South Africa, all of whom had their first child before age 20. HIV test results were retrieved from the National Health Laboratory Service database and linked to mother-child dyads.

Self-report data were collected (2017-2019) through researcher-administered questionnaires, covering pregnancy experiences, HIV services, healthcare engagement, and children's health. Chi-squared test explored associations between maternal socio-economic factors and HIV-test timing.

**Results:** 30% (313/1,044) of mothers were living with HIV. Nearly all (98%) attended at least one antenatal care appointment, and 89% the recommended 8 appointments. While all mothers had been tested for HIV, among those living with HIV only 29% reported first testing before their first pregnancy, 65% during the pregnancy, and 6% during or after delivery.

Younger mothers ( $\leq 16$ ) had lower rates of pre-pregnancy testing (18%vs33%, $p=0.002$ ), and higher rates of first testing at/after delivery (11%vs4%, $p=0.002$ ). Having an undisclosed HIV status was associated with only testing during/after delivery (21%vs5%, $p=0.002$ ).

Education, residence (urban/rural), grant receipt, and risky sex showed no association. Eighty percent of moth-

ers living with HIV and 57% of their children were linked to HIV-related laboratory records. Of those HIV-exposed, 15 (5%) children were living with HIV, 3-times the 2017 national vertical acquisition rate.

**Conclusions:** The prevention of vertical HIV transmission is critical to reaching the global goal of ending the HIV/AIDS epidemic by 2030.

To strengthen engagement in future care, young women need focused interventions for HIV testing and disclosure support, even before their first pregnancy. Linked dyadic data can provide a unique, robust evidence base for such programmatic refinement.

## TUPEC282

### Trend in time to antiretroviral therapy initiation after HIV diagnosis in Shandong province, China (2008-2021): a longitudinal cohort study

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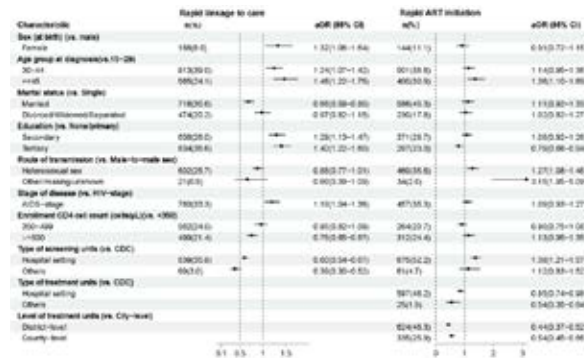
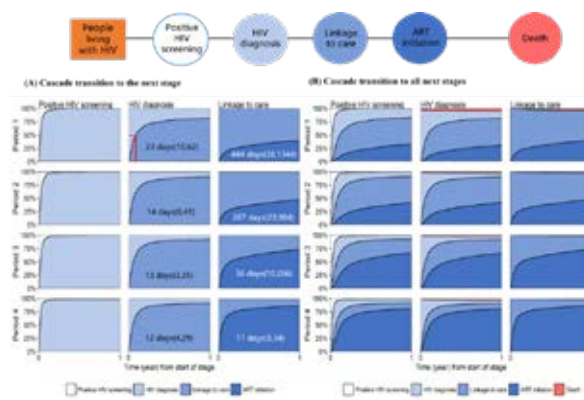
**Background:** Although clinical trials demonstrated that expanding antiretroviral therapy (ART) eligibility has broad clinical benefits, the improvement and barriers of prior updated guideline on HIV care cascade under real-world conditions is still unknown.

**Methods:** We conducted a longitudinal cohort study and included HIV-positive individuals diagnosed during 2008-2018 in Shandong Province, China. Participants were divided into four ART eligibility periods (CD4≤200, ≤350, ≤500, treat all). We estimated HIV cascade from positive HIV screening to ART initiation for each period and median time of stage transition.

Then we used logistic regression to explored factors associated with rapid linkage to care (from HIV diagnosis to linkage within 6 days) and rapid ART initiation (from linkage to ART initiation within 1 day) in treat all era.

**Results:** We included 16 025 individuals, among whom 15 052 were linked to care, 13 932 initiated ART. Over four ART guidelines periods, we observed prominent improvement in cascade transition from diagnosis to linkage (median time decreased from 23 days to 14, 13, 12), and in transition from linkage to ART initiation (median time decreased from 444 days to 287, 36, 11).

We found that female, older, individuals diagnosed at AIDS-stage and screened at CDC prone to linkage rapidly. Besides, those who are older, transmitted through non-MSM sex, screened at hospital were likely to start ART rapidly, while those who started ART in hospital and district/county level units were likely to delay ART.



**Conclusions:** The time to ART initiation reduced greatly, attention needs to be paid to the institutional level factors.

## TUPEC283

### History of antiretroviral therapy interruption prior to antenatal care is associated with delivery viremia and disengagement from care postpartum among women in Gugulethu, South Africa: a retrospective cohort

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**Background:** Disengagement from antiretroviral therapy (ART) during and after pregnancy is common. With the rapid scale-up of universal treatment there are increasing numbers of women conceiving on ART but little is known about ART history before pregnancy and associations with treatment outcomes.

**Methods:** We used existing data from a prospective cohort that enrolled women living with HIV (WLHIV) attending ANC in Gugulethu, South Africa (March 2021-April 2022) to describe ART history before ANC and associations with delivery viral load (VL) and disengagement from HIV care postpartum. Enrolment interviews collected self-reported ART history, grouping women into:

1. Initiating ART in pregnancy,
2. ART-experienced without any interruptions,
3. ART-experienced with ≥1 interruption.



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Delivery VL and postpartum engagement in care were abstracted from electronic medical records. Log-bino-mial models were used to assess associations between ART history and i) VL at delivery (>50 copies/ml) and ii) dis-engagement from HIV care at 12 weeks postpartum (≥30 days late for ART refill at 12 weeks postpartum).

**Results:** Among 321 women (median age 32.3 years, interquartile range [IQR] 28.1–35.9; 61.4% in their first pregnancy), 15.3% reported initiating ART in pregnancy, 52% reported being ART-experienced with no interruptions (median years on ART 6.1, IQR 3.3–10.1), and 32.7% reported being ART-experienced with ≥1 interruption (median years on ART 6.9, IQR 4.4–9.4; 94.3% reported one interruption). In adjusted models, ART-experienced women with ≥1 interruption were more likely to have VL >50 copies/mL at delivery (adjusted risk ratio [aRR] 2.39 95% CI 1.39–4.35) and to be disengaged from care at 12 weeks postpartum (aRR 1.96 95% CI 1.23–3.13) compared to ART-experienced women without interruption. ART-experienced women with ≥1 interruption were also more likely to have disengaged at 12 weeks compared to women newly starting ART in pregnancy (aRR 6.20 95% CI 2.05–18.77).

**Conclusions:** These findings highlight that ART history, and history of treatment interruption, is an important consideration for maternal ART outcomes in this critical period for vertical transmission. Further research is needed to explore mechanisms driving these associations and examine interventions to support sustained engagement in HIV care before, during and after pregnancy.

## TUPEC284

The Community Pop-up Clinic (CPC):  
HIV treatment in vulnerable population  
of people who use drugs (PWUD)

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**Background:** To address the HIV pandemic, a concerted effort is needed to include vulnerable inner-city residents, many of whom are actively using drugs, disengaged from care, and facing issues such as housing insecurity and active untreated addiction. We have evaluated a new model of HIV care using our community pop-up clinic (CPC) as a strategy to identify people living with HIV, to engage them in care and successfully engage and maintain them on antiretroviral therapy.

**Methods:** Weekly events are conducted at places of residence in Vancouver's inner city. Point-of-care testing for HCV and HIV are completed (with phlebotomy performed on site), along with ascertainment of prior HCV or HIV infection status.

All individuals in whom this is indicated are then offered access to antiretroviral therapy delivered within a multi-disciplinary program with adherence support.

**Results:** From 01/21 to 11/23, we conducted 125 CPCs (3.5 events/month) evaluating 2111 individuals, 68 (3.2%) of whom tested positive for HIV antibodies, all previously diagnosed with HIV infection and lost to follow up. Of the 68, 45 (66.2%) showed active HCV co-infection. Among clients living with HIV, we note median age 50 (25–66) years, 24 (35.3%) female, 11 (16.2%) indigenous, and 26 (38.3%) with unstable housing, 28 (41.2%) experiencing recent incarceration, and 26 (38.2%) were active drug users, 25 of whom had a significant opioid overdose in the previous 6 months. Of 68, 45 (66.2%) engaged in long-term care at our center and continued with antiretroviral therapy.

**Conclusions:** Although we have made significant progress in the control of the HIV pandemic in British Columbia and across Canada, many inner-city residents have disengaged from care and discontinued antiretroviral therapy. To control disease progression and transmission in this priority population, there is an urgent need to develop and evaluate interventions such as our CPC program to optimize our approach to the diagnosis and treatment of HIV acquisition in Canada.

## TUPEC285

Closing the final gap of elimination of  
vertical transmission of HIV through scale up  
of community interventions for early infant  
diagnosis (EID) in Botswana

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**Background:** Botswana is the first high HIV burden country globally to attain the World Health Organization (WHO) "Silver Tier" status certification for path to elimination of vertical transmission of HIV (EMTCT). Despite this, Botswana lags behind in testing coverage for Early Infant Diagnosis (EID). USAID, through Implementing Partners, supported the Ministry of Health to track and link mother-baby pairs who missed their appointments for early infant diagnosis and final outcomes through engagement of Community Health Workers (CHWs). We aim to demonstrate the success of community health worker tracking interventions.

**Description:** We conducted a retrospective review of routine programme data reported in PEPFAR's Data for Accountability, Transparency and Impact Monitoring system (DATIM) over a 30-month period from January 2021 to July 2023 in 17 USAID supported districts. We compared this to the national DHIS system data to establish the number of infants eligible for EID. We triangulated this with data from the national HIV-positive infant audit conducted for 2018 - 2023.

**Lessons learned:** Between January 2021 to July 2023, 1479, HIV exposed infants were referred for tracking and re-linking; of these, 34% (496 of 1479) missed the early infant diagnosis (EID) appointment at <12 months of age, and 66%



(983 of 1479) missed the final outcomes (FID) appointment. Community tracking resulted in 76% (1130 of 1479) being successfully reached. Of those reached, 65% (740 of 1130) were re-linked to care and 26% (299 of 1130) were found to have been already tested - representing 91% confirmation of outcomes. 0.5% (4 of 740) children tested HIV positive. The national HIV infected infant audit showed 16% (36 of 212) of mothers of positive infants identified only initiated treatment during the breastfeeding period; and subsequently 7% (13 of 182) of infected infants identified after 12-months of age.

**Conclusions/Next steps:** Data showed that community tracking interventions were successful in closing the EID coverage gap, which remains critical to mitigate for vertical transmissions, as national data showed a correlation between late incident maternal acquisitions and vertical transmissions. Sufficient scale of CHW involvement will ensure optimal EID coverage and enhanced program monitoring to move Botswana towards EMTCT.

## TUPEC286

Reaching HIV epidemic control by 2030 will require focused attention on the PMTCT cascade: a comparison of PEPFAR versus non-PEPFAR supported sites in Tanzania

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**Background:** The Tanzania HIV response is mainly funded by donors; however, decreasing donor funding poses a risk for sustaining gains and ending AIDS in children by 2030. Tanzania endorsed the global goal of eliminating mother-to-child transmission (MTCT) of HIV, but progress has fallen short with a current MTCT rate of 7% in 2022. We reviewed national MTCT data to describe current performance of prevention of MTCT (PMTCT) at sites supported by PEPFAR versus non-PEPFAR supported sites.

**Description:** A cross-sectional retrospective analysis was conducted on the PMTCT program for the year 2022, using the national DHIS2 database. Annual routine PMTCT data were abstracted from the monthly site-level DHIS2 reports and aggregated by PEPFAR and non-PEPFAR supported sites. The standard PMTCT cascade indicators were calculated using Excel, and numbers and proportions presented to compare the PMTCT program performance between supported and non-supported sites.

**Lessons learned:** In 2022, 7,501 health facilities offered PMTCT services, of which 61% (4,560/7,501) were non-PEPFAR supported sites. A total of 2,365,940 pregnant women (99%) attending antenatal care (ANC) were tested for HIV at their first ANC visit. Of those tested, 0.8% (18,646) were newly diagnosed HIV positive during the current pregnancy; 74% (13,766) of them were seen at PEPFAR-supported sites, compared to 26% (4,880) at non-PEPFAR sites. ART initiation was 108% at PEPFAR-supported sites vs 43% non-PEPFAR supported sites, and testing of HIV-exposed infants (HEI) in the first two months after birth was 75% at supported sites vs 28% at non-supported sites. Other notable differences are shown in the table.

PMTCT variables	PEPFAR N (%)	Non PEPFAR N (%)
Number and % of new ANC women tested for HIV	1,522,552 (99%)	843,388 (98%)
Number and % of new ANC women tested positive	13,766 (0.9%)	4,880 (0.6%)
Number and % of women known positive at ANC of all ANC positive	43,355 (76%)	7,058 (59%)
Number and % of new HIV positive women at ANC Initiated on ART	14,844 (108%)	2,108 (43%)
Number and % of all HIV positive women on ART (New pregnancy, known, and breastfeeding)	59,647 (99%)	9,508 (72%)
Number and % of HEIs tested with dried blood spot testing (DBS) <2mo	42,582 (75%)	3,402 (28%)
Number and % of HEIs tested with DBS <12mo	50,675 (85%)	4,320 (45%)
Number and % of HEI tested positive through DBS	1,501 (3.0%)	196 (4.5%)

Table: National PMTCT cascade data disaggregated by PEPFAR vs non-PEPFAR supported sites

**Conclusions/Next steps:** The PMTCT performance is low in non-PEPFAR supported facilities; however, these sites serve 26% of newly identified pregnant women each year. This calls for adaptation of the current program and resource prioritization to address the gaps and support Tanzania on the path to elimination of MTCT



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## TUPEC287

## Predictors of disengagement during the early treatment period in South Africa

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**Background:** Disengagement from HIV care in the early treatment period is a critical obstacle to achieving UNAIDS's second 95 target. Underlying drivers of disengagement from care in the early treatment period are not clear. While South Africa's Service Delivery Guideline on Fast Track Initiation and Counseling (FTIC) define normative procedures, the effect of guideline implementation and underlying drivers of disengagement remain unclear.

**Methods:** From 8/2022-6/2023, PREFER surveyed adult ART clients initiating, re-initiating, or on ART for  $\geq 1$  post-initiation visit but  $\leq 6$  months at 18 facilities across three provinces in South Africa. We collected data on demographics, HIV testing, treatment history, and service delivery preferences. Participants were followed using routinely-collected EMR data up to 7 months after initiation. We defined disengagement from care at 6 months as no clinic visit 5-7 months after ART initiation.

**Results:** 301 participants (median age=32, 80% female, median CD4 count=316 cells/mm<sup>3</sup>) had sufficient follow-up time. At study enrollment, 19% self-reported newly initiating ART, 7% re-initiated after a period of disengagement, and 74% were on ART for ≥1 post-initiation visit. By 6-months, 58 (19%) had disengaged from HIV care. Figure 1 summarizes drivers.

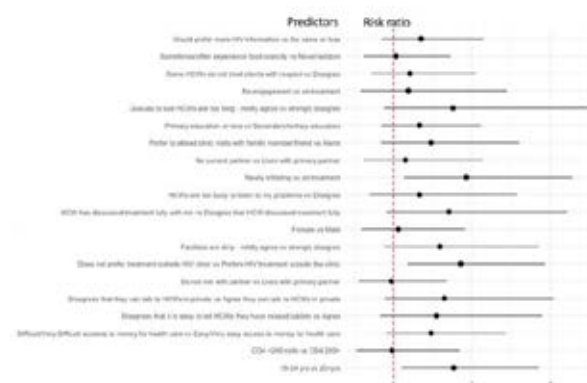


Figure 1. Potential drivers of disengagement from HIV care during the first 6 months on treatment.

Those newly initiating ART at study enrollment were nearly twice as likely to have disengaged by 6 months (crude relative risk (cRR)=1.93; 95% CI:1.13-3.29) as those who had remained in care for  $\geq 1$  visit. Disengagement was also

more likely among younger (18–24 years) participants, those saying that queues were too long, those preferring care within the facility rather than in the community, and those who felt they needed more treatment information. Disengagement did not differ by gender, relationship status, or CD4 count.

**Conclusions:** Among adults initiating or re-initiating ART in South Africa, risk of disengagement is highest immediately after initiation. Strengthening implementation of SA's Service Delivery Guidelines may improve retention during the early treatment period.

## TUPEC288

Early initiation of peer support is acceptable to people newly diagnosed with HIV through opt-out testing in the emergency department

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**Background:** Peer support interventions have been shown to increase self-management, reduce stigma and increase adherence to antiretroviral therapy (ART). We reviewed the offer and acceptability of peer support to people who were newly diagnosed with HIV through opt-out testing in the emergency department (ED).

**Description:** Following the availability of National Health Service England funding for HIV testing in EDs of high prevalence areas in April 2022, opt out testing was expanded in the EDs of Epsom & St Helier Hospitals (ESTH). People aged over 16 having blood tests in both EDs were tested for HIV.

At the start of the project there was no in-house peer support and referrals were made to voluntary sector organisations. In-house peer support became available in July 2023.

Between April 2022 and December 2023, 17 people were newly diagnosed with HIV. The median (IQR) age of diagnosis was 39 (31-52) years. One person died during admission and 1 was transferred to another hospital. Of the 15 remaining, 10 were offered peer support and 9 accepted the offer (90%). Of these, seven were male and two were female. Three were white British, three were from other white backgrounds and two of mixed ethnicity. Other ethnic backgrounds represented included Black African and Asian. Of the 17 newly diagnosed, 16 remain in care. 100% of those who accepted the offer of peer support remain in care. One person who did not receive an early offer of peer support has not engaged with care.

**Lessons learned:** The early offer of peer support was well received by people of various ages, gender identities, sexuality and ethnic backgrounds who were newly diagnosed with HIV. High rates of linkage and retention in care were observed; however one person who did not receive an early offer of peer support did not remain in care.

**Conclusions/Next steps:** Opt out testing in the ED has achieved high rates of new diagnoses, however retention in care is important. We found that the early offer of peer support was acceptable and may be an important tool in improving retention. With the availability of an in-house peer mentor we now offer early peer support.

## TUPEC289

Patterns of retention in care during clients' first 12 months after HIV treatment initiation in Zambia: a retrospective cohort analysis using routinely collected data

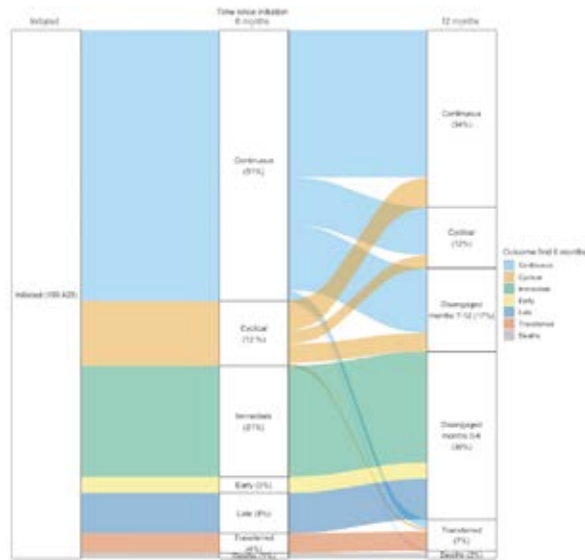
M. Benade<sup>1,2,3</sup>, M. Maskew<sup>2</sup>, P. Chilembo<sup>4</sup>, M. Mwanza<sup>5</sup>, S. Rosen<sup>1,2</sup>

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**Background:** The first year after HIV treatment initiation or re-initiation remains the time of the highest risk of treatment interruption, yet little is known about the timing or patterns of early interruptions. We used routinely collected medical record data to define and describe patterns of engagement in Zambia during clients' first year after initiation.

**Methods:** Using leDEA's electronic medical record data from the 566 Zambian facilities supported by CIDRZ, we described patterns of engagement among those presenting for initiation of ART in 2018 to 2021. We merged clinical visits and other interactions to create service events, categorized events based on whether they were attended on time or  $\leq 28$  days or late  $> 28$  days and used these visit categories to define engagement patterns for months 0-6 and months 7-12 after initiation. Clients who remained engaged without treatment interruption were defined as continuous; those who attended  $\geq 1$  visit late  $> 28$  days but returned to care were labeled cyclical. Disengagement was defined as missing a scheduled visit by  $> 28$  days and without evidence of return.

**Results:** 159,429 individual client records were included (61% female, median age 33). In months 0-6, 51% clients were continuously engaged, 12% cyclically engaged, and 33% disengaged by 6 months (Figure 1). During months 7-12, most clients who had been continuously engaged in months 0-6 (54%) remained so, while 18% moved to cyclical engagement. Among those in a cyclical pattern in months 0-6, nearly half (47%) moved to being continuously engaged by month 12. Only 34% of the study population were engaged continuously for the full 12 months period.



**Conclusions:** Fewer than 60% of clients initiating ART between 2018 and 2021 at Zambian facilities remained continuously engaged at month 6 and  $< 40\%$  remained continuously engaged at month 12. Cyclical engagement is common and may call for a new model of service delivery.

## TUPEC290

Telehealth disparities in HIV care during the COVID-19 pandemic at a large academic medical center: study findings from North Carolina

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**Background:** Telehealth was used to maintain HIV care continuity during the COVID-19 pandemic in the United States. We examined variation in the utilization of telehealth HIV visits during the COVID-19 pandemic among people living with HIV (PLWH) by sociodemographic characteristics.

**Methods:** Aggregated electronic health record (EHR) data from the Duke University Infectious Disease clinic in NC were analyzed graphically to assess variation in telehealth use by (1) race and ethnicity, (2) age, (3) sex, and (4) residence. Monthly rates of HIV care engagement among



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PWH (henceforth: monthly visit rates) were calculated as the proportion of PWH with at least one in-person and/or telehealth visit that month.

**Results:** EHR data from 2,623 PWH receiving care between January 2019 and March 2023 were extracted. Telehealth use increased sharply in the early phase of the COVID-19 pandemic but reverted to predominantly in-person care within 1 year (<3% of PWH receiving telehealth per month). The proportion of PWH who received at least one telehealth visit was higher among those identifying as non-Hispanic White, ≥50 years old, female, and not residing in the county in which the HIV clinic is located, as compared to people of color, 18-49-year-olds, males, and persons living in the clinic county (Figure 1).

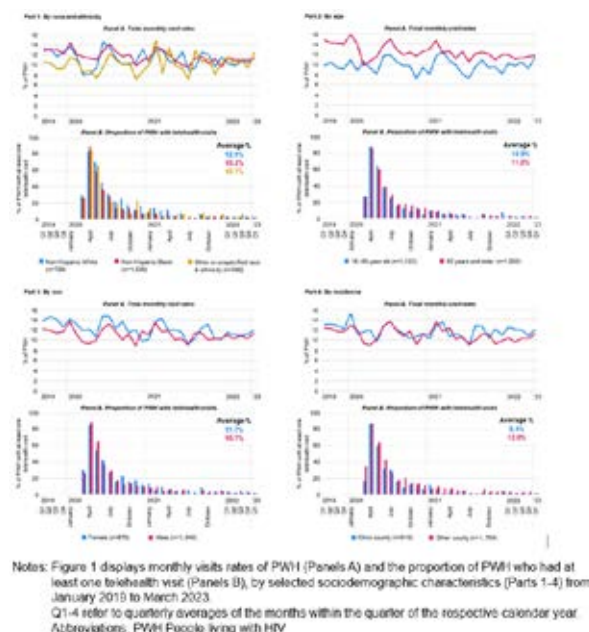


Figure 1. Engagement in HIV care relative to the COVID-19 pandemic, by sociodemographic characteristics.

**Conclusions:** While telehealth bridged the initial COVID-19 pandemic phase with reduced in-person visit availability, it was unequally utilized. People of color utilized telehealth less than non-Hispanic White PWH indicating telehealth disparities in HIV care. To guide the optimal integration of telehealth in HIV care and promote equitable HIV care, strategies designed to promote access for people of color are needed.

## TUPEC291

### Father engagement and caregiver relationship dynamics impact early child neurodevelopment

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**Background:** The role of caregiver relationship dynamics and father engagement factors in child neurodevelopment remain poorly understood. We assessed differences in caregiver factors between children who are HIV-exposed uninfected (CHEU) and children who are HIV-unexposed uninfected (CHUU) and determined associations between caregiver factors and child neurodevelopment among two-year-old children.

**Methods:** CHEU and CHUU and their mothers were enrolled during 6-week routine postnatal care visits across six sites in Kenya between March-October 2021. Univariable descriptive analyses compared caregiver relationship and father engagement factors between CHEU and CHUU at two years. Neurodevelopment was assessed using the Malawi Developmental Assessment Tool that examines social, language, fine motor, and gross motor skills. Multivariable linear mixed effects models explored associations and clustered by site.

**Results:** Compared to mothers of CHUU (N=733), mothers of CHEU (N=503) were significantly more likely to be older, have ≤7 years of education, report moderate to severe household food insecurity, and less likely to still be in a relationship with the child's biological father by 2 years postpartum (72% among CHEU and 80% among CHUU). Among mothers still together with the child's biological father, mothers of CHEU were more likely to be in polygamous marriages, have significantly older partners, report lower satisfaction and stability in their relationships, and have less financially supportive partners. Among all children with neurodevelopment assessments at Year 2, regardless of maternal relationship status, CHEU (N=335) exhibited lower (worse) gross motor scores compared to CHUU (N=456) (adjusted coeff: -0.52, 95% CI: -0.95, -0.08), but comparable social, language and fine motor, after adjusting for maternal age, marital status and education, and child age and sex. Among all children adjusting for CHEU status, lower social, language and fine

motor scores (but not gross motor scores) were associated with male child sex, shorter duration of parental relationship, poorer maternal relationship satisfaction, lower frequency of father-child interactions, and father living separately (all  $p < 0.01$ ).

**Conclusions:** Gross motor scores were lower among CHEU than CHUU, and relationship satisfaction and father engagement were associated with multiple neuro-developmental domains among both CHEU and CHUU. Caregiver-based interventions may be useful to support families impacted by HIV and relationship instability.

## TUPEC292

Factors associated with rapid antiretroviral therapy (ART) initiation following HIV diagnosis in British Columbia

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**Background:** Early initiation of antiretroviral therapy (ART) following HIV diagnosis is standard of care. Treatment as Prevention strategies in British Columbia (BC) have improved linkage to care and time to overall ART initiation. Rapid (within seven days or less) starts have been shown to be feasible in many high-income settings. We evaluated the proportion of individuals undergoing rapid ART initiation in BC.

**Methods:** We evaluated time to ART initiation from 01/2008 - 03/2020 in newly HIV diagnosed adults (>19 years) captured in a retrospective cohort (STOP HIV/AIDS), linking the provincial ART Drug Treatment Program and different administrative datasets. Rapid ART starts were analysed over three periods from 01/2008 - 30/2012, 04/2012 - 03/2016 and 04/2016 - 03/2020.

Factors associated with rapid ART start were analysed using multivariable logistic regression adjusted for age, gender, geographic setting, ethnicity, and HIV risk status (men who have sex with men, heterosexual transmission or history of injection drug use [PWID]).

**Results:** Overall, 1529 individuals initiated ART following confirmed HIV diagnosis. The median time to ART start fell from 451 days (25th-75th percentiles 78 - 1222) in the first time period to 28 days (25th-75th percentiles 14 - 50) in the most recent time period ( $p < 0.001$ ). Rapid initiations increased from 0% in the first time period to 14.3% in period 3 ( $p < 0.001$ ).

In multivariable analysis, factors associated with rapid ART were younger age (adjusted odds ratio (aOR) 1.03 per year, 95% CI 1.01 - 10.4), MSM risk (aOR 2.86, 95% CI 1.29 - 6.35) and place of residence in Vancouver (aOR 2.64, 95% CI 1.76 - 3.97).

**Conclusions:** Rapid starts make up a minority of new starts but have increased in frequency over time.

Younger individuals, those with MSM risk and those living in a large urban city were more likely to start rapid therapy.

Early ART initiation needs to be encouraged, and supported in key populations and varied geographic settings.

## Monitoring the spread, impact and prevention of new or resurgent pathogens

## TUPEC293

Self-reporting adverse events after MVA-BN immunization against the Mpox epidemic in Taiwan, 2023

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**Background:** The emergence of Mpox, an orthopox virus responsible for over 87,000 global cases in 2022, persisted into 2023, spreading across the Western Pacific regions, including Taiwan. WHO recommends MVA-BN vaccination for at-risk populations to control the epidemic. However, the MVA-BN vaccine has not been approved in Taiwan, and it was administered intradermally (ID) due to vaccine shortages.

This study aimed to investigate the vaccine safety through self-reporting by vaccinees.

**Methods:** Participants were enrolled through QR code snapshots on vaccination day (D0) and completed voluntary, anonymous online questionnaires on day 7 (D7). Data included birth year, gender, vaccination dates, administration routes (subcutaneous, SC; or intradermal, ID), and percentages reporting local or systematic adverse events (AEs), AEs leading to medical visits, or missed daily activities post-vaccination. Chi-square tests and logistic regression models analyzed AE differences and associated risk factors.

**Results:** From March 25 to Oct 3, 2023, 6110 vaccinees completed D0 surveys, with 2180 (35.7%) completing D7 questionnaires. After data cleaning, 2141 respondents were analyzed (92.9% men, median age 40, IQR: 31-42 years). Local AEs within D7 of the 1st dose with SC and ID, and 2nd dose with SC and ID were 48.9%, 23.6%, 52.0%, and 29.6%, respectively. Systematic events within D7 were 4.3%, 2.9%, 3.2%, and 3.5%, respectively.

Among those 2063 participants with complete information for D0 and D7 survey, analysis of associated factors showed that a history of allergy increased AE risk (aOR=1.57, 95% CI: 1.14-2.15), while the 2nd dose, regardless of SC or ID,



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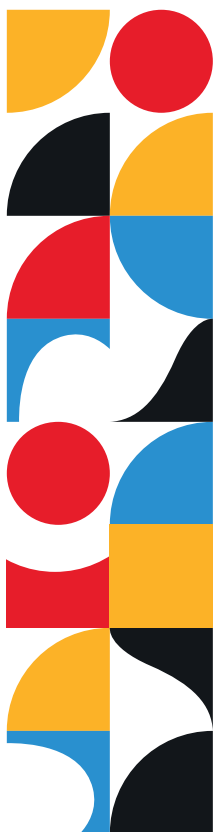
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was less likely to develop AEs (SC: aOR=0.36, 95% CI: 0.26-0.48; ID: aOR=0.49, 95% CI: 0.38-0.64) compared to the 1st dose via SC administration (Table 1).

	Adverse events				univariate	multivariate
	Yes (n, %)		no (n, %)		OR (95% CI)	adjusted OR (95% CI)
<b>Gender</b>						
M*	768	40.0%	1150	60.0%	0.45(0.32-0.63)	0.56(0.39-0.8)
F	87	60.0%	58	40.0%	Ref	Ref
<b>Age groups (years)</b>						
0-29	172	41.3%	244	58.7%	Ref	Ref
30-39	383	42.3%	523	57.7%	1.04(0.82-1.31)	1.09(0.85-1.39)
40-49	237	42.2%	325	57.8%	1.03(0.8-1.34)	1.06(0.81-1.39)
50-59	60	36.6%	104	63.4%	0.82(0.56-1.19)	0.8(0.55-1.18)
60-69	3	20.0%	12	80.0%	0.35(0.1-1.28)	0.33(0.09-1.23)
<b>Administration routes or doses</b>						
SC, Dose 1	230	49.0%	239	51.0%	Ref	Ref
SC, Dose 2	98	25.1%	293	74.9%	0.35(0.26-0.47)	0.36(0.26-0.48)
ID, Dose 1	360	53.2%	317	46.8%	1.18(0.93-1.49)	1.19(0.94-1.51)
ID, Dose 2	167	31.7%	359	68.3%	0.48(0.37-0.63)	0.49(0.38-0.64)
<b>History of allergy</b>						
yes	107	53.2%	94	46.8%	1.7(1.27-2.27)	1.57(1.14-2.15)
no	748	40.2%	1114	59.8%	Ref	Ref
<b>History of medical visit for allergic events</b>						
yes	28	60.9%	18	39.1%	2.24(1.23-4.07)	1.84(0.96-3.52)
no	827	41.0%	1190	59.0%	Ref	Ref

Abbreviation: SC: subcutaneous; ID: intradermal; M: Male; F: Female

\*Including one individual without information of gender

Table 1. Associated factors with having local or systemic adverse events on day 7 (or less) after MVA-BN immunization among those voluntary self-reporting participants (n=2063).

**Conclusions:** MVA-BN immunization demonstrated safety in this study. Individuals receiving the second dose, regardless of administration route, experienced significantly fewer local or systematic AEs within or on D7 after immunization.

## TUPEC294

Time to COVID-19 clinical deterioration and factors associated with COVID-19 severe disease among patients living with HIV in KwaZulu Natal, South Africa: a retrospective cohort analysis of COVID-19 surveillance data

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**Background:** We sought to determine whether time to COVID-19 clinical deterioration is shortened by HIV infection and whether factors that influence SARS-CoV-2 infected patients' progress to severe disease and mortality

risk differ between patients living with HIV and those who are HIV-negative. Some socio-demographic characteristics, behavioral factors and co-morbidities may likely affect time-to-disease severity amongst COVID-19 patients living with HIV than those who are HIV-negative.

**Methods:** A total of 5399 COVID-19 patients aged 18+ years enrolled in the daily COVID-19 database one of the highly burdened districts in KwaZulu Natal Province of South Africa and the COVID-19 hospital admission database surveillance system were retrospectively followed between 8 March 2020 and 25 April 2022. Analysis was performed via STATA version 17. A logistic regression model was fitted to assess whether HIV infection had any influence on COVID-19 severity. Kaplan-Meier survival curves were used to estimate time-to-event among those who developed the outcome of interest (COVID-19 severity) and the log-rank test to test whether there were statistically significant differences in time to COVID-19 severity. Lastly, a parametric proportional hazard model with a Weibull distribution was used to test how age, gender, and long-term health conditions affected the time to COVID-19 disease severity in the HIV-positive and HIV-negative groups after a COVID-19 diagnosis.

**Results:** Of the 5399 COVID-19 patients, 4209 (78.0%) were HIV-negative, and 1190 (22.0%) were living with HIV. In the adjusted model, although COVID-19 patients living with HIV were 20% more likely to experience COVID-19 disease severity, the association was not significant (Adjusted Hazards Ratio (AHR):1.2;95%CI: 0.9-1.5). Further, older age, being male, having hypertension, current active TB, and chronic kidney disease were associated with COVID-19 severity. Men experienced events at a 10% (AHR:1.1;95%-CI:1.0-1.2) higher rate than women. Hypertension, as well as previous and current active TB, were significantly associated with 50% (AHR:1.5;95%CI:1.2-1.9), 80% (AHR:1.8;95%-CI:1.4-2.5) and 60% (AHR:1.6;95%CI:1.2-2.2) increased risk of COVID-19 disease severity.

**Conclusions:** Notably co-morbidities, older age, and being male affected on time to disease severity amongst COVID-19 patients living with HIV compared to those who are HIV negative. This necessitates integrated care to prevent COVID-19 adverse clinical outcomes.

## TUPEC295

Mpox virus seroprevalence among men who have sex with men, transgender, non-binary, and gender diverse individuals in NYC in 2023

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**Background:** New York City (NYC) was the US epicenter of the 2022 global mpox outbreak among gay, bisexual, and other men who have sex with men (MSM). However, due to



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stigma and limited testing the burden of mpox remains unclear. We assessed the prevalence of orthopoxvirus antibodies (Ab) by history of mpox diagnosis and vaccination for mpox and smallpox among a cohort in NYC.

**Methods:** We conducted a cross-sectional survey (June-December 2023) among a purposive sample of MSM, transgender, non-binary, and gender diverse individuals who have sex with men, recruited primarily from outdoor venues in neighborhoods with large LGBTQ+ populations. Descriptive analyses were conducted using data from questionnaires and ELISA results for anti-orthopoxvirus IgG Ab.

**Results:** Results for 231 participants of 570 persons screened were available for preliminary analysis. Median age was 36 years, 73% male, 55% gay, 36% White, 25% Black, 23% Latinx, 9% multi-racial, and 7% Asian. Prevalence of self-reported HIV and prior mpox diagnosis was 19% (n=43) and 5% (n=11), respectively; among the latter, 8/11 reported HIV diagnosis and 7/11 reported STI diagnosis in the past year. Prior smallpox vaccination and 1- and 2-dose mpox vaccination was reported by 43%, 15% and 40%, respectively, with 54% reporting last mpox vaccination 6-12 months previously. Overall orthopoxvirus seroprevalence was 61%, with highest seroprevalence among those reporting prior mpox diagnosis (100%), followed by those reporting mpox and smallpox vaccinations (85%), two mpox vaccine doses (83%), prior mpox diagnosis and smallpox vaccination or mpox vaccination (67%), one mpox vaccine dose (47%), or prior smallpox vaccination only (42%). Among those reporting no prior mpox diagnosis or smallpox or mpox vaccinations, seroprevalence was 31%, or 18% after excluding individuals >45 years old who may have received childhood smallpox vaccination.

**Conclusions:** In this NYC community sample, orthopoxvirus seroprevalence was high, even among those with no prior mpox diagnosis or mpox/smallpox vaccination, suggesting that undiagnosed mpox infections may be more common than previously appreciated. Two-dose mpox vaccination was associated with high short-term seroprevalence. Evidence also suggests long-lasting seroprevalence among those reporting smallpox (likely during childhood) vaccinations. Distinguishing Ab from infection versus vaccination is needed to better understand mpox epidemiology.

## Monitoring and population-level interventions for non-HIV outcomes

### TUPEC296

#### Role of familial stigma in depression among cisgender GBMSM

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**Background:** Cisgender gay, bisexual, and other men who have sex with men (GBMSM) face a disproportionate burden of mental health challenges, including depression. Sexual activity stigma and lack of family support can exacerbate poor mental health, which may be complicated by HIV-related stigma. However, the role of lifetime familial stigma in current depression outcomes has not been extensively studied. In response, we explored relationships between sexual activity stigma from family and current depressive symptoms among GBMSM.

**Methods:** Data were collected using the 2021 American Men's Internet Survey, a web-based survey of US cisgender GBMSM. The survey included modules on HIV, demographics, substance use, sexual history, and familial stigma (exclusion and/or discriminatory remarks). Depressive symptoms within the past two weeks were assessed using the Patient Health Questionnaire-9 (PHQ-9), with a score of  $\geq 10$  indicating moderate to severe depression. Modified Poisson regression with robust variance was employed to examine associations between familial stigma and current moderate to severe depression symptoms while adjusting for outness, sexual orientation, age, income, and race/ethnicity.

	Moderate-Severe Depression row % (n)	chi <sup>2</sup> p value
Overall (n=7754)	21.1% (1636)	
Familial Stigma		<0.001
Lifetime or recent (n=3637)	28.1% (1021)	
Recent only (n=1447)	34.9% (506)	
Never (n=3518)	13.6% (479)	
HIV Status		0.058
Living with HIV (n=1040)	22.9% (238)	
Not living with HIV (n=5817)	20.4% (1189)	
Life Stage		<0.001
15-19 (n=134)	38.1% (51)	
20-30 (n=1412)	30.0% (424)	
31-64 (n=5544)	19.6% (1089)	
65+ (n=664)	10.8% (72)	
Race/ethnicity		0.002
White (n=5096)	20.6% (1048)	
Hispanic (n=938)	19.3% (181)	
Black (n=942)	23.7% (223)	
Asian (n=284)	18.3% (52)	
Outness		0.007
Out to someone (n=7282)	21.5% (1562)	
Not out to anyone (n=416)	15.9% (66)	

Figure. Prevalence of current depression by potential factors in cisgender GBMSM in the US.

**Results:** Of the 9061 GBMSM who completed the survey, we retained 7754 participants who completed the PHQ-9. Among the respondents, prevalence of lifetime sexual activity stigma from family was 46.9% (n=3637) and recent





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moderate-severe depression was 21.1% (n=1636). Several factors were associated ( $p<0.01$ ) with depression including age, race/ethnicity, and experiences of stigma. In adjusted models, lifetime familial stigma was associated with a 75% greater prevalence of depression (aPR: 1.76; 95% CI: 1.60, 1.95).

**Conclusions:** The relationship between stigma and mental health suggests that addressing stigma should be part of an effective mental health response. Specifically, in addition to addressing familial stigma, there is a clear need to address the disproportionate burden of depression among cisgender GBMSM and develop effective intervention strategies for depression and other mental health outcomes.

## TUPEC297

Depression among people with tuberculosis and tuberculosis/HIV in Ukraine: a cross-sectional study

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**Background:** TB/HIV coinfection accounted for 22% of TB cases in 2019, and TB remains the leading cause of death among people living with HIV (PLWH) in Ukraine. Depressive disorders are associated with poor treatment outcomes, poor physical health and quality of life among people living with TB and TB/HIV. Data on depression and associated factors among this population is limited in Ukraine.

The present study aimed to examine the prevalence of depression risk and its correlates and describe willingness to be in depression treatment among people living with TB and TB/HIV in Ukraine.

**Methods:** This cross-sectional analysis included adult healthcare clients who initiated TB treatment within 30 days (n=100 with TB; n=109 with TB/HIV) in two tertiary hospitals in Kyiv and Odesa. We conducted a survey from February 2021 to October 2022 and reviewed clients' health records.

We used the Center for Epidemiological Studies-Depression Scale (CES-D), with a cut-off score of  $\geq 16$  points to indicate risk for clinical depression. TB stigma was measured with Van Rie TB stigma scale. Factors associated with risk for clinical depression were identified using logistic regression.

**Results:** The mean age of participants was 43 (SD = 11) years and 66% identified as male. The prevalence of risk for clinical depression was 28%. Among those with risk for depression, 66% were willing to seek either therapeutic or medical help for it. HIV coinfection (2.95, 95% CI: 1.46, 6.20), illicit drug use in a past 30 days (3.57, 95% CI: 1.18–11.60), TB stigma (moderate stigma - 7.40, 95% CI: 2.22, 34.1; high stigma - 15.5, 95% CI: 4.52, 73.2), and unemployment status (2.25, 95% CI: 1.12, 4.60) were significantly associated with risk for depression among people living with TB and TB/HIV.

**Conclusions:** Findings support integration of a clinical depression screening tool into routine clinical care of people living with TB and HIV, and highlight the importance of linking clinical care for TB/HIV with mental health services. HIV coinfection, illicit drug use in a past 30 days, TB stigma, unemployment status were associated with risk for depression, highlighting the need for comprehensive services for this healthcare client population.

## TUPEC298

Exclusive breastfeeding and associated factors for mothers living with and without HIV in Botswana

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**Background:** Exclusive breastfeeding (EBF) through 6 months is associated with lower morbidity and mortality for infants born to mothers living with HIV (MLHIV) on antiretroviral therapy. Botswana's national guidelines for MLHIV adopted EBF in 2016, after global recommendations in 2013. Since then, no studies have longitudinally estimated EBF in Botswana. We evaluated infant feeding practices through 6 months for mothers living with and without HIV in Botswana.


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**Methods:** The FLOURISH study prospectively enrolls Botswana citizens with singleton pregnancies, age  $\geq 18$  years, and breastfeeding intent. From July 2022–December 2023, participants answered a questionnaire at 6 months post-partum on factors influencing infant feeding choices. Participants reported feeding practices quarterly, enabling 6-month EBF quantification. Factors associated with EBF were evaluated overall and for MLHIV only using multivariable logistic regressions.

**Results:** Of 198 participants, 47.5% were living with HIV. Median age was 28 years (IQR 24–33). Participants were 65.2% multiparous, 22.2% single, and 40.4% unemployed. Overall 6-month EBF prevalence was 29.8%, without significant difference by HIV status (30.8% HIV-seronegative and 28.7% MLHIV).

Median duration of any breastfeeding was 6.1 months (IQR 2.9–9.5). 27.3% received ante/peripartum counselling on feeding methods. 19.2% were influenced by returning to work/school. Among MLHIV, 85.9% correctly understood EBF guidelines, and 8.5% were advised against breastfeeding due to viral load.

Overall, mothers were less likely to EBF if influenced by returning to work/school (aOR 0.14 [95%CI: 0.03–0.45],  $p < 0.01$ ) or single (aOR 0.41 [95%CI: 0.20–0.83],  $p = 0.01$ ), and more likely if multiparous (aOR 3.65 [95%CI: 1.68–8.48],  $p < 0.01$ ). MLHIV were more likely to EBF if influenced by the infant's father (aOR 9.71 [95%CI: 2.11–58.03],  $p < 0.01$ ) and less likely if single (aOR 0.20 [95%CI: 0.06–0.60],  $p < 0.01$ ).

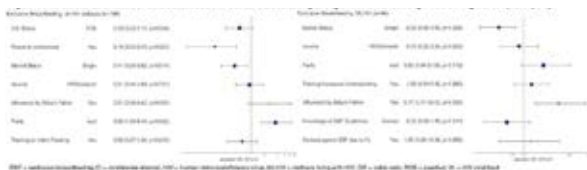


Figure 1. Final multivariable models of factors associated with exclusive breastfeeding among all mothers and among mothers living with HIV (MLHIV) only.

**Conclusions:** Sustained EBF in Botswana remains low irrespective of maternal HIV status. Structural interventions targeting breastfeeding feasibility at work/school, engagement of infants' fathers, and support for single mothers may increase EBF.

## TUPEC299

HCV incidence among MSM using HIV PrEP and MSM with HIV in a New York City Health Care System over 2 decades

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**Background:** Despite HCV elimination efforts, transmission among MSM with HIV remains high. MSM on PrEP have emerged as a risk group, expanding those at risk for

sexual acquisition of HCV. New York City (NYC) has been an epicenter of this HCV epidemic, but there are no data quantifying the extent of this epidemic.

**Methods:** We performed a retrospective analysis of the electronic health records in the Mount Sinai Health System for incident HCV among MSM with HIV and MSM on PrEP from 2000–2022. Incident HCV was defined as a positive HCV Ab test after a negative test. Incidence rates were calculated using the time between the initial negative Ab test and either a positive Ab test or the last negative Ab test. Kaplan-Meier (KM) analysis was used to compare cumulative probability of incident HCV infection.

**Results:** We identified 10,862 MSM who had a negative Ab test and at least one follow-up Ab test  $>90$  days later between June 15, 2012 through December 31, 2022, of whom 8,273 were MSM with HIV and 1,890 were MSM on PrEP. Among MSM with HIV, there were 94 incident HCV infections over 38,889 (mean 4.7) years of follow up. Among MSM on PrEP there were 8 incident HCV infections over 5,208 (mean 2.8) years of follow up.

There was no difference between the HCV incidence rates for these groups [0.24/100 PY (95% CI 0.20–0.30)/100 PY; 0.15/100 PY (95% CI 0.07–0.30)/100 PY, respectively,  $p = 0.21$ ]. The HCV incidence rate for MSM with HIV over the entire study period (2000–2022) was 0.26/100 PY (95% CI 0.06–0.22)/100 PY.

**Conclusions:** The incidence rate of HCV infection among MSM on PrEP in NYC is equivalent to that of MSM with HIV over the last 20 years. CDC PrEP guidelines should be updated to reflect the need for active HCV surveillance as well as targeted education about the risk of HCV.

## TUPEC300

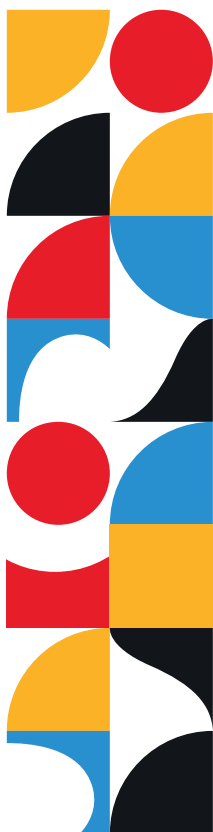
Impacts of COVID-19 on supervised consumption service utilization in Canada using interrupted time series analysis

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**Background:** Drug poisoning morbidity and mortality increased markedly in Canada during the COVID-19 pandemic. However, it is unknown whether reduced supervised consumption service (SCS) utilization contributed to these trends. We aimed to determine if the onset of COVID-19 was associated with changes in the number of total visits to SCS in Canada, number of unique visitors, and the frequency of drug poisoning events occurring in SCS.

**Methods:** We analyzed administrative data from 28 SCSs across British Columbia, Alberta, Saskatchewan, and Ontario using interrupted time series techniques to examine changes following the onset of the COVID-19 pandemic. Multi-level segmented Poisson analyses were employed





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to account for variation within SCSs. Outcomes included the total number of visits, number of unique visitors, total number of overdose events, and number of overdose events requiring medical intervention between March, 2019 and February, 2021.

**Results:** Following the onset of COVID-19, we observed immediate increases in both poisonings (level  $\Delta$ : 12.00; 95% CI -18.71, 13.70) and poisonings requiring naloxone (level: 23.39, 95% CI 17.44, 29.34). These trends persisted throughout the study period, with marked increases in overdoses (slope: 3.76; 95% CI 2.65, 4.87) and overdoses requiring naloxone and oxygen, respectively [slope: 5.10 (95% CI 3.33, 6.87); slope: 6.34 (95% CI 5.67, 7.61)].

We also observed immediate decreases in average unique visitors per month (level: -34.55; 95% CI -35.57, -33.53), which also persisted throughout the study period (slope: -4.77, 95% CI -5.07, -4.47).

**Conclusions:** Increases in poisonings and decreases in unique visitors indicate reduced access to SCS in Canada during COVID-19, when poisoning risk was elevated. Efforts are needed to support to promote and protect access to SCS in future emergencies.

## Methodology to support epidemiological studies

### TUPEC301

#### Longitudinal HIV care engagement and viral suppression trajectories among persons with HIV diagnosed during 2017–2019 – United States

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**Background:** Consistent HIV care engagement with viral suppression is associated with optimal health outcomes and decreased community transmission. Monitoring HIV care and viral suppression outcomes is important to assess progress towards the Ending HIV Epidemic in the U.S. initiative goals and inform resource allocation and program planning. These outcomes are often evaluated cross-sectionally, and long-term patterns are not well understood.

**Methods:** Using data from the CDC's National HIV Surveillance System from 41 jurisdictions with complete laboratory reporting, we conducted group-based trajectory models (SAS PROC TRAJ) to identify longitudinal (4-year) patterns of care engagement and viral suppression among 98,755 persons with HIV diagnosed during 2017–2019. HIV care and viral suppression were defined at 6-month intervals after diagnosis using CD4 and/or viral load markers as proxies.

**Results:** We identified two 4-class model trajectories for care (58.1% consistently high, 22.6% constant decline, 6.0% progressive increase, 13.3% persistently low) and viral suppression (42.8% consistently high, 24.5% constant decline, 10.0% progressive increase, 22.7% persistently low) during the first 4 years after HIV diagnosis. Models for care engagement and viral suppression demonstrated an overall 72% concordance; 12% and 15% of the population were either classified "persistently low" or in "constant decline" for both care and viral suppression (Table).

Care Engagement Class	Viral Suppression Class				Total
	1 Consistently high	2 Constant decline	3 Progressive increase	4 Persistently low	
1 Consistently high	41,206 (71.8) (41.7)	8,449 (14.7) (8.6)	4,458 (7.8) (4.5)	3,244 (5.7) (3.3)	57,357 (58.1)
2 Constant decline	742 (3.3) (1.8) (0.8)	14,418 (64.6) (59.7) (14.6)	1,955 (8.8) (19.7) (2.0)	5,207 (23.3) (23.2) (5.3)	22,322 (22.6)
3 Progressive increase	329 (5.6) (0.8) (0.3)	265 (4.5) (1.1) (0.3)	3,506 (59.4) (35.3) (3.6)	1,803 (30.5) (8.0) (1.8)	5,903 (6.0)
4 Persistently low	0	1,014 (7.7) (4.2) (1.0)	0	12,159 (92.3) (54.2) (12.3)	13,173 (13.3)
Total	42,277 (42.8)	24,146 (24.5)	9,919 (10.0)	22,413 (22.7)	98,755 (100)

Table.

**Conclusions:** Among persons with HIV diagnosed during 2017–2019, approximately 1 in 9 persons were persistently low and 1 in 7 persons were in constant decline for both care and viral suppression during the 4-years after diagnosis. These findings, highlight the urgent need for interventions to help engage and retain people with HIV in care to have viral suppression.

Our findings contribute to existing research with findings of varied national care outcome patterns after diagnosis. These insights are crucial for informing the development of focused interventions throughout the HIV care cycle to optimize outcomes, address gaps in the care continuum, and to make progress towards ending the HIV epidemic in the U.S.

## TUPEC302

### Patterns of platform use by men seeking male sexual partners as indicator of HIV risk to differentiate interventions: results from a Latent Class Analysis

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<sup>2</sup>National Centre for Infectious Diseases, National HIV Programme, Singapore, Singapore, <sup>3</sup>Action for AIDS Singapore (AfA), MSM Programme and ATS, Singapore, Singapore

**Background:** Low-level HIV epidemic settings like Singapore face the challenge of effectively reaching men at-risk who have less contact with prevention programmes. We hypothesized that the use of multiple networking platforms by men seeking male sexual partners could serve as potential marker of risk to differentiate sub-groups for targeted interventions.

**Methods:** Latent class modelling was used to identify homogeneous sub-groups with similar patterns of meeting platforms use and demographic profiles. The best-fit latent class model was factored in multivariable regression to identify associations with key risk behaviours.

**Results:** Five distinct patterns emerged, reflecting salient platform use characteristics: *Sauna-centric (SC; n=413)*, *App-centric (AC; n=276)*, *Multiple-Platforms (MP; 123)*, *Platform-inactive (PI; 257)* and *"Do not hook up" (DNH; n=72)* classes. Men in the SC and MP classes had high probabilities of using saunas to meet partners; SC were significantly older and less likely to have disclosed their sexual orientation. The MP class had high probabilities of connecting via internet, smartphone apps and *all* other platforms in addition to saunas – and more likely to have disclosed their sexual orientation.

Men in SC and MP classes had twice the odds of reporting multiple sex partners ( $aOR^{SC}=2.1$ ; 95%CI: 1.3-3.2;  $aOR^{MP}=2.2$ ; 95%CI: 1.1-4.6, respectively). Single/non-partnered MSM and those using alcohol/drugs during sex had 1.7 (95%CI: 1.2-2.5) and 3.2 (95%CI: 2.0-5.1) times the odds respectively, of reporting multiple sex partners.

The SC and MP class had higher odds of engaging in group sex ( $aOR^{SC}=1.6$ ; 95%CI: 1.1-2.3 and  $aOR^{MP}=1.7$ ; 95%CI: 1.1-2.8, respectively). Participants using alcohol/drugs during sex had twice the odds of reporting group sex ( $aOR=2.2$ ; 95%CI: 1.6-3.0).

There were no between-class difference in unprotected sex, however, MSM using alcohol/drugs during sex or reporting group sex had twice the odds of reporting condom-less sex. Lower education was positively associated with unprotected sex. Group sex, alcohol/drug use during sex, disclosure of sexual orientation or being Singaporean/permanent resident were positively associated with recent testing for HIV.

**Conclusions:** Our analysis identified five distinct platform use patterns associated with different risk profiles which, combined with field knowledge, can be used by programmes to tailor interventions including HIV self-testing and Pre-Exposure Prophylaxis to sub-groups at risk.

## TUPEC303

### Opportunities and challenges of using smartphone GPS technology to understand linkages between mobility patterns and HIV risk among young adults in rural South Africa

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**Background:** Despite widespread HIV prevention and treatment programs, mobile individuals still face a heightened risk of HIV acquisition and poor treatment outcomes. This study in rural KwaZulu-Natal, South Africa, explores the feasibility and acceptability of gathering location data of young adults using a smartphone-based GPS app to investigate the association between movement patterns and the risk of HIV transmission or interruptions in HIV care.

**Methods:** Between June 2021 and November 2022, we enrolled 205 randomly selected young adults (20-30 years old) from the 2019 Africa Health Research Institute HIV surveillance program in two phases. In Phase 1, participants were given study smartphones, while in Phase 2, participants used their own personal smartphones. A customized version of the commercially available Ethica app was installed to record the device's location at regular intervals. Participants were followed up for six months; participants whose smartphones failed to transmit positional data as per the study protocol were contacted via phone or home visits for troubleshooting.

**Results:** We received over 29 million location points, with common issues for not receiving data traced to lack of internet connection, inadvertent app terminations linked to its background functionality and participants changing app settings. Some participants opted to use their personal phones to avoid carrying an extra device. Various phone-related challenges were reported with the study phone, such as breakages, losses, and network signal issues. In Phase 2, 44 participants were enrolled, with two personal devices that were unable to support the app. To address sub-optimal data uploads, an incentive-based game was introduced to boost user engagement, resulting in greater than 50% increase in the average number of location data points uploaded.



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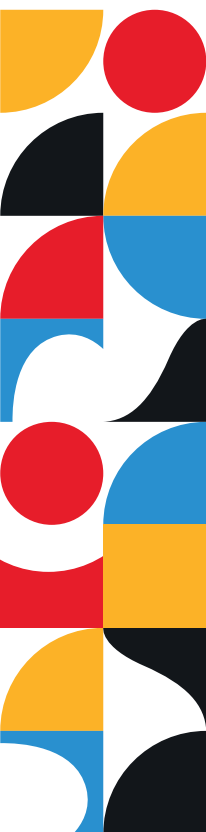


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**Conclusions:** Use of smartphone GPS technology to record mobility in a rural setting is feasible and acceptable. This type of mobility data holds the potential to not only identify location-based risk factors but also to help inform tailored intervention strategies. We were able to demonstrate that the challenges of sub-optimal data upload can be overcome by including consistent troubleshooting and motivating app engagement.



## Social science theories, concepts and methods

## TUPED304

## Characterizing intersectional stigma and its association with mental health outcomes among cisgender men and gender diverse minority youth in the United States

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<sup>2</sup>Florida State University, Tallahassee, United States

**Background:** Sexual and gender minorities experience disproportionately higher rates of depression and anxiety. Experiences of intersectional stigma related to HIV status, sexuality, gender, and race/ethnicity likely contribute to these disparities. Accurate characterization of intersectional stigma (IS) among these populations is a critical first step to enhancing HIV programming that also meets mental health needs.

**Methods:** A sample of men and gender diverse participants (N=750) were enrolled in a national randomized controlled trial (RCT) testing HealthMpowerment (HMP) 2.0, a mobile health intervention to improve HIV prevention and care continuum outcomes. We conducted latent profile analysis (LPA) to categorize participants' experiences of IS, including five indicators: internalized sexuality stigma, gender identity stigma, gender prejudice, enacted stigma, and everyday discrimination. Recognizing the distinct experiences of gender minority individuals relative to their cisgender counterparts, we estimated the LPA separately for these groups and associations with mental health outcomes.

**Results:** We identified a high IS profile and a low IS profile for cisgender men (n=666) and gender minority participants (n=84), respectively. A one-way ANOVA yielded significant differences between IS profiles and symptoms of anxiety, depression, and social isolation (Table 1).

Measures	Intersectional Stigma Profile Means (SD)				F	p-value	Effect size (η2)
	Cisgender Men		Gender Diverse Minority				
	Low IS	High IS	Low IS	High IS			
Anxiety	1.90 (1.75)	2.93 (1.76)	1.99 (1.76)	3.22 (1.78)	10.90	<.001 <sup>a,b,c,d</sup>	.04
Depression	1.91 (1.78)	3.06 (1.94)	2.08 (1.81)	3.37 (1.61)	12.79	<.001 <sup>a,b,c,d</sup>	.05
Social Isolation	7.08 (4.21)	9.79 (4.38)	8.00 (4.22)	12.05 (3.10)	17.79	<.001 <sup>a,b,d</sup>	.07

<sup>a</sup> significant difference between cisgender men low IS and cisgender men high IS

<sup>b</sup> significant difference between cisgender men low IS and gender diverse minority high IS

<sup>c</sup> significant difference between cisgender men high IS and gender diverse minority low IS

<sup>d</sup> significant difference between gender diverse minority low IS and gender minority high IS

Table 1. Pairwise comparisons of differences in mental health outcomes by intersectional stigma profiles.

A post hoc Tukey test found cisgender men and gender minority participants with high IS had significantly higher anxiety, depression, and social isolation compared to cisgender men with low IS, respectively. Among gender minority participants, those with high IS had significantly higher anxiety, depression, and social isolation compared to those with low IS. Gender minority participants with low IS also had significantly higher anxiety and depression compared to cisgender men with low IS.

**Conclusions:** High IS profiles are associated with higher levels of anxiety, depression, and social isolation among cisgender men and gender diverse participants. We highlight the utility of an LPA to characterize distinct IS profiles, which is needed to develop and tailor interventions to measure and address IS impacting the mental health of vulnerable, often marginalized population.

## TUPED305

## "Empowerment" for Us By Us: developing a model of empowerment using feminist participatory methods with and among lesbian, bisexual, queer, and transgender (LBQT) women/persons in Western Kenya

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<sup>1</sup>Western Kenya LBQT Feminist Forum (Lets Be Tested

Queens CBO), Kisumu, Kenya, <sup>2</sup>University of Michigan, School of Public Health, Ann Arbor, United States,

<sup>3</sup>University of Michigan, College of Literature, Science, and the Arts, Ann Arbor, United States, <sup>4</sup>University of Michigan, School of Social Work, Ann Arbor, United States

**Background:** Many LGBTQ people in Kenya experience human rights violations (e.g., healthcare barriers) driven by anti-LBQT and intersecting stigmas, and associated with physical and mental health inequities, including HIV. Studies also suggest strengths-based factors, such as empowerment, may mitigate the negative impact of intersectional stigma on HIV vulnerability of LGBTQ people. Little research has focused specifically on LBQT women/persons, focusing almost exclusively on cisgender men. We sought to explore Kenyan LBQT women/persons' conceptualizations of empowerment and to understand how empowerment influences their health.

**Methods:** A community-based participatory study "Empowerment For Us By Us" (E4UBU) was conducted in collaboration between the University of Michigan and Western Kenya LBQT Feminist Forum WKLFF (Lets Be Tested Queens CBO) and Homa Bay LBQ Women and Feminist Network (HBL) 2021-2023. Semi-structured qualitative interviews were conducted with 40 LBQT women/persons in two counties (Homa Bay, Kisumu). Data were analyzed using a participatory approach to develop an initial draft of a conceptual model of empowerment. Findings were presented in 2 focus groups as a form of member checking.



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**Results:** Participants (ages 19-35) identified as lesbian 51.2 %, queer 26.8%, bisexual 17.1 %, and other 4.9%. All participants were assigned female at birth, with over half cis-gender women, 19.5% nonbinary, 12% transgender men, and 2.4% intersex. Participant narratives revealed there is no one central measurable construct of empowerment. Empowerment was viewed as a process that led to healthy growth (See Figure). The process was dependent on context, issue, and population, and could be impeded at any point because of internal or external barriers. Intersectional identities that determined one's relationship with power included ethnicity, sexuality, gender expression/identity, partner status, sexual/reproductive health, employment, and more. The model demonstrated points where interventions were needed at multiple socioecological levels, including individual (e.g., knowledge), interpersonal (e.g., social support), community (e.g., LGBTQ visibility), and policy (e.g., employment protection). The model also identified manifestations of powerlessness, including poor mental and physical health.

**Conclusions:** This model of empowerment, grounded in the lived experiences of LBQT women/persons in Western Kenya, can be used to inform the development of participatory, community-led interventions to address multiple outcomes that influence HIV vulnerability.

## TUPED306

### Adherence through the prism of long-acting injectable therapy: qualitative findings from the ILANA implementation study

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**Background:** Adherence to ART is one of the most studied topics in HIV research. Many disciplinary, methodological, and theoretical approaches have been applied to understanding adherence as a complexity of life with HIV. The advent of long-acting injectable therapy is the most significant paradigmatic disruption since the introduction of combination treatment. ILANA is the first UK-based mixed methods study examining the acceptability and feasibility of long-acting injectable Cabotegravir + Rilpivirine (CAB+RPV) among healthcare providers and people living with HIV. We describe the experience of patient participants.

**Methods:** A longitudinal qualitative study design was used. Fourteen semi-structured repeat interviews were conducted with patient participants at baseline (Aug-

Nov '22) and at study end (Sept-Nov '23). Participants were recruited from six HIV clinics across the UK. Interview topics included questions regarding adherence before switching to injectables, perceptions around switching and experiences of being on injectable therapy after 12 months. Interviews were transcribed in full then analysed using thematic analysis of individual narrative summaries.

**Results:** The interviews generated data about new, key dimensions of a framework to understand adherence in the context of injectable therapy:

1. The relief experienced by the majority participants when moving to CAB+RPV reveals the ongoing treatment burden on patients otherwise considered to be taking therapy 'successfully' based on undetectable VL;
2. Such relief from previous anxieties is accompanied by the birth of new anxieties among a minority of participants about the effectiveness of CAB+RPV and the rigid exigencies of regular injections;
3. The welcome shift in responsibility for managing treatment from the patient to the clinical team also engenders a loss of control for some;
4. The transitional and dynamic nature of the adherence experience with injectable therapy carries yet under-researched implications for scale-up and sustainability.

**Conclusions:** ILANA participants constitute a diverse and pioneering group characterised by enthusiasm for injectable therapy.

The study identifies new areas of research to maximise opportunities afforded by injectable therapy whilst understanding new arising concerns in the context of injectables for a wider population, outside of study conditions, and in different geographical contexts.

## TUPED307

### Australian consensus statements of the HIV response to approaching and moving beyond the elimination of HIV transmission

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<sup>1</sup>Monash University, Central Clinical School, Melbourne, Australia, <sup>2</sup>Melbourne Sexual Health Centre, Melbourne, Australia, <sup>3</sup>Health Equity Matters, Sydney, Australia, <sup>4</sup>Western Sydney University, School of Medicine, Sydney, Australia

**Background:** In 2023, Sydney, Australia, reported an 88% decline in new HIV infections, signalling the near elimination of HIV transmission (indicated by a 90% decline from a 2010 baseline). As the rest of Australia approaches the elimination of HIV transmission, a longer-term strategy is critical to ensure that a sustained effort continues to work towards minimal transmission rates of HIV across all affected communities in Australia. We aimed to establish consensus statements to articulate these strategies.


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**Methods:** Co-creation and Delphi techniques were used. Two focus groups, using an exploratory approach with a series of open-ended questions, were conducted with 11 community representatives, researchers and clinicians to co-create draft statements that would guide Australia's future HIV response. One hundred and sixty-four experts in the Australian HIV response were then invited to participate in two rounds of an online Delphi survey to rate their agreement with the draft statements in achieving and moving beyond the elimination of HIV transmission. Each statement required 80% agreement to reach consensus.

**Results:** Thirty-five draft statements were co-created following the focus group discussions and grouped under six themes: 1) Prevention; 2) Treatment, Management and Care; 3) Testing; 4) Reducing stigma and discrimination; 5) Research; and 6) Community-led responses. In round 1 of the survey, 106 participants rated the 35 draft statements, of which 30 (85.7%) reached consensus. In round 2, 89 participants re-rated the five draft statements that did not reach consensus, of which none reached consensus. Participants were also asked to rate six new statements suggested by participants in round 1, of which all six reached consensus.

**Conclusions:** Australia is one of the first countries in the world to actively plan for strategies post-elimination of HIV transmission. The rigorous and collaborative approach, involving diverse experts from the community, research and clinical sectors, has ensured that the identified strategies reflect a multifaceted understanding of the challenges and opportunities ahead after eliminating HIV transmission. The resulting consensus statements provide a valuable roadmap for guiding future policy and program development as Australia strives to maintain and solidify hard-won gains against HIV and ensure that affected communities are not left behind.

## TUPED308

A psycho-social weather report in the Netherlands: mapping the internalised homonegativity "storms" and the sexual self-efficacy "sunshine" among MSM and their ecological associations with HIV care cascade

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<sup>1</sup>Maastricht University, Department of Work and Social Psychology, Maastricht, Netherlands, the, <sup>2</sup>Stichting HIV Monitoring, Amsterdam, Netherlands, the

**Background:** Internalised homonegativity (IH) is associated negatively on all steps of the HIV care cascade (testing, treatment and viral suppression), while sexual self-efficacy (SSE, e.g. confidence to say no to sex) may lead to better outcomes. This study mapped the nationwide IH and SSE among MSM and their ecological associations with HIV cascade in the Netherlands.

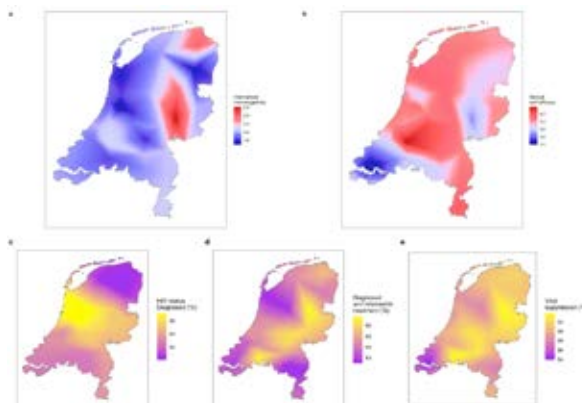
**Methods:** Data from the Dutch MSM subsample (n=1,102) of PROTECT, a cross-sectional survey, obtained from October-December 2023, were included. IH and SSE (measured on 1-5 Likert scale) were aggregated on regional level using postcode data. Regional HIV cascades were obtained from the Dutch HIV Monitoring Foundation.

We first mapped the IH, SSE, and the HIV cascade using a stochastic partial differential equation approach. We then used ecological regressions to explore associations between geostatistical IH/SSE and each HIV cascade.

**Results:** The estimated geostatistical IH (range 1.7-2.6), SSE (3.4-4.4) and HIV cascades in the Netherlands are shown in Figure below. Ecologically, a negative association between IH and SSE were estimated ( $B=-0.11$ ), where the highest (lowest) concentrated IH "storm" (SSE "sunshine") were found around more rural regions. Highest %HIV diagnoses were observed in areas around Amsterdam, declining with distance.

Upon diagnosis, the %retained in treatment and %virally suppressed were, however, higher in more rural areas. Our ecological models affirmed these observations: higher geostatistical IH was associated with lower %HIV diagnosed ( $B=-0.58$ ), higher %linked to treatment ( $B=0.39$ ), and higher %Virally suppressed ( $B=0.23$ ).

Conversely, geostatistical SSE exhibited opposite associations with these cascades ( $B=0.44$ ,  $B=-0.02$ ,  $B=0.21$ ).



**Conclusions:** Higher IH "storm" may bar achieving the first "95" but could facilitate reaching the second and third "95" goals in HIV care cascades.

Conversely, SSE "sunshine" works oppositely, emphasizing the importance of local psycho-social "climate".

Tailored interventions/actions may be proven to enhance the nuanced approach needed for optimal HIV care outcomes, especially in diverse geographic settings.





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## TUPED310

Explaining the condom use of sex workers with casual partners in Switzerland using an extended Information-Motivation-Behavioral Skills (IMB) model

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**Background:** HIV prevention messages are often based on risk behavior taking place in the professional setting of sex work. However, sex workers also have sex with private casual partners.

The aim of the study was to identify predictors of condom use with private casual partners. For this purpose, we used an extended IMB model, which also considers personal, social, and economic conditions, as well as critical life events.

**Methods:** The study was a nationwide cross-sectional survey which took place from March to October 2022. We used a self-administered online questionnaire with validated instruments to measure the IMB construct variables. The dependent variable was the frequency of condom use during vaginal or anal intercourse with casual partners within the past 12 months.

Sex workers completed questionnaire at local sex worker drop-in-centers. Informed consent was obtained. Participation was voluntary. To test the extended IMB model, we performed a structural equation modeling using AMOS.

**Results:** Among the 386 sex workers were 265 women, 82 men and 39 transgender persons. Mean age was 35.5 years (SD=10.85). Fifty-six percent were heterosexual, 16.3% homosexual, and 14.8% bisexual. Approximately 31% were migrants from HIV high-prevalence countries. Fifty-seven percent always used condoms when having sex with private casual partners.

Predictors of condom use were intention to use condoms ( $\beta=0.28$ ,  $p<0.001$ ), attitude toward condoms ( $\beta=0.22$ ,  $p<0.001$ ), subjective norm ( $\beta=0.12$ ,  $p<0.01$ ), higher age ( $\beta=0.11$ ,  $p<0.05$ ), heterosexual orientation ( $\beta=0.11$ ,  $p<0.05$ ), and drug use before sex ( $\beta=-0.14$ ,  $p<0.01$ ). Intention was predicted by age ( $\beta=0.21$ ,  $p<0.001$ ) and heterosexual orientation ( $\beta=0.10$ ,  $p<0.05$ ).

Attitude toward condoms was predicted by female gender ( $\beta=0.13$ ,  $p<0.05$ ), heterosexual orientation ( $\beta=0.20$ ,  $p<0.001$ ), education ( $\beta=0.15$ ,  $p<0.01$ ), and perceived discrimination ( $\beta=-0.13$ ,  $p<0.01$ ). Subjective norm was predicted by being in a committed relationship ( $\beta=0.11$ ,  $p<0.05$ ).

The extended IMB model showed an acceptable model fit:  $\chi^2=53.2$ ,  $df=33$ ,  $RMSEA=0.034$ . The explained variance for condom use was 30%.

**Conclusions:** The results show that the extended IMB model is a suitable model for explaining condom use among sex workers. However, neither information nor self-efficacy had any influence on the frequency of con-

dom use with private casual sex partners. Prevention should take into account both drug use and discrimination against sex workers.

## TUPED311

Enhanced HIV science literacy and improved motivation towards participation in biomedical research among key communities in India – the role of gamification and experiential-learning based interventions

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**Background:** The fundamental right to health is predicated by the right to science, including the right to be a part of scientific progress. Therefore, access to core scientific rationale in a comprehensible way is critical for informed and voluntary community participation in biomedical research (BMR). Gamification and experiential learning (GEL) use indigenous knowledge and culturally-rooted metaphors to expedite scientific learning.

We employed GEL-based interventions to enhance HIV science literacy and motivation to engage in HIV BMR. The intervention included interactive games and participatory theatre to explain HIV viral diversity, latency, drug resistance and broadly neutralizing antibodies.

**Methods:** The mixed-method study employed quasi-experimental treatment-controlled design and qualitative enquiry on participant experience for evaluating utility of GEL intervention.

Baseline survey engaging 600 participants representing Female Sex Workers, Men who have Sex with Men and Transgender Women from rural Maharashtra, India, captured community perspectives about HIV science and their willingness to participate in research. 300 of baseline participants were exposed to the GEL intervention.

These 300 participants, and another 300 intervention-naïve participants were subjected to end-line survey for assessing change in HIV science knowledge and attitude towards HIV BMR. Data was thematically structured base on COM-B behaviour change framework and analysed using 2-sample parametric statistics.

### Results:

- **HIV science literacy:** Irrespective of existing baseline knowledge, exposure to GEL intervention yielded higher level of correct response (39% increase in viral diversity and latency, 29% increase in drug resistance) around scientific concepts;
- **Motivation for research participation:** Enhanced level of motivation to engage in HIV research was represented by 61% reduction in hesitancy towards re-

search participation in intervention exposed group than control group;

- **Altruism:** Participants exposed to interventions showed positive shift in altruistic reasons boosting research participation;
- **Participant feedback:** Post-intervention feedback revealed high level of likability and participant satisfaction. Participants shared a greater appreciation for complexity of science and value of community participation in research.

**Conclusions:** GEL intervention provided a jargon-free interactive way to make complex science accessible and relevant to the community. GEL-based strategies seem promising in effectively communicating science and strengthening motivation, and hence might be considered for broader adoption in upcoming next generation HIV trials.

## Social and behavioural aspects and approaches to HIV and living with HIV

### TUPED312

Understanding HIV and drug use related stigma among people living with HIV who use drugs in Vietnam: a latent class analysis

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**Background:** HIV- and drug-related stigma, encompassing internalized, perceived, and enacted subtypes, significantly impairs medication adherence and mental health among people living with HIV who use drugs (PLHWUD). Disentangling the impact of intersectional stigma and subtypes of stigma could add nuances to intervention development.

**Methods:** This study analyzed baseline data from a randomized control trial (N = 241) conducted among PLHWUD in Vietnam. Latent class analysis was conducted to identify patterns in self-reported intersectional stigma and subtypes of stigma. Multivariable regression was conducted to examine the association between class membership and depression, ART adherence self-efficacy, social support, HIV disclosure, and drug avoidance self-efficacy.

**Results:** A five-class model of stigma was identified:

- Class 1. High on perceived stigma;
- Class 2. High on internalized stigma;
- Class 3. Low on all stigma;
- Class 4. High on all stigma;

Class 5. High on drug-related stigma & low on HIV-related stigma.

Compared to people with high perceived stigma (Class 1), people with high internalized stigma reported lower ART adherence self-efficacy ( $\beta = -2.72$ , 95% CI [-5.10 – -0.35]), lower drug avoidance self-efficacy ( $\beta = -4.22$ , 95% CI [-8.26 – -0.18]), and higher depression ( $\beta = 4.23$ , 95% CI [1.18 – 7.27]). Compared to people with high perceived stigma (Class 1), people with high drug-related stigma and low HIV-related stigma (Class 5) reported lower tangible support ( $\beta = -1.55$ , 95% CI [-3.04 – -0.06]), lower drug-avoidance self-efficacy ( $\beta = -4.37$ , 95% CI [-8.65 – -0.09]), and higher disclosure ( $\beta = 1.96$ , 95% CI [0.49 – 3.42]).

**Conclusions:** This study enriches stigma literature by unpacking stigma patterns among PLHWUD, linking high internalized stigma to increased depression and reduced ART adherence, and associating high drug-related stigma with decreased tangible support.

This study underscored the imperative of examining the intersectionality of HIV and drug stigma and the distinct impacts of stigma subtypes.

### TUPED313

Perceptions about mpox-related stigma manifestations and key elements to prevent this stigma: a qualitative research in Lima, Peru

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**Background:** The mpox outbreak in 2022 in Peru affected primarily men who have sex with men, transgender women and people living with HIV, communities that historically face high levels of stigma. Due to reported stigma, there was concern that stigma against persons diagnosed with mpox could impact individual health behavior and public health efforts to control the epidemic. We sought to explore mpox-related stigma manifestations and to identify key elements of a public health response to prevent and combat mpox-related stigma in Peru.

**Methods:** Four focus groups with individuals who had mpox (three comprising persons living with HIV diagnosed with mpox) and four in-depth interviews with healthcare personnel were conducted between September 2023



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and January 2024 in Lima. Semi-structured guides were used to explore client experiences with stigma (how and by whom they were stigmatized), healthcare personnel perceptions of persons diagnosed with mpox and their care, and recommendations for reducing mpox-related stigma.

Audio recordings were transcribed verbatim. A three-stage content analysis was conducted using QDA Miner Lite.

**Results:** Three themes emerged regarding stigma manifestations against persons diagnosed with mpox:

A. people's assumptions about their sexual orientation (i.e. homosexual, bisexual) and sexual behavior (i.e., promiscuity),

B. healthcare personnel's assumptions about their HIV-positive status, and;

C. inequitable (i.e., delays while in the healthcare facility compared to people with other conditions) and unempathetic (i.e., use of isolation measures without proper explanation) health care.

Many persons diagnosed with mpox perceived that this suboptimal care arose from health care personnel's insufficient knowledge about mpox.

Indeed, healthcare personnel reported insufficient knowledge of mpox management (i.e., isolation procedures, infection control precautions, and use of personal protective equipment).

Elements that could reduce mpox-related stigma mentioned by the participants included the development of communication material shared especially through social media to educate about mpox, and prompt training of healthcare personnel on mpox management.

**Conclusions:** Mpox-related stigma was present in the form of stigmatizing assumptions and inequitable health care. Timely training of healthcare personnel on mpox management, and mass communication material with educational content could help to reduce these experiences in a future mpox outbreak.

## TUPED314

[Strengthening meaningful engagement of youth-led organisations to monitor and advocate for improved HIV responses for young key populations](#)

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**Background:** This programme is multifaceted approach to address the challenges faced by young key populations (YKPs) in accessing HIV services in the Asia Pacific region. The strategic objectives include capacity-building initiatives for healthcare workers, ensuring the design and delivery of YKP-friendly services within a stigma-free environment, bolstering leadership skills among YKPs to actively contribute to national HIV responses, and fortifying partnerships between communities, civil society, health-

care facilities, UN agencies, and government entities to create a unified and comprehensive approach to combat HIV/AIDS.

**Description:** The program involves comprehensive activities based off of Youth LEAD's "Reginal Healthcare Worker Sensitisation Training Manual" aimed at advancing HIV/AIDS advocacy and healthcare for YKPs across four countries: Papua New Guinea, Indonesia, the Philippines and Cambodia. Engaging with national YKP-led networks as implementing partners, the initiative focused on sensitizing healthcare workers in areas with high numbers of YKPs on improving friendlier services and environments in increasing the uptake of vital HIV, prevention and treatment services.

**Lessons learned:** The programme surpassed expectations with 120 healthcare workers trained across the four countries, demonstrating a successful achievement of the set indicator. All districts submitted action plans, with over 90% of participants achieving their commitments, reflecting adaptability within constraints like limited funding and existing work plans.

Evaluation reports on sensitization training in seven districts demonstrated practicality and effectiveness, with all districts providing valuable qualitative feedback for improvements in the training manual.

Overall, the project successfully achieved short-term and long-term objectives by capacitating healthcare workers, fostering YKP-friendly environments, and strengthening partnerships, emphasizing the essential leadership capacity of YKP national networks.

**Conclusions/Next steps:** Key partnerships and collaborations involved various entities, including UNAIDS, national health departments, youth-led networks, and local NGOs, showcasing a multi-stakeholder approach. Implementation constraints, such as limited funding for action plans and evaluation periods, were identified, providing valuable lessons for future initiatives, emphasizing the importance of securing funding for action plans and adjusting evaluation periods based on country context.

Overall, the project demonstrated the effectiveness of capacitating healthcare workers, fostering leadership among YKPs, and strengthening partnerships for more inclusive and supportive healthcare services.



## TUPED316

Fostering resilience: a holistic approach to empowering HIV-positive teens and children (aged 8-14) through foster care, and community collaboration in Nakivale Refugee Settlement

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**Background:** Nakivale Refugee Settlement in Southwestern Uganda hosts over 171,000 refugees, with 15% comprising HIV-positive children aged 8 to 14. Alight's multi-faceted approach encompasses mental health support, legal aid, livelihood programs, and child protection. In 2019, recognizing the challenges faced by HIV-positive youth, Alight initiated a groundbreaking strategy, introducing foster care and community collaboration. This innovative approach aims to ensure adequate support and supervision for children between 8 to 14 years struggling with adherence to ARVs, empowering foster parents to play a pivotal role in promoting HIV awareness and fostering a supportive environment.

Through engaging foster parents as key influencers within the community, Alight seeks to create a ripple effect of positive change, addressing both the immediate health needs of PLHIV and contributing to a broader societal shift.

This intervention, conducted in collaboration with Village Health Teams (VHTs), aims to address the immediate needs of HIV-positive teens and children while enhancing their economic well-being.

The objectives include successful integration into supportive families, improved overall health through increasing ARV's adherence and well-being.

**Description:** The initiative strategically placed 80% of identified HIV-positive children into foster care, creating clusters of 20 homes linked to Village Health Teams (VHTs). VHTs played a pivotal role in achieving health-related objectives, providing medical care, adherence support, and counseling. Alight's supervisors monitored ARV adherence, while the livelihood training program saw 70% of foster families engage in income-generating activities, contributing to financial stability. Greenhouses at Isanja, Rubondo, and Basecamp exemplify the success of this comprehensive approach.

**Lessons learned:** Key insights include the effectiveness of tailored interventions, emphasizing community engagement's significance, and the importance of clear communication channels for health monitoring. Consistent oversight in medical interventions and the success of the livelihood program underscore the value of holistic approaches integrating health and economic empowerment.

**Conclusions/Next steps:** Alight aims to refine strategies for ARV adherence, continuously adapting to evolving needs. The initiative serves as a reference for interven-

tions in diverse refugee settings, emphasizing collaboration with local partners. This holistic empowerment model, extending to other settlements, calls for advocacy for policy change and knowledge sharing within the humanitarian community, contributing to the discourse on supporting vulnerable populations.

## TUPED317

Analysis of vulnerability to co-infections and co-morbidity of opportunistic infections from indoor air pollution amongst positive elderly persons in rural households in Kisumu County

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**Background:** The level of exposure to Bio-Mass Fuel (BMF) pollutants in rural poor households in developing Countries is 100 times greater than the UN recommended maximums. A normal healthy Elderly Persons aged above 60years in Kisumu County is twice more likely to contract ALRI while those above 75years are 4x more likely to suffer from COPD since majority spend a lot of time indoors. However, Elderly persons living with HIV are 5 to 10times more exposed to health effects of BMF-Household Air Pollution (BMF-HAP). The health effects of BMF-HAP may arise after just a single exposure and/or long or repeated exposure.

The short-term effects are treatable; however, the long term effects can be severely debilitating and/or fatal. BMF-HAP pollutants are involved in altering macro-phage function thus increasing vulnerability to active Pulmonary TB.

**Description:** We conducted a study over a period of 60months to investigate the general health effects of BMF-HAP on elderly persons aged above 60years living with HIV in poor rural households in Kisumu County when switching from the traditional BMF sources to simple low cost modern alternative energy Solutions. Special consideration was given to the households with persons aged above 75years. Analysis was done on all diseases but special emphasis was given to TB, ALRI, COPD and eye infections.

**Lessons learned:** Over 85% of the elderly persons aged 60 to 74years and 66% of those aged over 75years recorded reduced incidences of respiratory Tract infections within 30days. There was a 60% deceleration in the development of ALRI and 80% decelerated development of COPD within 6months. Over 95% experienced over 90% reduction in the short-term effects of BMF-HAP. There was 30% reduction in Pulmonary TB infection.

**Conclusions/Next steps:** Over 98% of rural poor households in developing countries use BMF daily thereby increasing the vulnerability to co-infection and co-morbidities. HIV infection and exposure to BMF-HAP is a dou-



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ble tragedy to elderly persons in rural poor households. BMF-HAP kills over 1.5million people globally, 40% being Elderly persons. Reducing BMF-HAP is a new frontier and a viable HCBCS strategy that requires targeted funding to strengthen Community Leadership and Behaviour Change in the fight against HIV/AIDS & TB.

## TUPED318

Knowledge, attitudes, beliefs, and practices towards HIV/AIDS among adolescents and young adults in Western Kenya. Baseline results in the context of a drone-based differentiated service delivery initiative

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**Background:** HIV is a significant public health issue in Kenya, affecting around 4% of its population. Adolescents and young adults (AYA's) are particularly vulnerable, due to misinformation and lower ARVs adherence and retention, among other reasons. A Differentiated Service Delivery (DSD) of HIV commodities could enhance PrEP, PEP, and ARV adherence by addressing the needs of vulnerable groups, while reducing stigma associated with visiting health facilities.

This study, conducted in Kisumu County, Kenya, aimed to evaluate AYAs baseline Knowledge, Attitudes, Beliefs, and Practices (KABPs) towards HIV/AIDS, before the implementation of a DSD intervention that will use drones to deliver HIV commodities outside from the traditional health system.

**Methods:** The study employed quantitative surveys, qualitative interviews, and focus groups. A total of 1,415 individuals were surveyed (56% female, 43.5% male, 0.42% intersex), focusing on HIV-related KABPs. In-depth interviews and focus groups involved AYAs, healthcare workers, and community leaders. Thematic analysis was used for qualitative data, while quantitative data were analyzed using descriptive and inferential statistics.

**Results:** Results showed a high awareness of HIV, its transmission, and prevention. However, misconceptions persisted, such as belief in transmission through saliva. Only 26.7% of respondents understood the efficacy of ARVs in reducing transmission, indicating a need for education on the "treatment as prevention" model.

Condom use was limited (45.6 %) due to logistical issues, shortages, and costs. Anticipated stigma, including from neighbors, religious, and medical communities, was found to be a significant concern.

Many participants feared breach of confidentiality by medical staff, and shared stories of religious and cultural leaders viewing HIV as a curse or punishment. These factors potentially deter people from seeking HIV testing and affect ARV adherence and retention. Access to healthcare was also hindered by logistical challenges, transportation issues, drug shortages, and high costs.

**Conclusions:** The study highlights the potential of the DSD model in enhancing HIV/AIDS prevention and treatment in Kisumu County. It revealed multiple barriers to accessing HIV healthcare, such as stigma, mistrust in medical staff, logistical and financial constraints, and shortages of condoms and medication.

These findings are vital to understand HIV/AIDS dynamics in high-prevalence areas and could guide future intervention strategies.

## TUPED319

Examining trends and demographic variations in discriminatory attitudes towards people living with HIV: insights from 22 Sub-Saharan African countries

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**Background:** Discriminatory attitudes towards people living with HIV can exacerbate the epidemic by hindering efforts in prevention and treatment. The aim of this study is to examine the patterns and demographic variations in these attitudes across Sub-Saharan Africa.

**Methods:** This study utilized a dataset from UNICEF's Multiple Indicator Cluster Surveys and other household surveys, conducted between 2014 and 2022, and published in July 2023, examining discriminatory attitudes towards people living with HIV. The indicator for discriminatory attitude measures the percentage of individuals aware of HIV who exhibit prejudice against HIV-positive people, determined through their responses to questions about interactions with such individuals.

The dataset spans 22 Sub-Saharan African countries, offering detailed demographic data (gender, age, residence, wealth, education) and uses descriptive statistics and inferential statistics (t-tests, Chi-square, ANOVA) to identify attitudinal differences across regions and demographics.

**Results:** In our analysis of individuals aged 15 to 49 years in Sub-Saharan Africa, we observed fluctuations in discriminatory attitudes towards people living with HIV over time. Notable differences were evident across countries, with Mauritania reporting the highest average levels of discriminatory attitudes at 85.2%, followed by Guinea at 81.8%, and Gambia at 79.4%. Significant variations were found in terms of residence, with rural areas reporting

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higher average levels of discriminatory attitudes at 64.8% compared to urban areas at 52.7%, and the lowest in nomadic areas at 48.4% ( $p = 0.002$ ).

Additionally, significant differences were observed across wealth quintiles ( $p < 0.05$ ), where the highest average levels of discriminatory attitudes were noted in the poorest quintile at 69.5%.

Gender-based analysis showed no significant difference in levels of discriminatory attitudes between females (59.9%) and males (59.85%) ( $p = 0.993$ ). Regionally, higher average levels of discriminatory attitudes were found in West and Central Africa at 64.7%.

Furthermore, our analysis indicated that younger age groups and those with lower education levels generally reported higher levels of discriminatory attitudes ( $p < 0.05$ ).

**Conclusions:** These findings underscore the urgent need for continued initiatives to reduce discriminatory attitudes towards people living with HIV in Sub-Saharan Africa. Targeted interventions are needed in regions and demographic groups with particularly high levels of such attitudes.

## TUPED320

Unveiling complexities: a socio-ecological exploration of access and acceptability of HIV/AIDS treatment and care services for key populations - a qualitative case study in Pakistan

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**Background:** Pakistan contends with a concentrated HIV epidemic; Key populations (KPs) such as men having sex with men (MSM), people who inject drugs (PWIDs), transgender populations (TG), and female sex workers (FSW) bear a disproportionate HIV burden. Round 6 of the Integrated Biological and Behavioural Surveillance (IBBS) recently covered 31 districts, to provide an improved understanding of the HIV landscape and allowing a comprehensive evaluation of HIV/AIDS prevalence and intervention effectiveness. This study employed formative research methods within the IBBS framework to explore socio-ecological factors influencing access to and acceptability of HIV/AIDS treatment and care services (HACTS).

**Methods:** This qualitative study within the socio-ecological framework explored HIV service utilization in Pakistan. In-depth interviews with key populations at HATCS aimed to reveal lived experiences, barriers, and challenges for a nuanced understanding of healthcare access dynamics among People Living with HIV. Data analysis employed the Framework analysis method.

**Results:** A total of 111 interviews were conducted with PLHIVs from key populations at public sector HATCS. The distribution included 33% transgender individuals, 13% FSWs, 36% MSM, and 18% PWIDs.

Factors influencing access and acceptability of HACTS were categorized across four socio-ecological units: individual (awareness, experiences, expectations, income, employment, family, HIV disclosure, and side effects of medicines), interpersonal (care and support, stigma, discrimination, and side effects of treatment), organizational (interactions with care providers, availability, confidentiality, quality, distance, affordability, logistics, follow-up, and service administration), and systemic (treatment and welfare support/financing, service standards, and regulations). Gendered discrimination emerged within interpersonal factors, affecting access and acceptability, notably for transgender individuals and FSWs.

**Conclusions:** The socio-ecological perspective provides a valuable framework to assess multilevel factors influencing access and acceptability of HIV/AIDS treatment and care services.

Findings indicate the necessity for enhanced client-provider interactions, staff training, logistics supply, and community education. Access to HATCS is closely tied to social support and financial resources, requiring short and long-term plans for individuals from low socioeconomic strata.

The study emphasizes importance of integrating the socio-ecological framework into program planning, targeting clients, communities, health systems, and policy levels to improve access and acceptability of HIV/AIDS treatment and care services.

## TUPED321

Low bone mineral density in PLHIV and its correlation with bone health quality of life, an observational study conducted by treatment adherence advocacy and literacy, TAAL+ community pharmacy, peer-led intervention

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**Background:** In India, the Antiretroviral Therapy (ART) Program was launched in 2004, with over 14.6 lakhs People Living with HIV (PLHIV) on treatment. TAAL is a community-based pharmacy serving PLHIV participants for ART from both the private and government sectors ( $n=1859$  on ART till Feb 22).

HIV treatment is lifelong, and research has shown that HIV infection may accelerate the aging process, leading to complications typically associated with aging occurring at younger ages in PLHIV.

Integrating bone health and noncommunicable disease management into the care of PLHIV can lead to improved treatment outcomes.





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**Description:** TAAL Pharmacy initiated a small study involving DEXA scans to assess the Bone Mineral Density in a total of 160 participants, with 80 (50%) being PLHIVs and 80 (50%) non-PLHIVs.

**Lessons learned:** In the general population, out of 80 participants, 44 (55%) were found to be osteopenic, while among PLHIVs, out of 80 participants, 58 (72%) were found to be osteopenic. In the general population, 56 (70%) participants were found to be either osteopenic or osteoporotic, compared to PLHIVs, where 71 (88%) participants fell into these categories.

Among participants aged 20-40 years, 25 (31%) in the general population were osteopenic, whereas among PLHIVs, 31 (38%) were osteopenic. This indicates that PLHIVs are more susceptible to osteopenia.

**Conclusions/Next steps:** PLHIVs are at a higher risk of developing osteopenia and osteoporosis, indicating the need for additional supplementation.

**Conclusion:** In addition to ART, the inclusion of calcium and vitamin D3 supplementation should be considered as part of the treatment regimen to prevent osteopenia and osteoporosis in PLHIVs.

## TUPED322

The influence and impact of creativity in the Wakakosha (Your'e Worth It) intervention for self-stigma among young people with HIV in Harare, Zimbabwe

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**Background:** The integration of creativity into interventions directed at health and well-being is growing with increasing evidence on how the arts can elicit stigma reduction. Many research projects evaluate arts-based approaches, but few specifically examine creativity.

This study focuses on the influence and impact of creativity in an intervention to move young people living with HIV from positions of self-stigma to self-worth.

**Methods:** The Wakakosha self-stigma intervention - a 16 session group therapy intervention using inquiry-based stress reduction integrated with creative activities - was conducted among 60 (n=30 female) young people (ages 18-24) living with HIV in Zimbabwe in 2022. The impact of the programme is published elsewhere.

This study involved the examination of that same data but looking specifically at creativity and its influence and impact on the participants. The anonymised transcripts

of three focus groups and twelve interviews, the creative products and outcomes were inductively thematically analysed using NVivo.

**Results:** Wakakosha's integration of creative expression created several opportunities where participants were able to express and release emotions within the process of shifting negative personal beliefs.

Overall, the intervention transferred a set of practical skills on self-inquiry, mindfulness, meditation and creativity that continued to be used in participants' daily lives. Creativity saturated the Wakakosha intervention through modalities such as music, dance, letters to the body, drawing, colouring, poetry and body mapping. The creativity in the programme engaged participants and gave them a space in which to shift their self-stigmatising beliefs.

Four major themes on the influence and impact of creativity in the intervention emerged: Acceptance and Forgiveness, Emotional Regulation, Self-Empowerment and Self-Worth, and Reminder of Messaging or New Skills.

Our findings align with the literature on creativity and the arts aligns with our findings that creative activities can enhance the therapeutic environment and associated participant experience.

**Conclusions:** Creativity contributed to the self-stigma reduction process and improved overall participant experience. The creativity in the programme gave participants new skills with which to remind themselves of the lessons of the programme as well as regulating distress when it arose. This project provided promising insight into the potential of creativity in counteracting self-stigma.

## TUPED323

WILLOW: enhancing self-efficacy, health literacy and resiliency among HIV-positive African Caribbean and Black women through peer-led support groups in Toronto, Canada

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**Background:** African, Caribbean and Black women (ACB) have a 60-fold higher risk of HIV than women of other racial and ethnic identities despite making up only 3% of the female population in Canada. Addition to the physical effects of the disease, ACB HIV positive women also face multiple layers of oppression and marginalization.

Peer-led approaches are effective in increasing HIV prevention uptake among hard-to-reach and vulnerable populations with high HIV prevalence.

**Description:** In response to these concerns, the WILLOW project was developed to enhance self-efficacy, health literacy, and resiliency among HIV-positive ACB womxn through peer-led support groups. This is a community-based program that aims to empower womxn living



with HIV by providing a safe and supportive space for them to share their experiences, learn from one another, and build a sense of community. The program is grounded in the understanding that peer support can be a powerful tool in promoting health and well-being.

Through the WILLOW program, womxn living with HIV are able to develop self-efficacy, or the belief in their ability to manage their health and make positive changes in their lives. This is achieved through a series of workshops and activities focused on topics such as medication adherence, self-care, and healthy coping strategies.

**Lessons learned:** Through the support groups, participants have been able to access reliable information and learn how to critically evaluate health information, thus empowering them to take control of their health and make informed decisions. The WILLOW program has been built resiliency among HIV-positive African Caribbean and Black womxn. By fostering a sense of community and providing a safe and non-judgmental space, the WILLOW program has helped participants build resilience and develop coping strategies to overcome these challenges.

**Conclusions/Next steps:** WILLOW project is a crucial step towards addressing the unique needs of HIV-positive ACB womxn. By enhancing self-efficacy, health literacy, and resiliency through peer-led support groups, this program aims to improve the overall well-being of womxn living with HIV and ultimately contribute to reducing health disparities within these communities.

This program has the potential to make a significant impact and create a more supportive and empowered community for HIV-positive racialised womxn.

## TUPED324

Drama and psycho-educational support intervention reduced HIV stigma among sexual and gender minority migrants affected by HIV

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**Background:** During 2023 the project Be You! explored the use of drama and creativity for stigma reductive group interventions among sexual and gender minority migrants affected by HIV. This group is disproportionately affected by HIV, bearing a high burden of intersectional stigma and structural inequality.

**Description:** The Be You! project was created from ideas and feedback from the target group (sexual and gender minority migrants affected by HIV). The participants were active through the whole process together with three leaders (one in drama and two in psychology and social work).

The project involved 12 participants and reached more than 700 people. A multilingual work process was adapted combining Swedish, English and Spanish. The activities within Be You! were structured in a process-based ap-

proach through peer- and professional support (CBT and ACT approach). Creative activities with photography, storytelling, embodiment, drama and singing were altered with therapeutic and psycho-educative sessions around self-worth, stigma, triggers, identity and empowerment, with additional individual support for those needed.

**Lessons learned:** The interventions were evaluated through different tools such as open group evaluations, CSQ-8 (Client Satisfactory Questionnaire) and the 12-item HIV stigma scale. The results from the CSQ-8 showed a positive result in all questions asked.

For example, all the respondents thought that the interventions responded to their needs, would recommend the intervention to a friend, and that the intervention has helped them to better cope with their problem.

Results from the 12-item stigma scale concluded a reduction in HIV stigma by 3,5 points (scoring 26 out of 48 in entry of intervention and 22,5 points of 48 at the end of intervention). This quote from one participant marks its effect; "Being part of this project makes me feel that I can celebrate my existence".

**Conclusions/Next steps:** The success of this project is an important reminder of how vital it is to combine professional and peer lead support with creativity to make way for individual and collective empowerment and stigma reduction. The dual function of presenting, or exposing, the participants stories to their community was expressed as a somewhat scary but empowering process in terms of de-attaching stigma and improving self-worth.

## TUPED325

Life mapping through citizen journalism: exploring and documenting the lived experience of recipients of care with treatment literacy gaps

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**Background:** "Life Mapping" is a form of citizen journalism that aims to document the lived experiences and perspectives of people affected by HIV. "Life Maps" is a collaborative and participatory research methodology utilizing digital storytelling to document peoples' daily lives within the context of HIV. It aims to empower, advocate, and improve healthcare outcomes by moving from models of "data extraction" to "data democracy".

A key area that impedes access to HIV services is treatment literacy and this research project intends to highlight this barrier.

**Methods:** Citizen Science Life Maps is a qualitative longitudinal research study that uses digital smart phones to collect data on (among other topics) gaps in treatment



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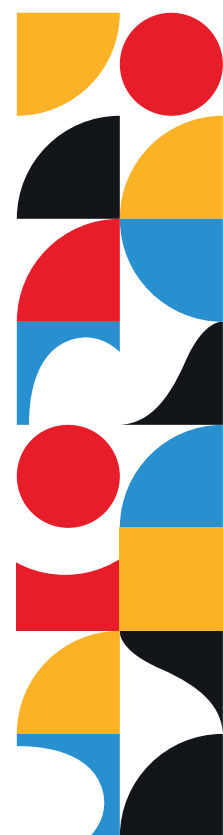
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literacy. This project has 39 participants; 19 in South Africa and 20 Malawi that were recruited from 2022 to 2024. Data is collected in form of written text messages, voice notes, photographs and videos. The data collection process is informed by a qualitative guide and analyzed using thematic analysis approach.

This abstract reports on themes of treatment literacy and present data on Undetectable = Untransmissible (U=U) and sources of HIV information.

**Results:** Many participants reported obtaining their HIV information through social media, radio, and less from their health workers. Half the South African participants especially young people had little knowledge of U=U. Almost all participants had never seen a U=U poster in a public or private health facility.

The majority of participants had heard of Pre-exposure prophylaxis (PrEP); most reported learning about PrEP through non-governmental organizations, rather than from health care workers in their health facilities.

The data collection process itself was an educational opportunity for participants, as identifying gaps in knowledge about U=U and PrEP led to curiosity and research about the science and evidence of HIV treatment.

**Conclusions:** This project highlights the gap in treatment literacy among people affected by HIV, the key demographic that should be most knowledgeable about HIV prevention, treatment and care. Much investment is needed in these communities regarding treatment education. Citizen journalists and other community monitors provide a logical entry point for peer education about HIV prevention, treatment and care modalities and innovations moving forward.

## TUPED326

Dialogue and joint actions between religious leaders and people living with HIV to eradicate stigma and discrimination. The case of Uganda and Nigeria

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**Background:** Stigma and discrimination are major barriers to HIV prevention, testing, treatment and adherence. The 2021 Stigma Index Survey reported HIV related stigma at 20% and 22% in Nigeria and Uganda respectively. AYPs and Key-populations are disproportionately affected, heightened by existing laws and policies.

In response, the UNAIDS – PEPFAR Faith Initiative, in collaboration with the World Council of Churches (WCC), the Global Network of People Living with HIV (GNP+), and the

International Network of Religious Leaders Living with or Personally Affected by HIV (INERELA+) implemented the Framework for Dialogue (FfD). FfD seeks to foster sustained partnerships between religious leaders and networks of PLHIV to eradicate stigma and discrimination.

**Description:** In 2023, FfD was implemented in Uganda and Nigeria, engaging diverse participants, including communities living with HIV, civil society groups, government representatives, key populations, and religious leaders from Christian and Muslim communities. Facilitated by WCC and UNAIDS, FfD emphasized principles such as country ownership, evidence-based strategies, people-centered approaches, equal and meaningful participation, innovation, action orientation, safe spaces, and doing no harm. The FfD engaged and re-engaged communities and faith leaders.

### Lessons learned:

- In Uganda, where an Anti Homosexuality Act had recently passed, the FfD provided a safe space for healing, allowing community organizations to voice their concerns and address threats to supporting LGBTQ+ causes.
- In Nigeria, joint actions emerged from the dialogue, galvanizing the implementation of two scalable activities addressing HIV self-stigma among young people and building capacity of young women living with HIV.
- In both Uganda and Nigeria, stigma related policies exist; however, design, planning, implementation, monitoring, and evaluation of context-specific stigma reduction programs need to be strengthened.
- The FfD facilitated the creation of shared understanding, collaborative approaches to overcome HIV stigma and discrimination, follow-up and sustained dialogue particularly among women and young people living with HIV.

**Conclusions/Next steps:** The FfD proved effective in analyzing evidence, fostering dialogue, and promoting joint actions against HIV stigma and discrimination. Ongoing dialogue is crucial for sustaining these efforts.

Global and local actors should continue to provide platforms for evidence-based discussions, encouraging and funding joint actions between religious leaders and communities affected by HIV in order to influence policy change.

## TUPED327

### Prioritising issues for intervention to improve the health-related quality of life of people with HIV: a network analysis

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**Background:** Signs impacting the health-related quality of life (HRQoL) in people with HIV (PHIV) are often overlooked. To address this, our team created the clinic screening tool CST-HIV, assessing eight key HRQoL issues: anticipated stigma, psychological distress, sexuality, social support, material deprivation, sleep and fatigue, cognitive problems, and physical symptoms.

We aimed to analyze the associations between the dimensions of CST-HIV through network analysis, identifying central aspects to prioritize interventions, addressing the underdiagnosis of critical symptoms by healthcare professionals.

**Methods:** Between 2021 and 2023, we carried out a cross-sectional study within the Spanish CoRIS cohort. We designed a mobile app to collect information on sociodemographic and health data, the CST-HIV and the WHOQOL-HIV-BREF to measure HRQoL. We conducted a weighted and undirected network analysis using the EBICGlasso estimator with the JASP program.

**Results:** Of 347 PHIV from 17 centres included in the study, 92.4% were men, 72.6% homosexual men and the mean age was 43.4 (SD:10.6) years. CST-HIV dimension with higher scores was stigma, then by sleep and fatigue. Sexuality and psychological distress also exceeded the mean range of responses. The dimensions that had the most connections (strength centrality) in the network were psychological distress, then sleep and fatigue, then the cognitive dimension. When considering closeness centrality, psychological distress, cognitive problems, sleep and fatigue, and social support were the closest dimensions. Regarding betweenness centrality, psychological distress, cognitive problems, and social support were found to be the most interrelated (Figure 1).

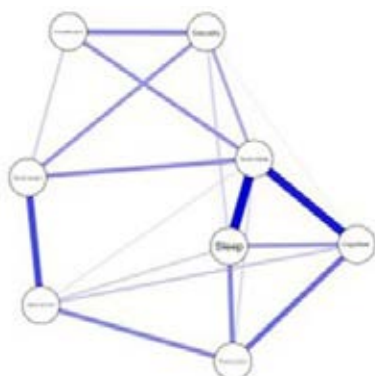


Figure 1. Network analysis of the eight dimensions of the CST-HIV.

**Conclusions:** Focusing on central nodes, especially psychological distress, enhances the likelihood of addressing issues measured by CST-HIV dimensions, thereby improving HRQoL.

However, for effective clinical use, analyzing interrelationships among problems in HIV cohorts is recommended to tailor interventions based on diverse contexts and profiles of PHIV.

## TUPED328

### "A tool to be okay": experiences of and attitudes towards starting antiretroviral therapy amongst people with recently acquired HIV in Greece, Spain and the UK

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**Background:** The twelve months following HIV acquisition (henceforth termed recent acquisition) is a time when people may experience debilitating symptoms and are potentially at heightened risk of HIV transmission. Most national guidelines recommend rapid initiation of antiretroviral therapy (ART) for those with recently acquired HIV. However, little is known about attitudes to and experiences of rapid initiation of ART among those with recently acquired HIV.

**Methods:** We conducted 23 semi-structured interviews (SSIs) with individuals from Greece, Spain and UK who had recently acquired HIV (HIV-negative to HIV-positive  $\leq 1$  year or other laboratory evidence of seroconversion) as part of CASCADE, an international longitudinal mixed-methods study of recently acquired HIV. Interview data were summarised and synthesised across countries using Rapid Assessment Procedures and analysed thematically.

**Results:** Of 23 participants, 21 were cis-gender men and 2 cis-gender women. Most initiated ART soon after diagnosis, describing themselves as ready or excited about starting treatment. Key motivations were restoration of health, becoming virally suppressed, returning to normalcy and regaining control over one's health. Some participants expressed concerns, primarily about long-term side-effects (particularly hepatic and renal toxicity),



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the lifelong nature of treatment and adherence; a small number were uncertain about efficacy. However, despite these concerns, the majority reported good adherence with some seeking out aids such as dosette boxes and reminders.

Support was integral to feeling ready to start ART and maintaining adherence, with participants describing their HIV clinical team, friends and peer mentors as key.

**Conclusions:** Our data show that people with recently acquired HIV who are linked to care are highly motivated to start ART, with concerns largely outweighed by the desire to return to health and to achieve virological suppression. Commonly reported concerns included long-term side-effects and efficacy.

Healthcare providers and others supporting people with recently acquired HIV should proactively address such concerns when initiating ART in order to reduce medication-related anxiety and to maximise adherence.

## TUPED329

HIV and gender identity stigma, health-related quality of life, mental health and substance use in transgender women (TGW) with HIV: two years follow up analysis in the TransCITAR cohort

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**Background:** TransCITAR is a prospective cohort study of 500 transgender and non-binary individuals from Buenos Aires, Argentina. This work examined changes from baseline to follow-up (12-months and 24-months) in HIV-related stigma, gender identity stigma, health-related quality of life, mental health and substance use in a subsample of transgender women (TGW) with HIV.

**Methods:** From September/2019 to December/2023, 175 TGW with HIV attended a gender-affirming healthcare service and completed questionnaires at baseline, 12 and 24 months follow-up to assess HIV status, HIV-related stigma (Berger's Scale, 4 dimensions: personalized stigma [PS], disclosure concerns [DC], negative self-image [NSI], and concern with public attitudes toward people with HIV [CPA]); gender identity stigma (GIS); health-related quality of life (HRQoL, SF-36, 2 component summaries:

mental and physical), depression (CES-D); alcohol use (AUDIT); and substance use and possible dependence (DAST-10). Repeated measures ANOVA was used.

**Results:** The median age was 31 years (IQR=27-38). Across the three timepoints, a significant reduction in total HIV-related stigma ( $F=420.84(1.78)$ ,  $p=.000$ ,  $n2=.88$ ), and in GIS ( $F=37.11(1.90)$ ,  $p=.000$ ,  $n2=.38$ ) was observed. All dimensions of HIV-related stigma significantly decreased.

Global HRQoL ( $F=22.12(2)$ ,  $p=.000$ ,  $n2=.22$ ) increased significantly between months 12 and 24 compared to baseline. Particularly, the Physical component summary ( $F=3.80(2)$ ,  $p=.025$ ,  $n2=.06$ ) significantly increased from baseline to month 24. No significant differences were found in the mental component summary of HRQoL, depression, alcohol use and substance use.

**Conclusions:** Access to HIV care in a gender-affirming service, supported by a peer navigator team, may have enhanced self-acceptance concerning HIV status and gender identity, leading to improved personal resources to cope with stigmatizing situations. Such support by peers and enhanced access to healthcare could have contributed to a general improvement in HRQoL, particularly in physical health. It is crucial to implement comprehensive strategies to address substance use and mental health indicators in this group.

## TUPED330

Detectable HIV-RNA and curable STI prevalence among Ugandan men living with HIV who are planning to have a child

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**Background:** Many men with HIV (MWH) want to have children. We hypothesized that unmet reproductive goals contribute to men prioritizing behaviors favoring conception (e.g., additional sexual partners, condomless sex) over HIV and STI prevention. We evaluated whether men with unmet versus met reproductive goals were more likely to have detectable HIV-RNA or prevalent STI.

**Methods:** We recruited MWH from an HIV clinic in southwestern Uganda. Half had "met" reproductive goals, defined as fathering a child in the last two years. Half had "unmet" reproductive goals, defined as not fathering a child in the last two years.

All reported ongoing condomless sex with intent to conceive a child. Men completed a questionnaire to assess demographics, sexual, and health behaviors. HIV-RNA



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(blood) and *Neisseria gonorrhea*, *Chlamydia trachomatis* (urine) were measured via GeneXpert. Syphilis was assessed via rapid immunochromatographic testing, confirmed by RPR.

We conducted multivariable logistic regression to assess whether unmet reproductive goals were associated with detectable HIV-RNA or curable STI.

**Results:** 100 MWH enrolled, 50 with and 50 without unmet reproductive goals. Median age was 41 (range 24-68) years. Twenty-two (22%) reported 2 or more sexual partners in the last month and most 62% reported no condom use. Most (88%) knew their pregnancy partner's HIV-serostatus; 35% reported a partner without HIV.

Among all men, 17% had detectable HIV-RNA and 30% had a curable STI. In models adjusted for age and education having unmet reproductive goals was not associated with detected HIV-RNA (aOR 0.79, 95% CI 0.14-4.57) or STI (aOR 1.02, 95% CI 0.39-2.65).

	Overall, N=100	Unmet Reproductive Goals, N=50	Fulfilled Reproductive Goals, N=50
Age, years (Median, range)	41 (24-68)	44 (28-68)	37.5 (24-61)
Education, primary or less (N,%)	43 (43%)	22 (44%)	21 (42%)
Partner serostatus, (N,%)			
With HIV	56 (56%)	30 (60%)	26 (52%)
Without HIV	30 (30%)	14 (28%)	16 (32%)
Unknown	11 (11%)	5 (10%)	6 (12%)
Curable STI, (N,%)	30 (30%)	14 (28%)	16 (32%)
Ng	8 (8%)	6 (12%)	2 (4%)
CT	5 (5%)	2 (4%)	3 (6%)
Syphilis	20 (20%)	8 (16%)	12 (24%)
HIV-RNA detected, (N,%)	17 (17%)	8 (16%)	9 (18%)
HIV-RNA > 200 copies/mL	7 (7%)	3 (6%)	4 (8%)

Table. Characteristics, HIV-RNA, and STI prevalence among men with & without unmet reproductive goals, living w/HIV, and planning for partner pregnancy in Uganda.

**Conclusions:** Our hypothesis that men with unmet reproductive goals may have greater odds of viremia or STIs was rejected. MWH continue to have detectable HIV-RNA and high STI prevalence, compromising their own health and creating risk for sexual partners. Engaging MWH who want children in STI care and adherence support is important to promote their health and address HIV incidence among women of reproductive age.

## TUPED331

### Factors influencing HIV treatment preferences for pills, injectables, and future 6-month modalities in people with HIV in the United States

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**Background:** As long-acting injectable antiretroviral therapies (LA-ART) offer people with HIV (PWH) treatment options beyond daily pill regimens, there is a need to understand preferences for distinct treatment modalities. We assessed factors associated with HIV treatment preferences among PWH.

**Methods:** We surveyed 798 PWH at 3 clinics in the United States (Chapel Hill, NC; Boston, MA; San Diego, CA) from June 2022 to March 2023.

Our primary outcome was HIV treatment preference for pills (daily, weekly, or monthly), LA-ART (injected therapy every 1 or 2 months), or a future 6-month injected modality. Using multinomial regression, we examined the association between socio-demographic, psychosocial (fear of needles and perceived HIV pill burden) and logistical aspects of HIV treatment (appointment frequency) on treatment preferences.

**Results:** 81% of participants identified as cisgender male with 43% White, 33% Black, and 16% Hispanic. Mean age was 52 years. 81% did not feel burdened by their HIV pill regimen; 62% did not fear needles, and 49% attended HIV care appointments  $\geq 3$  times/year. Using pills as the reference category, participants replying "yes" to HIV pill burden were over twice as likely (RRR= 2.26,  $p < 0.01$ ) to prefer LA-ART and over 2.5 times as likely (RRR= 2.65,  $p < 0.01$ ) to prefer the 6-month LA-ART option. As fear of needles increased, preference for LA-ART and 6-month options decreased (RRR= 0.16,  $p < 0.01$  and RRR= 0.30,  $p < 0.01$ , respectively).

Participants with  $\geq 3$  clinic visits/year were 3 times more likely than those with 0-1 visits/year to prefer LA-ART (RRR=3.66,  $p < 0.05$ ) and twice as likely to prefer the 6-month option (RRR=2.11,  $p < 0.10$ ).

Participants in the oldest tercile ( $\geq 58$ ) were half as likely as the youngest (19-47) to prefer LA-ART (RRR=0.43,  $p \leq 0.01$ ) and less likely to prefer the 6-month option (RRR=0.34,  $p < 0.001$ ). Black respondents were less likely vs white respondents to prefer 6-month option (RRR=.55,  $p < 0.01$ ).

**Conclusions:** Socio-demographic, psychosocial, and logistical factors influence HIV treatment decisions. Respondents who were older, Black, or expressed needle fear preferred pills, whereas younger respondents, those





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who reported HIV pill burden, and more clinic visits preferred LA-ART modalities. Findings highlight the need to consider multiple factors to support shared therapeutic decision-making between PWH and their providers.

## TUPED332

HIV-related stigma and social isolation among people living with HIV in China: the mediating role of family adaptability and cohesion

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**Background:** People living with HIV are prone to mental health problems, especially, social isolation. However, evidence indicates that HIV-related stigma is a significant risk factor. On the other hand, family adaptability and cohesion play important supportive roles in the response to physiological and psychological stress, among people living with HIV, and has a significant impact on their social isolation.

Therefore, this study explored potential mechanisms between HIV-related stigma and social isolation, specifically whether family adaptability and cohesion moderate the relationship.

**Methods:** A cross-sectional descriptive correlational exploratory research design was used to conduct the study. Data were collected from 294 people living with HIV recruited from two HIV-designated hospital or Disease Control Centers in Sichuan, China using three instruments, namely, the HIV Stigma Scale, General Alienation Scale, and Family Adaptability and Cohesion Scale.

We used descriptive statistics, inferential statistics as well as structured equation modeling (SEM).

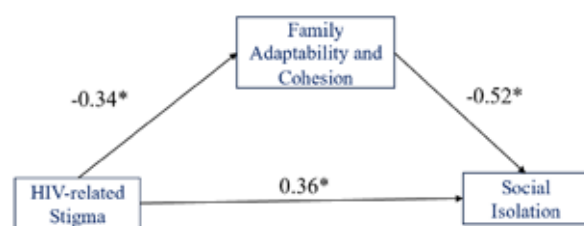


Figure. Final model with standardized coefficients \* $p < 0.001$

**Results:** The participants' average scores were  $41.46 \pm 7.52$  on social isolation,  $34.55 \pm 6.74$  on HIV-related stigma, and  $102.11 \pm 20.26$  on family adaptability and cohesion. The findings demonstrated a significant positive association between HIV-related stigma and social isolation ( $\beta = 0.36$ ,  $t = -4.99$ ,  $p < 0.001$ ).

Moreover, there was a negative and significant correlation between HIV-related stigma and family adaptability and cohesion ( $\beta = -0.34$ ,  $t = -5.04$ ,  $p < 0.001$ ). Path analysis revealed a significant negative effect between family adaptability and cohesion and social isolation ( $\beta = -0.52$ ,

$t = -7.78$ ,  $p < 0.001$ ). The results of mediation revealed that the indirect effect of HIV-related stigma on social isolation through family adaptability and cohesion was statistically significant; suggesting that family adaptability and cohesion partially mediated this relationship.

**Conclusions:** Family adaptability and cohesion mediated the association between HIV-related stigma and social isolation.

Thus, we should strive to reduce stigma faced by people living with HIV and strengthen the connection between people living with HIV and their families, thereby promoting their social integration, and reducing social isolation.

## TUPED333

Exploring health provider knowledge of the Undetectable equals Untransmissible (U=U) concept in Central America

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**Background:** The USAID HIV Care and Treatment Project, led by IntraHealth International, provides technical assistance to 36 HIV clinics in Central America to achieve the 95-95-95 goals. Regarding the third 95, in Q3FY23 project-supported clinics in the region reached 94.72% viral load suppression.

The region is therefore at a key moment to reinforce the Undetectable = Untransmittable (U=U) concept. Knowing that suppressed is not the same as undetectable, the project wanted to evaluate knowledge about this concept.

**Description:** In 2023, the project carried out an exploratory survey on U=U among project-supported health workers at HIV clinics, to identify gaps in their knowledge, attitudes, and perceptions. A multidisciplinary team designed the survey based on WHO guidelines and literature on U=U.

It included open-ended questions about the meaning of U=U and participants' opinions on it, and closed questions about key definitions like untransmittable, undetectable, and use of barrier methods according to viral load values. 123 participants from different professional backgrounds (medical doctors, nurses, psychologists, social workers) answered the online survey. The team analyzed responses to identify recurring themes.

**Lessons learned:** Findings showed around 30% of participants mentioned U=U as an important message that benefits adherence and clients' quality of life and leads to reduction in HIV transmission. However, there is confusion between the definitions of viral load suppression,

undetectable, and untransmittable. For instance, 49% of participants answered that only people with an undetectable viral load do not transmit HIV.

**Conclusions/Next steps:** The survey showed the importance of training and sensitizing all health personnel in the timely and correct dissemination of the U=U concept.

Literature shows that clients with viral load values between 1,000 and 50 copies/ml do not transmit HIV; however, these values represent the risk to develop future virological failures, stressing the importance of reinforcing adherence and aiming towards an undetectable viral load. It is crucial that providers use simple language and visual materials when explaining these concepts.

Providers should also keep transmitting STIs prevention messages, such as the use of barrier methods, regardless of the client's viral load value.

## TUPED334

**"A photo is not enough": Limitations of telemedicine based on qualitative analysis of interviews with people living with HIV using this strategy in the public health system of Buenos Aires**

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**Background:** From October-2020 to September-2022, we conducted an implementation study to offer telemedicine(TM) across four HIV units of public hospitals in Buenos Aires. We implemented TM to provide a continuum of care to people living with HIV(PLHIV) while exploring their perceptions of factors that promote or prevent the utilization of telemedicine. TM visits were conducted through phone or video calls.

The study started during the COVID-19 outbreak and continued until complete flexibilization came through.

**Methods:** This work analyzes PLHIV's perceptions to understand the limitations of TM for HIV care. We prospectively collected qualitative data through virtual open-ended interviews with PLHIV users of telemedicine. Interviewees were identified considering their gender, age, hospital unit, and years from diagnosis.

Sample size was determined by theoretical saturation according to the baseline analytical axis: care trajectories, hospital unit valuation, and difficulties for telemedicine. Interviews were conducted through Zoom® and manually recorded.

Rather than a statistical analysis, we favored an approach focused on both the diversity and the common experiences. Analysis was done using Atlas.ti®.

**Results:** 39 PLHIV were invited to interviews. 100% agreed to participate. 41%(16) were cisgender women, 2.5%(1) were transgender women, and 56.5%(22) were cisgender men. 51%(20) had up to 10 years since diagnosis.

Telemedicine was positively valued by 100% of interviewees, highlighting benefits such as avoiding commuting to hospitals and reducing consultation time.

However, face-to-face consultations were considered irreplaceable in the future due to the willingness to receive physical examinations. Even in PLHIV with suppressed viral loads, the fear of medical underestimation of problems was pointed out.

For example, when consulting for cutaneous rash and being assessed only by photography, they feared a diagnosis of an AIDS related event or long-term treatment adverse event could be overlooked. From their perspective, TM remains limited to routine purposes such as demanding prescriptions and clinical study assessments.

**Conclusions:** In a setting with accessible ART and acceptable rates of viral load suppression, PLHIV still underline the daily uncertainties of living with the virus. Limitations of TM for HIV-care shed light on how certain concerns remain unreachable by strategies focused exclusively on delivering ART and the replacement of in-person consultations.

## TUPED335

**Community services support children and adolescents living with HIV enrolled in an orphans and vulnerable children project achieve viral suppression in South Sudan**

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**Background:** In South Sudan, viral suppression (VLS) for children and adolescents living with HIV (CALHIV) 0-17 years is 63%. Factors contributing to low VLS include missed appointments, non-adherence to treatment, lack of psychosocial support and other community services, and stigma and discrimination. Adolescents and Children, HIV Incidence-reduction, Empowerment, and Virus Elimination (ACHIEVE), a USAID/PEPFAR funded project, is implemented in South Sudan by Jhpiego in collaboration with Ministry of Health (MOH) offering services to CALHIV in Juba County through community-based case management.

**Description:** ACHIEVE collaborates with health facilities where CALHIV are identified and offered enrolment into the orphans and vulnerable children (OVC) projects. Services are provided by case care workers and community



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adolescent treatment supporters (CATS). CATS update clinical records and work with clinical partners to ensure that non-suppressed CLHIV are identified and case conferred, and action plans are designed and monitored until VLS is achieved. Families of CALHIV receive other services including HIV treatment literacy provided twice a quarter through home visits, disclosure counselling, reminders for clinical appointments, including for viral load testing and MMD, as well as economic strengthening services through savings groups for caregivers, income generating activities, positive parenting training, and education support for children.

**Lessons learned:** Between April 1, 2020, and December 2023, 542 CALHIV were enrolled in the OVC program (316F/226M). Viral load suppression (VLs 1000 copies/ml) among the CLHIV increased from 63.4 to 90 percent in this period. CALHIV who stayed longer in the OVC program achieved better viral suppression: 87 percent for 18 to 24 months compared to 70 percent for <6 months.

These findings suggest length of time in the OVC program may be a predictor of improved VLS rates among CLHIV. The main barrier to viral suppression for CALHIV was interrupted adherence as a result of limited access to food.

**Conclusions/Next steps:** Community-based services through the OVC platform offer an opportunity to provide family-centered services, bridging the treatment cascade gap and contributing towards sustained viral load suppression.

ACHIEVE will build on these findings and best practices to strengthen coordination with MOH and clinical partners to enroll and offer OVC and other comprehensive services towards 95% VLS.

## TUPED336

Typologies of stigma and discrimination management in healthcare settings among people living with HIV in Australia

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**Background:** The existing literature provides clear evidence that anticipated and experienced stigma and discrimination within health care settings have detrimental effects on people living with HIV (PLHIV), particularly in relation to physician trust, use of health services, treatment adherence, and overall health and well-being.

The aim of this study was to understand the different ways PLHIV manage stigma or discrimination in healthcare settings using latent class analysis (LCA).

**Methods:** Data were collected from 739 PLHIV in Australia between May 2021 and July 2022 via a cross-sectional survey. Participants were asked how often they did any of the following in order to avoid stigma or discrimination in health settings: "delayed accessing care", "not told health workers about your HIV", "looked for alternative services", and "not attended a follow-up appointment". Response options were measured on a five-point Likert scale (0-4; never, rarely, sometimes, often, always).

**Results:** LCA suggested four distinct classes of stigma and discrimination management. Class 1 ("No avoidance/deferment or non-disclosure") was the most common (41.8% of participants were in this group); and these participants were more likely than other participants to be: male; gay; an English speaker; diagnosed >5 years ago; and not living in a rural area. One in six participants (15.3%) were in Class 2 ("Both avoidance/deferment and non-disclosure") – the group using the most strategies to avoid stigma in healthcare settings. These participants were more likely to be: female or a different gender (compared to male); and heterosexual, queer, or a different sexuality (compared to gay). The remaining participants were in Class 3 ("Non-disclosure but no avoidance/deferment"), comprising 15.2% of the sample; and Class 4 ("Situational avoidance/deferment and non-disclosure"), which comprised 27.7% of participants.

**Conclusions:** These findings suggest that PLHIV in Australia who are recently diagnosed, and who are not gay men, are more likely to anticipate stigma and discrimination related to accessing healthcare services. Health services and systems need to meaningfully engage people recently diagnosed with HIV in order to reduce anticipated stigma and discrimination, and give greater attention to informing PLHIV about their rights in relation to healthcare provision.

## TUPED337

Contextualizing factors that impact access to HIV care among women aged 30-49 years in Gauteng and Limpopo, South Africa

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**Background:** South Africa carries the largest share of the global HIV burden, with women bearing the brunt of the epidemic. This study explored factors impacting access to HIV care among 30-49-year-old women accessing HIV services.

**Methods:** Employing convenience sampling, we recruited and consented 291 women aged 30-49 at 15 clinics and various public spaces in Gauteng and Limpopo, which constituted urban and rural respectively. The sample

consisted of three cohorts: HIV positive missing from care (HPM, n=44), HIV Unknown status (HU, n=121), and HIV positive linked to care (HPL, n=126). Descriptive analysis was conducted using Stata17.

**Results:** Most participants were Black/African (99%), citizens/permanent residents (82%) and currently in a relationship (78%). Among HPL and HU participants, highest level of education was secondary/university school (50% and 64%), whereas it was primary school (59%) for HPM. Most participants listed extended waiting and queues as primary barriers to accessing health care (HPL 60%, HU 50% and HPM 80%). HPM also viewed poor attitude among healthcare workers (HCWs) as a barrier (70%). Most participants that did not access healthcare in the last 12 months, listed primary barriers as not feeling sick (HPL 17%, HU 17%, HPM 27%), not trusting HCWs (HU 2%, HPM 14%) and previous negative clinic experiences (HU 1%, HPM 11%). Most women missing from care (93%) reported that they had started antiretroviral therapy previously, although most of their last ARV collection was between 7 and 12 months (36%) or more than a year ago (41%) (Table 1).

Barriers to accessing health care *Multiple Response	HPL n(%)	HPM n(%)	HU n(%)
Poor attitude of HCW	30 (23.8)	31 (70.4)	21 (17.4)
Lack of confidentiality	14 (11.1)	16 (36.4)	4 (3.3)
Inappropriate language or behaviour such as racism or xenophobia	8 (6.4)	5 (11.4)	5 (4.1)
Refusal to provide me with testing or treatment	2 (1.6)	5 (11.4)	1 (0.8)
Refusal to see/treat me without ID documents	5 (3.9)	1 (0.8)	
Long queues and waiting times	75 (59.5)	35 (79.6)	61 (50.4)
Did not have the medication I needed	8 (6.4)	1 (2.3)	13 (10.7)
They were unable to communicate with me in my language	3 (2.4)	4 (9.1)	3 (2.5)

**Conclusions:** Since 93% of missing women have been on antiretroviral therapy previously and many highlighted negative clinic experiences as barriers, offering these women safe and supported spaces as options for them to return is a potentially viable solution. Additionally, targeted HCW interventions focusing on protocols for women returning to care after multiple missed visits can be explored.

## TUPED338

### Building MindSKILLZ of young people in Zambia: lessons learned from a printed mental health magazine in Lusaka and Eastern Province

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**Background:** Adolescents and young people (AYP) in Zambia face numerous mental health challenges, especially youth living with HIV (YLHIV), but services are scarce. Under two phases of the USAID-funded Youth Excel project from 2022-2023, Grassroot Soccer Zambia (GRSZ) developed the MindSKILLZ Magazine, a comic book-style, take-home resource to promote positive mental health and build coping skills and promote social support for AYP.

**Description:** In phase 1, GRSZ near-peer 'Coaches' distributed the magazine to YLHIV who participated in a GRSZ group ART adherence support program. In phase 2, teachers and volunteer ART caregivers also distributed magazines, additionally reaching AGYW participants in a GRSZ SRHR and life skills program and some adolescents who had not previously engaged with GRSZ. Magazines were distributed through home visits or school-based group distribution, and virtual or in-person follow-up visits were conducted.

A mixed methods evaluation was conducted across both phases, including a brief pre-post tests for participants (n=500), in-depth interviews with AYP (n=34) and parents (n=12), focus group discussions with Coaches (n=5) and AYP (n=10) and key informant interviews with teachers (n=6) and caregivers (n=19).

#### Lessons learned:

- Across both project phases, 4,796 AYP received the magazine, including 3,295 YLHIV.
- Participants found the magazine content relevant and useful, and enjoyed the youth-friendly design, games, and engaging activities in the magazine, including space for writing and drawing.
- YLHIV and AGYW who participated in GRSZ programs had higher baseline levels of mental health knowledge than those who had not (79% vs. 83%, respectively), indicating reinforcement of content covered in in-person programming.
- Participants reported referring to the magazine at stressful times to help them calm down. They also shared it with friends and used the 'conversation starter' prompts to begin discussions with family.
- Teachers and caregivers worked together with GRSZ Coaches in phase 2 magazine distribution, but faced time constraints due to other job duties. They also requested additional training to build their capacity in mental health.



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**Conclusions/Next steps:** The MindSKILLZ magazine is an acceptable resource for promoting positive mental health among AYP, including YLHIV. Its distribution is being further scaled and evaluated when coupled with in-person program sessions.

## TUPED339

### Mental health of key population groups and PLHIV during war

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**Background:** War has a destructive impact on the mental health and psychosocial well-being of all Ukrainians, especially affecting the health of key population groups. Representatives of key groups and people living with HIV (PLHIV) become particularly vulnerable to mental health issues due to high levels of social stigma and discrimination, unique experiences of traumatic events and stress (often involving substance abuse), accompanying barriers related to access to essential treatment services (infrastructure destruction, medical facility damage, disruptions in drug supplies).

Denial of mental health problems and interpreting them as another stigmatizing factor hinder key groups from seeking specialized services. A low level of mental health care culture often leads representatives of key groups to not consider mental health issues as illnesses, attempting to ignore psychological disturbances that arise or worsen under the influence of war-related stressors, resorting to self-treatment, and so on.

**Description:** The main goal of the NGO "Light of Hope" program was the implementation of screening tools to identify mental disorders in representatives of key groups and PLHIV, followed by guiding them to specialized services for assistance.

Additionally, the program aimed to cultivate a culture of caring for mental health and reduce the stigma associated with mental disorders.

#### Lessons learned:

- Early detection of mental disorders significantly facilitates their treatment and minimizes their impact on adherence to HIV and other disease treatments.
- Navigating participants to relevant support services demonstrated the importance of easy and quick access to qualified assistance, thereby reinforcing the state's efforts in the field of mental disorder treatment at the primary healthcare level.

#### Conclusions/Next steps:

- It is necessary to expand screening and navigation programs not only at the NGO level but also to involve middle-level medical personnel to fully cover representatives of key groups with services.

- Support and training for medical professionals in managing cases of mental disorders at the primary healthcare level should be ensured.
- Conduct regular evaluation and monitoring of program results to adapt and improve it for more effective assistance.
- It is crucial to engage both civil and governmental organizations to support and develop programs focused on mental health support, especially in crisis conditions.

## TUPED340

### Doblemente tachada: a mixed methods assessment of how intersectional stigma affects HIV prevention among Indigenous gay and bisexual men in Guatemala

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**Background:** Indigenous Guatemalans comprise half the country's population and are more likely to live in extreme poverty, have lower rates of educational attainment, and experience poorer health outcomes. Indigenous gay and bisexual men (GBM) likely experience intersectional stigma, when various forms of oppression overlap to negatively affect those with multiple marginalized identities. We sought to assess how intersectional stigma impacts HIV prevention for Indigenous GBM in Guatemala.

**Methods:** Between April 2022 and December 2023, we conducted an exploratory sequential mixed methods study and integrated data from in-depth qualitative interviews with Indigenous GBM (n=23) and an ongoing cross-sectional survey with Indigenous GBM (n=324) in Western Guatemala.

For qualitative data, we coded thematically and conducted narrative analysis to identify the most salient themes. For quantitative data, we conducted descriptive statistics to report the frequency and proportion of stigma and HIV prevention outcomes.

**Results:** In qualitative interviews, we found that Indigenous GBM experience intersectional stigma based primarily on their Indigenous and sexual identities, but also based on gender expression, level of education, and if they were from a rural setting. Indigenous GBM perceived that intersectional stigma had a direct impact on their mental and physical health, and also impacted access to education, employment, and quality healthcare, including HIV



services. Quantitative findings further highlight the high burden of sexual orientation (SO) stigma and Indigenous identity stigma experienced by this population. 80.5% of participants reported hearing that their SO was not normal; over half (52.8%) reported losing a relationship with a family member because of their SO; and 29.3% suffered physical violence for being gay/bisexual. The majority of Indigenous GBM (76.0%) also reported high levels of interpersonal racism based on their Indigenous identity.

Although less than half (48.8%) of participants reported always using a condom during sex, only 50.2% believed PrEP was an acceptable prevention strategy and only 20.7% had initiated PrEP.

**Conclusions:** To increase Indigenous GBM engagement in HIV prevention services, including PrEP uptake, multicomponent interventions are needed to mitigate the effects of intersectional stigma, including on structural determinants of health, while also identifying innovative strategies for addressing the root causes of homophobia and racism in Guatemala.

## TUPED341

The impact of multilevel interventions on alcohol consumption, depression, stigma, and ART adherence among men living with HIV in India: results from a 27-month longitudinal study

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**Background:** Individuals living with HIV frequently encounter additional challenges such as stigma and mental health disorders, along with issues including alcohol use and suboptimal ART adherence. Interventions are needed to address multiple factors to comprehensively improve their overall health and well-being.

This study assessed the effectiveness of multilevel interventions designed to decrease alcohol consumption, alleviate depression, stigma, and improve ART adherence among men living with HIV in India.

**Methods:** This study utilized data from the research project titled *Alcohol and ART Adherence: Assessment, Intervention, and Modeling in India*. The investigation implemented multilevel interventions, including individual counseling (IC), group intervention (GI), and collective advocacy (CA) across three cycles at three ART centers. Participants in the control center only received standard care and treatment.

Participants completed surveys assessing demographic characteristics, alcohol use, HIV stigma, and depressive symptoms at baseline, 9 months, 18 months, and 27 months. The two-way mixed ANOVA was employed to as-

sess differences between intervention and control groups over 27 months, controlling for covariates including age, education, marital status, migration, and time since ART treatment.

**Results:** A total of 940 participants initially enrolled in the study at baseline. Analysis focused on 726 participants who responded to both the baseline and the 27-month follow-up surveys. The intervention group exhibited significantly lower alcohol use compared to the control group ( $F(1, 577) = 18.6, p = 0.000$ ).

Moreover, the intervention demonstrated a significant impact on reducing depression and stigma compared to the control group, with significant differences observed in depression ( $F(1, 577) = 125.5, p = 0.000$ ) and internal stigma ( $F(1, 577) = 61.6, p = 0.000$ ) across time points.

In contrast, 4-day ART adherence did not show a significant difference between the intervention and control groups over time. This lack of significance may be attributed to the already high adherence levels present in both groups.

**Conclusions:** These findings demonstrated the effectiveness of the multilevel interventions in addressing the various challenges experienced by men living with HIV in India. Similar interventions could be replicated in countries with comparable contexts.

## TUPED342

Psychosocial distress of persons living with HIV in the workplace in Trinidad and Tobago

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**Background:** As the HIV and AIDS pandemic enters its sixth decade, despite advancements in treatment, HIV-related stigma continues to impact the workplace experiences of people living with HIV (PLHIV), particularly under the added strain of the COVID-19 pandemic.

This study explores the psychosocial distress among employed PLHIV, examining the effects on mental health and well-being, considering the compounded challenges posed by the COVID-19 pandemic.

The objectives of the study were to:

Investigate the interplay between HIV, COVID-19, and psychosocial well-being in the workplace.

Inform policies and interventions for improving workplace equity for PLHIV.

**Methods:** The data for this survey is from a cross-sectional study conducted from October 2022 to November 2023. Using a stratified convenience sampling methodology, data were collected from 300 adult, employed PLHIV aged 18 years and over who were clients of the largest



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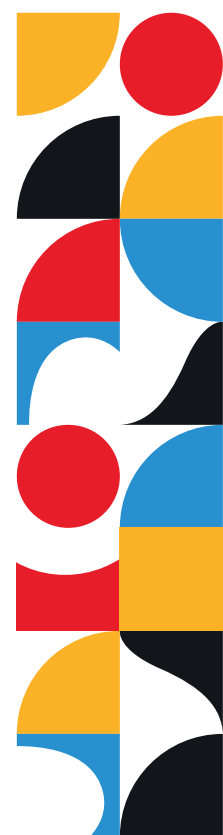
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treatment clinic (Medical Research Foundation) in TNT. The survey instrument collected information on demographic characteristics, sexual identity, mental Health, effects of COVID-19 and workplace experience of participants.

**Results:** The provision of free antiretroviral therapy (ART) positively impacted PLHIV, though a significant need for enhanced psychosocial and mental health support was identified. Notably, 24% of respondents reported thoughts of self-harm. The government's response to COVID-19 helped mitigate additional impacts on PLHIV, with 43.7% getting vaccinated primarily to retain employment.

Workplace experiences varied; 24.4% of PLHIV who disclosed their status experienced confidentiality breaches, and 33.8% faced discrimination, underscoring the need for stronger workplace support systems.

**Conclusions:** Advocacy efforts should aim to strengthen Social Protection Networks to enhance the quality of life for PLHIV.

Development of protocols to protect livelihoods during future pandemics is imperative.

Implementing workplace programs to manage HIV is crucial for creating a supportive environment for PLHIV

## TUPED343

**Lack of access to viral load testing and results is demotivating as people with HIV cannot celebrate the benefits of U=U: expressions from PLHIV in South Africa**

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**Background:** We conducted a series of advocacy workshops for people living with HIV (PLHIV) across three provinces in South Africa between October and December 2023 to sensitize them about the importance of viral load testing (VLT) and access to viral load results as a determinant of an undetectable status.

**Description:** We recruited 75 adult PLHIV across different provinces across South Africa with assistance from the PLHIV sector provincial representatives and each session had 22- 25 people. Discussions were facilitated to establish participants expressions about VLT and results sharing practises in their provinces.

Participant also completed a questionnaire to assess their level of understanding about the Undetectable equals Untransmittable (U=U) concept, and the benefits of VLT and results to themselves and in preventing transmissions.

**Lessons learned:** We have learned that many participants who tested more than 5 years ago had at least one VLT once a year, but more than half of them did not know their viral load results. Some were told at the clinics that their VLT results were ok, but the meaning of ok was not explained.

From those who tested for HIV a year or less ago, some indicated that they had blood tests done, but were never told what it was and results were never shared. Four clients indicated that they never had a blood test, and didn't know there is a test that monitors treatment effectiveness.

Some participants expressed that they lost hope in dating and in having children of their own. But they later reported that their hope in finding love and having children was restored because of U=U. It is clear that PLHIV must have control of their VLT schedules, demand the test when due, and demand that results must be shared and explained to them.

**Conclusions/Next steps:** A reward for PLHIV for adhering and being motivated to remain on treatment is a proof that they achieved a U=U status, and that proof is VLT results. Improving VLT access, and results sharing and documenting has multiple benefits : improves the quality of life, continuity in care and attainment of the 95 95 95 targets.

## TUPED344

**Barriers and facilitators to daily oral PrEP uptake and adherence among youth in a clinical trial to evaluate community-based biosocial HIV prevention and sexual reproductive health in rural South Africa**

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**Background:** Freely available anti-retroviral based prevention, including HIV Pre-Exposure Prophylaxis (PrEP) has not translated into population effect due to suboptimal coverage amongst adolescents and young adults (AYA). We hypothesized that a stepped-wedge trial whereby trained and peer navigators conducting tailored psychosocial assessments, mentorship and referring AYA to mobile sexual and reproductive health (SRH) clinics for differentiated HIV prevention, and ongoing peer adherence support, would improve AYA's uptake and adherence to oral PrEP. As part of the trial's process evaluation between



July and December 2023, we explored acceptability and uptake of daily oral PrEP among males and females aged 16-30 years old participating in the trial.

**Methods:** Using a mixed methods approach, we triangulated intervention delivery process data collected electronically during psychosocial assessments by peer navigators and clinic data with semi-structured in-depth interviews conducted with a purposive sample of  $n = 30$  AYA. Qualitative data was transcribed, translated from IsiZulu into English, and analysed thematically.

**Results:**  $N = 10188$  AYA underwent psychosocial assessment and  $n = 4515$  (44.3%) were referred to the mobile clinics.  $N = 1243$  participants were eligible for PrEP, of which 864 (69.5%) initiated. Of those initiated, 334 (38.7%) returned for the first PrEP refill, while 150 (17.3%) discontinued PrEP use after 30 days. Factors facilitating uptake and retention included health promotion from peer navigators as part of individual psychosocial needs assessment and tailored health promotion, significant risk perception of HIV transmission due to multiple partners or not knowing a sexual partner's HIV status, experiencing minimal to no side effects, adherence support, and a desire to be in control of own health. Those who discontinued PrEP cited barriers including migration, forgetting to recollect, stigma associated with using PrEP, pill burden, and side effects. Those who refused to be initiated cited a perceived pill burden, stigma associated with HIV treatment, lack of knowledge, not wanting to test for HIV, and fear of PrEP's side effects.

**Conclusions:** Peer delivered psychosocial needs assessment to tailor health promotion and support can facilitate the uptake and acceptability of daily oral PrEP among young people. However, barriers including usability, palatability and context discourage uptake and retention.

## TUPED345

Empowering choices for health and beyond: a status-neutral demand generation campaign to proactively combat HIV transmission in the Philippines

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**Background:** According to the latest data, the Philippines is far from its 95-95-95 targets, registering at 64-66-97. Diagnosed cases are increasing, with 50 Filipinos diagnosed with HIV per day. Current approaches in HIV-related demand generation strategies include sero-sorting, risk-

based, and messages involving behavior change for key populations. Here, we present #WhatWorksForU: a status-neutral demand generation campaign developed by key communities in the Philippines.

**Description:** A crowdsourcing inviting key populations were conducted to facilitate discussions in creating the framework of the demand generation campaign. In the discussions, the following were considered: demographics (such as age, occupation, activities during the day, etc.) and technographics (social media accounts they use, how they interact, etc.).

The campaign made sure to use a range of sub-campaigns targeted at specific age groups and relationship dynamics, emphasizing self-empowerment and inspiring others to do the same. The campaign also highlighted the integration of the status-neutral approach, recognizing that HIV prevention and care is everyone's responsibility, regardless of their HIV status.

**Lessons learned:** The developed campaign, #WhatWorksForU, is a demand generation campaign that aims to promote HIV testing and combination prevention among individuals regardless of their HIV status and gender. The campaign's status-neutral approach recognizes that HIV care is everyone's responsibility, regardless of their HIV status and demographics.

Also, the different sub-campaigns will cater to the different needs of individuals, encouraging them to access free and/or subsidized sexual health packages and services.

The sub-campaigns will also educate individuals on how to protect themselves and their partners from HIV and other STIs, depending on their specific relationship dynamics.

**Conclusions/Next steps:** In conclusion, the #WhatWorksForU campaign is a comprehensive approach to HIV prevention and care that aims to increase HIV awareness and combination prevention among individuals of all HIV statuses and genders.

Through a series of sub-campaigns targeting different relationship dynamics and sexual experiences, the campaign empowers people to take charge of their sexual health.

With the help of key people and the entire community, and the power of social media, the #WhatWorksForU campaign seeks to create a lasting impact and a world where everyone can take proactive steps to protect themselves and others.



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## TUPED346

Exploring differences in the association between mental health, viral suppression, and adherence by age and transmission risk among people living with HIV: results from the DC Cohort

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**Background:** One in five people with HIV (PWH) in the US are older than 55 years and are men who have sex with men (MSM). Adverse mental health disproportionately impacts sexual minorities and can result in suboptimal HIV outcomes. This may have a greater impact among older adults.

Stratifying by age and HIV transmission risk, we examined the influence of mental health on adherence to antiretrovirals (ARV) and viral suppression (VS) among PWH.

**Methods:** The DC Cohort is a longitudinal study on PWH across 14 clinics in Washington, D.C. This analysis includes participants who completed a patient reported outcomes survey (PROs) between 10/1/2022 and 01/01/2024 linked to electronic health records.

We classified whether or not participants had a mental health diagnosis (MHD) of either anxiety, depression, or post-traumatic stress disorder (PTSD) using ICD codes at least 6 months prior to completing the PROs.

We used Poisson regression with robust variance to calculate adjusted risk ratios (RR) between MHD and self-reported ARV adherence and VS (HIV RNA < 200 copies/mL measured within 6 months of the PROs), stratifying by age ( $\geq$  vs. < 50 years) and HIV transmission risk factor (MSM vs. non-MSM). Models were adjusted for race/ethnicity, time since HIV diagnosis, and employment.

**Results:** Among the 1324 participants, having a MHD was associated with lower VS (Adjusted RR [95% CI]: 0.96 [0.93, 0.99]). This association was constant across age groups and transmission risk groups.

Having an MHD was associated with a lower likelihood of adherence (7 Days RR: 0.89 [0.83, 0.96]; 30 Days RR: 0.86 [0.78, 0.95]; 90 Days RR: 0.85 [0.76, 0.96]) and this was true across all age and transmission risk strata.

We did not find evidence of interaction by age or transmission risk for any of the associations when evaluating p-values of interaction terms, Breslow-Day tests, or likelihood ratio tests.

**Conclusions:** MHD was associated with lower VS and lower adherence. These associations were the same across age and HIV transmission risk strata.

Future analyses should further investigate how mental health impacts adherence and VS among aging MSM living with HIV to inform future HIV care interventions in this population.

## TUPED347

Navigating HIV challenges through interfaith collaboration through the UNAIDS-PEPFAR Faith Initiative

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**Background:** The UNAIDS-PEPFAR Faith Initiative 2022-2023 addresses the global challenge of an off-track response to end the AIDS pandemic. Despite great progress in HIV response, new HIV infections persist, mostly among Children, Adolescent Girls and Young Women, and older men, with late diagnosis contributing to poor treatment outcomes. Sexual and Gender-based Violence (SGBV) is a significant risk factor fueling HIV spread.

The faith initiative aims to create interfaith advocacy and collaboration among faith community and public health agencies to address gender and social inequalities.

**Description:** The interfaith approach involved identification of 20 national Christian Health Associations and religious leaders, establishing connections with the Interfaith Health Platform to facilitate coordinated activities. Additionally, 15 targeted HIV prevention messages were designed and disseminated during sensitization sessions by faith leaders. In Zambia, 50 faith leaders were trained on SGBV as a key driver of HIV spread. Subsequently, collaborative stakeholder dialogues on SGBV prevention and response were held, fostering a unified front among faith leaders, NGOs, and government departments.

As a result, faith leaders endorsed a call to action and developed action plans, established a robust referral network with other SGBV stakeholders, and initiated media campaigns against SGBV.

**Lessons learned:** Acknowledging faith leaders as influential advocates, necessitate comprehensive tools for delivering effective HIV prevention messages. The intricate diversity in values and traditions inherent in each religion mandates utmost respect throughout the phases of engagement. Active involvement of faith leaders emphasizes integrating religious teachings in health programs. Working with religious scholars create opportunities for aligning counseling practices with scriptural teachings. Furthermore, the lessons highlight the critical need for capacity building to enhance knowledge on HIV prevention and control.

**Conclusions/Next steps:** The faith Initiative embodies the essence of global collaboration in addressing the persistent challenges of HIV/AIDS. The achievements under-

score the significance of faith leaders in steering efforts towards achieving the Global AIDS Strategy 2021-2026. Navigating the complexities of the HIV pandemic requires sustained efforts to ensure an inclusive, and impactful response, leaving no one behind.

## TUPED348

### Towards a stigma-free healthcare experience among people living with HIV in Pennsylvania: recommendations from a Statewide Intersectional Stigma Project

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**Background:** Intersectional stigma (IS) significantly impacts the healthcare experiences and health outcomes of people with HIV (PLWH) including being predictive of healthcare avoidance and poor adherence to HIV medical care. Despite its critical importance, no evidence-based IS reduction interventions exist that work dually to reduce stigmatizing behaviors among clinical staff and perceptions of IS among clients.

**Description:** Through a community-government-academic partnership committed to reducing IS in healthcare settings among PLWH in Pennsylvania (PA), United States, this project used statewide stakeholder-engaged approaches to: document the prevalence and impact of IS in healthcare settings among PLWH (2021); determine healthcare provider readiness for IS reduction efforts (2022); and develop IS reduction interventions for HIV care clinics (2023).

**Lessons learned:** A statewide, online anonymous survey heard from 1,421 clients of PA's AIDS Drug Assistance program from all seven Ryan White Coalition regions of PA (2021). Participants reported experiences and anticipation of stigma from health care professionals (33% from non-HIV doctors, 26% front desk staff, 25% medical care team). Higher levels of IS in healthcare settings were significantly associated with lower odds of both self-reported retention in HIV care ( $p<0.001$ ) and self-reported viral suppression ( $p=0.02$ ).

Survey findings underscore the urgent need to develop interventions to reduce IS and improve HIV care outcomes. We then designed a series of stakeholder activities using Human-Centered Design to prioritize experts with lived experiences in the creation of IS reduction interventions (2022-2023).

Forty-one stakeholders including PLWH, healthcare workers, and government officials participated in an iterative and inclusive process of sharing, prioritizing, generating, and refining intervention concepts for reducing IS expe-

riences for PLWH in HIV care settings. Eight IS reduction interventions were co-designed across three levels: clinic culture and environment, capacity-building, and institutional/structural.

**Conclusions/Next steps:** This project quantified the scale of IS experienced by PLWH in healthcare settings, underscoring the significant role that stigma plays in negative health outcomes and points to the need for healthcare-based stigma reduction interventions.

Our systematic meaningful co-creation approach allowed PLWH and healthcare providers to imagine a stigma-free healthcare experience for PLWH.

We will discuss feasibility, acceptability, and context of initial deployment of these interventions, planned to occur in Spring 2024.

## TUPED349

### Peer-facilitated disclosure support for adolescents and young people living with HIV in rural Limpopo, South Africa

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**Background:** Adolescents and young people living with HIV (AYPLHIV), aged 0-24, encounter intricate challenges encompassing health, relationships, and societal stigma. Our programme in rural Limpopo, South Africa, focuses on supporting AYPLHIV, emphasizing the crucial aspect of HIV status disclosure.

**Description:** Anchored in the Zvandiri model, our programme employs AYPLHIV as peer educators to aid their peers in the community. With lived experiences and unique disclosure journeys, these educators are well-equipped to navigate the fears and implications of both receiving and delivering disclosures. Rooted in the community, they possess an in-depth understanding of cultural norms, local practices, and prevailing stigma, making them effective advocates.

Peer educators undergo comprehensive training to assist in vertical disclosure (caregiver to child) and peer-to-peer disclosure (AYP disclosing to friends and/or intimate partners). Since the programme's inception in September 2023, 11 educators have supported 64 disclosures, with 52 (83%) being vertical and 11 (17%) peer-to-peer.

**Lessons learned:** The disclosure support initiative yielded valuable insights, particularly in the case of peer-to-peer disclosure.

Those who underwent this process experienced a greater sense of comfort attributed to having a peer of similar age and disease experience guide them through the disclosure journey.



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The presence of a peer further made the disclosing party more receptive to the process due to the relatable way in which it was facilitated, fostering easy and open communication.

The establishment of a safe space, conducive to questions and accurate knowledge sharing, played an important role in eliciting supportive responses from peers. Notably, 100% of peer-to-peer disclosures ended in a commitment of ongoing support which was reportedly sustained during the following month when follow-ups were conducted. Peer-facilitated vertical disclosure support also proved to be beneficial as peer educators, drawing from their own experiences, could establish connections with the child/adolescent and offer insights and advice that individuals without lived experience might find challenging.

**Conclusions/Next steps:** This initiative highlights the impact peer-facilitated disclosure support has on fostering acceptance and positive outcomes among AYPLHIV.

Future efforts will focus on refining training methodologies, strengthening community partnerships, and assessing the long-term impact on client wellbeing, with a commitment to addressing the ongoing challenges associated with AYPLHIV disclosure.

## TUPED350

**CHAMPS in action: cultivating a skilled workforce for effective HIV prevention in West Virginia**

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**Background:** The opioid crisis has increased risks for HIV outbreaks associated with injection drug use in West Virginia, where common barriers to testing, treatment, and transportation are exacerbated by social and geographical isolation.

To address these challenges, the Community Education Group (CEG) adapted its highly effective CHAMPS program to serve vulnerable communities in the state.

**Description:** CHAMPS was first established in Washington, D.C. in 2004 to address the health needs of communities of color.

The program was highly successful, training over 150 Community Health Workers (CHWs), screening over 10,000 for HIV and 5000 for HCV annually, and achieving a 90% linkage to/retention in care rate.

CEG adapted this program to better suit West Virginia's unique needs, resulting in a six-week, 147-hour training program that has successfully trained 185 CHWs across 25 counties, while prioritizing recruitment from rural areas, BIPOC communities, and populations with a history of substance use.

## CHAMPS Outcomes (2023)

Participants graduated:	185
% Participants graduated:	89%
% Grads w/ history of substance use:	53%
% Grads identifying as female:	69%
% Grads identifying as BIPOC:	35%
% Grads w/ history of incarceration:	41%

CHAMPS equips participants with core CHW skills, but also includes 22+ hours of HIV education, making CHAMPS graduates well-suited to fill gaps in the HIV care continuum, mitigate increases in HIV incidence, increase HIV testing and linkage to care, disseminate HIV education, and reduce HIV stigma.

These workers can be particularly effective, as they are already positioned in many of the communities most vulnerable to HIV in West Virginia.

**Lessons learned:** CHAMPS has successfully served two distinct populations, demonstrating the effectiveness of training CHWs from rural and at-risk communities to address specific health needs.

CHAMPS graduates represent a trained workforce, already positioned to leverage existing trust relationships and local knowledge to deliver effective interventions and address local health concerns.

### Conclusions/Next steps:

- Expand CHAMPS across Appalachia, reaching more rural and high-risk communities.
- Leverage the CHAMPS workforce for future HIV-related interventions, including rapid deployment for outbreaks or new initiatives.
- Conduct further research to evaluate the long-term impact of CHAMPS on HIV prevention and care outcomes throughout Appalachia.

## TUPED351

**Building trust: a qualitative investigation of peer navigation experiences among transgender women (TGW) living with HIV in São Paulo, Brazil**

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**Background:** Transgender women (TGW) face an elevated risk of HIV infection, encountering barriers to health-care access and antiretroviral therapy (ART) adherence. Grounded in the Gender Affirmation Model, 'Trans Amigas,' a peer-led intervention, was designed to improve retention in HIV care for TGW Living with HIV (LWH) in São Paulo, Brazil. We utilize in-depth interviews (IDI) with peer


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navigators (PN) post-study completion to explore PN's trust-building experiences and obstacles confronted by participants.

**Methods:** Conducted between May 2018 and September 2019, the Trans Amigas project provided peer navigation services to 75 TGWLWH. PNs were TGWLWH and adherent to treatment themselves, PNs guided participants in seeking healthcare and social assistance and fostering strategies for increased ART adherence. Collaboratively, participants and PNs addressed self-care and personal goals. Following the navigation phase, we conducted in-depth interviews (IDIs) with seven PNs. These interviews utilized a semi-structured script designed to explore the PN's perception of participant challenges and interactions during the navigation. Thematic analysis was applied to transcribed and coded IDIs.

**Results:** PNs discussed their participant's receiving and disclosing HIV serostatus. The support of PNs emerged as crucial, often serving as the initial confidante for participants to express fears and expectations. PNs were viewed as exemplary figures, given their adherence to treatment. Despite PN efforts, some participants were lost to follow-up, primarily due to extreme social vulnerability. Nevertheless, actively engaged participants remained adherent to treatment, achieving milestones such as completing educational or occupational courses and re-entering the job market.

ART adherence significantly impacted the quality of life for TGWLWH, influencing subjective organization and access to essential resources like stable housing and treatment for other health conditions, notably evident in participants with substance abuse issues.

**Conclusions:** Trans Amigas, a pioneering study in Brazil, illuminated the benefits and challenges of peer navigation for promoting ART adherence among TGWLWH.

Continuous assessment of structural issues faced by TGWLWH is essential for tailored support and addressing persistent obstacles. Peer navigation demonstrates positive impacts and holds potential for integration into broader public health programs.

## TUPED352

### Caregiver trauma and abuse among adolescents living with HIV in India: a dyadic analysis

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**Background:** Trauma and post-traumatic stress disorder (PTSD) are associated with poor parenting practices that increase abuse potential among adolescents. Abuse po-

tential might be further elevated among adolescents living with HIV. However, no studies have examined the relationship between caregiver trauma and abuse among adolescents living with HIV in India.

The objective of this research was to examine the pathways between caregiver trauma, PTSD, and adolescent abuse.

**Methods:** An exploratory sequential mixed methods study was conducted in three phases among adolescents living with HIV (10-19 years) and caregiver dyads. Dyads were recruited purposively from a community-led clinic in India. In Phase I, in-depth interviews were conducted with 25 dyads, transcribed, and analyzed following a grounded theory approach.

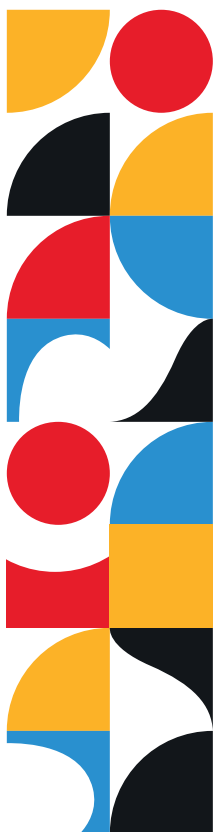
Findings were utilized to develop a survey in Phase II implemented among 88 dyads in Phase III. Survey data was utilized to implement a path analysis to examine the association between caregiver adverse childhood experiences (ACES), adult traumatic experiences, PTSD, and adolescent verbal and physical abuse (caregiver and adolescent self-report).

**Results:** Between September 2021 and December 2023, 113 adolescents living with HIV (51 Females and 62 Males) and their caregivers (84 Females and 29 Males) were recruited. 83% of the caregivers were living with HIV. The themes of caregiver PTSD and intergenerational trauma emerged from the in-depth interviews.

The subthemes of caregiver PTSD were alcohol use, cognitive distortions like lack of trust, self-blame, detachment, and social withdrawal. Narratives suggest that PTSD may contribute to parental hypervigilance and intergenerational transmission of trauma through punitive parenting practices with implications for adolescent mental health. Path analysis reveals that both caregiver ACES ( $\beta=0.34$ ,  $=0.02$ ) and adult traumatic experiences ( $\beta=0.90$ ,  $p<0.01$ ) were associated with caregiver PTSD.

Caregiver PTSD was associated with caregiver reports of adolescent verbal abuse ( $\beta=1.24$ ,  $p=0.01$ ) but not with physical abuse ( $\beta=-0.07$ ,  $p=0.91$ ). Caregiver PTSD was not associated with adolescent reports of abuse. ACES and adult traumatic experiences were not associated with caregiver or adolescent reports of abuse.

**Conclusions:** Findings indicate the need for trauma-informed care for adolescents living with HIV and their caregivers. Screening of caregivers for ACES, trauma, PTSD, and timely care might prevent intergenerational transmission of violence.







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## Social, political, legal and behavioural determinants of health in different contexts

### TUPED353

Mapping the future: leveraging lasso regression and GWR to guide HIV testing and prevention strategies in Tanzania

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**Background:** Identifying prevalent HIV infections and preventing new infections in Tanzania requires understanding the interplay of sociodemographic, biological, and behavioral factors.

This study identifies key determinants of HIV infection, using advanced statistical methods to reveal the dynamics of these variables, thereby informing targeted public health interventions.

**Methods:** A nuanced dual analytical approach was employed across Tanzania's thirty-one regions. Lasso Regression, implemented in three distinct models—Cross-Validation (CV) for optimal regularization, Minimum Bayesian Information Criterion (minBIC) for balanced model complexity, and Adaptive Lasso for refined variable weighting—guided the selection of key variables. Concurrently, Geographical Weighted Regression (GWR) examined the spatial dynamics in these variables' relationship with HIV infection. This robust approach leverages comprehensive data of persons above 15 years from the 2022-2023 Tanzania HIV Impact Survey and the 2022 Tanzania Demographic and Health Survey. The dataset, comprising 49 explanatory variables, was divided into training and testing groups for lasso model selection and validation, respectively.

**Results:** In the analysis of 49 explanatory variables, both CV and minBIC Lasso models consistently selected 4 key variables as most influential in determining HIV infection. These were, in order of ranking: men's alcohol consumption (14.8%, IQR: 9.7%-24.5%), women's primary education completion (44.9%, IQR: 38.3%-48.7%), age at first sexual intercourse among women (16.9%, IQR: 16.6%-18.1%), and women tested for HIV and informed of their results (35.5%, IQR: 30.4%-40.4%). The GWR model demonstrated

strong fit, with an adjusted R-squared of 0.784, indicating its reliability in explaining spatial trends in HIV infections. Spatial analysis revealed distinct regional patterns: men's alcohol consumption was significantly related to HIV infection in the northeast, women's completion of primary education in the southeast, and the awareness of HIV test results among women in the southwest region. Multicollinearity led to the exclusion of age at first sexual intercourse from the GWR model.

Our findings reveal a significant spatial variance in HIV infections, with specific sociodemographic factors displaying a pronounced impact in certain regions.

**Conclusions:** This study's insights into spatial dynamics of HIV infections provide a strategic foundation for implementing targeted, data-driven HIV prevention and management programs, particularly in high-impact areas identified through our analysis.

### TUPED354

How COVID-19 increased AGWY's vulnerability: a qualitative analysis of the pandemic's effects on the implementation and outcomes of the DREAMS HIV prevention program in Kenya

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**Background:** The COVID-19 pandemic disrupted global health programs, including the DREAMS (Determined, Resilient, Empowered, AIDS-free, Mentored and Safe) initiative – a combination HIV prevention program aimed at reducing adolescent girls and young women's (AGYW) risk of HIV acquisition.

This study explores the pandemic's influence on DREAMS implementation and assesses program recipients' perceptions on its impact on their empowerment and sexual reproductive health (SRH) outcomes.

**Methods:** This secondary analysis utilizes qualitative data from the DREAMS II Evaluation, collected in Nairobi and in rural Western Kenya (Gem) between October, 2022 and February, 2023. 3 key informant interviews with implementing partners, 8 focus group discussions with 74 DREAMS mentors, and 43 in-depth interviews with AGYW DREAMS recipients were analyzed using thematic analysis. NVivo 12 for Windows was used to organize the data and conduct analysis using coding methods. Themes were structured using the Medical Research Council (MRC) framework for process evaluation.

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**Results:** COVID-19-related challenges affected DREAMS service delivery, limited AGYW's access to health services, reduced attendance rates and limited psychosocial support like peer-to-peer interaction in safe spaces. Adaptations included virtual communication and intervention delivery via WhatsApp, smaller group sizes, and vocational training for in-school AGYW.

While positive outcomes emerged from adjustments and innovations, disparities in technology access widened inequalities and affected parents' trust of program staff. AGYW perceived COVID-related restrictions, heightened economic hardships, and limited psychosocial support as barriers to their empowerment and sexual health. Qualitative evidence from AGYW indicated increase in unintended pregnancies, in part due to disrupted education. While AGYW reported increased perceived susceptibility to engagement in risky behaviors as a result of idleness caused by school closures, they also demonstrated resilience and self-efficacy during the pandemic.

**Conclusions:** Despite challenges posed by COVID-19, the DREAMS program continued through the implementation of program adjustments and innovative adaptations. The study findings highlight the importance of resilience-building and economic strengthening activities for AGYW empowerment, and consistent school attendance in reducing AGYW's vulnerability to HIV acquisition, mitigating sexual risk behaviors, and avoiding unintended teenage pregnancies. Sustained efforts are needed to ensure safe and accessible program implementation, and for equitable support during national and international emergency situations.

## TUPED355

We fear the day this bill is passed:  
the criminalization of LGBTQ+ and its effect  
on public health efforts in Ghana

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**Background:** The criminalization of lesbians, gay, bisexual, transgender, and queer (LGBTQ+) individuals remains a global issue with discriminatory laws, stigma and violence affecting their well-being.

Health and human rights. Ghana is currently in the process of criminalizing LGBTQ+. A bill proscribing LGBTQ+-related activities was proposed to the parliament of Ghana in 2021. The bill proposes to promote proper human sexual rights and family values while proscribing all LGBTQ+-related activities. The bill as it stands now prohibits all forms of advocacy for LGBTQ+. Thus making it illegal to provide HIV prevention services to LGBTQ+. The prevalence of HIV in Ghana is 1.3%, compared to 18.1% among men who have sex with men (MSM).

We sought to investigate the effects of LGBTQ+ criminalization on HIV prevention and treatment efforts in Ghana.

**Methods:** We elicited respondents' perceptions of the effect the bill will have on MSM and HIV-related activities in January 2023. We conducted 23 semi-structured in-depth qualitative interviews with peer social networks of MSM within Greater Accra Region. A thematic analytical framework was used to analyze audio recordings.

**Results:** The major findings indicated that MSM will be less willing to access HIV prevention services from drop-in centers due to fear of being arrested. It was indicated that stigma and discrimination currently discourage the majority of MSM from accessing HIV prevention services. Further criminalization of LGBTQ+-related activities will worsen the situation.

Respondents also reported that the majority of MSM have gone underground out of fear of penalization due to their sexual behavior. This poses a challenge for public health organizations to implement targeted intervention and outreach programmes for MSM.

**Conclusions:** Laws criminalizing all forms of LGBTQ+ advocacy can fuel the HIV epidemic as they dissuade MSM from seeking treatment. Penalization of same-sex intercourse also contributes to a cycle of stigma and discrimination. Such a hostile legal and social environment will exacerbate mental health issues among LGBTQ+ individuals, leading to higher rates of stress, anxiety and depression. The criminalization of LGBTQ+ in Ghana will significantly impact the country's HIV response.

## TUPED356

A holistic approach to accessible HIV prevention  
and care for women with disabilities in the  
Dominican Republic

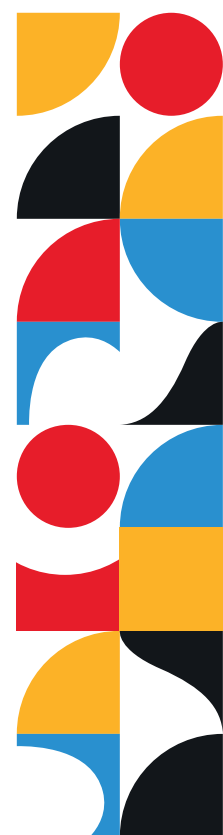
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**Background:** The LISS project focuses on enhancing access to HIV prevention and care services for women with disabilities (WWD) in the Dominican Republic. Despite WWD constituting around 7% of the population, and 43% of them having their first child at 20 or younger, misconceptions about their sexual activity place them at risk. WWD are often excluded from HIV programs and policies and no prevalence data is collected. Also, 55.6% of people with disabilities report facing challenges in healthcare access.

**Description:** The project comprises three components:

1. Empowering WWD to reduce HIV risk factors, through workshops on sexual and reproductive health (SSR) and gender-based violence (GBV);
2. Enhancing combined HIV services and care through infrastructure reforms, the creation of a guide on care for WWD, and training for health providers; and,





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3. Advocacy to increase representation of WWD in decision-making mechanisms.

**Lessons learned:** We conducted multiple studies that reveal that obstacles to service provision stem from attitudinal barriers, infrastructure issues, and non-compliance with inclusivity/accessibility laws for people with disabilities, and not from the disability itself as a social driver.

WWD Group pre- and post-test scores on SSR knowledge increased by an average of 14%, emphasizing the demand for enhanced access to sexual education.

Assessments on health center accessibility show a need for interventions at both infrastructure and attitudinal levels, with health centers obtaining an accessibility score of 60% or lower, and 48% of WWD indicating a lack of empathy during service provision.

Feasibility studies on a digital platform to increase access to services for WWD indicate high internet access (76.5%) and emphasize the usefulness of such a platform (94.1%). Legal frameworks exist but lack enforcement at the national level and do not include sanctions for non-compliance.

**Conclusions/Next steps:** By understanding the multifaceted challenges, the LISS project aims to implement comprehensive strategies for inclusivity, leveraging technology, infrastructure improvements, and educational adaptations to increase equal access to healthcare services for WWD in the Dominican Republic.

The project has been:

- Developing a digital platform for increased accessibility.
- Collaborating with the Ministry of Health for infrastructure changes.
- Adapting education content and training healthcare workers to overcome attitudinal barriers.

## TUPED357

**Social drivers associated with HIV prevention efficacy and HIV vulnerabilities among urban refugee youth in Kampala, Uganda**

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**Background:** Social drivers of HIV vulnerability—inequitable social arrangements that shape HIV prevention engagement—are understudied in urban humanitarian settings. We examined associations between multi-level social drivers of HIV (*structural*: water insecurity [WI], food insecurity [FI]; *relational*: intimate partner violence [IPV],

transactional sex, multiple sex partners; *intrapersonal*: alcohol misuse) and HIV prevention efficacy (sexual relationship power [SRP], condom use self-efficacy [CUSE]) among urban refugee youth in Kampala, Uganda.

**Methods:** This longitudinal study collected data at two time-points over 12-months to characterize patterns of social drivers of HIV among a peer-driven sample of urban refugee youth (ages 16-25) in informal settlements in Kampala. We conducted latent class analysis (LCA) to identify sub-groups of co-occurring social drivers.

We then (a) explored the extent to which sub-groups were associated with Time 1 (T1) HIV prevention efficacy outcomes (SRP, CUSE), and (b) tested whether class membership differences persisted over time (Time 2 [T2]) on predicted HIV vulnerabilities (T2: IPV, transactional sex) using logistic and linear regression.

**Results:** Among participants (n=282, mean age: 20.1, standard deviation: 2.5, cisgender women: 51.8%, cisgender men: 46.1%, transgender women: 2.1%), LCA identified three social driver subgroups with differing HIV risk levels: 1) "lower risk" (n=69; 24.5%); 2) "medium risk" (n=185; 65.6%) (co-occurring: FI, WI, alcohol misuse); and 3) "high risk" (n=28; 9.9%) (co-occurring: FI, WI, alcohol misuse, IPV, multiple sex partners, transactional sex).

In multivariable analysis, "high risk" (adjusted beta coefficient [ $\alpha\beta$ ]; -9.09; 95% confidence interval [CI]: -15.12, -3.06); p=0.003) and "medium risk" ( $\alpha\beta$ = -3.21, 95% CI: -5.40, -1.03; p=0.004) groups had lower T1 SRP, and the "medium risk" group ( $\alpha\beta$ = -2.01, 95% CI: -3.27, -0.75; p=0.002) had lower baseline CUSE, compared with the "lower risk" group. Subgroup differences persisted; in T2 multivariable analyses the "high risk" group had higher odds of IPV (aOR: 6.24, 95% CI: 1.39, 27.99; p=0.017) and transactional sex (aOR=33.78, 95% CI: 3.80, 300.54; p=0.002) compared with the "low-risk" group.

**Conclusions:** Social inequities were associated with reduced HIV prevention efficacy and increased HIV vulnerabilities among urban refugee youth in Kampala. Multi-level strategies can address co-occurring resource insecurities, IPV, and alcohol misuse to advance HIV prevention with urban refugee youth.

## TUPED358

**Intersecting realities: exploring the nexus of mental health, drug use, and HIV prevention among adolescents and young adults (AYA) in Zimbabwe**

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**Background:** There is lack of clear understanding of the surge in drug and substance use among Adolescents and Young adults (AYA) in Zimbabwe. To better understand drug and substance use among young people, Popula-

tion Solutions for Health with support from the Sweden Embassy, conducted a study to investigate the intricate relationships between mental health, drug use, and HIV prevention, examining risks, factors, and interventions for a comprehensive public health strategy.

**Methods:** A cross-sectional study was conducted between May 2023 and June 2023. Data derived from the above stated survey was used, and included variables like substance use history, HIV transmission knowledge, engagement in risky sexual behaviours, and awareness of drug effects on mental health. We divided previously identified causes of drug use into mental health-related and non-mental health-related factors.

Mental health-related causes were prolonged or traumatic parental absence, harsh discipline, communication breakdown, family members using drugs, unemployment, and stress-related problems.

Non-mental health causes included easy access to drugs, lack of awareness, availability of financial resources, peer pressure, experimentation, and weak law enforcement. Data were analysed using Stata 17.

**Results:** Of the 770 participants examined, 46.5% were females, 53.2% males, and 0.26% transgender individuals. Median ages were 24 (IQR 19-29) for males and 23 (IQR 19-26) for females. Drug use was prevalent among males (50%) compared to females (36%), with a median age of onset at 18 (IQR 16-20).

Among the 269 with a history of drug use, 73% attributed it to mental health reasons, while 27% cited non-mental health reasons. We observed universal HIV knowledge (97%) among drug users and non-users, no statistical difference. During drug use, 27% reported mental health issues, 6% engaged in risky sexual behaviours, 23% reported testing for HIV and 24% reported pregnancies.

**Conclusions:** The result emphasizes the complex relationship between drug use, mental health, and their impact on HIV prevention/transmission, including unwanted pregnancies.

The intricate interplay underscores the importance of addressing mental health, a key contributor to risky behaviours such as substance abuse, heightening HIV transmission risks. Integrated interventions considering mental health alongside HIV prevention and drug use can enhance overall well-being and reduce transmission risks.

## TUPED359

### Housing instability impacts all-cause and substance-involved mortality among people with HIV in British Columbia, Canada

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**Background:** British Columbia (BC), Canada, is experiencing a housing crisis marked by a shortage of accessible, safe, and affordable housing. BC is also the epicenter of the overdose crisis in Canada. We explore the impact of housing instability on all-cause and substance-involved mortality among a cohort of people with HIV in BC.

**Methods:** Data are from the Longitudinal Investigation into Supportive and Ancillary Health Services (LISA) study, a cross-sectional survey (2007-2010) (n=998). Survey data are linked with prospective administrative health data from the BC Centre for Excellence in HIV/AIDS Drug Treatment Program (DTP) and Population Data BC until March 31, 2020. This linkage includes information on mortality via ICD-10-CA codes, allowing us to investigate the relationship between housing instability, all-cause mortality, and substance-involved mortality. Selection bias into LISA was potentially introduced through oversampling PWH marginalized by sociostructural inequities. We used inverse probability of participation weighting (IPPW) to address this bias. We constructed participation weights using information from the entire DTP database, which includes all known people with HIV in BC accessing antiretrovirals via the DTP (including respondents and non-respondents to the LISA survey). Leveraging time-to-event data, we estimated hazards of all-cause and substance-involved mortality associated with housing instability using an adjusted, IPPW-weighted Cox proportional hazards model.

**Results:** In this sample, 317 (32%) people reported housing instability. Overall, 302 people (30%) died from any cause between the completion of the LISA survey and March 31, 2020; of those people, 111 (37%) died due to substance-involved mortality, and 86 (29%) experienced housing instability. We found experiences of housing instability were associated with both increased hazards of all-cause and substance-involved mortality (Table 1).

	All-cause mortality		Substance-involved mortality	
	aHR	95% CI	aHR	95% CI
Housing instability				
No	1.00		1.00	
Yes	1.52	1.13 – 2.04	1.80	1.01 – 3.19

Table 1. Association between housing instability and mortality, estimated via Cox proportional hazards model, weighted via IPPW.



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Models are adjusted for: gender, race, employment, mental health disorder, current drug use, and history of incarceration.

**Conclusions:** People with HIV experiencing housing instability may have a greater risk of both all-cause and substance-involved mortality. Our findings add to the literature supporting a need to expand access to safe and affordable housing.

## TUPED360

**Social and structural marginalization associated with increased odds of sub-optimal viral load suppression among women living with HIV: implications for HIV law reform in Canada and globally**

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**Background:** Despite recommendation globally as well as by the federal Canadian government to limit prosecution of HIV non-disclosure cases, Canada stands out in its assertive approach to criminalizing HIV non-disclosure during sex.

This study investigated key social and structural determinants of sub-optimal viral load suppression among women living with HIV (WLWH) under Canada's current approach to HIV criminalization.

**Methods:** Data were drawn from the Sexual Health and HIV/AIDS: Women's Longitudinal Needs Assessment (SHAWNA) Project, a longitudinal community-based research project with WLWH in Metro Vancouver (2014-present).

We used bivariate and multivariable logistic regression with generalized estimating equations to account for repeated measures over time to examine the relationship between social and structural factors and sub-optimal viral load suppression ( $\geq 200$  copies/mL at least once in the last six months); adjusted odds ratios (AOR) and 95% confidence intervals are reported.

**Results:** Among 355 women with 2312 observations (September/14-August/20), the prevalence of sub-optimal viral load suppression at baseline was 24.2% (n=86) and 44.5% (n=158) over the study period.

In multivariable analysis, longer duration since first diagnosed with HIV was inversely associated with sub-optimal viral load suppression (AOR:0.94 [0.92-0.97], for each increase of one year).

Participants who, in the last six months: experienced sexual violence (AOR: 1.77 [1.11-2.83], who experienced housing insecurity (AOR: 1.64 [1.22-2.19]), who reported daily crimi-

nalized non-injection drug use (AOR: 1.59 [1.09-2.34], versus none), who had been incarcerated (AOR: 2.11 [1.09-4.06]), who experienced food insecurity (AOR: 1.32 [0.95-1.82]) had higher odds of sub-optimal viral load suppression.

**Conclusions:** Our study results highlight that women living with HIV who experience multiple forms of social and structural marginalization are at the highest risk of sub-optimal viral load suppression and prosecution for HIV non-disclosure under Canada's current approach to HIV criminalization.

There is an urgent need for HIV law reform and it remains critical to address the over-criminalization of women living with HIV alongside core needs relating to improved options for violence prevention and supports, housing, food security, substance use treatment and better supports during and post-incarceration among women living with HIV. All approaches should be gender-responsive, harm reduction-focused, trauma-informed, culturally safe and culturally appropriate.

## TUPED361

**Multi-level factors associated with HIV late presentation with advanced disease and delay time of diagnosis in Southern United States, 2005-2019**

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**Background:** Despite highly effective antiretroviral therapy (ART), HIV late presentation with advanced disease (LPWA) remains a major contributor to the mortality of people with HIV (PWH).

We aimed to identify individual- and county-level risk factors of LPWA among PWH and longer delay time of diagnosis among PWH showing LPWA.

**Methods:** This retrospective cohort study derived HIV data from South Carolina (SC) statewide Enhanced HIV/AIDS Reporting System (eHARS). LPWA was defined as having an AIDS diagnosis within three months of initial HIV diagnosis.

According to the CD4 depletion model, we used the initial CD4 test result to calculate the delay time of diagnosis (interval from HIV infection to diagnosis) among PWH with LPWA.

Generalized linear mixed effects models were employed to explore the associations of multi-level characteristics with LPWA and the delay time of diagnosis.

**Results:** A total of 3,733 (41.88%) out of 8,913 adult PWH diagnosed from 2005 to 2019 in SC were LPWA, and the median delay time of diagnosis was 13.04 years. PWH who were male (adjusted odds ratio [aOR]: 1.61, 95% CI: 1.32 ~ 1.95), aged  $\geq 55$  vs 18-34 years old (aOR: 2.94, 95% CI: 2.45 ~


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3.53), were Black (aOR: 1.21, 95% CI: 1.09 ~ 1.35) or Hispanic (aOR: 2.27, 95% CI: 1.66 ~ 3.11), and live in counties with a larger proportion of unemployment individuals (aOR: 1.02, 95% CI: 1.00 ~ 1.04) were more likely to be LPWA. Among PWH who were LPWA, Hispanic (adjusted beta: 1.17, 95% CI: 0.49 ~ 1.84) instead of Black (adjusted beta: 0.14, 95% CI: -0.27 ~ 0.55) individuals had significant longer delay time of diagnosis compared to White individuals.

**Conclusions:** Targeted and sustained interventions are needed for older, male, Hispanic or Black individuals and those living in counties with a higher percentage of unemployment because of their higher risk of LPWA.

Additionally, specific attention should be paid to Hispanic individuals due to their longer delay caring. Promoting HIV testing among people in communities at socioeconomic disadvantages with tailored interventions is warranted to decrease HIV late diagnosis as part of the effort to end the HIV epidemic.

## TUPED362

Survival of people living with HIV in displaced sites in three provinces of the Democratic Republic of Congo

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**Background:** To contribute to improving the living conditions of PLHIV in the displaced persons camps in the provinces of Ituri, North Kivu and South Kivu, identify them and describe their socio-demographic characteristics as well as their means of survival in the different camps.

**Methods:** This is an exploratory descriptive study carried out in the DRC. It was conducted among people living with HIV in 143 sites via non-probability sampling using the snowball technique.

To do this, each camp was considered a study area and, in each area, a household where PLHIV lives was identified.

To collect the data for this survey, we used the interview technique carried out face to face between the investigator and his respondent.

Data was collected in January 2024 using a pre-tested and structured interview questionnaire via KoboCollect.

**Results:** In total, 1,337 PLHIV were reached in 97 war displaced persons camps out of the 143 planned in the DRC provinces during the study. 80% of identified PLHIV are female compared to 20% of men.

Around two thirds of PLHIV living in IDP camps do not have regular access to treatment due to lack of access to their care centers. The absence of HIV care centers in the camps means that they lack medication.

Almost all PLHIV living in the camps are economically inactive and only survive on food support from the WFP and other agencies working in the humanitarian field. PLHIV are unable to create income-generating activities following the recurring clashes between the armed forces and the rebels. Note also the absence of HIV activities in the camps for displaced people for fear of stigma and discrimination.

**Conclusions:** The survival of PLHIV in camps for war displaced persons remains a factor favoring the increase in new HIV infections following the double vulnerability of the latter due to the fact that they are PLHIV and displaced by war but without means of survival. The frequent sex trade in the camps remains an intense activity for their survival. The use of condoms as a means of prevention is not respected following the absence of HIV activities and pharmacies in the camps.

## TUPED363

HIV behavioural and social risks among female, male and transgender female sex workers in Thailand – a national cross-sectional study

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**Background:** HIV prevention in Thailand has been a success story, particularly among female sex workers (FSW) with 0.7% HIV prevalence in 2018 (Thailand Ministry of Public Health, 2023). However, other SW sub-populations display higher prevalence rates: males (MSW: 3.8%, 2018) with no available data on transgender females (TGSW). Investigation of HIV risk behaviors was included in a cross-sectional study of pre-exposure prophylaxis (PrEP) among Thai SW populations.

**Methods:** This study was conducted from April-December 2023 by SWING and BIRD (Bangkok Interdisciplinary Research and Development) in seven provinces in Thailand. This study investigated associated factors with PrEP uptake using a questionnaire including questions on HIV risk behaviors.

The study enrolled a total of 1,511 MSW, FSW and TGSW, aged ≥18 years old, HIV-negative, and engaged in sex work in the past three months. 621 FSW, 452 MSW and 438





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TGSW were interviewed face-to-face by trained outreach workers. A descriptive analysis of HIV risk behaviors was conducted.

**Results:** Out of the total, 702 respondents (46%) perceived high and medium HIV risks; 172 (11.4%) had never been tested; 493 (32.6%) not tested in the past 12 months; and 324 (21.4%) reported participating in group sex in the past 3 months with the highest rates among MSW (25.6%) and TGSW (29.6%). Of these, 95% reported any unprotected sex during group sex: TGSW 99.0%; FSW 96.1% and MSW 91.0%. Furthermore, recreational drug use in the past 12 months was reported by 11.8% of SW (MSW: 17.3%; TGSW: 15.1%; and FSW 5.5%); and 51.6% had ever been screened for a sexually transmitted infection (STI). Any form of gender-based violence in the past 12 months, was reported by one third (35.8%) of SW, perpetrated largely by clients.

**Conclusions:** Thailand HIV testing and prevention strategies for SW need to be revisited. Significant HIV risks and vulnerability were reported by SW underscoring their need for PrEP. HIV programming for SW needs to be reprioritized using a people-centred approach covering the full spectrum of SW behavioural and social risks. PrEP programming for SW must be rapidly intensified.

## TUPED364

Making a case for social and structural support to improve outcomes of children living with HIV in Baringo and Samburu Counties, Kenya

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**Background:** USAID Tujenge Jamii (UTJ) is implementing an integrated HIV program in Baringo, Laikipia, Nakuru and Samburu Counties serving 4535 children and adolescents aged below 19 years living with HIV (CLHIV) on ART. Of the CLHIV, 91% are virally suppressed. Despite this good viral load suppression, there are about 400 children who have persistent high viral load (HVL).

The project team engaged with the children and their care givers to understand the reasons for not achieving viral load suppression to inform interventions. The main barriers leading to the persistent HVL were social (neglect, poor relationships with caregivers) and structural (poverty, food insecurity) in nature.

The hypothesis postulated by the UTJ team was that addressing these barriers would improve outcomes (viral load suppression, adherence to treatment, good health) for these children.

**Description:** UTJ identified partners providing social and structural support for vulnerable children in Baringo and Samburu counties. Meetings were held between the UTJ team, these social/structural support implementing partners and the families of children with high viral load and poor adherence to clinic appointments.

Consent was received from the families to link their children with the services provided by the partners to help improve care for the children. 25 children were provided with food, a loving and caring environment, school fees and other basic needs by the partners and monitored for outcomes over a six months' period between October 2022 and March 2023.

**Lessons learned:** At baseline in October 2022, only 42% and 25% children in Baringo had adherence to clinic appointments and viral load suppression respectively. This improved to 86% and 91% respectively by March 2023. In Samburu, at baseline, only 56% of the children had adherence to clinic appointments and viral load suppression. This improved to 100% and 89% respectively after the intervention in March 2023.

**Conclusions/Next steps:** For countries to achieve the UN-AIDS 3<sup>rd</sup> 95, there is need to address social and structural barriers identified at family level. Providing socio-structural interventions through meaningful partnerships improves outcomes for children living with HIV.

Funders supporting HIV interventions for children should include resources to respond to social and structural needs.

## TUPED365

Understanding the HIV continuum of care in rural people living with HIV in Nepal: a qualitative study

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**Background:** Individuals engaging in risky sexual behavior, injecting drug usage, sex work, and those identifying as transgender face an elevated susceptibility to HIV diagnosed, often accompanied by societal discrimination. The impact of HIV extends beyond physical health, significantly affecting the social and psychological aspects of individuals' lives. Continuity of care connect distinct elements throughout a client's care trajectory, incorporating various episodes, interventions from different providers, and adaptations to the client's health status.

This study delves into the experiences of People Living with HIV in rural Nepal understanding the need for continuum of care to enhance overall quality of life.

**Methods:** A qualitative thematic study was conducted where 43 People Living with HIV living in rural areas of Nepal and four key-informants were interviewed from rural Nepal. In-depth interview and key-informant interview was conducted using semi-structured interview guidelines. Inductive coding was conducted to develop codes and codes were grouped to form sub-theme and theme. Manifest analysis was conducted to analyze the data and presented in the form of excerpts.



**Results:** A total of 72 codes, comprising five sub-themes and two overarching themes (HIV care seeking pathways and Continuum of HIV Care), were derived from the data to effectively communicate the study's findings. Participants stressed the importance of accessible medication, advocating for decentralization of ART centers to the local level to alleviate challenges related to distance, economic hardships, and daily living costs.

Participants also underscored the need for expanded services, including periodic viral load and CD4 cell count examinations, access to nutritious food, and self-care practices. Particularly those without employment, expressed the need for vocational education, skill development, and financial support to initiate livelihoods and businesses, inclusion of HIV-positive populations in social security schemes, and extended health insurance packages.

**Conclusions:** The continuum of care for People Living with HIV can be significantly enhanced through a multifaceted approach that not only involves medical interventions but also addresses the broader spectrum of educational, social, and community-based needs. This emphasizes the importance of not only treating the physical aspects of the condition but also fostering an environment that promotes understanding, support, and overall well-being for those affected by HIV.

## TUPED366

Care pathways and barriers to HIV treatment among migrant people living with HIV in Quebec, Canada

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**Background:** In Quebec, Canada, migrant people living with HIV (mPLWH) who hold a temporary study or work visa or have no legal status are unable to access public health insurance. Therefore, they are unable to obtain antiretroviral treatment at low cost. This study examines the care pathway of mPLWH from their arrival in Canada until they receive treatment.

**Methods:** Semi-structured qualitative individual interviews were conducted to mPLWH who received assistance of *Cercle Orange*, a Montreal-based organisation that facilitates access to care and treatment to mPLWH. The interviews took place between August 2022 and September 2023.

The aim of these interviews was to document their experiences in Canada, identify barriers and facilitators to accessing antiretroviral treatment, and inquire about their concerns and requests regarding access to care in Can-

ada. The interviews were conducted via the Zoom platform by three peer research associates in English, Spanish or French. The audio part was recorded, transcribed and translated into French if needed. Thematic content analysis was conducted by two researchers.

**Results:** Sixteen people living with HIV were interviewed, with four interviews conducted in English, seven in Spanish, and five in French. The respondents' ages ranged from 24 to 48. Six held a study permit and ten a temporary work permit.

The main barriers to accessing healthcare were identified as a lack of information on how to access the system and the cost of consultations, despite having private insurance. While community organisations and some specialised clinics offered solutions for accessing care, they were not easily visible.

The interviewees expressed anxiety and frustration due to uncertainty about access to medication upon arrival in Canada. The main demand was for clearer and easier access to HIV care for migrant people with temporary status.

**Conclusions:** The interviews revealed the challenges that mPLWH faced to access care and treatment, even though Canada's immigration service is often aware of their HIV status before their arrival. Solutions for mPLWH are available through community organizations or specialized clinics, but navigating them can be difficult.

These experiences highlight the care journey of mPLWH and emphasize the importance of easy, free and universal access to HIV care.

## TUPED367

The association between HIV infection status and mothers' experience measures among post-partum women in Mbeya, Tanzania

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**Background:** Most of the challenges in attaining Sustainable Development Goal number 3.1 aiming to reduce the global maternal mortality ratio to less than 70 per 100,000 live births by 2023 have their roots in the event of birth. Understating mothers' satisfaction with care after birth, "Confidence in healthcare providers" "Birth experience" "Quality of care provision", "Women's personal attributes", "Stigma" and "Stress experienced during labour". We aimed to describe the mother's experiences and differences between women with and without HIV.



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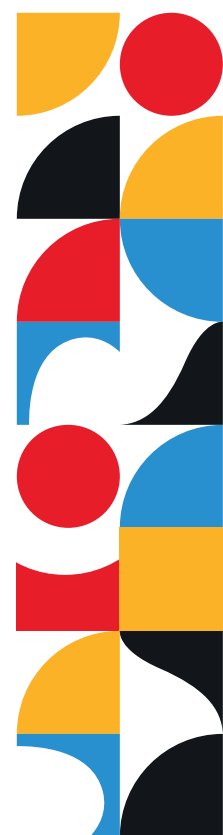
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**Methods:** The cross-sectional study was conducted in the four (4) Reproductive and Child Health (RCH) Clinics (2 referral hospitals and 2 district hospitals) in Mbeya, Tanzania from June 2022 to August 2022.

Mothers who gave birth were immediately recruited within 1 week after birth and interviewed on their experience using the Child Birth Experience (CEQ); Birth Satisfaction Scale-Revised (BSS-R). STATA was used to describe the items and domain scores. The bivariate Chi-square and t-tests and multivariate linear regression models were used to test the effect of the demographic on the relationship between HIV and scores.

**Results:** A total of 626 mothers with a mean age of 31.9  $\pm$  7.8 ranging from 18.1 to 49.2 years were studied in the 4 hospitals. The scores from 288 mothers with HIV (46.0%) were worse compared to 338 mothers (54.0%) without HIV. When adjusted for the 6 demographic covariates of age, education, socio-economic status, marital status, residence and the level of the hospital facility, the coefficient of scores in CEQ was "Own capacity" (0.73, 95%CI 0.45, 1.01),  $p < 0.001$ , "Professional support" 0.94 (0.68, 1.2),  $p < 0.001$ , "Perceived safety" -0.07 95% CI (-0.24, 0.09),  $p = 0.41$ , and "Participation" 0.33 (0.15, 0.51),  $p < 0.001$ . In the BSS-R, the coefficient of scores was "Quality of care provision" 0.87 95% CI (0.74, 1.01),  $p < 0.001$ , "Women's attributes 0.27 95% CI (0.1, 0.45),  $p = 0.002$ , and "Stress experienced" 0.1 95% CI (-0.02, 0.23),  $p = 0.1$ .

**Conclusions:** Mothers with HIV in the postpartum period reported poor scores of CEQ and BSS-R compared to mothers without HIV urging a special package of respective maternal care among mothers with HIV at birth.

## Social science, community and HIV prevention

### TUPED368

Risks and rewards of AI-generated HIV prevention and treatment information across four ai platforms

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**Background:** Despite increasing use of artificial intelligence (AI), there are scant empirical data regarding the strengths and limitations of AI-delivered HIV health information.

The aim of this study was to examine:

- The health information related to pre-exposure prophylaxis (PrEP) and treatment as prevention (TasP) and substance use (alcohol, opioid/fentanyl use) across four AI platforms,
- Core themes present in AI-generated responses, and
- Differentiation of responses across platforms.

**Methods:** Four AI platforms – ChatGPT Plus (ChatGPT-4), ChatGPT-3.5, HIV.gov chatbot, and Google Bard – were queried on four consecutive weeks during July-August, 2023. Queries ( $n=34$  unique questions) were assessed across four domains related to PrEP and TasP regarding:

- Safety, efficacy, and side effects;
- Effects of substance use (broadly);
- Effects of alcohol; and
- Effects of opioids including fentanyl.

Platform-specific responses to each query were recorded verbatim. Qualitative analyses using a conventional content analysis coding approach examined key themes in AI responses both within and across AI platforms, and response comprehensiveness was rated via the number of themes represented in a response.

**Results:** The HIV.gov chatbot frequently, and to a lesser extent, Google Bard were unable to provide responses to some queries. While AI-generated responses typically provided correct information, comprehensiveness differed significantly across platforms, with ChatGPT-3.5 and ChatGPT-4 providing the most comprehensive responses. Core themes included:

- General medication information;
- Medication purposes and recommended uses;
- Recommendations to consult a healthcare provider;
- Side effect information;
- Potential medication interactions with substances and other medications; and
- Information from regulatory and other public health agencies (e.g., FDA-approved indications).

**Conclusions:** Except for instances where the AI platform did not provide a response, AI-generated responses provided correct, factual information related to PrEP, TasP, and the potential effects of substance use.

Responses differed across AI platforms, with Google Bard and the HIV.gov chatbot providing less comprehensive responses relative to ChatGPT. Core themes included medication information, interactions, and side effects with recommendations to seek consultation from healthcare professionals.

## TUPED369

Programmatic mapping and size estimation of key population in Niger state: for an inclusive and evidence based HIV intervention, towards ending AIDS by 2030

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**Background:** Key Population (KP) communities representing less than 2% of the population, they contribute to approximately 11% of HIV incidence. In Niger state, HIV prevalence of key population is 10 to 17 times more than the general population.

To provide effective and efficient HIV intervention towards vision 2030, there is need for population size estimates of Men who have Sex with Men (MSM), Female Sex Workers (FSW), Person Who Inject Drugs (PWID) and Transgenders (TG) as none exist in Niger State, Nigeria.

**Methods:** We deployed programmatic mapping and size estimation in 23 LGA of Niger state between October 2022 to March 2023; using ESRI ArcGIS software, we identified and mapped key geographical locations/areas, identified and mapped all web-based spots/apps used by MSM to look for sexual partnerships in Niger state. Interviewed 3750 secondary and 2490 primary key informants using Survey CTO, validated and estimated the size of key populations in their hotspots on usual day and peak day, described the characteristics of identified spots and data analysis was completed using Excel and STATA.

**Results:** The analysis of the data collected and validated from secondary key informants and primary key informants showed that, in the active 3897 KP hotspots mapped in Niger state, it was estimated that, there are minimum of 12605 and maximum of 12605 KPs on a usual day and 14901 and 24323 respectively on a peak day. By typology, for the community of FSW, there are average of 11489 (95% CI 6074 to 10790) in 1415 hotspots, community of MSM are average of 5140 (95% CI 4319 to 5961) in 1000 hotspots, community of TG are 2621 (95% CI 2380 to 2861) in 559 hotspots and community of PWID are 5575 (95% CI 3490 to 7661) in 923 hotspots. For MSM virtual sites, 728 (95% CI 683 to 779 ) from 17 virtual sites.

**Conclusions:** These estimates will be useful to advocate for and in planning, implementation and evaluation of HIV prevention and care interventions for MSM, FSW, PWID and TG as investments are made towards ending AIDS by 2030. Periodic state surveillance activities may consider integrating key population size estimation in their protocols.

## TUPED370

Self-perceived HIV risk and objective behaviors of young students: implications for HIV prevention

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**Background:** With the increasing number of young students living with HIV, HIV related prevention is very important but might be hampered by inaccurate self-perceived risk.

Therefore, we aim to evaluate discordance between self-perceived and objectively measured HIV risk among young students and to determine the predictors of young students who underestimated their risk and have higher probability to acquire HIV.

**Methods:** We used an institutional based cross-sectional study design to collect data from 21,962 young students from colleges between November 2022 and May 2023. Self-perceived and objectively measured HIV infection risk were evaluated. Participants were categorized into three groups, i.e., congruent, subjectively underestimating risk and subjectively overestimating risk.

Logistic regression method was used to identify the factors influencing the subjectively underestimating HIV risk of young students.

**Results:** Most young students (94.5%) were objectively evaluated as low risk. Similarly, majority (95.1%) of young students self-perceived themselves no risk for HIV infection subjectively. In total, 4.5% of young students subjectively underestimating HIV risk and 4.3% subjectively overestimating the risk. 91.2% of young students were congruent between objective and self-perceived HIV risk. However, 89.38% of individuals who were objectively evaluated as moderate risk perceived themselves as without any risky sexual behaviors subjectively. 61.90% of individuals who were objectively evaluated as high risk perceived themselves as without any risky sexual behaviors subjectively. In total, 4.51% of young students perceived they had risky sexual behaviors but without objective risky behaviors.

The logistic regression results showed that female compared to male ( $P=0.020$ ), having 2-5 partners compared to more than 5 partners ( $P<0.001$ ), sometimes using condom compared to never using ( $P<0.001$ ), seek PrEP compared without ( $P=0.039$ ) tended to underestimate their risk of HIV infection.

**Conclusions:** Discordance between self-perceived and objectively measured HIV risk among young students does occur, which indicated under/over estimation of one's HIV acquisition risk.



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Much efforts need to be made to decrease the vulnerability of young students especially those who have inaccurate HIV risk perception, such as warning education for those underestimating risk subjectively and improving literacy to reduce risk imagination for those overestimating risk subjectively.

## TUPED371

**A cautionary tale of online research procedures for couples-based HIV prevention intervention studies with transgender women and their partners in the United States**

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**Background:** It Takes Two (T2) is a couples-based HIV prevention intervention designed for transgender women and their partners. At the onset of the COVID-19 pandemic, the T2 clinical trial shifted to online methods for research continuity.

This analysis explores differences in socio-demographics, relationship dynamics, mental health, and HIV outcomes at baseline between participants enrolled in-person and those enrolled online.

**Methods:** In-person enrollment occurred between November 2019 and March 2020 where all study procedures occurred at a field site in the Tenderloin District of San Francisco, California. Study activities restarted completely online in January 2021 and enrollment ended in January 2023. We conducted bivariate analyses to examine differences between participants enrolled in-person and those enrolled online.

**Results:** We enrolled 52 couples (N=104 individuals, 40% in-person and 60% online during the COVID-19 pandemic). Those enrolled in-person were more likely to be African America (31.0% vs. 1.6%,  $p<0.001$ ) and partners were more likely to be cisgender men compared to those enrolled online (71.4% vs. 16.1%,  $p=0.003$ ).

Couples enrolled in-person were more likely to be serodiscordant (47.6% vs. 3.2%,  $p<0.001$ ), have less than a college degree (64.3% vs. 42%,  $p=0.002$ ), be unemployed (58.5% vs. 33.9%,  $p=0.033$ ), and have a history of arrests (72.5% vs. 17.7%,  $p<0.001$ ).

Additionally, those enrolled online had higher relationship satisfaction ( $M=4.2$  vs.  $M=3.9$ ,  $p=0.035$ ), communication ( $M=3.9$  vs.  $M=3.6$ ,  $p=0.021$ ), and goal congruence ( $M=4.5$

vs.  $M=3.6$ ,  $p<0.001$ ), and partners reported lower relationship stigma scores ( $M=1.3$  vs.  $M=1.7$ ,  $p=0.024$ ) than those enrolled in-person. There were no significant differences in relationship length, sexual agreements, PrEP use, viral load, sexual behaviors, or mental health.

**Conclusions:** Despite community-engaged efforts to develop online procedures that would recruit a participant cohort that reflects the current HIV epidemic, findings demonstrate that online recruitment resulted in fewer African American transgender women being enrolled. In-person procedures reached participants who were more structurally vulnerable than those recruited online. Findings also corroborate previous studies suggesting that online methods inadequately engage cisgender male partners of transgender women. In this era of online HIV prevention intervention proliferation, we caution researchers and funders to thoughtfully consider who will be left behind if in-person options are not provided.

## TUPED372

**A community-academic partnership to empower Black MSM for economic development, advocacy, and HIV prevention research: HPTN 096**

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**Background:** Despite the effectiveness of HIV biomedical interventions, HIV incidence remains high among Black men who have sex with men (BMSM) in the Southern USA. BMSM must be meaningfully engaged in local HIV responses while prioritizing their needs. Enhancing local community capacity requires more than recruitment to time-limited research advisory boards. The Center for Interdisciplinary Research on AIDS (CIRA) and HIV Prevention Trials Network (HPTN) 096 commissioned a program to build leadership, scientific literacy, and social entrepreneurship capacity among BMSM to promote individual and community economic development while increasing HIV research engagement.

**Description:** CIRA identified two complimentary programs aimed at developing Black queer people: The Investigaytors, developed by Vancouver-based Community Based Research Centre as a method to increase scientific literacy, and Project Liberate, an economic development program, developed by the Normal Anomaly Initiative (TNAI), a Black-led, grassroots Houston, TX organization. Investigaytors has run across Canada building research



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capacity in numerous cohorts of young queer people. Two cohorts have completed TNAI's year-long program, and outcomes included developing 48 Black, queer-led businesses.

TNAI, CIRA, and HPTN 096 are developing a program to integrate these two initiatives to train BMSM to create sustainable projects that advance economic justice and promote equity in HIV prevention responses and outcomes in Atlanta, Dallas, Memphis, Montgomery, and Ft. Lauderdale/Miami. Program development began with a TNAI-led retreat that engaged scientists and community leaders.

Activities included a community engagement dinner, development of a theory of change using the Art of Hosting, a collaborative, solution-generating modality, and a review of community capacity building interventions delivered with BMSM.

**Lessons learned:** The community dinner was a feasible approach that attracted 13 BMSM without previous health equity involvement. Participants questioned and contributed ideas regarding the intent and direction of the program, endorsing and providing face validity to the idea that developing qualities common to leadership and entrepreneurship would also prepare BMSM to collaborate in designing local solutions to HIV, while reinforcing the sustainability of grassroots organizations.

**Conclusions/Next steps:** Project Liberate and The Investigators program are both undergoing adaptation, integration, and expansion to build local capacity in community leadership to mobilize and advocate for ending the HIV epidemic.

## TUPED373

Factors associated with oral daily Pre-Exposure Prophylaxis (PrEP) discontinuation among clients at coptic hospitals in Kenya

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**Background:** PrEP has revolutionized HIV prevention for clients who are at risk. Understanding the factors contributing to PrEP-discontinuation remains essential for enhancing its long-term effectiveness.

**Methods:** We conducted a retrospective cohort-analysis for clients who had initiated PrEP between January 2020-December 2023 at eleven Coptic hospital facilities in Kenya. Demographics (gender, age, marital-status, occupation) and HIV-risk-factors (HIV testing-point, client-type, sexual-partner's HIV status, sexual-partner on ART, sex with multiple-partners, recurrent Post-Exposure-Prophylaxis (PEP) use, sex under-the-influence of alcohol, inconsistent-condom-use, PrEP adherence-counselling and signs-of-acute HIV-disease) were explored as predictors. Reasons for PrEP-discontinuation were categorized as: client-related (self-discontinued,

transferred-out, PrEP-non-adherence, Intimate-Partner-Violence (IPV), partner-refusal, numerous HIV-tests); clinical (HIV sero-conversion, renal dysfunction and adverse-drug-reaction).

Multivariable logistic regression with robust standard-errors was used to assess selected predictors of the outcome. Statistical-analyses were done using Stata-17.0.

**Results:** In total, 1350 clients were initiated on PrEP with a median follow-up time of 3months (IQR: 0-11 months); 741 (54.9%) female, mean-age 32.2 (SD=9.9) years.

Overall, 295 (21.9%) had client-related (CR) reasons for PrEP-discontinuation, of whom 184 (62.4%) self-discontinued, 59 (20.0%) had non-adherence, 19 (6.4%) transferred-out, 30 (10.2%) other CR-reasons; while IPV, partner-refusal and numerous HIV-tests, each, contributed only 1 (0.4%) to CR-discontinuation. Eight (0.6%) had clinical-reasons for discontinuation.

In multivariate analysis, clients who were more likely to discontinue PrEP were those in informal-work or without-employment (vs formal-employment, adjusted OR: 5.29; 95% CI: 2.00, 13.98 and adjusted OR: 4.69; 95% CI: 1.69, 13.06 respectively); those whose sexual-partner/s had a negative-HIV-status (vs whose partner/s were living-with-HIV, adjusted OR: 4.88; 95% CI: 1.53, 15.64), those engaging-in-sex while under-the-influence of alcohol (adjusted OR: 6.13; 95% CI: 1.61, 23.27); and those with inconsistent-condom-use (adjusted OR: 2.15; 95% CI: 1.16, 3.99). Conversely, clients who were less likely to discontinue PrEP were those with multiple-sexual-partners (adjusted OR: 0.32; 95% CI: 0.14, 0.72) and those counselled-on-PrEP-adherence (adjusted OR: 0.12; 95% CI: 0.05, 0.30). Recurrent PEP-use, testing-strategy, whether sexual-partner was on ART, client's gender and age were not associated with CR-PrEP-discontinuation.

**Conclusions:** Prioritizing CR-interventions (intensive adherence-counseling during HIV-testing, encouraging partner-disclosure, offering-counseling on substance/alcohol-abuse) and targeted-strategies designed to enhance-communication and prevent PrEP-discontinuation for those at high-risk of HIV maybe essential to address PrEP-discontinuation.

## TUPED374

Innovative model: prisoners' involvement as peer counselors in HIV prevention services provision in prisons under the martial law

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**Background:** In Ukraine, there are more than 39,000 prisoners in correctional facilities, where the HIV prevalence is several times higher than outside, reaching 7.7%. NGOs were involved in HIV/TB/HCV service provision to prison-







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ers. However, the provision of services to prisoners has almost stopped due to the prison regime restrictions on visits, and other COVID-19-related quarantine measures, location remoteness, etc. The situation worsened significantly in 2022 with the war outbreak - shelling, air raids, evacuation of prisons, disrupted logistics, and occupation of territories.

**Description:** FREE ZONE has been implementing a unique practice involving prisoners as peer preventive service providers since 2017. Such peer social workers encourage prisoners to undergo HIV testing, distribute needles and syringes, prevent overdoses, assist in early TB detection, form adherence to HIV/TB/HCV treatment, and provide primary legal support.

To train prisoners as peer consultants, paralegals, case finders, and syringe exchange program peer outreach workers comprehensive methodological manuals were developed. Learning webinars were based on these manuals covering ethical standards, basic peer counseling skills, HIV/TB/HCV prevention and treatment services provision, ART adherence formation, harm reduction services, and legal support basics.

The aforementioned practice allows us to introduce peer-to-peer service provision in every prison, solving several problems: - sustainability of service provision and a high percentage of coverage of target groups in prisons; - services are provided at a convenient time for prisoners, almost 27/7; - continuous provision of HIV prevention services amidst the pandemic and war.

**Lessons learned:** During 2020-2023, more than 1330 prisoners underwent training as peer social workers. Following the training, NGOs officially employed 43 prisoners, 98 prisoners as volunteers, and 15 as paralegals.

Continuity of involving prisoners in HIV/TB-related activities was ensured due to systematic approaches to service provision by the peer consultants, especially during the extremely difficult COVID-19 quarantine restrictions and current war hostilities.

**Conclusions/Next steps:** In 2024-2026, we continue training prisoners across all Ukrainian correctional facilities. It enables them to provide peer counseling on HIV in prisons reducing the spread of HIV, TB, and HCV, and to promote adherence to ART and syringe exchange programs, etc.

## TUPED375

"Not every queer woman is informed": multi-level erasure of lesbian, bisexual, queer, and other sexuality and gender diverse women's experiences of HIV in Western Kenya

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**Background:** There is a dearth of data on HIV risk perceptions and HIV prevention/care needs among lesbian, bisexual, queer (LBQ) and other sexuality and gender diverse women (heretofore referred to as LBQ women), globally, and more so in Sub-Saharan Africa. What little research has been done in Kenya among LBQ women suggests increased risk of negative sexual health outcomes, including HIV, driven by intersectional stigma. Meanwhile, LBQ women are invisible in HIV policy and programming in Kenya. We sought to illuminate HIV risk and perceptions among this population to inform HIV prevention, care, and policy.

**Methods:** We conducted a community-based participatory mixed methods study from 2021-2023: "Empowerment for Us by Us" (E4UBU), a collaboration between the University of Michigan, Western Kenya LBQT Feminist Forum (Let's Be Tested Queens CBO), and Homa Bay LBQ Women and Feminist Network. Semi-structured qualitative interviews were conducted with 40 LBQ women in two counties in Western Kenya (Homa Bay, Kisumu), and surveys were collected from 227 LBQ women in Kisumu County. Quantitative data were analyzed descriptively (e.g., means, standard deviations, proportions) and qualitative data were analyzed using a thematic analysis.

**Results:** Although most participants had engaged in condomless vaginal sexual activity with men, over two-thirds (69%) reported a small or zero chance of acquiring HIV, 13% were already living with HIV, and 37% reported experiencing forced vaginal sex with men. Participants described how assumptions of low HIV risk among LBQ women fuels a lack of funding for LBQ women-specific HIV research and exclusion of LBQ women from LGBTQ+ HIV studies. Participants described negative experiences in healthcare settings, such as accessing testing with same gender partners, including assumptions of heterosexuality, to denial of care. Participants recognized a lack of knowledge about HIV/STIs in their community, and knowledge was a powerful driver of HIV prevention and testing for those who had access.

**Conclusions:** The self-reported HIV prevalence rate among LBQ women was double the Kenyan national seroprevalence rates for women.

Understanding the intersectional stigmatization of LBQ women in Kenya, dispelling myths, creating awareness of risks, and producing evidence for policymakers is crucial to create positive health outcomes among this population.

## TUPED376

"I am not sick, why should I swallow daily pills?": non-uptake of, and adherence to daily oral pre-exposure prophylaxis among adults at high-risk of HIV in Masaka, Uganda

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**Background:** In sub-Saharan African countries, oral pre-exposure prophylaxis (PrEP) has mainly been provided through daily regimens, yet uptake and adherence to oral PrEP in the region are sub-optimal.

We explored non-uptake and adherence to daily oral PrEP among men and women at high risk of acquiring HIV who took part in a PrEP and HIV vaccine trial (PrEPVacc) in Masaka, Uganda. PrEP was promoted and provided to all trial participants.

**Methods:** Between October 2021 and August 2023, we conducted three repeat in-depth interviews with 14 male and 16 female PrEP users, a single interview with 10 participants PrEP refusers (6 females, 4 males) and six focus group discussions (4 with PrEP users and 2 with PrEP refusers of both gender).

We explored attitudes and experiences of using PrEP, and preference of using either daily or event driven PrEP regimen. Thematic content analysis was used to generate themes across the data.

**Results:** Participants' reluctance to take daily PrEP was based on the belief that one was not sick and did not require medication. Many of those who refused to start on PrEP confessed a dislike for oral medication and preferred injections; in the context of the trial, the injection was the HIV vaccine.

Others feared to be seen taking daily pills by their partners, family members and employers because they associated pill taking with being on antiretroviral therapy while some faced resistance from their partners who suspected them of being promiscuous or living with HIV. In many instances, side effects such as nausea and headaches were a 'put off' and often disrupted their daily

routine. However, we noticed that some made efforts to take PrEP during periods they perceived to be at risk of acquiring HIV. There were no gendered differences, rather we noted that both males and females reported these experiences.

**Conclusions:** Participants' interpretation that medicine is for people who are not well and perceived social stigma around HIV affected PrEP uptake. Supporting them to manage stigmatizing situations could improve uptake. Promoting alternative PrEP regimens such as oral event-driven PrEP, and delivering methods such as injectables should be expedited to meet user preferences.

## TUPED377

Co-create innovative PrEP service approaches with the community: experiences from PrEP users in China

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**Background:** Co-creation is an iterative, bidirectional strategy that includes researchers and relevant to create knowledge, that may help inform the development of innovative HIV prevention and sexual health services.

This study used co-creation groups to develop posters, videos, and texts promoting PrEP adherence and then assessed their efficacy and potential barriers.

**Description:** Three rounds of co-creation groups were held between 2021 and 2023 in China to develop mobile phone-based PrEP adherence enhancement materials. Six researchers and 19 Chinese adult MSM PrEP users enrolled in the PrEP demonstration trial (NCT04754139) joined the groups. For each co-creation session, we adopted a three-step approach informed by Hawkins and Leask's framework of co-creation activities, which includes participants' consultation, co-production, and evaluation (on the advantages, deficiencies, and suggestions of the co-creation group).

**Lessons learned:** After extensive discussion on the adherence intervention content themes and visual designs during the co-creation sessions, a total of 25 products (19 posters, 3 videos, and 3 text messages) were generated, iterated, and finalized. Among those, 17 products were sent to 910 PrEP users in the demonstration trial via WeChat messages (a popular Chinese chat app).



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These products received average scores of 8.25/10, 7.86/10, and 7.25/10 on relevance to the topic, feasibility of utilization, and elaboration, respectively. The most common barriers to PrEP adherence identified during the co-creation sessions include concerns about side effects, perceived PrEP stigma, and difficulties in integrating PrEP into daily life routines.

Participants underscored the effectiveness of product generating, localized community engagement, and self-empowerment during the participation while pointing out the need to:

1. Thoroughly synchronize the activity aims, include diverse users to enrich solicited foci during the consultation;
2. Overcome the subjective and objective barriers that hindered proactiveness building, and balance the engagement and producing avoiding productivism when co-production;
3. Actual intervention effects and follow up activities disclose were needed for evaluation.

**Conclusions/Next steps:** Co-creation can generate culturally appropriate PrEP adherence enhancement materials for Chinese MSM PrEP users, demonstrating high acceptability and feasibility. Trials are needed to understand effectiveness. approaches.

## TUPED378

### Understanding parental motivations and decision-making for adolescent girls' participation in the long-acting cabotegravir (CAB-LA) trial – Insights from HPTN 084-1

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**Background:** HIV disproportionately impacts adolescent girls, yet they are underrepresented in HIV prevention trials in part due to parental consent barriers. In HPTN 084-1, adolescents and their parents provided consent/assent to trial participation.

We aimed to understand parents/guardians' motivations and decision-making process regarding adolescents participating in a long-acting cabotegravir (CAB-LA) trial for HIV prevention.

**Methods:** This study was conducted from October 2021 to July 2022 as part of HPTN 084-1, an open-label study assessing the safety, tolerability, and acceptability of CAB-LA for HIV prevention among adolescent girls aged

under 18 in South Africa, Uganda, and Zimbabwe. Enrolled girls were offered CAB-LA. We conducted interviews with purposively selected parents/guardians (n=15) across all three sites to explore their motivations for allowing their adolescent girls to join the study. We coded transcripts in NVivo 12, created memos, and followed a thematic analysis approach.

**Results:** Parents/guardians' motivations emanated from concerns about HIV and unplanned teenage pregnancy caused by apprehensions about their adolescent daughters' behaviors, including going out at night, not sleeping at home, and difficulties in discussing sexual health. One parent stated:

*"There are a lot of diseases, children have sex anyhow, they don't use condoms. Sometimes, they are just playing, and the next thing they are naked. Children date older people; ...it's good for her to be safe."*

Parents valued the trial's medical benefits, like HIV testing and contraceptives, viewing it as an opportunity to access prevention and sexual and reproductive health (SRH) information. This was perceived as a means of alleviating risks and communication challenges.

Other parents hoped their daughters would be empowered through counseling and trial activities. Reimbursement also served as a motivation. Parents reported positive changes in adolescents' attitudes and behavior, encouraging them to keep their daughters in the trial. Decision-making involved parents and adolescents and sometimes trusted friends and family members.

**Conclusions:** Parents/guardians recognize the risks of HIV and unplanned pregnancies facing their adolescent daughters and value their participation in HIV prevention trials.

Our findings highlight the importance of emphasizing the trial's medical and educational to parents and addressing any concerns they may have about their daughters' participation.

## TUPED379

### Intention to use different long-acting pre-exposure prophylaxis formulations for HIV prevention in transgender and gender expansive Texans: associations with social vulnerability and medical mistrust

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**Background:** Transgender and gender expansive (TGE) populations carry a disproportionate HIV burden. Daily oral pre-exposure prophylaxis (PrEP) for HIV prevention in adults was approved by the United States Federal Drug Administration in 2012. Less than a third of PrEP-eligible transgender women have used PrEP. Less is known about PrEP use among transgender men and gender expansive individuals. Longer acting injectable PrEP (LA PrEP) has been approved for use and other formulations are in development. Identifying and examining factors that influence intention to use different formulations is warranted. TGE individuals face barriers related to PrEP use. For example, this population has exposure to more social vulnerabilities and there is also a history of mistreatment that contributes to medical mistrust. Both of these factors need to be considered in relation to intention to use different LA PrEP formulations.

**Methods:** *PrEP for ALL* is a community-based participatory research project that engaged TGE Texans and community-based organizations as collaborators in the research. In total, 482 TGE individuals were recruited and responded to all relevant questions in an online survey. Intention to use three different formulations were assessed: a monthly oral pill, a bimonthly intramuscular injection, and an annual subdermal implant.

After controlling for relevant demographic factors, the association between social vulnerability and medical mistrust with intention to use different LA PrEP formulations was assessed using multiple regression.

**Results:** TGE individuals with higher levels of social vulnerability had greater intentions to use the monthly oral pill ( $\beta = 0.12$ ,  $p = .009$ ), the bimonthly intramuscular injection ( $\beta = 0.18$ ,  $p < .001$ ) and annual subdermal implant ( $\beta = 0.17$ ,  $p < .001$ ). Medical mistrust reduced intentions to use the bimonthly intramuscular injection ( $\beta = -0.18$ ,  $p < .001$ ) and the annual subdermal implant ( $\beta = -0.11$ ,  $p = .021$ ).

**Conclusions:** Social vulnerability and medical mistrust should be considered in the design of new LA PrEP formulations. For example, formulations that increase clinical contact may not be preferable for priority populations with high levels of medical mistrust.

If LA PrEP is going to have a meaningful impact then perspectives of the most marginalized priority populations, like TGE individuals need to be included in the drug development and rollout processes.

## TUPED380

### Training socially-connected fishermen in western Kenya to distribute HIV self-test kits and health facility referral vouchers

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**Background:** Despite significant progress on the HIV response in Kenya, HIV prevalence around Lake Victoria remains high. A key challenge is low HIV testing among men, particularly highly mobile fishermen. The Owete Study (NCT#04772469) employed a social network-based approach to promote testing and linkage to HIV services among fishermen in Siaya County, Kenya. Social networks of fishermen in three beach communities were mapped to identify highly influential and socially-connected men ('Promoters') and close social networks, who were then randomized to intervention or control arms.

We describe Owete's training approach and Promoters' training experiences to offer implementation insights.

**Methods:** Experienced trainers employed interactive methodologies to enhance comprehension among Promoter trainees with diverse educational backgrounds. Training lasted two days: day 1 included both arms, involving: study overview, Promoter-roles, HIV literacy, HIV testing including self-testing, and prevention and treatment information. Intervention Promoters participated in



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day 2 which focused on: HIV self-testing demonstrations and peer communication role-plays. After training, control Promoters received non-monetary referral vouchers for peer distribution for local health facility linkage for HIV testing.

Intervention Promoters received HIV self-testing kits for peer distribution, with incentive vouchers (~USD \$3.50) for local health facility linkage following self-testing.

**Results:** There were 146 Promoter trainees (balanced across arms). Promoters were highly engaged, eager to learn, and supportive of targeted health talks and trainings for men, whom they felt had been left out of the HIV response. Promoters felt the knowledge gained improved their understanding of health matters and elevated their social status. Trainer demonstrations and HIV self-testing role plays elicited participant excitement. Promoters felt empowered knowing how to interpret self-testing results. Promoters were pleased that the training provided an opportunity to answer questions about PrEP use and correct misconceptions.

**Conclusions:** Training and engaging social network-central Promoters as lay health workers to spearhead campaigns on health issues affecting fishermen, can leverage established relationships and may prompt increased participation of highly mobile men in health seeking practices. Capacity building through training and providing Promoters with tools to deliver health information and HIV self-testing kits may expand knowledge, trust, and help overcome limited health service access among fishermen.

## TUPED381

Acceptability of HIV Pre-Exposure Prophylaxis (PrEP) among individuals being tested for HIV and healthcare workers in Nyeri County, Kenya

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**Background:** Pre-exposure prophylaxis (PrEP) is highly effective in HIV prevention. However, its uptake remains suboptimal in Kenya tied to differing levels of awareness and acceptability. In 2022, Kenya reported an increase in the number of new HIV acquisition in 10 years, with over 2000 cases.

This study sought to determine the acceptability of PrEP among individuals tested for HIV and healthcare workers (HCWs). The specific objectives were investigating the socio-demographic, socio-cultural, and health system factors associated with PrEP acceptability.

**Methods:** A cross-sectional survey was conducted to assess PrEP acceptability in March 2023 among individuals tested for HIV in Karatina SubCounty Hospital and HCWs

in Nyeri County, Kenya. Participants were administered pre-tested questionnaires and two key informant interviews were conducted. Approval of the study was granted by the Kenyatta University Ethical Review Committee. Statistical analysis was done using MS Excel and SPSS. The confidence level was set at 95%. Chi-square was used to test the association between variables while thematic analysis was used to analyze qualitative data.

**Results:** 60.7% of individuals tested for HIV during the study period were aware of PrEP and 63.6% were willing to use PrEP. Acceptability among HCWs was high as 94.1% were willing to prescribe PrEP. 92.2% of HCWs felt that PrEP preventing HIV acquisition was the main motivation for prescription. There was no statistically significant association between key socio-demographic factors and acceptability of PrEP.

A statistically significant relationship between HIV risk perception and acceptability of PrEP was noted. Stigma ( $P=0.008$ ), a sociocultural factor, and long waiting times at the pharmacy ( $P=0.038$ ), a health system factor, were significantly associated with a reduction in acceptability of PrEP.

**Conclusions:** Findings indicate moderate PrEP acceptability among individuals at risk of HIV acquisition while acceptability among HCWs is high. HIV risk perception, stigma, and long waiting times at the pharmacy significantly affect PrEP acceptability. Strategies should be implemented to address barriers to PrEP acceptability among individuals at risk of acquisition.

The study recommends community engagement in the advocacy for PrEP usage and similar studies be done in different settings to enable a global overview and hence globally accepted strategies in campaigns for PrEP usage.

## TUPED382

Aging concerns and relations with HIV prevention strategies among individuals aged 50 or older in the United States

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**Background:** While most research focuses on HIV prevention and implementation of Pre-Exposure Prophylaxis (PrEP) among young men aged 18-29, a substantial portion of adults who lived through the HIV/AIDS crisis of the 1980s and 90s still age with concerns related to their sexual/gender identities and sexual health.

Concerns about aging in a time with new biotechnological tools to prevent and treat HIV are important to explore given generational differences in attitudes and experiences with the HIV epidemic.

**Methods:** To better understand aging concerns related to HIV prevention among sexual and gender minority adults, a sample of 794 adults both living with and with-



out HIV over 50 years old (mean = 59) residing in the US were asked about their aging concerns related to three domains: general aging concerns (e.g., becoming isolated and lonely), sexual orientation (e.g., lack of support/care due to sexual identity), and gender identity specific-concerns (e.g., lack of support/care due to sexual identity).

The relations of three HIV-related experiences (i.e., HIV serostatus, lifetime use of PrEP, and recent use of PrEP) were investigated among all three aging concerns.

**Results:** Findings revealed that participants living with HIV reported significantly higher aging concerns related to sexual orientation, but not general or gender identity-specific aging concerns.

Additionally, both lifetime and recent PrEP use were associated with significantly higher general aging concerns only.

Last, among heterosexual, older participants, general aging concerns was significantly lower, yet the opposite was true among sexual minority participants—as age increased, aging concerns related to one's sexual orientation also increased.

**Conclusions:** Findings related to sexual orientation-specific aging concerns among participants living with HIV may be related to receiving care related to HIV from health care professionals who are not fluent in the needs of sexual and gender diverse clients.

For participants who used PrEP who also lived through the HIV/AIDS crisis, concerns may shift toward general aging as opposed to specific challenges of aging as a sexual or gender diverse individual.

These findings have implications for strategies healthcare professionals may employ to ensure that their clients are able to engage appropriate support systems and tools while aging.

## TUPED383

[Distribution of SRH products and HIV self-tests to adolescent girls and young women enrolled in a girl-friendly loyalty club: midline results from the AmbassADDors for Health cluster randomized controlled trial](#)

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**Background:** With obstructed access to youth-friendly preventive healthcare, adolescent girls and young women (AGYW) in East Africa remain disproportionately

burdened by HIV and unplanned pregnancy. Small drug shops are a promising venue for differentiated service delivery of sexual and reproductive health (SRH) and HIV prevention products to AGYW given their ubiquity in rural communities.

**Methods:** Our *AmbassADDors for Health* cluster randomized controlled trial enrolled 158 drug shops ('ADDOS') in 41 wards within Lake Zone, Tanzania. Shops in intervention areas implemented a girl-friendly loyalty program providing free opt-out HIV self-test (HIVST) kits and SRH products (over-the-counter contraceptives, pregnancy tests) with a shop purchase; shops in 20 control areas offered only free HIVST kits to AGYW. Using electronic sales data, we estimate zero-inflated models controlling for study region with clustered standard errors by ward to estimate the rate of distribution of SRH products between arms at midline (12 of 24 months).

**Results:** From July 2022 – November 2023, 158 shops distributed a cumulative 20,939 HIVST kits, 10,362 units of condoms, 9,962 units of daily oral contraceptive pills (OCP), 5,339 emergency contraceptives (EC), and 9,697 pregnancy tests (UPT).

The rate of HIVST distributions were not meaningfully different by arms (adjusted rate ratio[aRR]=0.94; 95% CI: 0.92, 0.97), but was higher in the intervention arm compared to control for condoms (aOR=15.59; 95% CI: 14.19, 17.13), OCPs (aRR=18.54; 95% CI: 16.0, 21.6), EC (aRR=20.8; 95% CI: 16.2, 26.6), and UPTs (aRR=3.9; 95% CI: 3.7, 4.1). Intervention shops distributed a mean of 9.2, 8.3, 4.8, and 7.3 more units of condoms, OCP, EC, and UPT, respectively, per month compared to control shops (all  $p < 0.01$ ), and 1.17 fewer HIVST kits compared to control shops ( $p = 0.143$ ).

**Conclusions:** Higher distribution of SRH products from intervention shops at midline suggests the intervention facilitates distribution of subsidized contraceptives and UPTs, which will be confirmed in an ongoing validation study, but not necessarily HIVST kits which were free in both arms.

Nonetheless, overall high distribution of HIVST kits affirms both high demand among AGYW for obtaining HIVST kits from drug shops and potentially demonstrates high willingness of shopkeepers to facilitate access to HIVST.



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## TUPED384

The Health Education and Community Core:  
a model of community engagement in the  
US-based Pediatric HIV/AIDS Cohort Study (PHACS)  
Network

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**Background:** Lived experience is a vital form of expertise that contributes to socially valid and impactful research by incorporating the priorities of community members historically excluded from the research process. While Community Advisory Boards are common in HIV research, logistical challenges and a lack of committed resources can prevent community members from being truly engaged in decisions about research in which they participate.

There is a need for a widely adoptable infrastructure that meaningfully integrates community members throughout all stages of the research process.

**Description:** Within the US-based, NIH-funded Pediatric HIV/AIDS Cohort Study (PHACS) Network, we established the Health Education and Community Core (HECC) in 2020 with a team of 13 multidisciplinary staff (including 2 full-time staff) and multiple community groups, including a group of study participants paid as consultants.

The HECC's primary aim is to advance and formalize bi-directional partnership between researchers and community members throughout the research process.

**Lessons learned:** Dedicated resources and staff experienced in plain language communication, community engagement, and graphic design are critical to build the foundation for community partnership in research. Through a committed process of authentic relationship-building, promotion of community leadership, and creation of a flexible and adaptable infrastructure (wherein community members can choose when and how they share input - via email, phone/video call, text, etc.), the HECC has offered myriad services that support

the PHACS research agenda. HECC members participate in setting PHACS' overall research priorities, shaping network policies, crafting research questions and specific aims, reviewing research proposals, determining study procedures, troubleshooting issues with data collection, and interpreting study results.

Because of members' multidisciplinary expertise and skills, the HECC is also able to respond nimbly to ad hoc requests from research teams, such as creating participant resources, study logos, and disseminating results to participants and the public. The HECC's work - whether creative or research-based - centers community voices and lived experiences.

**Conclusions/Next steps:** Purposeful inclusion of lived experience and community priorities across HIV-focused research networks can support more socially valid research that ultimately benefits people living with HIV. The HECC model provides a practical roadmap for other research networks looking to expand their community engagement.

## TUPED385

A qualitative analysis of knowledge, attitudes, and  
practices of sexually transmitted infections among  
youth: perspectives from the Isisekelo Sempilo  
Clinical Trial in rural KwaZulu-Natal, South Africa

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**Background:** Adolescents and young adults (AYAs) in low-income settings face a high burden of sexually transmitted infections (STIs), including an increased risk of a significant risk for HIV. We explored knowledge, attitudes, and practices among AYAs participating in an intervention trial that offered home-based STI self-sampling and integration of HIV and sexual and reproductive health services in rural KwaZulu-Natal, South Africa.

**Methods:** We conducted seventy in-depth interviews in June-December 2020 (telephonically), and September-November 2021 (face-to-face). Male and female trial participants (n=52) and intervention delivery teams (n=18 peer navigators) were purposively sampled. Study and research procedures were explained to participants

and parents/guardians (to gain consent for AYA under 18 years) during recruitment. Interviews were conducted using a semi-structured interview guide. Data were transcribed, translated from IsiZulu into English, and analysed thematically.

**Results:** We found a significant gap in AYA's knowledge about STIs, with the exception of HIV. AYA and the delivery team attributed this disparity to the focus of health promotion on HIV. Young women were more concerned about unintended pregnancy than contracting STIs. AYAs were reluctant to engage in open discussions with parents, peers, and healthcare providers about sex and STIs. They described the negative attitudes to adolescent sexuality perpetuating misinformation about STI prevention and treatment.

Confidentiality and privacy were major concerns. Despite some AYA mentioning they had experienced STI-related symptoms, they did not seek timely medical care, and some, particularly males, opted for traditional healers or home remedies, because they perceived less stigma and greater privacy and confidentiality with these methods.

AYA described the home-based STI sampling and mobile SRH service delivered to young men and women through the trial as meeting their needs. They appreciated the privacy, convenience, and individualised sexual health promotion and care.

**Conclusions:** In a setting with a high burden of HIV, we demonstrated ambivalent attitudes and practices toward STI services among AYAs. There is a need for integrated, private and decentralised services to address a wider spectrum of STIs alongside HIV to reduce HIV and improve sexual health among AYAs.

## TUPED386

Ubomi Bethu! It is our life, let us own it and live it: community leadership by young women working together to prevent HIV in rural Ngqushwa, Eastern Cape, South Africa

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**Background:** In South Africa, a third of young women experience sexual abuse before 18 years. This abuse contributed to the 13,000 teenage pregnancies recorded in the Eastern Cape in 2022 and an associated spike in them acquiring HIV.

With funding from Viiv HealthCare, the Ubunye Foundation, a community-led organisation, worked with young women to create their own programme of change.

**Description:** With training and mentoring from Ubunye staff, volunteer learners from nine schools set themselves up as HIV Ambassadors in a project they named Ubomi Bethu: It's Our Life. These Ambassadors talk to their

friends and colleagues, passing on information on HIV prevention and linking young women in need of immediate professional help to a dedicated team of counsellors, teachers, police, legal aid representatives, nurses - all local public sector employees trained and pledged to help young people.

The Ambassadors also refer those in abusive relationships (providing sex for food and luxury goods) to Life Skills groups. Here, they are coached in creating alternative life plans, with each step supported by financial, training, psycho-social, and study assistance.

A targeted mobile app gives the community (men included) access to Ubomi Bethu resources, access to feedback on the project, local resources and an interactive platform where young people can chat anonymously and get support.

**Lessons learned:** Since August 2023, there have been daily personal conversations between Ambassadors and their colleagues, widespread community access to the Ubomi Bethu app, 200 referrals to the Support Team and 80 young women joining Life Skills groups.

Feedback from the Community Led Monitoring in the app indicates a decline in abusive relationships and an increase in uptake of HIV prevention methods, but significantly, through the Participatory Action Research method: photovoice, Ambassadors, learners, and young people speak of their growing confidence and ability to address abuse.

**Conclusions/Next steps:** Young women can effectively design, implement, monitor and evaluate a programme to prevent young women from acquiring HIV, especially when it is caused by their sexual exploitation and abuse. With a community-based support network: a community-led organisation, concerned and informed professionals, and a community-led app, young people lead in making a difference in their lives.

## TUPED387

Effectiveness of digital health interventions on HIV knowledge, testing, and behavioral change among young women and girls in sub-Saharan Africa: a narrative review

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**Background:** Robust intervention to ease HIV burden among young women and girls in Sub-Saharan countries is paramount. There is a growing evidence that digital health interventions can successfully influence significant changes in HIV related behaviour among young women and girls. Given the widespread uptake and use of digital media among young people, it is critical to investigate the ever-changing landscape of digital health interventions and their impact on HIV-related outcomes among



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young people. Furthermore, the intersection of digital media into healthcare may present new chances to leverage innovative approaches to promote HIV health related interventions to this demographic.

Therefore, this review aims to explore and synthesize existing literature on the effectiveness of digital health interventions on HIV knowledge, Testing, and behavioral change among adolescents in SSA.

**Methods:** A narrative scope review was adopted, following the comprehensive nine-step approach outlined by Juntunen and Lehenkari. English-written articles from 2014 to 2024 were electronically searched from Google Scholar, Science Direct, PubMed, and Medline.

The inclusion criteria consisted of studies that specifically addressed digital health interventions for health promotion among young women and girls in Sub-Saharan Africa, excluded non-English written articles and those with a focus derailing from young women and girls.

**Results:** Studies highlighted evidence supporting the effectiveness of digital health interventions in influencing significant changes in HIV-related behaviour among adolescents in Sub-Saharan Africa. Digital platforms may enhance HIV knowledge dissemination, increasing testing rates, and facilitating positive behavioural changes.

Although digital media has the capacity to expand efficiencies and have positive health interventions, it does not guarantee success. Challenges observed were demographic and socio-economic aspect, culture and education level.

**Conclusions:** Studies reviewed showed that digital health interventions hold promise in addressing the burden of HIV among adolescents in Sub-Saharan Africa. These interventions have the capacity to contribute positively to HIV knowledge, testing, and behavioral outcomes among young women and girls. Digital healthcare intervention may have shortfalls due to challenges of socio-economic and cultural aspect. Innovations to ensure that digital health interventions are culturally sensitive and could be accessible to a larger scale of young women and girls is paramount

## TUPED388

### Community-led research for enhancing pre-exposure prophylaxis (PrEP) uptake among sex workers in Thailand – a national level cross-sectional study

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**Background:** SWING Foundation, a sex worker-led community-based organization (CBO), led a national cross-sectional study in collaboration with BIRD (Bangkok Interdisciplinary Research and Development) to investigate low levels of PrEP uptake (8%: MoPH, 2023) among sex workers (SW) – female (FSW), male (MSW) and transgender female (TGSW) despite government policy of free PrEP for anyone who wants it.

**Description:** From April-December 2023, SWING conducted the largest cross-sectional study of SW in Thailand to assess demand for PrEP and decision-making factors in PrEP engagement. We enrolled 621 FSW, 452 MSW and 438 TGSW (n=1,511) in 7 provinces – Bangkok, Pattaya, Chiang Mai, Kanchanaburi, Phuket, Sakaew and Udonthani. SWING engaged in protocol development and defense with the Ethics Committee. We collaborated with provincial public health offices to obtain permission. National government and other key stakeholders served in the study advisory group. We used our connections and our database to promote the study and facilitate SW participation in face-to-face data collection. We identified hotspots for sex work and recruited SW populations. We contributed to questionnaire development and implementation ensuring sensitivity to SW cultures.

**Lessons learned:** The study reveals important findings that can be used to inform advocacy activities, improve SWING interventions for SW and influence Thailand policy on PrEP in line with our strategic plan, 2023-2027. We found evidence of high-risk behaviors, including group sex (21% of respondents) with 95% of these reporting no use of condoms, low levels of HIV testing with 43% not having been tested in the past 12 months, low levels of PrEP knowledge, but relatively high level of interest in PrEP use. Gender-based violence was found to be pervasive among all sub-populations, particularly from clients but also from the society.

**Conclusions/Next steps:** Community leadership in policy-relevant research is not only feasible, but also essential to engage successfully with the different and hard to reach SW populations. We will use the findings to drive the expansion of HIV prevention particularly PrEP services to cover the needs of SW populations and geographical areas. We will advocate for the inclusion of community-led research in the national strategic plan to end AIDS.



## TUPED389

## Mental models reflect continued demand and unique value of vaccines for HIV prevention: insights from an end-user study in India, Uganda and South Africa

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**Background:** With newer advances in HIV biomedical research, the prevention toolbox is expanding with the inclusion of vaginal rings, long-acting anti-retrovirals and broadly neutralizing antibodies. Numerous global efforts are also being directed towards developing effective HIV vaccines. Thus, it becomes pertinent to understand the continued demand and value proposition of HIV vaccines among key and vulnerable communities in light of other prevention products.

Real-world lived experiences, diverse interactions and deep-seated beliefs around vaccines among potential end-users give rise to mental models which are pivotal in shaping their perceptions and eventual decision-making with regard to HIV vaccines.

**Methods:** Between October 2022 and April 2023, a qualitative study with descriptive-interpretive exploratory design was conducted in 6 sites across 3 countries (India, South Africa and Uganda) among men who have sex with men, transgender women, female sex workers, fishing communities, long-haul truck drivers, adolescent girls and young women and adolescent boys and young men. Using maximum variation purposive sampling, 106 focus-groups (n=848) were conducted. Data were thematically analysed with a focus on mental models of HIV vaccines.

**Results:** Data revealed that end-users perceived vaccines to have distinct values despite the availability of newer prevention options. The following deeply ingrained mental models dominated perceptions around continued need for HIV vaccines:

- Since vaccines train the human body to fight for itself, they provide more durable, efficacious and longer-term protection and are the only tool that can lead to disease elimination;
- Vaccines are well-tolerated even among children and have fewer side-effects than drugs due to lesser frequency and volume of dose;

c. Vaccines are accessed through generalized, routine non-discriminatory immunization systems meant for all, hence will avoid the stigma of being associated with high-risk behaviours;

d. Vaccines are non-habit-forming and not associated with drug resistance.

**Conclusions:** As newer HIV prevention options continue to be made available across regions, ongoing HIV vaccine development efforts will need to articulate the persisting need and distinctive value of HIV vaccines in this continuously evolving context. This messaging can be informed by mental models of vaccines that highlight the continued relevance to community and policy stakeholders.

## TUPED390

## Evolving HIV risk networks among female sex workers in India and need for strengthening linkages to prevention services

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**Background:** High HIV prevalence among Indian female sex workers (1.56% vs. national average 0.22%) underscores the urgent need to address gaps in HIV prevention, notably in the context of evolving digital networks.

In response, a study was launched to understand these evolving HIV risk networks and this abstract focuses on the gaps/needs in engaging FSWs with existing HIV prevention services.

**Methods:** From October 2022 to June 2023, a qualitative study included FSWs aged 18-45 in Chennai, Mumbai, and Delhi, covering physical and digital spaces. Inclusion criteria followed NACO's guidelines for sex work or transactional sex in the past month. 12 focus group discussions (4/site, n=76) and 12 in-depth interviews (4/site, n=12), were conducted. Data analysis employed ATLAS.ti (Version.23.2.1), using a blend of framework analysis and grounded theory to derive key themes.

**Results:** The study included 88 participants with a mean age of 33 years. Among them, 58% operated in physical spaces, 33% in both physical and digital spaces, and 9% exclusively in digital spaces. 37.5% had at least a secondary level of education and the majority (80.7%) considered sex work as their primary occupation. Nearly equal percentages were either married (44.3%) or separated/widowed/divorced (43.2%).

The study revealed that digital spaces benefited FSWs with client screening, autonomy, privacy, and violence protection. Despite challenges like digital illiteracy, many preferred digital platforms. Some FSW groups, like those



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on streets or hidden brothels and young girls were hard to reach with interventions. Outreach workers faced difficulties in reaching these unaffiliated groups, and FSWs encountered obstacles accessing services due to awareness gaps, distance, inconvenient operational hours, stigma, and clients' resistance to condom use. Limited access to education materials was also a challenge, attributed to literacy and technological barriers.

**Conclusions:** Findings emphasize the need for nuanced strategies in HIV prevention, especially amid the evolving landscape of digital sexual networks, creating barriers for FSWs to access existing programs.

The study advocates for innovative outreach, urging prevention programs to leverage virtual platforms for knowledge dissemination and health access including testing and treatment linkages.

## TUPED391

Barriers and facilitators of pay-it-forward interventions for HIV/STI research: a systematic review and qualitative evidence synthesis

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**Background:** Pay-it-forward interventions involve an individual receiving a free health service, then making a monetary or non-monetary donation to support another individual's health service. Pay-it-forward interventions have been used to distribute HIV self-test kits, increase STI test uptake, and distribute sterile needles.

The purpose of this systematic review and qualitative evidence synthesis was to examine barriers, facilitators, and implementation of pay-it-forward approaches in HIV/STI research.

**Methods:** We used the Cochrane Handbook and registered the review in PROSPERO (CRD42024499448). Five databases (PubMed, CINAHL, Embase, PsycInfo, ProQuest) were searched for qualitative studies on pay-it-forward interventions related to HIV/STI research. Thematic synthesis was used to summarize findings. CASP was used to assess the quality of individual studies; GRADE-CERQual was used to assess confidence in the review findings.

**Results:** Twenty-one studies examined pay-it-forward interventions. Fifteen studies concerned secondary distribution of HIV self-tests; five concerned secondary syringe exchange; and one concerned a pay-it-forward approach for STI tests. Studies included heterosexual partners (nine

studies), people who inject drugs (seven studies), pregnant women (six studies), female sex workers (five studies), and men who have sex with men (four studies). Study settings included high- (six studies), middle- (nine studies), and low-income countries (nine studies).

Pay-it-forward interventions increased participant agency and empowered participants to make informed sexual or injection decisions (11 studies, high confidence). Distribution was often motivated by an altruistic concern for the health of partners, friends, and clients, sometimes with moral obligations (nine studies, moderate confidence).

In established marital, sexual, and peer relationships, distribution was mediated by mutual trust and responsibility, aligning with an ethic of care (13 studies, moderate confidence). Distribution to more distant peers was rare but facilitated by shared community identity and social cohesion (seven studies, low confidence). For female partners and sex workers, the key barrier to distribution was anticipated negative recipient reactions, including violence or abandonment (11 studies, high confidence).

**Conclusions:** Pay-it-forward interventions leverage agency, altruism, and relationality to increase HIV/STI testing and sterile needle use among key populations. Social network distribution can empower participants as health agents and draw on a natural propensity for care to enhance HIV/STI services.

## TUPED392

Volunteers' motivation to participate in an experimental medicine trial and experiences with non-conventional invasive sampling techniques

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**Background:** Experimental medicine trials (EMT) do not confer immediate benefits to study volunteers and often require unique safety considerations. Non-conventional sampling techniques (NCST) are not typical in clinical care or trials in Africa. We sought to;

1. Understand the volunteers' motivation to participate in EMT and,
2. Elucidate their experiences with NCST including, large blood draws (LBD), leukaphereses and fine needle aspirates (FNA).

**Methods:** We employed a qualitative evaluation among HIV-1 uninfected healthy adults enrolled in IAVI G003, a Phase 1 clinical trial to assess the safety, tolerability, and immunogenicity of an mRNA vaccine immunogen in

Rwanda and South Africa. Semi-structured in-depth interviews were conducted with all 18 volunteers at three time points between June 2022 and June 2023. Audio recordings were transcribed verbatim and meaning-based translations were performed.

We applied a thematic data analysis approach to summarise the results through an iterative coding process. Data was organised using NVivo version 14, a QSR International Software.

**Results:** The volunteers' considerations to participate in the trial involved a complex interplay of intrinsic and extrinsic drivers. Altruistic inspirations such as 'saving humanity', 'finding a cure for HIV', 'saving family and peers' and 'contributing to vaccine development' manifested as important drivers to participation.

These noble ideals were coupled with expectations of benefit to 'protect self from HIV', access to 'health insurance' for self and family, 'HIV testing', 'monitoring of one's health', compensation, 'free treatment' and perceived superior quality care.

Prospective perceptions of the NCST were characterized by fear and anxiety due to anticipated pain, the complexity of the machines and procedures, and the quantity of the blood draw.

Retrospective experiences were characterised by ambivalent reactions including concerns regarding immediate side effects and perceived long-term effects and safety post-trial, a sense of déjà vu and 'feeling fine', to 'not understanding why' the NCST procedures.

**Conclusions:** Our findings demonstrate the feasibility of conducting EMT involving NCST while highlighting literacy gaps including the scientific rationale for trial procedures. This work calls for reimagining the notions of standard of care, adequate compensation, and quality of informed consent in the context of collaborative transnational clinical research.

## TUPED393

### Effective strategies to expand PrEP use among transgender women in Brazil

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**Background:** Pre-Exposure Prophylaxis for HIV (PrEP) was introduced as a Public Policy in Brazil in 2017. According to data from the Ministry of Health's 2022 monitoring report, PrEP users are predominantly gay men and other cisgender men who have sex with men (84%), with transgender women representing only 4%, concentrated in the age group of 30 to 39. It is crucial to emphasize that while PrEP

is effective, it cannot be considered in isolation, detached from the educational process and sociological and psychological approaches.

**Methods:** From February 2020 to July 2023, the Community Education Program of Casa da Pesquisa/CRT/AIDS developed behavioral and social methodologies to reach the transgender women population not using PrEP.

We implemented the peer education methodology to access social spaces and reach the transgender population, complementing this strategy with social actions and vulnerability reduction initiatives.

**Results:** To implement the peer education methodology, transgender women were intentionally hired for the team. Addressing comprehensive health, we implemented the hormone therapy protocol and a specialized team, providing psychiatric and oral health care.

For vulnerability reduction, we initiated community education for all PrEP users, established social vulnerability criteria for providing food baskets, and launched seasonal campaigns for clothing donations. Additionally, with a focus on a humanized and individualized approach, we introduced birthday presents, birthday cards, and cultural activities.

Evaluating the period from 2020 (pre-implementation of the Community Education Program), we identified a total of 319 PrEP users at Casa da Pesquisa, with 5.3% being transgender women. In July 2023, the total number of PrEP users is 248, with transgender women constituting 22.9%, a significant increase in this population.

This surpasses the data for the state of São Paulo and Brazil, where this population represents 4% of PrEP users, according to the Ministry of Health's report.

**Conclusions:** We conclude that the effectiveness of HIV prevention goes beyond the availability of biomedical technologies and requires a comprehensive approach that includes education, awareness, and behavioral and social strategies.

Our methodology, based on peer education, has proven to be effective in attracting and retaining a substantial group of transgender women and transvestites in our HIV prevention clinical studies.



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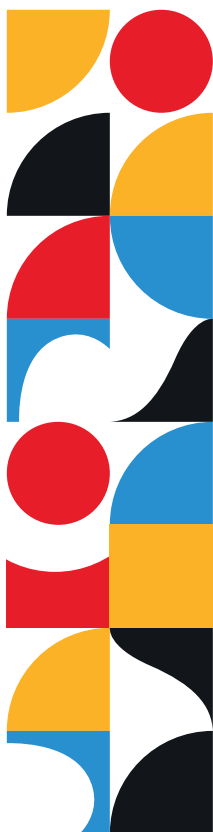
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## TUPED394

Empowering young people through digital innovation

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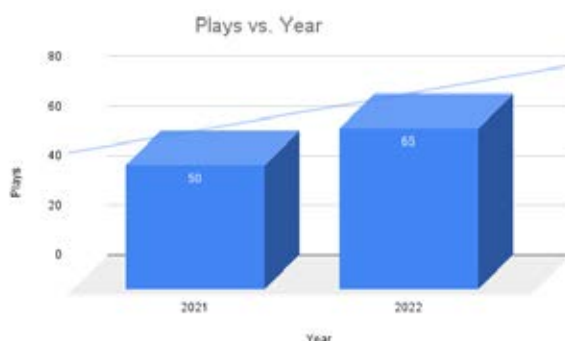
**Background:** The Global Network of Young People has identified a significant gap in opportunities for young people affected or living with HIV to share their stories and advocate for change. The primary objective of READYCast is to provide a platform for young people to raise their voices on policy reforms and create a conducive environment for all of them.

By empowering young people to share their experiences and advocate for change, READYCast is working towards improving the lives of communities affected by HIV and promoting policy reforms that support them.

**Description:** The organization has implemented the READY+ program in seven countries, introducing a series of podcasts called READYCast. The podcast is an open platform and safe space for youth advocates to host discussions with key influencers on various topics such as HIV, SRHR, and human rights. It is edited before being uploaded to Anchor and Spotify and targets adolescents, young people, caregivers, and donors.

**Lessons learned:** The READYCast, an innovative educational content, has covered several topics, including the significance of self-care for mental health, the meaningful engagement of young people living with HIV, and Digital Health Rights.

The program has proved to be highly effective in creating a diverse range of content aimed at reaching out to a wide range of young people. According to the analytics, the number of plays has seen an increase from 2021 to 2022, as shown in the graph.



**Conclusions/Next steps:** The implementation of an innovation aimed at providing young people with consistent and high-quality information, while concurrently amplifying their voices, has yielded significant results. The sub-

stantial increase in the number of listeners serves as a testament to the effectiveness of this intervention, which has evidently filled a gap in HIV response.

## TUPED395

The caregivers' participatory approach to understanding the extent to which OVC services are delivered, their value and the current gaps within OVC services

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**Background:** Funded by USAID, NACOSA implements HIV/AIDS Prevention interventions in vulnerable populations focusing on orphans and vulnerable children and youth (OVCY) in the Western Cape. The program delivers services to OVCY aligned to the four OVC family-centered objectives of Healthy, Stable, Safe and Schooled.

**Methods:** A qualitative study evaluated the extent to which the services of the program are impacting on eligible OVCY. 90 OVCY caregivers that have been in the program for a year or more were randomly selected from 4 sub-districts in Cape Town, South Africa.

Data were gathered through focus group discussions using an interview guide and content analysis was used to analyze the results.

**Results:** The objectives of the OVCY program were achieved, even though the degrees of achievement differed for each beneficiary and by sub-district. OVCY services were delivered to almost all beneficiaries. Significant successes were achieved in the provision of educational support and school re-enrolments.

The support provided by care workers to children living with HIV and recalling those who were defaulting on ART was viewed as a great benefit. Improved relationships and the ability to have healthy conversations between adolescent girls and their caregivers was highlighted as a value-add of the program.

Strengthened relationships between government departments and the implementing partners facilitated quick turnaround times for beneficiaries to acquire birth certificates and identity documents, enabling them to receive social grants. Caregivers spoke highly about the levels of skill and commitment of care workers but voiced disappointment in retrenchments due to reduced funding opportunities. Participants suggested to increase the number of boys in the program as they are vulnerable to gangsterism, violence and drug misuse.

The need for meaningful income-generating activities and food security was great. Although SRH and HIV prevention interventions were part of the program, these needed to be intensified as teenage pregnancy and early sexual debut was very prevalent.



**Conclusions:** The magnitude of the problem requires co-ordinated efforts to scale up existing interventions and adapting interventions to increase funding for care workers, More support for caregivers. Intensify SRH and HIV prevention interventions/awareness to prevent unwanted pregnancy and early sexual debut. to meet the community-identified needs.

## TUPED396

What attracts young men for VMMC services?  
Finding from a large scale VMMC program in South Africa

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**Background:** Voluntary Medical Male Circumcision (VMMC) remains one of the most cost-effective and cost-saving HIV prevention modalities especially when targeted to males 15-29 years in communities with high HIV prevalence and low circumcision saturation. Innovative, targeted demand creation activities are key in reaching this age group. Over a six-year period, Right to Care (RTC) under the Centres for Disease Prevention and Control (CDC) funded VMMC program supported selected districts in South Africa (SA) with VMMC services for HIV prevention. We reviewed data on clients' sources of information about VMMC and reasons for circumcision.

**Methods:** This was retrospective data analysis using routinely collected de-identified program data collected from 15 CDC-supported districts across six provinces between April 2018 and September 2023. Consenting males aged 10 years and above eligible for comprehensive package of VMMC services completed a semi-structured questionnaire on reasons for assessing VMMC and source of information about VMMC. Standard RTC and National Department of Health (NDoH) tools were used for data collection and the data was captured into a cloud-based M&E system with restricted access. Descriptive analysis, and tests of association were done using Pearson's chi-square or Fischer's exact test on extracted dataset.

**Results:** A total of 465,188 clients visited our facilities, with 38% (n=178 622) of males in the age group 15-19 years. Among the males, 98.77% (459,367) successfully had a VMMC procedure performed. When asked why they wanted to be circumcised, most (n=202,705;43.47%) indicated hygiene and cleanliness as the reason for circumcision, followed up by reducing risk of HIV (25,17%, n=117,369), tradition (8.75%; n=40,803), and reduced risk of STI (7.61%; n=35,484;). Friends & relatives (45.64%; n=202,705) and social mobilizers (37.56%; n=175,127) were the major sources of information on VMMC.

**Conclusions:** To reach the target age group of males 15-29 years for VMMC services, peer interventions like use of friend/relatives for VMMC mobilization should be up-scaled. Use and capacitation of social of social mobilisers may increase VMMC uptake. Equally, hygiene and reduction of risk of HIV&STI need to be incorporated in educational materials for VMMC.

## TUPED397

Almost half a century later...are we REALLY HIV aware?: knowledge about female genital schistosomiasis (FGS), family planning, mental health and HIV in Zimbabwe

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**Background:** Risk perception and awareness about HIV pathogenesis is critical to HIV prevention, diagnosis and treatment. Community health-workers (CHWs) form the backbone of HIV information and services in high burden countries.

Our objective was to explore the knowledge and awareness of CHWs around evidence-based risk factors for HIV acquisition including access to family planning methods prevention and treatment of FGS and mental health disorders.

**Methods:** From April to May 2023, we conducted a mixed-method evaluation with 465 CHWs in 9 districts of Zimbabwe about HIV transmission, awareness of family planning methods, FGS and mental health disorders. We collected quantitative data from 465 CHWs using Open Data Kit. Focus group discussions were conducted in April to May 2023 and analyzed thematically.

**Results:** There were high levels of awareness among CHWs (100%; n=465) regarding the importance of HIV testing for personal health awareness. The importance of lifelong adherence to antiretroviral medications among HIV-positive individuals was well recognized in both CHW survey and FGDs. Knowledge of family planning methods was evident, with condoms being the most frequently mentioned (77%; n=357).

However, awareness of Female Genital Schistosomiasis (FGS) was limited (56%; n=260) with varying understanding of its transmission and treatment locations. While participants suggested diverse sources for seeking treatment for MHDs including church-based support, awareness about clinical MHDs was limited.

**Conclusions:** We find that while HIV-awareness in affected communities is high, critical gaps remain. These findings underscore the need for targeted education on FGS and mental health interventions in the community.



Oral abstracts



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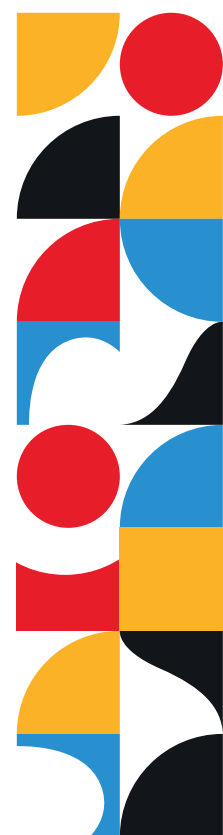
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## TUPED398

Enhancing HIV/mental health care through  
community-based SACCO Health & Wellness  
Models in Uganda

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**Background:** In Uganda, men are less likely to know their HIV status in comparison to women. Moreover, recent studies in Uganda show higher HIV prevalence among boda-boda (motorcycle taxi) drivers, prompting National AIDS plans to prioritize prevention and treatment in this sector. The project utilizes a community-based approach to screen men for HIV and common mental health (MH) issues.

**Description:** The project collaborates with existing Community-Based Organizations (CBOs), local health departments, and SACCOs in Africa's transport sector, focusing on men vulnerable to HIV due to high-risk behaviors. Implemented from February 2022 to July 2023, the project trains champions, health staff, and volunteers, conducts sensitization events, HIV testing, and MH screenings. The aim is to link HIV-positive individuals or those with depression to appropriate care.

### Lessons learned:

1. The SACCO Health and Wellness model has proven its effectiveness, with over 4,000 men voluntarily undergoing HIV tests, along with some members of their families. The model is tailored to the mobile nature of men in the transport sector, establishing service centers with flexible hours for easy access to services.
2. Integrating MH care with HIV prevention has shown significant positive outcomes for men living with HIV. The intervention effectively addressed challenges related to medication adherence and MH issues. Providing MH and psychosocial support allowed men living with HIV to tackle underlying challenges affecting their well-being.
3. The approach successfully addressed the mental health gap and increased access to mental health services among men. A total of 3,021 individuals were screened for mental health, with over 4,500 tested for HIV and more than 300,000 community members sensitized about MH and HIV care. The predominant mental health conditions identified were depression (76%), PTSD (55%), and substance use disorders (SUDs) (56%), with a notable symptom reduction rate of 72%.

**Conclusions/Next steps:** The SACCO Health and Wellness Model showcases innovation in integrating mental health services. As SACCO models continue to expand across various communities, there is potential for replication beyond the transport sector.

## TUPED399

Perceived norms and misperceptions about  
PrEP-related behavior and personal willingness  
to take PrEP among all adults across eight villages  
in rural Uganda

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**Background:** Perceived norms drive health-promoting attitudes and behaviors, but their relevance to PrEP in an HIV-endemic setting is unknown.

**Methods:** We conducted a study of adults across eight villages in Uganda. Survey questions elicited whether a participant would personally be willing to take PrEP daily (yes/no), talk to a friend/spouse/provider about PrEP (yes/no for each), and react violently to partner PrEP use (yes/no). Participants also reported their own perceptions about how many men and women in their villages would engage in those behaviors.

Participants could choose a response from a 4-point Likert-type scale ranging from 'all or almost all' to 'very few or no one' for these questions. Perceptions were compared with village-rates of personal behaviors to identify the prevalence of men and women misperceiving health-risk PrEP-related behaviors as local norms. Modified Poisson regression models estimated associations between perceived norms (i.e., what majority would do) and personal willingness to take PrEP among adults not living with HIV and adjusting for other factors.

**Results:** Among 1566 participants, 14% reported medium/high personal HIV risk; 11% reported having condomless, non-spousal sex; 44% said that they would be willing to take PrEP.

Overall, 64% of participants would not personally react violently to partner PrEP use and 70%-78% would personally talk to a friend/spouse/provider about PrEP. However, 39-61% thought that most men would react violently and not talk about PrEP, and 14% thought that few to no men would be willing to take PrEP.

Misperceived norms about women were similar. Perceived norms about men and women were associated with personal PrEP uptake willingness.

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Perceived Norms [REF = did not think most would engage in that behavior]	Personal willingness to take PrEP daily if free and accessible					
	Model 1*			Model 2*		
	aRR	(95% CI)	p-value	aRR	(95% CI)	p-value
Most men would react violently to partner PrEP use	0.79	(0.71-0.86)	<0.001	-	-	-
Most men would talk with a healthcare provider about PrEP	1.37	(1.08-1.74)	0.008	-	-	-
Most single men would be willing to take PrEP daily	1.27	(1.09-1.48)	0.002	-	-	-
Most women would react violently to partner PrEP use	-	-	-	0.81	(0.72- 0.91)	<0.001
Most women would talk with a healthcare provider about PrEP	-	-	-	1.44	(1.21- 1.72)	<0.001
Most single women would be willing to take PrEP daily	-	-	-	1.32	(1.18- 1.47)	<0.001

\*Adjusted for sex, age, marital status, education, household wealth, alcohol consumption, recent HIV testing, condomless sex, personal HIV risk, & thinking less of others on PrEP.

**Conclusions:** Although most adults would engage in health-promoting PrEP-related behavior, many incorrectly thought peers would not.

Adults who perceived health-promoting PrEP-related behavior as common were more willing to take PrEP themselves.

Strategies to change misperceived norms about PrEP-related behavior use may help increase PrEP uptake.

## Key populations and other vulnerable populations: Behavioural, social and cultural issues and contexts

### TUPED400

Saving souls, healing bodies: faith-based HIV outreach to Black communities in New Orleans

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**Background:** Black individuals, particularly those in the southern United States, are disproportionately affected by HIV. Black faith-based organizations (FBOs) have long been recognized as important partners for delivering health-related behavior change interventions. New Orleans, Louisiana, has one of the highest rates of HIV in the United States.

Saving Souls, Healing Bodies: Faith-Based HIV Outreach to Black Communities in New Orleans was designed to tackle this issue by educating clergy, congregants, and clinicians in New Orleans and offering HIV screening at local church-based health fairs.

**Description:** We partnered with a community-based organization, an established local healthcare system, and a network of Black churches in the New Orleans area (Louisiana Freedmen Missionary Baptist Association) to develop and deploy this initiative.

This initiative included engaging local clergy (n = 432) by educating them about HIV transmission and the importance of testing so that they could educate their congregants and encourage testing, hosting health fairs at four local Black churches to screen congregants for HIV, establishing a referral network, and educating clinicians (n = 260) serving those communities so that congregants are referred to providers knowledgeable about preventing and treating HIV. To reduce potential aversion by congregants, screening was also conducted for other conditions (eg, hypertension, diabetes, hyperlipidemia).

In total, 309 people attended the health fairs, 132 were educated on HIV prevention and treatment, 465 were screened for hypertension, diabetes, or other conditions, and 61 were screened for HIV.

**Lessons learned:** While pastors recognized the critical need for this program, some expressed concern about providing HIV education to some of their conservative congregants, who may be uncomfortable given HIV's association with the LGBTQIA+ community.

Nonetheless, the pastors fully supported the education as vital to overcoming the impact HIV has on the community.

**Conclusions/Next steps:** By collaborating with FBOs, expert faculty, and an established local health care system, we provided a comprehensive curriculum for clergy, clinicians, and the communities they serve. Because the congregants were educated about HIV by a trusted source (clergy), stigma some individuals feel about HIV testing may be ameliorated.





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## TUPED401

### Association between criminal legal system involvement and HIV prevention and care behaviors among transgender women of color: the TURNNT cohort study

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**Background:** It is estimated that 62% of Black transgender women and 35% of Latina transgender women are living with HIV. Transgender women of color are also targets of over policing; Black transgender women are incarcerated 10 times the rate of the general population.

**Methods:** We conducted a cross sectional analysis using the first-wave data from The Trying to Understand Neighborhoods and Networks Among Transgender Women of Color (TURNNT) Cohort Study. 314 transgender women of color were included in this analysis. 28.7% identified as Black and 46.2% identified as Latina. 49% had previously been arrested and 27.7% had previously been incarcerated. Half of the participants were living with HIV.

We estimated the association of criminal legal system involvement with HIV status as well as HIV testing, condom use, PrEP use, and HIV viral load suppression among transgender women of color living in metropolitan areas. Effect measure modification by race and ethnicity was also analyzed.

**Results:** History of incarceration was positively associated with being HIV positive (ARR: 1.41; 95% CI: 1.15, 1.74). Among those living with HIV, history of incarceration was associated with increased risk of having a detectable HIV viral load (ARR: 4.01; 95% CI: 1.56, 10.4).

Among seronegative individuals, history of arrest decreased the probability of PrEP use, though results were not significant (ARR: 0.70; 95% CI: 0.46, 1.06).

Effect measure modification by race was observed. The effect size for the association between history of arrest and HIV seropositivity was positive among non-Black and non-Latina women, but null for Black women. Among Black individuals, history of arrest was positively associat-

ed with consistent condom use, while there was a negative association among those who identified as non-Black and non-Latina.

**Conclusions:** Within a cohort of transgender women of color, criminal legal system involvement was positively associated with HIV seropositivity and detectable viral load, and it was negatively associated with PrEP use. Race and ethnicity acted as effect measure modifiers. Criminal legal system involvement negatively affects the health of transgender women of color through complex mechanisms; more intersectional research is needed to identify specific pathways and strategies to eliminate or mitigate this effect.

## TUPED402

### Assessing population-level outcomes for HIV programmes among female sex workers and men who have sex with men in Nairobi, Kenya

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**Background:** Nairobi has the highest proportion of estimated Female Sex Workers (FSW) and Men who have Sex with Men (MSM). Understanding the gaps and strengths in HIV prevention program designed for FSW and MSM is key to improving programming for these populations and achieving population-level HIV impact.

**Methods:** Mixed-method study was conducted in April-July 2023. Quantitative methods included

- Polling booth surveys and
- Face-to-face interviews with biological sample collection among 759 FSW and 368 MSM.

The qualitative component included 20 focus group discussions. A descriptive analysis of the quantitative data by appropriate stratifications to assess the behavioral, biomedical and structural outcomes. Thematic analysis was done.

**Results:** In the PBS, 81% of FSW reported using a condom at last sex with a client and 73% of MSM used a condom at last sex with a non-regular partner. However, only 62% of FSW and 44% of MSM reported consistently using condoms in the last 3 months. Two-fifths (40%) of FSW and 50% of MSM reported condom non-availability in the last month.

Among HIV-negative participants, only 16% of FSW and 13% of MSM were taking PrEP. 26% of FSW and 11% of MSM reported experiencing police violence in the last 12 months and 12% of FSW and 13% of MSM reported experiencing stigma and discrimination at health care in the last 12 months. 73% FSW and MSM 53% reported experiencing loneliness and sadness continuously for 2 weeks in



the last 3 months. 69% of FSW and 66% MSM were met by a peer educator in the last 3 months and 68% of FSW and 62% of MSM visited a clinic in the last 3 months. HIV prevalence of 14% FSW and 18.6% MSM participants. 87% FSW and 88% MSM were currently on ART. HIV incidence for FSW and MSM was 1.9 and 3.4 per 100 person-years.

**Conclusions:** Study shows a gap in availability and utilization of HIV prevention services. High violence, stigma and discrimination are barriers to utilization of prevention services. High linkage to treatment reported by participants. Study highlights key areas government and partners focus on to improve coverage and quality of services.

## TUPED403

### Preferences for PrEP delivery and PrEP modalities among adolescent girls and young women who are mothers and at risk of HIV in South Africa

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**Background:** HIV continues to be a significant public health challenge, especially among adolescent girls and young women (AGYW) in sub-Saharan Africa. Pre-exposure prophylaxis (PrEP) is an efficacious HIV prevention tool, but real-world uptake of oral PrEP remains extremely low. More nuanced understanding of AGYW preferences regarding PrEP delivery models and modalities is needed to improve PrEP rollout, uptake, and use.

The aim of this study was to understand the preferences for PrEP delivery and modalities of AGYW mothers in an observational cohort.

**Methods:** This study used cross-sectional data from the follow-up survey of a cohort study (HEY BABY) of AGYW mothers in the Eastern Cape, South Africa in 2020-2023. 96% of participants were aged 16-24, 96% had their first child aged <20.

Quantitative descriptive analysis was conducted on self-reported preferences for PrEP delivery and modalities. Associations with current use of family planning services and accessing HIV testing in recent years were evaluated using bivariate and multivariate logistic regression, adjusting for sociodemographic factors.

**Results:** The study included n=582 AGYW mothers who were HIV-negative. 78% had previously heard of PrEP and 11% reported previous PrEP use. 55% said they would

prefer to receive PrEP integrated with family planning services, and 23% preferred other primary health clinics. 90% of participants favoured long-acting PrEP modalities over daily oral pills – of which most preferred long-acting injectables (48%). In multivariate analysis, preference for PrEP delivery integrated with family planning services was significantly associated with current use of family planning methods (OR 1.69, 95%CI 1.00-2.85, p<0.05) and accessing HIV testing in recent years (aOR 1.78, 95%CI 1.05-3.03, p<0.05).

However, participants were less likely to prefer delivery through primary health clinics if they accessed HIV testing in recent years (aOR 0.53, 95%CI 0.30-0.94, p<0.05).

**Conclusions:** Tailoring PrEP delivery to align with AGYW preferences and needs can lead to more effective PrEP uptake and use. Integrating PrEP delivery into other services already accessed by AGYW would be beneficial, such as family planning and SRH services. AGYW prefer long-acting PrEP modalities, which highlights the need for long-acting PrEP to be available and accessible. Increasing awareness and knowledge of PrEP options is essential during rollout.

## TUPED404

### Acceptability of oral HIV self-testing among female sex workers: a qualitative study from Accra, Ghana

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**Background:** HIV testing is a key entry point to prevention and treatment measures. Key populations mostly have a lower uptake of HIV testing services because of several factors. In Ghana, HIV prevalence among Female Sex Workers (FSWs) is 11.1% which is disproportionately higher in comparison to the national general population prevalence at 2.1%. This study was conducted to investigate acceptability of oral HIV Self-Testing (HIVST) among FSWs in Accra Ghana.

The aim of the study was to explore awareness of oral HIVST, perceived self-efficacy and perceived effectiveness of the oral HIVST.

**Methods:** A Qualitative study with a phenomenological study design was employed to explore FSWs' acceptability of oral HIVST. Non-probability convenience sampling was used. 5 FGDs (n=30) and 13 IDIs were conducted in Accra, Ghana in Ashaiman, East Legon and Adabraka. Data was collected between May 2023 and September 2023. The data was recorded digitally and transcribed verbatim. Thematic analysis was adopted in the analysis of the data using NVivo 14.

**Results:** The study generally showed a low level of awareness of oral HIVST. Despite this, several advantages were attributed to using oral HIVST including confidentiality, convenience, and ease of use.



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The study further showed a preference to oral HIVST as compared to the standard HIV testing as it is painless and does not involve blood. However, concerns arose about accuracy of the test at diagnosing HIV mostly because of the use of saliva as a sample specimen. Even though many participants (38/43, 88%) expressed confidence in performing the test, all of them could not correctly outline the procedure and only (2/38, 5%) could correctly interpret the results.

**Conclusions:** Acceptability of oral HIV self-testing was high among FSWs with many of them willing to use the oral HIVST attributing it to the benefits of the test. The results suggest that implementation of oral HIVST among FSWs can have a high uptake and help increase HIV testing coverage. There is a need for health education to improve awareness, testing technique and address individual's concerns of the test kit.

## TUPED405

PrEPared for change: injectable PrEP interest among women engaged in sex work in Zambia, a rapid qualitative study

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**Background:** Women in sex work (WESW) face a 21-fold higher risk for HIV acquisition than the general adult population. Structural barriers including stigma hinder adherence to oral HIV pre-exposure prophylaxis (PrEP). Long-acting injectable (LAI-PrEP), may offer a less stigmatizing and convenient option for this priority population.

With Zambia planning to introduce LAI-PrEP in 2024, the WiSSPr study qualitatively investigated its potential acceptance among WESW in Lusaka, exploring barriers to oral PrEP and prospects for LAI-PrEP.

**Methods:** Utilizing a community-based participatory approach, the WiSSPr study collaborated with key population civil society organizations (CSOs) and Zambia's Ministry of Health. From July-October 2023, we conducted in-depth interviews with 18 WESW and 6 peer health navigators in Lusaka.

Rapid qualitative analysis involved interview memos and an analysis matrix to distill themes, confirmed through team consensus.

**Results:** Participants' average age was 28 years, with 5.8 years in sex work. They showed a strong preference for LAI-PrEP, facilitated by CSO-supported peer networks and service delivery platforms. Preference for LAI over oral PrEP was due to anonymity ("nobody can know that you are on PrEP" [age:21]), potentially reducing anticipated stigma and the ease of adherence ("I wouldn't be forgetting" [age:23]).

Challenges to oral PrEP adherence included missing doses due to alcohol use, anxiety of missing doses when "a client gets you and keeps you" [age:31] for several days, and fear of clients "even beating you [age:31]" if they find pills that could be mistaken for antiretrovirals (ART).

However, some concerns about LAI-PrEP included potential side effects such as weight gain, and prolonged menstrual periods, as well as the loss of solidarity ("sometimes we share tablets but if in jab form, then no sharing" [age:33]).

Misconceptions exist among peer promoters who believe if someone seroconverts after inconsistent PrEP use, "ART will never work in your body [age:29]."

**Conclusions:** LAI-PrEP offers a viable alternative to oral PrEP, addressing adherence challenges and potentially other barriers to HIV prevention for WESW. Peer-led education that explains adverse event risks and supports informed decision-making may enable WESW to choose the HIV prevention method that best suits them.

## TUPED406

Understanding sexual risk during sex work transitions amongst female sex workers in Blantyre, Malawi: a longitudinal life-course narrative study

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**Background:** Globally, female sex workers (FSW) are estimated to be 30 times more likely to be living with HIV than other women of reproductive age. In Malawi, HIV prevalence amongst FSW is 49.9%.

Sexual risk amongst FSW varies across their life-course, influenced by socio-economic and interpersonal factors which impact behavioural choices and engagement in HIV/STI care. Evidence of FSW's experiences and risks during these transitions remains inadequately investigated.



We explored transitions in the life-course of FSW to understand the shifting dynamics of sexual risk in Blantyre, Malawi.

**Methods:** We conducted a nested longitudinal qualitative study (February 2022 to January 2023) as part of the AMETHIST Consortium, a three-country study designed to reduce the risk of HIV transmission in sex work. We conducted three serial narrative interviews with 30 purposively sampled FSW (22-55 years old) at three-time points (0, 3, 6 months) to explore retrospective factors influencing their life course and document prospectively changes over one year. We compared individual narratives to understand sex work transitions, risk and engagement with HIV services.

**Results:** Transition into sex work was a process shaped distally by financial hardships and disrupted family structures. Proximate influences included social networks and peer interactions.

Once engaged in sex work, women's experiences were characterised by a mix of opportunities, uncertainties, and inevitabilities. While sex work provided a means of livelihood improvement for many, it was marred with uncertain income, normalisation of HIV risk, and exposure to violence. Despite HIV/STI service availability, alcohol and substance abuse hindered consistent engagement with HIV services.

The study highlights cyclical transitions marked by temporary breaks and fluctuating sexual risk. Temporary transitions were primarily influenced by financial stability and relationship status. Sex work breaks may have temporarily reduced exposure to some sexual risks (reduced number of sexual partners) but increased disengagement with PrEP/ART, especially in stable partnerships.

**Conclusions:** Both social and physical drivers shaped sexual risk behaviours. Risk fluctuated along the life course of FSW, influenced by shifting social dynamics tied to broader lifestyle changes within the sex work trajectory. Interventions should consider the changing life-course of FSW and acknowledge the increased risk inherent in transitions.

## TUPED407

Empowering men's health: Mina/Coach Impilo(life) program's innovative approach to addressing HIV-related challenges in South Africa

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**Background:** The Mina/Coachh Impilo Men's Program is a groundbreaking initiative aimed at addressing HIV-related health challenges faced by men in South Africa. The program, rooted in the concept of "Mina," encourages individuals to take charge of their health, while "Coachh Impilo" involves peer-led support for men openly living

with HIV. Regardless of factors such as sexuality, age, race, tribe, or religion, the program extends its reach to newly diagnosed males, fostering a supportive community.

**Description:** Operational for the past five years, Mina/Coach Impilo operates across diverse urban and rural settings in South Africa, improving the uptake of Men in our health facility and health community campaigns.

The program adopts a unique approach, employing simple and culturally sensitive language encompassing all 11 official languages. Focused on reaching men unable to access clinics due to work commitments, the program delivers medication and establishes treatment partnerships. These treatment buddies accompany individuals until they achieve viral suppression, empowering them to independently manage their health.

Beyond HIV/TB concerns, the program addresses critical issues like gender-based violence, recognizing the broader health implications of societal challenges.

**Lessons learned:** The program's outcomes highlight significant successes. Peer-led support has proven effective in fostering a sense of community, essential for individuals navigating their HIV journey.

The decentralized approach and language inclusivity have bridged communication gaps, making healthcare more accessible. The personalized treatment buddy system ensures adherence and support, contributing to improved health outcomes.

Lessons learned emphasize the importance of culturally competent and community-centric interventions in addressing the complex landscape of men's health, especially in the context of HIV.

**Conclusions/Next steps:** The Mina/Coach Impilo Men's Program signifies a paradigm shift in HIV health interventions for men in South Africa. Its success in reaching marginalized populations and addressing broader health issues beyond HIV/TB underscores its significance.

The program's approach offers a blueprint for future initiatives, emphasizing the need for cultural sensitivity, peer support, and community engagement.

Moving forward, the program's impact extends beyond individual health, contributing to a more resilient and empowered community, resilient against the multifaceted challenges of HIV and related health issues.

## TUPED408

The missing measurement; understanding gaps in uptake of PrEP by MSM

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**Background:** The Global Fund Cycle 6 introduced 2 new performance indicators which focused on the number of MSM accessing HIV testing and PrEP. At the beginning of the cycle in Quarter 1 in 2021, only 16 MSM accessed PrEP from the 5 MSM targeted sites.



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The Global Fund Programme is numbers-driven which in the case of MSM who are criminalised should be the secondary not primary focus. GALZ through the monitoring and evaluation department developed client satisfaction surveys for specific public health facilities and worked with mystery clients as a way of investigating ways of improving both demand for and service provision of PrEP in facilities.

**Description:** In Quarter 2 of 2021, GALZ developed a supplementary performance framework that combined qualitative and quantitative indicators which were at both process and results level. The indicators focused on variables such as level of satisfaction with the quality of PrEP services, enablers and barriers of access to services such as distance, user fees, and service provider behaviour, as well as the state of support systems.

**Lessons learned:** MSM reported accessing PrEP improved from 10 in Q1 of 2021 to 34 in Q1 of 2022, 120 in Q1 of 2023, and 167 in Q4 of 2023. Although this only represents 20% of the 822 target, the increase from 10 is very commendable and attributable to the focus on the missing measurement which is Process indicators that edify program implementation.

A holistic understanding of the factors affecting the uptake of PrEP by MSM required more than just a prudent adherence to the Detailed Implementation Plan activities for the 3 years but also a further investigation into why the MSM community did not want to get PrEP services.

**Conclusions/Next steps:** Developing process indicators as part of broader performance frameworks that focus on other crucial elements of programs targeting MSM should be considered not as an option for the partners implementing MSM programs but as a mandate for the Principal Recipient of Global Fund.

The attention should not only be on the health facility itself but broadly on the environment and how enabling it can be for improved access to PrEP

## TUPED409

HIV and syphilis self-testing to support implementation of patient-delivered partner therapy for bacterial STI partner treatment among men who have sex with men

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**Background:** Bacterial sexually transmitted infections (STIs) are rising among men who have sex with men (MSM) in the U.S., with nearly two-thirds of syphilis cases occurring among MSM and roughly 10% of HIV incidence attributable to untreated active chlamydia and gonorrhea infections. Patient-delivered partner therapy (PDPT) is a

presumptive treatment mechanism for sexual partners, wherein people diagnosed with gonorrhea and chlamydia deliver medications to their partners without the need for diagnostic partner testing.

The Centers for Disease Control and Prevention endorsed the use of PDPT for MSM in July 2021, but concerns about missed opportunities for HIV and syphilis testing impede successful implementation.

We explored barriers and facilitators of including a dual HIV and syphilis self-testing device with PDPT among MSM residing in Oklahoma—a priority rural state of the U.S. Ending the HIV Epidemic initiative.

**Methods:** In 2023, HIV-negative or unknown status MSM ( $n=20$ ;  $M_{age}=33.4$ ; 90% cisgender; 55% white, 25% multiracial, and 20% Black or Latino; 50% gay, 35% bisexual, and 15% queer) were recruited for in-depth interviews eliciting responses about access to care, at-home HIV/STI testing, and PDPT. Data were analyzed using inductive and deductive thematic analysis. Recruitment occurred until data saturation.

**Results:** MSM reported inadequate access to culturally competent providers. Despite mixed perceptions, altruism led most participants to indicate the importance of notifying a partner of a bacterial STI diagnosis.

Delivering PDPT with an HIV and syphilis self-testing kit was perceived to increase confidentiality, improve access to appropriate care, decrease time to partner treatment, reduce exposure to anti-gay and HIV/STI stigmas, and avoid insurance and cost challenges.

Participant intervention requests included the need for multimodal educational materials, a letter from a healthcare provider with contact information, medication and safety information, discrete packaging, and a communication guide.

**Conclusions:** PDPT with an HIV and syphilis self-testing kit could help reduce HIV/STI transmission by reducing barriers to partner treatment and testing, but further efforts are needed to reduce remaining barriers to support use. Intervention requests by MSM will be important for maximizing successful uptake. Additional research with providers is needed to identify potential implementation strategies to support prescribing behaviors.

## TUPED410

Intersecting barriers to Pre-exposure Prophylaxis (PrEP) uptake among migrants in Belgium

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**Background:** In Belgium, 63% of newly reported HIV cases in 2022 ( $N=595$ ; 51 diagnoses/million inhabitants) were reported among people with foreign nationalities (51% among men having sex with men; among heterosexuals,

54% were of sub-Saharan African (SSA) origin). Yet, migrants were underrepresented among PrEP users: 71% of PrEP-starters were Belgian, 99% were men, 1% had a SSA nationality.

This study aimed at assessing multi-level barriers to PrEP uptake to inform strategies to better reach migrant groups with unmet PrEP need.

**Methods:** This qualitative community-based study collected data from n=8 key informant-interviews (community members/service providers), n=23 in-depth interviews (men having sex with men), and n=7 group discussions (GD) with SSA participants (n=51; women: n=26) in community settings in Antwerp.

Verbatim transcripts of audio recordings were coded in NVivo-12, analyzed inductively using a reflexive thematic approach, and triangulated to assess intersecting barriers.

**Results:** Socio-economic precariousness and undocumented status created barriers to PrEP uptake. HIV stigma and restrictive sexual norms limited participants' PrEP knowledge, especially among SSA participants who perceived their HIV risk to be low.

Several participants had experienced of multiple stigmata: racism and stigma against immigrants intersecting with HIV stigma. Harsh post-migration conditions and potential trauma during migration trajectories resulted in mental health problems for some, especially among LGBTQ+ refugees seeking asylum because of sexual or gender identity.

Huge PrEP information deficits became apparent in the GD, with younger participants feeling both racially targeted and overlooked in HIV prevention.

For some men, access to gay networks and dating apps created new social support systems and a sense of community belonging, which needed to be balanced against increased sexual health risks.

The national PrEP delivery/reimbursement system through specialized HIV clinics using risk-based eligibility criteria was perceived as having a high threshold.

**Conclusions:** Intersecting structural, health systems, community and individual level barriers lead to inequitable access to PrEP in a public health system reimbursing PrEP.

Barriers were particularly high for those most at risk of HIV acquisition due to their socio-economic and legal precariousness. Clinic-CBO partnerships could increase PrEP uptake. PrEP should be made available as a sexual health promotion tool independent of users' legal status.

## TUPED411

### Factors associated with HIV infection among contacts of newly diagnosed PLHIV in Thailand, 2019 – 2023

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**Background:** In 2019, the Ministry of Public Health implemented index partner testing (IPT) to strengthen case finding. We investigated factors associated with HIV diagnosis among contacts of index cases in Thailand.

**Description:** All newly diagnosed PLHIV ≥ 1 years of age seeking health services at 107 sites during October 2019 through September 2023 were enrolled in IPT after providing informed consent. Exposed contacts of index clients (i.e., sexual partners and drug injecting partners within the past year, biological children, or biological parents if child was the index client) were elicited, offered HIV testing, and linked to appropriate HIV services. We reported contact's demographic and clinical data using an online system and performed multiple logistic regression to determine factors associated with HIV infection using R.

**Lessons learned:** Of 3,741 contacts elicited, 3,113 (83.2%) were tested for HIV, 583 (15.6%) did not test, and 45 (1.2%) were known HIV-positive. Of those tested, the median age was 30 years (IQR: 24–41), 92.1% (2,868/3,113) had sex with index case, 85.4% (2,658/3,113) were Thai, 65.6% (2,042/3,113) were male, 42.0% (1,309/3,113) lived in the northeastern region, and 30.3% (942/3,113) self-reported as a member of key populations (KP). Of 966/3,113 (31.0%) contacts testing HIV-positive, 926 (95.9%) were sex partners of index cases. Of 433/3,113 (13.9%) contacts with a baseline CD4 result, the median was 328 cells/mm<sup>3</sup> (IQR: 207–449 cells/mm<sup>3</sup>) with 29.4% (128/435) with a CD4 200–350 cells/mm<sup>3</sup>, and 27.1% (118/435) with a CD4 351–500 cells/mm<sup>3</sup>, and 19.8% (86/435) with a CD4 >500 cells/mm<sup>3</sup>. Contacts who did not self-report as KP vs. those who did (Adjusted odds ratio [AOR] 0.78, 95%CI 0.63–0.95), had sex with the index case vs. those who had a biologic relationship (AOR 5.4, 95%CI 1.3–22.9), and reported living in the northern region (AOR 2.5, 95%CI 1.6–3.9) vs. those who live in Bangkok or nearby provinces were more likely to be diagnosed with HIV.

**Conclusions/Next steps:** HIV diagnosis was strongly associated with non-KP, sexual partners, and living in northern provinces. Integrating HIV self-test into index testing services as an option for contacts to test for HIV could potentially increase HIV testing uptake and strengthen case finding.



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## TUPED412

Implementation of AI navigator for HIV prevention with AIDS healthcare foundation: reducing medical mistrust in LGBT and communities of Color

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**Background:** Medical mistrust is high in communities of color and lesbian, gay, bisexual, and transgender (LGBT) communities, given the history of on-going systemic discrimination (Williamson et al, 2018; Martos et al, 2019). Emerging artificial intelligence (AI) healthcare tools have the power to reverse some mistrust, but care must be taken to avoid further division, especially in marginalized communities (Bautista et al, 2023; Bragazzi et al, 2023).

**Methods:** Healthvana, a healthcare client engagement platform, in collaboration with AIDS Healthcare Foundation, an HIV prevention provider, asked 20,000 clients during their routine clinic visit registration if they were interested in early access to an AI Navigator to assist with scheduling and access to Pre-Exposure Prophylaxis (PrEP), an HIV prevention drug.

This registration process also collected demographic information including race and sexual orientation, amongst other demographic markers.

We compared non-white and LGBT client responses to their white and heterosexual/straight responses, respectively, in order to gauge interest in marginalized communities using an AI tool.

**Results:** High interest was indicated by 49.8% of respondents (9,953/20,000) saying 'Yes' to early access. Overall participation of non-white clients was also high, with 71% (6,579/9,264) of all 'yes' responses coming from non-white clients.

Furthermore, non-white clients were the most interested demographic, with 54% 6,579/12,434 of non-white clients responding 'Yes'. 52% (4,536/8,673) of LGBT clients also responded 'yes' at a higher rate compared to 48% (5,139/10,716) of heterosexual/straight clients.

**Conclusions:** These results are promising for AI tools that may assist healthcare providers in reaching out to clients who have apprehension in participating in a system that has historically disregarded their needs, given the high enthusiasm that both of these communities have demonstrated.

AI may then be a way to bring more marginalized communities who may benefit the most from HIV prevention into healthcare clinics to receive the care they need.

## TUPED413

Defining the economic impact of Climate Change on Health in high HIV-burden countries in Africa

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**Background:** By 2100 global temperatures are projected to rise by > 4 degrees in the 'Business-As-Usual' (BAU) climate scenario and by as much as 2 degrees in the 'Best-Case' (BC) scenario relative to 2019 temperatures, according to the Intergovernmental Panel on Climate Change. Unfortunately, the economic impact of climate on health in high HIV-burden countries has not been well described.

We sought to estimate the economic losses resulting from climate-related mortality in high HIV burden, PEPFAR-supported countries in sub-Saharan Africa (SSA) between now and 2050.

**Methods:** We used the excess mortality risk due to a 1°C increase in temperatures estimated by others to calculate excess deaths due to global warming at ten-year increments between now and 2050. We then calculated expectancy losses and estimated the impact on national income growth in 20 PEPFAR countries in SSA.

In estimating full income, 'Value of Statistical Lives' (VSLs) were estimated using benefits transfer, with a US VSL of US\$11,77 9611 at an annual per capita income of \$13,416 and an income elasticity of 1.0.

We compared full income losses resulting under the 'BAU' climate trajectory and the 'BC' scenario.

**Results:** Across 20 PEPFAR-supported countries in SSA, full income losses from climate-related deaths will be in excess of US\$54.1 billion per year in 2030, >US\$80 billion per year in 2040, and >US\$117.0 in 2050 in the BAU scenario.

The BC climate scenario will lead to full income losses from climate-related deaths of \$49 billion per year in 2030, \$69.5 billion in 2040 and \$89.3 billion in 2050 in the same 20 countries.

The economic impact will be greatest in Nigeria, where annual full income losses resulting from climate deaths will be \$61.3 billion in 2050 in the BAU scenario and \$46 billion in the BC scenario.

**Conclusions:** Climate-related deaths will increase substantially between now and 2050, regardless of the climate scenario across SSA.

However, in the BAU, full income losses from climate-related deaths will have a much more marked economic impact.

As PEPFAR-supported countries plan for HIV sustainability, there is a pressing need to also adopt climate-responsive health policies to both maintain HIV gains and mitigate climate-related threats.

## TUPED414

### Innovative approaches to HIV prevention and stigma reduction among vulnerable populations: a case study of the 'Blind Chat' and 'I-atm' Initiatives

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**Background:** Vulnerable populations, including men who have sex with men (MSM), sex workers, transgender individuals, and people who inject drugs, face heightened risks of HIV infection and pervasive stigma.

Traditional HIV-related interventions often fall short in addressing their unique needs and concerns. "Blind Chat" and "I-atm" were conceived to bridge this gap.

**Description:** The "Blind Chat" project leverages an innovative mobile application to provide counseling, prescriptions, and support for individuals living with HIV/AIDS. Its unique feature is anonymity, allowing users to access services discreetly, reducing the fear of discrimination. The "I-atm" initiative takes this concept further by deploying automated machines that dispense ARTs and distribute free condoms, ensuring accessibility and privacy.

**Lessons learned:** The case study illustrates the effectiveness of technology-driven, community-led interventions in addressing behavioral, social, and cultural barriers to HIV prevention.

Key lessons include the power of community ownership, tailored interventions, and data-driven adaptations to ensure impact.

**Conclusions/Next steps:** "Blind Chat" and "I-atm" represent groundbreaking approaches that have transformed the landscape of HIV prevention and stigma reduction.

These initiatives offer a blueprint for addressing behavioral, social, and cultural issues among key populations and other vulnerable groups.

The integration of innovative technology with community engagement has the potential to create a more inclusive and supportive environment for HIV prevention and care.

**Next steps:** The success of these projects underscores the need for broader adoption of similar interventions worldwide. Scaling up technology-driven, community-led initiatives can significantly contribute to reducing the burden of HIV/AIDS among key populations and other vulnerable communities. Collaboration, knowledge exchange, and policy advocacy are essential for advancing these approaches on a global scale.

## TUPED415

### Exploration of the co-delivery of long-acting injectable antiretroviral therapy (iART) and long-acting injectable medication for addiction treatment (iMAT) for people with HIV and comorbid substance use disorder

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**Background:** Long-acting injectable antiretroviral therapy (iART) paired with long-acting injectable medication for addiction treatment (iMAT) has the potential to improve the health of people with HIV and comorbid substance use disorder (PWH and comorbid SUD).

The objective of this mixed methods study is to assess perceptions of the co-delivery of iART and iMAT and to explore implementation determinants of the co-delivery of iART and iMAT.

**Methods:** PWH and comorbid SUD (n=23) and providers (n=14) participated in a mixed methods study involving a quantitative survey and focus group. Participants were recruited from an HIV clinic and SUD treatment program. A total of four focus groups with PWH and comorbid SUD and two focus groups with providers were conducted between April and July 2022. The quantitative survey included measures of acceptability, appropriateness, and feasibility of the co-delivery of iART and iMAT (total scores for each measure range from 1 to 5, with 5 indicating more favorable ratings).

A semi-structured guide, informed by the Exploration, Preparation, Implementation, Sustainment (EPIS) framework, was used to guide focus group discussions. Qualitative data generated from the focus groups were examined using a rapid qualitative analysis and triangulated with quantitative data.

**Results:** Overall quantitative ratings [median (IQR)] of acceptability [4.0 (3.7-5.0)], appropriateness [4.0 (3.9-5.0)], and feasibility [4.0 (3.8-4.8)] of co-delivering iART and iMAT were highly favorable. However, providers reported hesitation in prescribing iART to PWH and comorbid SUD due to concerns of the lower barrier of resistance with iART and high prevalence of commodities (e.g., Hepatitis B) that may be contraindicated for iART. PWH and comorbid SUD reported low awareness of iART and iMAT and described how various social determinants of health (SDOH; e.g., housing stability) might negatively interfere with adherence to iART and iMAT clinic visits.

**Conclusions:** Co-delivery of iART and iMAT is perceived as highly acceptable, appropriate, and feasible for PWH and comorbid SUD. Several implementation barriers



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were identified, highlighting the need for implementation strategies focused on mitigating provider concerns, increasing PWH awareness of these regimens, and addressing SDOH related to the co-delivery of iART and iMAT.

## TUPED416

**A comprehensive analysis of sexual health, behaviors, and prevalence of HIV, syphilis, and HCV among transgender women in Bangladesh: findings from the Integrated Bio-Behavioural Survey (IBBS) 2020**

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**Background:** The 2020 Integrated Bio-Behavioural Survey (IBBS) assessed HIV, syphilis, and hepatitis C prevalence among TGW (self-identifying as part of the traditional Hijra sub-culture). The survey explored risk behaviors, access to prevention/treatment, experiences of stigma, discrimination, violence, and TWG's knowledge about HIV/sexually transmitted infections (STIs) in Bangladesh.

**Methods:** The IBBS survey, aligning with WHO and UNAIDS guidelines, sampled TGW populations (n= 1172) in seven districts between October and December 2021, through face-to-face interviews and testing for HIV, syphilis, and HCV.

**Results:** The TGW Participants were recruited from seven intervention districts, with 35% falling within the 18-24 age group and 50% having education up to the primary level. Over the past six months, TGW reported a median of seven partners for anal sex, with 74% acknowledging having ever sold sex and 57% engaging in sex work for money during the same period. Among TGW who had anal sex with casual male partners, only 38% reported using condoms during the last encounter. While 90% of respondents had experience using condoms, consistent use during anal sex in the past six months was relatively low at 38.5%. Reasons for non-use included client objections, personal choice, and, significantly, the unavailability of condoms reported by over 40% of TGWs. Despite 93% being aware of STIs, only 36% and 48% were knowledgeable about three or more STI symptoms in males and females, respectively. A mere 20% could accurately answer all five questions related to HIV prevention.

Concerning HIV testing, 67% of TGW had ever been tested, varying from 50% to 91% across districts. The overall prevalence of HIV was 1%, with the highest rate recorded in Rajshahi at 2.6%. The prevalence of active syphilis was notably high at 11.9%, with a potential outbreak indicated in Chattogram (24.7%).

Conversely, the prevalence of HCV was low at 0.3%. Among the TGW, only 3% of participants reported being arrested in the last six months.

**Conclusions:** The findings underscore the complexities surrounding sexual health knowledge, practices, and prevalence of infections within the TGW community, emphasizing the need for targeted interventions and education programs to address these issues comprehensively.

## TUPED417

**Barriers and facilitators in targeted interventions service uptake among Transgenders in Puducherry, India: a sequential explanatory mixed method study**

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**Background:** This study assessed targeted interventions (TI) service utilization among transgender individuals in Puducherry, India, a high-risk group under the National AIDS Control Programme. Despite comprehensive services available, gap exists in service uptake and the study also explored barriers and facilitators impacting this vulnerable population's service uptake.

**Methods:** The study (sequential explanatory mixed-method design) was conducted at community-based organization drop-in center after Institutional Ethics and Research Review Committees' approval. Ninety-nine transgender individuals were surveyed using a structured questionnaire, and qualitative component had FGDs (among TGs), IDIs (among TGs) & KIs (with programme manager, outreach worker, peer-educators, ICTC counsellor, TI coordinator and dermatologist). Qualitative data underwent thematic content analysis.

**Results:** The mean age of the participants was 29±8 years and majority of them had completed their school education with were graduates. Most of them were unemployed (41.4%) and resorting to alms. Majority of them were living with their family (60.6%). Most of them were getting HIV/ AIDS testing as per TI norms. Despite high testing rates, barriers like stigma, discrimination, and cumbersome registration processes were prevalent. Facilitators and barriers of service uptake at different levels highlighted by various stakeholders in service uptake and delivery is highlighted using socioecological framework. (Figure 1)

**Conclusions:** Transgender individuals in Puducherry face challenges in accessing health services, primarily due to systemic barriers and stigma. To enhance service uptake and delivery, we recommend sensitizing stakeholders via regular training and adopting a transgender clinic model with evening hours for accessibility. Services, especially condoms and lubricants, should be tailored to meet community needs. A shift towards quality-focused service

delivery, coupled with revised human resource norms, will ensure more effective care. Strengthening community-based screening and engaging unaffiliated transgender groups are also crucial for comprehensive coverage.



Figure 1. Facilitators and barriers of service uptake among transgenders (socioecological model).

## TUPED418

Increase of synthetic opioid use: two evidence-based and low threshold interventions to prevent drug-related deaths

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**Background:** Synthetic opioids are a major contributor to drug-related deaths in different countries (2020, USA 75% of 91.799 drug-related deaths; 2021, Canada 81% of 7.560 opioid-related deaths). Also in Europe (e.g. Ireland, England, Estonia) synthetic opioids are responsible for a sharp increase in the number of drug overdoses. Germany saw 2022 a renewed increase in drug-related deaths for the sixth year in a row (1.990 cases). Synthetic opioids was registered in 86 cases. Two german studies (Take Home Naloxone and Rapid fentanyl testing) have proven measures for preventing opioid-related drug emergencies and drug deaths.

**Description:** RaFT (Rapid fentanyl Testing): The multi-centred study was carried out in 17 drug consumption rooms. With easy-to-use rapid tests, 2.736 heroin samples were tested. Users receive the result quickly, anonymously and have no loss of heroin. If the test is positive, fentanyl-related counselling is provided. The main goal was to raise awareness for fentanyl and support fact-based consumption decisions.

NALtrain (Take Home Naloxone): It is a nationwide program that trains opioid users and employees in the use of naloxone and provides them with the medication in case of an emergency.

**Lessons learned:** RaFT: Within 6 months, 3% of the samples tested positive for fentanyl. After fentanyl-related counselling, one in five users took advantage of harm reduction measures such as dose splitting.

NALtrain: Around 700 people were trained as multipliers in 72 training sessions by the end of 2023. Around 1,000 participants were provided with THN. 90 uses of naloxone were documented. No deaths were recorded.

Both projects shows that there is a great interest and willingness among employees and users to implement new, low-threshold and effective harm reduction measures.

**Both interventions are highly effective in preventing drug emergencies and drug-related deaths.**

**Conclusions/Next steps:** In view of the fact that drug checking cannot be implemented politically in many countries, fentanyl rapid tests is one effective way of reducing harm. Take-home naloxone is an inexpensive life-saving drug that every user should be equipped with. **Both projects are building blocks of effective and evidence based strategies that can be applied regardless of the economic status of the countries.**

## TUPED419

"Go Back to Your Country": trials and tribulations of accessing healthcare in South Africa for cross-border Lesotho-South Africa male and female migrant workers

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**Background:** Migrant workers face greater risk of suboptimal health status, including increased vulnerability to HIV. We explored perceived challenges and recommendations regarding access to healthcare services in South Africa (SA) among Lesotho migrants.

**Methods:** We used purposive sampling to recruit Lesotho migrant workers working in SA from community organizations serving migrant workers and at border crossings for 10 same-sex focus group discussions (FGDs) divided equally by sex. Data were analyzed using template methods.

**Results:** We enrolled 84 migrant workers (40 men, 44 women), with median age 40.5 (IQR, 32.8-53.0); 42.9% completed primary school and 38.1% secondary school. Length of time as migrant worker varied: 27.3% ≤1 year, 28.6% 1-4 years, 15.5% 5-10 years, 28.6% >10 years. Domestic work (32.1%), mining (17.9%) and construction (13.1%) were the dominant employment sectors.



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Only 27.4% possessed a work permit; all but two were men. While services in SA were seen as professional and efficient, discrimination (*"go back to [your] country to collect medication"*), lack of legal status and proper documentation (*"I will go there without my passport or any form of identification, they just will not show me where to have my [HIV] test"*), unfriendly and disrespectful treatment by healthcare providers (*"I never went to a clinic while I was there...I already knew how they will talk to me... they'll be rude..."*), lack of access to medications (*"South African medication is for South Africans only"*), reported in nearly all FGDs, discouraged migrant workers from seeking healthcare services in SA.

Transportation costs, non-alignment of clinic and worker hours, and language differences were other impediments to receiving health services.

There was consensus that providing a 6-12-month antiretrovirals supply would help ensure treatment adherence and enable their stay in SA for extended periods. Participants suggested that mobile clinics and doctors posted at border crossings would facilitate HIV testing and enable treatment if needed.

**Conclusions:** Increased collaboration between the SA and Lesotho governments, such as implementing health passports, is needed to address complex challenges to healthcare access faced by migrant workers in SA and provide services without discrimination based on nationality.

## TUPED420

HIV testing behaviors among cisgender women: exploring the interplay between HIV-related stigma and trust in healthcare providers

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**Background:** Stigma and discrimination surrounding HIV discourage individuals from seeking testing and act as critical barriers to HIV interventions.

Public initiatives often focus on gender minorities, leaving cisgender women underserved with disproportionately low access to HIV prevention and education opportunities.

This study explored the dynamics behind HIV-related stigma and testing behavior in cisgender women, with a specific focus on the moderating effects of trust in healthcare providers.

**Methods:** Data from 453 cisgender women were drawn from the 2022 General Social Survey conducted in the United States. HIV-related stigma was evaluated across three domains: two forms of personal stigma, including

the fear of transmission and moral judgement, and the perceived social climate against people living with HIV. We employed hierarchical and stratified logistic regression for data analyses.

**Results:** Despite the moderately low levels of personal stigma, most participants acknowledged the existence of discrimination against people living with HIV in society. Among the three domains of stigma, fear of transmission was the only significant predictor for lower levels of HIV testing (OR=0.615, 95% CI=0.451-0.825).

The manifestation of HIV-related risk behaviors, such as engaging in transactional or unprotected sex, drug injection, and binge drinking, was not associated with HIV testing. Individuals who identified as Black had 3.86 times greater odds of undergoing HIV testing compared to their White counterparts (95% CI=2.003-7.676).

In the subgroup expressing low levels of trust towards healthcare providers, stigma concerning the fear of transmission was associated with a 50.8% reduction in the odds of receiving testing (95% CI= 0.296-0.786).

However, this association was not observed among those with high levels of trust in healthcare providers, and no other forms of HIV-related stigma emerged as significant factors influencing HIV testing in either the low or high trust subgroups.

**Conclusions:** The interaction between HIV-related stigma and trust in healthcare providers led to different patterns of HIV testing among cisgender women, with trust mitigating the adverse consequences of stigma.

The findings underscore the importance of collective actions to foster trust in the healthcare system, which should simultaneously address common misconceptions about HIV transmission and enhance awareness of risk behaviors for this population.

## TUPED421

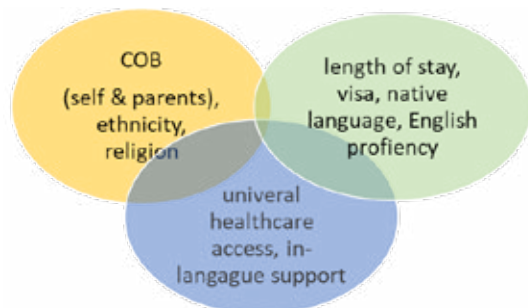
Measuring diversity to promote inclusion and equity: diversity indicators through an HIVSTI-focused behavioural surveillance type survey among Asian GBQ+ men who have sex with men in Australia

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**Background:** Limited and oversimplified understandings of the nuanced and intersectional nature of cultures and languages, which largely shape beliefs, norms and practices, severely hinder inclusive and equitable HIVSTI service access targeting immigrants.

**Methods:** In the biennial Australian Asian GBQ+ Men, cross-sectional online survey, a range of sociodemographic measures assessed cultural and linguistic diversities through an intersectional lens. The basic set contains non-modifiable, individual-level characteristics (Yellow circle in the Venn diagram below). The second relates to immigration trajectory (Green circle). The final set is structure-level service access (Blue circle).



**Results:** The sample of the latest 2023 (Oct-Dec) survey round consists of predominantly first-generation immigrants – 80% being overseas-born and 91.5% both parents also born overseas. Together, 78.6% had access to government-subsidised universal healthcare (Medicare). Close to half (n=555, 49%) identified as Chinese and a further 42.5% (n=481) of a Southeast Asian ethnic background (most commonly: Filipino, Thai, Vietnamese and Malay). Of the 615 non-native English speakers, 60.5% (n=372) perceived their English near or at native proficiency.

Of the remaining non-native English speakers, 186 (76.5%) men felt limited by English proficiency at least sometimes in Australia. Among this subgroup, only 22.6% (n=42) accessed any formal interpreter services within previous 12 months.

A much lower rate of lifetime Mpox vaccine uptake (27.8%) was reported in this subgroup, compared to the 372 men (42.2%, p=0.001).

Notably, no differences in HIV and STI screening rates within the previous 12 months were observed within the 615 non-native speakers (HIV: 63.4%; STI: 46.8%). This is likely due to high levels of HIVSTI free screening coverage in Australia through public funded sexual health clinics, private general practices and peer-led (including Asian GBQ+ peer) community services.

**Conclusions:** These findings underline the need to recognise and utilise cultural and linguistic indicators to improve inclusion and equity in HIVSTI service provision for queer immigrant communities.

## TUPED422

**"In a community that is strict about contraceptives, I have been able to access them because of DREAMS". An analysis of facilitators and barriers of contraception use amongst adolescent girls**

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**Background:** Adolescent girls and young women (AGYW) in sub-Saharan Africa are at a high risk of teenage and unplanned pregnancies. DREAMS (Determined, Resilient, Empowered, Aids-Free, Mentored, and Safe) is a multilayered HIV prevention program that empowers AGYW to make informed decisions about their bodies, including by offering contraceptives.

Through physical centers, DREAMS offers an alternative source of contraception. We explored the facilitators and ongoing barriers to this approach.

**Methods:** A qualitative evaluation was conducted in three districts in Zambia (one rural district and 2 urban districts). Data were collected from audio-recorded in-depth interviews (IDIs) and focus groups with DREAMS beneficiaries aged 16-21 (n=55), and program implementers (n=51). During IDIs, a romantic life history calendar gained insight into the participants' romantic and sexual relationships over time.

To analyze these data, we used thematic and narrative analysis. For thematic analysis, we coded data, and categorized results from data coded on reproductive health. For narrative analysis, we wrote, reviewed and compared narratives of beneficiaries' contraceptive use in romantic relationships. Data were analyzed using Atlas.ti (V23).

**Results:** Beneficiaries appreciated that they had a DREAMS center where they were comfortable accessing contraceptives in their local area. In the rural site, the DREAMS program served as the only local provider of these services.

Beneficiaries described the value of the information and accessibility of these services through DREAMS. They highlighted their understanding that early pregnancy can result in school drop-out, and noted contraceptives helped avoid unwanted pregnancies and allowed them to stay in school as well.



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Despite improved education efforts and increased accessibility, some beneficiaries reported ongoing misconceptions, namely the belief that contraceptives were only safe for a woman who had already given birth.

Further, continued accessibility challenges were reported – in the rural sites there were limited contraceptive method options. Some reported not using contraceptives because the methods they preferred were unavailable. Additionally, others complained of side-effects.

**Conclusions:** The inclusion of contraception in the DREAMS program has provided many AGYW with added resources and choices to meet their reproductive health needs. However, there is still need to further improve accessibility and choice of family planning methods, particularly in rural sites.

## TUPED423

Understanding sexualised drug use engagement among Asian Gay, Bisexual+ and Queer Men in Australia: a cross sectional study

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**Background:** Asian Gay, Bi+, Queer Men (GBQMSM) in Australia face health challenges not experienced by other groups, including a potential syndemic of sexual/mental health challenges with links to sexualised drug use (SDU).

Understanding which groups of Asian GBQMSM are most likely to engage in SDU can facilitate targeted support for wellbeing, including harm reduction and peer support. To inform service development, we aim to explore which drugs are most frequently used in sexual settings and which groups of Asian GBMSM in Australia are most likely to engage in SDU.

**Methods:** Using data obtained through GAMS 2023- a bi-annual, cross-sectional survey recruiting Asian GBQMSM, aged 18+ residing in New South Wales (NSW)/ broader Australia, online/through community outreach (Oct/December 2023)- we tabulated drugs used during SDU to identify which are most taken during sex.

Univariate and multivariate regression models explored SDU prevalence (methamphetamine, MDMA, GHB/GBL, cocaine, ketamine) in prior 6-months by region of birth,

age, sexual orientation, HIV status, Medicare card (indicative of permanent residence or citizenship), and educational qualification.

**Results:** GAM recruited 1,132 Asian GBQMSM, 46.5% (n=527) residing in NSW. Overall 12.3% (n=139) reported SDU in the preceding 6-months using: methamphetamine 5.4% (n=61); MDMA 5.0% (n=57); GHB/GBL 4.2% (n=48); cocaine 3.8% (n=43) and ketamine 3.8% (n=43).

In univariate analysis (table 1) GBQMSM born in East Asia, and without Medicare coverage were least likely to engage in SDU. Queer men, those taking, PrEP, living with HIV (PLHIV) and with Medicare coverage were more likely to engage. In multivariate analysis those taking PrEP, PLWHIV and with Medicare coverage remained more likely to report SDU.

Characteristic	% (n)	Unadjusted OR (95%CI)	Adjusted OR
<b>Region of birth</b>			
Australia / NZ	20.7 (234)	Ref	Ref
East Asia	27.4 (310)	0.56 (0.33 – 0.95)*	0.68 (0.38 – 1.21)
Southeast Asia	41.7 (472)	0.88 (0.56 – 1.37)	1.11 (0.67 – 1.86)
South Asia	5.4 (61)	0.74 (0.31 – 1.75)	0.81 (0.31 – 2.14)
Other	4.9 (55)	0.18 (0.28 – 1.75)	0.74 (0.26 – 2.09)
<b>Age</b>			
<19	2.1 (24)	0.79 (0.18 – 3.53)	0.42 (0.05 – 3.70)
20-29	27.5 (311)	Ref	Ref
30-39	42.2 (478)	1.42 (0.91 – 2.22)	1.22 (0.74 – 2.01)
40-49	17.0 (192)	1.55 (0.91 – 2.66)	1.25 (0.68 – 2.28)
50-59	8.6 (97)	0.57 (0.23 – 1.42)	0.37 (0.13 – 2.95)
60+	2.7 (30)	0.97 (0.28 – 3.37)	0.61 (0.13 – 2.94)
<b>Sexual Orientation</b>			
Gay	87.4 (988)	Ref	Ref
Bisexual	7.3 (82)	0.47 (0.19 – 1.20)	0.50 (0.17 – 1.42)
Queer	2.9 (33)	2.74 (1.24 – 6.03)*	2.36 (0.98 – 5.68)
In another way / straight	2.5 (28)	1.59 (0.59 – 4.25)	1.64 (0.45 – 5.93)
<b>HIV status</b>			
Negative	56.7 (608)	Ref	Ref
Negative taking PrEP	38.3 (411)	2.96 (1.99 – 4.38)*	2.78 (1.86 – 4.17)*
Positive	5.0 (54)	3.28 (1.58 – 6.80)*	2.90 (1.37 – 6.16)*
<b>Medicare card</b>			
Yes	78.4 (887)	Ref	Ref
No	21.6 (244)	0.37 (0.21 – 0.66)*	0.37 (0.20 – 0.70)*
<b>Highest education</b>			
High	77.9 (882)	Ref	Ref
Medium & low	22.1 (250)	1.22 (0.81 – 1.84)	1.37 (0.86 – 2.18)

\*Statistically significant

Table 1. GAMS baseline, univariate and multivariate regression.

**Conclusions:** Asian GBQMSM who have Medicare coverage, those taking PrEP and PLWHIV had higher odds of SDU engagement. SDU support can be targeted towards Asian GBQMSM taking PrEP and LWHIV, however support should remain inclusive as this group may face pronounced service accessibility barriers.

## TUPED424

Lessons learnt from the art-based HIV prevention programme for and by adolescent boys and young men in Kenya: a case study from Meru County

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**Background:** This program delved into the lessons and experiences harvested from an innovative art-based HIV prevention programme tailored for and by adolescent boys and young men (ABYM) in Meru County, Kenya.

This initiative addresses the unique challenges faced by ABYM, acknowledging the cultural, religious, and social barriers hindering access to HIV health services due to issues around age limitations in the current programs.

**Description:** The programme engages young visual artists, activities are majorly online based, and interventions are incorporated into the cultural landscape of the Meru community, ensuring relevance and effectiveness in addressing HIV health issues among adolescent boys and young men.

Snippets and pieces of art are shared and polled on social media that contains educational content on SRHR and HIV.

**Lessons learned:** Artistic interventions emerged as great catalysts for removing social barriers, promoting education, and fostering positive behavioral changes among adolescents and young men. The main lesson learnt was especially - transformative potential of creative art and content creation in addressing health disparities among young people.



Figure: Visual Artists showcasing their pieces of art.

**Conclusions/Next steps:** Engaging young people builds their agency in shaping interventions, this program contributed to the development of age-appropriate and sustainable strategies for HIV prevention with adolescents and young people.

## TUPED425

The effect of the Russian war against Ukraine – Critically low enrollment of OAT healthcare clients in the National Program!

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**Background:** Before the full-scale aggression by the Russian Federation, in February 2022, 17,431 healthcare clients received opioid agonist therapies (OAT) in 218 OAT sites. Since the beginning of the war, 18 OAT sites in Ukraine

have closed due to active hostilities and temporary occupation. 94.6% of healthcare clients received OAT at the expense of the state budget.

**Methods:** This was a retrospective cohort study using data from the national OAT patient register managed by the Alliance for Public Health (the Alliance). We compared the increase in the number of healthcare clients, percent of retention in the program, adherence to ART, and percent of healthcare clients in the state budget.

**Results:** The increase in the number of healthcare clients during the 21 months of the war was 20.6% while before the war this number was 31.4% for the same period. The state budget funded 94.6% of OAT medication procurement before the war and now it is only able to support 16.2%. From the onset of the war, the Alliance's OAT activities were reprogrammed to the most essential needs of healthcare clients including humanitarian assistance, evacuation from frontline areas, transportation services for OAT healthcare clients to receive medications, and financial support to OAT sites that were overloaded with healthcare client.

Due to this, retention in the OAT program for 6 months or more from the start of treatment remains high (before the war - 83.1%, now - 83.3%). There is also an increase in adherence to ART (before - 92.4%, now - 97.2%).

**Conclusions:** Despite the fast response of the Alliance and partners to the impact of the war on the OAT program in Ukraine, the enrollment of OAT healthcare clients into the program remains critically low. Only 6.6% of the estimated PWID are receiving OAT while WHO recommends 35%. Therefore, it is necessary to make targeted efforts to increase the coverage of OAT among PWIDs including the expansion of services through mobile vans, and integrated psychological and social support to OAT healthcare clients.



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## TUPED426

Depressive symptoms and its multilayer associated factors among Chinese young men who have sex with men facing dual threats of COVID-19 and Mpox

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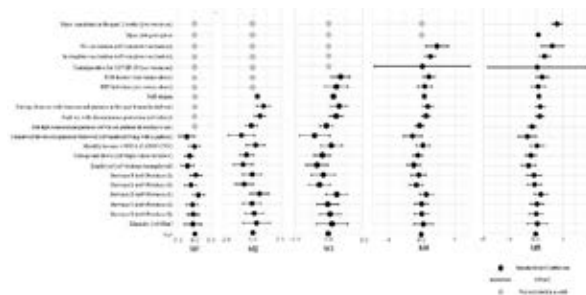
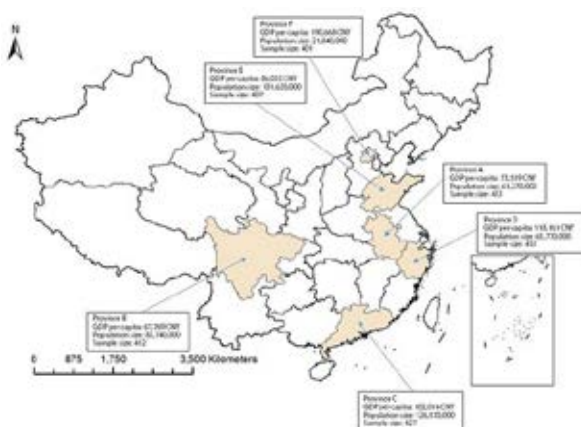
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**Background:** The COVID-19 pandemic has significantly impacted the mental health of human beings, especially the young age group and pre-existing marginalized groups such as men who have sex with men (MSM). In addition, the multi-country outbreak of mpox in 2022 also posed a significant stress on the most-affected communities (i.e., MSM).

This study investigated the level of depressive symptoms and its multifaceted associated factors among Chinese young men who have sex with men (YMSM) in this unique dual-threat period.

**Methods:** In September 2022, a large-scale online cross-sectional survey was conducted among YMSM aged 18-29 years across six representative provinces in China. Depressive symptoms were measured by the nine-item Patient Health Questionnaire.

Hierarchical regression analysis was performed to test the various associated factors of depressive symptoms.



**Results:** Among the 2,493 participants, 65.6% (n=1,638) reported mild to severe depressive symptoms. The hierarchical regression analysis identified that depressive symptoms was positively associated with unemployment (b=0.83, p=0.04), having substance use in the past 6 months (b=1.91, p=0.01), a higher level of MSM self-stigma (b=0.33, p<0.001), incompleteness of COVID-19 vaccination (uncompleted vaccination: b=0.95, p<0.01; no vaccination: b=1.87, p<0.01), greater mpox risk perception (b=0.25, p<0.001), and presence of mpox related symptoms (b=2.35, p<0.001).

**Conclusions:** Chinese YMSM faced significant mental health challenges during the concurrent epidemics of COVID-19 and mpox, which was associated with their socio-economic status, risk behaviors, stigma, and multiple diseases-related variables.

Proactive measures may hold promise as effective strategies for mitigating mental distress among marginalized groups during public health crises.

## TUPED427

Multidimensional inequalities among adolescent girls and women living with or at risk of HIV in Nigeria and South Africa

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**Background:** Inequality is a pervasive, unjust, and complex societal phenomenon that manifests in various dimensions among individuals and groups.


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We aimed to investigate the multiple dimensions of HIV-related inequality that prevent women and girls living with HIV from living the life they want.

**Methods:** Between June and December 2021, two cross-sectional surveys were conducted collaboratively with community-based organisations in Nigeria and South Africa. We adopted Sen's capability approach of inequality and selected relevant measures of inequality in the capabilities of women and girls living with HIV to:

- Live a healthy life,
- Live in physical safety and legal security,
- Be knowledgeable,
- Achieve economic independence,
- Have secure living conditions;
- Enjoy individual, family and social life, and to have self-respect, and;
- Participate in decision-making, have a voice and influence.

We performed descriptive statistical analysis per HIV status and country. We additionally calculated the Gini coefficient, Lorenz curve, location (means) and dispersion (standard deviation) of key markers.

**Results:** We found significant discrepancies across all the dimensions of inequality. Women and girls living with HIV reported lower physical ( $\chi^2(4, n=5350)=148.7$ ,  $p\text{-value}<.000$ ) and mental health ( $\chi^2(3, n=4918)=2.67$ ,  $p\text{-value}<.000$ ), poorer access to HIV ( $\chi^2(1, n=5251)=417.6$ ,  $p\text{-value}<.000$ ) and SRH ( $\chi^2(4, n=5172)=25.6$ ,  $p\text{-value}<.000$ ) services when needed, and capability to meet basic needs ( $\chi^2(1, n=5301)=14.2$ ,  $p\text{-value}<.000$ ). In addition, they had weaker economic independence, lower rates of tertiary education ( $\chi^2(2, n=5385)=60.2$ ,  $p\text{-value}<.000$ ) and faced more housing insecurity ( $\chi^2(2, n=3648)=11.3$ ,  $p\text{-value}=0.003$ ) than HIV-negative vulnerable women and girls.

Furthermore, HIV-positive women and girls were confronted with more sexual and gender-based violence ( $\chi^2(3, n=5028)=30.6$ ,  $p\text{-value}<.000$ ) and suffered from stigma and discrimination ( $M=32.5$ ,  $SD=8.18$ ), particularly among adolescent girls and young women ( $M=34.1$ ,  $SD=7.81$ ).

Ultimately, women living with HIV reported lower life satisfaction ( $M=5.48$ ,  $SD=2.89$ ) compared to their HIV-negative counterparts ( $M=5.77$ ,  $SD=2.84$ ).

**Conclusions:** The multidimensional approach to inequality shows how HIV status amplifies existing inequalities in multiple life dimensions for women and girls in Nigeria and South Africa. It underscores the need for multifaceted interventions to address inequalities in all aspects of the life of African women and girls, with context-specific empowerment programmes increasing their capability to live the life they value.

## TUPED428

### Knowledge of Pre-exposure prophylaxis among adolescent men having sex with men (MSM) and transgender (TG) persons: advocating for Access

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**Background:** South African adolescents are at an increased risk of HIV acquisition due to risky sexual behaviors. Recent studies revealed that HIV prevalence among the adolescents had increased from 3.0% in 2012 to 3.7% in 2019, with a total estimate of 360 582 adolescents HIV positive in 2019.

Among this age group is a subgroup of adolescent men having sex with men (AMSM) and adolescent transgender (ATG) people who are most vulnerable and bear disproportionate burden of HIV.

**Methods:** To inform services aimed at MSM and TGW, Aurum undertook an exploratory assessment across four districts (Ekurhuleni, uMgungundlovu, eThekweni, Ehlanzeni) to assess AMSM and ATG knowledge, attitudes, and perceptions about pre-exposure prophylaxis (PrEP) as a HIV prevention strategy.

Focus group discussions were conducted comprising 32 AMSM and KAP surveys were administered to the same adolescents as part of the quantitative element of the study.

Thematic analysis was employed to explore key themes related to adolescents' knowledge, attitudes and perception about PrEP and barriers to PrEP use.

**Results:** The results of the study revealed that there is good PrEP knowledge (>80%) among the adolescents. However, PrEP knowledge seemed to be influenced by whether they have been sensitized about PrEP from their respective healthcare facilities with some adolescents not knowledgeable at all.

Although PrEP knowledge among the adolescents seemed to be high, the use was relatively low with only 12.5% of the participants using PrEP. Factors such as stigma and low perceived risk of HIV acquisition were cited as reasons for non-PrEP use.

Nonetheless, the adolescents recommended various strategies to upscale PrEP use among their peers such as sensitizing schools, adding PrEP to the existing life orientation (LO) school curriculum, targeting social media platforms and recreational places such as clubs and places of 'groove'.

**Conclusions:** Adolescent key populations are an often-missed demographic in HIV prevention efforts. It is imperative that awareness and uptake of PrEP be improved within this population segment towards improving health outcomes among adolescents.





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## TUPED429

Integrating peer network analysis improved HIV case identification during the implementation of the enhanced peer outreach approach (EPOA) in Morogoro, Tanzania

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**Background:** In Tanzania, HIV prevalence remains high among female sex workers (26%) and men who have sex with men (25%). The Meeting Targets and Maintaining Epidemic Control (EpiC) project adopted use of the enhanced peer outreach approach (EPOA) to reach key populations (KPs) and offer HIV testing services to those who are typically considered more difficult to reach with traditional testing approaches. We present a data analysis and use approach within EPOA that improved reach of hard-to-reach populations.

**Description:** Initially, EPOA's coupon distribution and tracking were being less targeted in a complex geography and posed challenges. To improve outreach, a data-driven strategy that integrating social network analysis was implemented. 16 peer educators received a one-day training focused on the fundamentals of EPOA coupon distribution to reach their social networks. Data officers were trained in conducting network analysis on demographic and testing results of redeemed coupons using Microsoft PowerBI. Individual peer network analysis (PNA) was incorporated in EPOA from Apr-Jun 2023 and PEs were mentored in using PNA output to target reach. We compared case identification before (Oct 2022-Mar 2023) and after (Apr-Sept 2023) PNA introduction and assessed statistical significance using Chi-squared test.

**Lessons learned:** Before PNA, PEs distributed 909 coupons and identified 59 HIV positive cases (10% positivity rate, 59/590). After introduction of PNA, 815 coupons were distributed, yielding 13% positivity rate, (73/565) (p=0.119). During use of PNA, 77% (435/565) of the clients reached

had never tested or not tested for a year, compared to 51% (304/590) before PNA (p<0.001), see table below. Data interpretation and use by peer educators was crucial for this targeted approach.

Indicator	<6 months	6-12 months	>1 year	Never tested	Total tested clients	P value
Before using PNA	28 (5%)	258 (44%)	167 (28%)	137 (23%)	590	0.0001
After use of PNA	31 (5%)	99 (18%)	211 (37%)	224 (40%)	565	

Table 1: Comparison of clients' reported duration since last HIV test among EPOA coupons redeemed, before and after use of PNA.

**Conclusions/Next steps:** Integrating PNA with EPOA effectively extended HIV services to KPs previously underserved. EPOA's scalability makes it a valuable strategy for identifying HIV cases in hard-to-reach populations.

## TUPED430

Equitable sexual and reproductive healthcare access for GBQ sex workers in Lagos State: unveiling the mental health barriers in HIV service utilization

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**Background:** Gay, Bisexual, Transgender, and Queer (GBQ) sex workers living in Lagos, Nigeria, encounter significant obstacles in accessing critical sexual and reproductive healthcare (SRH) services, including inclusive HIV care, leading to discrimination and barriers that affect their physical, mental, and psychosocial well-being.

This study explores the mental health challenges faced by this community in obtaining inclusive HIV and SRH-related services at community-friendly facilities in Lagos.

**Methods:** Conducted for 3 months in three (3) senatorial districts in Lagos, Nigeria, this qualitative study engaged 257 GBQ sex workers through 9 Focus Group Discussions (FGD) which explored mental health challenges, healthcare barriers, and coping mechanisms. The respondents showcased diverse demographics, with variations in age (18-24: 56.4%, 25-30: 23.7%, 31-40: 10.1%, 41-50: 6.6%, 51+: 3.1%), sexual orientation (Gay: 45.1%, Bisexual: 24.8%, Transgender: 15.2%, Queer: 10.1%, Other: 4.9%), HIV status (HIV Positive: 56.8%, HIV Negative: 33.1%, Unknown/Not Disclosed: 10.1%). Thematic analysis was employed to interpret the FGD recordings.

**Results:** 64.9% of GBQ sex workers (SW) living with HIV reported discrimination while attempting to get their monthly antiretroviral (ARV) medication refills. Attending clinic assistants often used snide remarks and attempted to shame participants due to their choice of job and

the nature of their illness. As a consequence, continuous ARV uptake among GBQ sex workers living with HIV decreased by 59.1%. Equally alarming is the finding that 68% of young participants had been openly criticized, causing them to experience increased anxiety within community clinics.

This underscores the urgent need to address the bias by community healthcare workers and ensure equitable access to healthcare for GBQ sex workers in Lagos state.

**Conclusions:** The study findings reveal a pervasive pattern of discrimination against GBQ sex workers accessing antiretroviral medication (ARV) by clinic assistants, contributing to a 59.1% decline in ARV uptake. 80% of young participants further faced increased anxiety whenever they had to visit community health facilities.

These findings have illustrated the critical importance of inclusive cultural sensitivity workshops for community healthcare workers and targeted advocacy efforts to key stakeholders and policymakers to create a more inclusive healthcare environment for GBQ sex workers and improve their overall health and well-being.

## TUPED431

Are COVID-induced disruptions in HIV service and gender-affirming care associated with negative mental health outcomes among transgender people in South Africa? Insights from a purposive sampling study

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**Background:** Globally, transgender women and men (TGWM) experience poorer mental health outcomes than the general population, with most evidence originating outside sub-Saharan Africa.

By introducing new stressors, the COVID-19 pandemic further deteriorated mental health; pandemic counter-measures also disrupted access to care, which may affect physical and psychosocial health. We examined the effect of HIV service and gender-affirming care (GAC) disruptions on suicidal ideations (SI) and moderate/severe anxiety and depression symptoms (A&D) among self-identifying TGWM in South Africa.

**Methods:** This secondary analysis uses data from a broader project aiming to understand the impact of COVID-19 on populations (aged 15-65+) with or at high risk for HIV in Gauteng, KwaZulu-Natal, and Eastern and Western Cape. From data collected between September and November 2021, we identified sociodemographic, structural-, and violence-related stressors of SI and A&D using backward elimination ( $\alpha=0.05$ ).

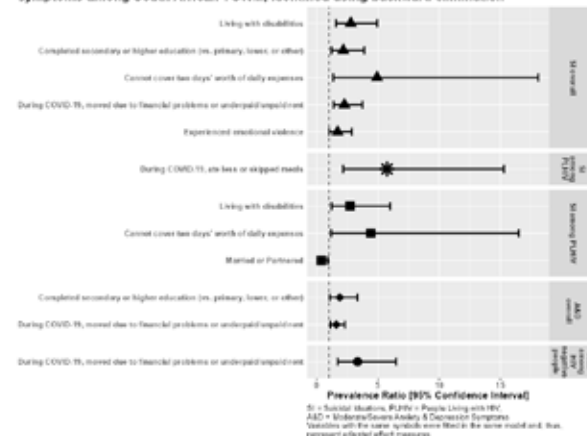
Utilising generalised estimating equations (Poisson regression, robust standard errors) to control for provincial clustering, we calculated adjusted prevalence ratios (aPR) to estimate the effects of disruptions after controlling for observed stressors (Figure 1). Given South Africa's HIV burden, we also performed HIV-stratified analyses to assess if HIV status modified relationships.

**Results:** Overall, approximately one-fourth (N=190) reported SI and two-fifths (N=178) indicated A&D. The only disruption associated with SI related to HIV services (aPR=2.14 [1.19-3.83]). A&D was higher among those reporting disrupted access to HIV services (aPR=1.70 [1.10-2.63]) and gender-affirming therapy/counselling (aPR=1.49 [1.07-2.07]), medications/hormones (aPR=1.50 [1.03-2.18]), and surgeries (aPR=1.60 [1.02-2.50]).

For A&D, HIV-stratified analyses highlighted HIV-negative respondents were primarily affected by disruptions to gender-affirming therapy/counselling (aPR=2.09 [1.18-3.70]), medications/hormones (aPR=2.58 [1.32-5.04]), and surgeries (aPR=2.09 [1.07-4.08]).

For A&D, HIV-stratified analyses highlighted HIV-negative respondents were primarily affected by disruptions to gender-affirming therapy/counselling (aPR=2.09 [1.18-3.70]), medications/hormones (aPR=2.58 [1.32-5.04]), and surgeries (aPR=2.09 [1.07-4.08]).

Figure 1: Stressors of suicidal ideations and moderate/severe anxiety and depression symptoms among South African TGWM, identified using backward elimination



**Conclusions:** In South Africa during COVID-19, A&D was higher among TGWM reporting HIV and GAC disruptions. SI was primarily affected by sociodemographic factors, structural vulnerabilities, and violence experiences (Figure 1). Given their life-saving potential, linkages to HIV services and GAC must be preserved.



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## TUPED432

### Postpartum HIV care engagement among South African women: results from a prospective cohort study

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**Background:** KwaZulu-Natal, South Africa (SA) has the highest prevalence of pregnant women with HIV (WWH) in the world. Pregnancy and postpartum (PP) periods offer opportunities to engage women in HIV care, prevent perinatal transmission, and optimise maternal and infant health.

Research suggests PP HIV care engagement is challenging; this prospective cohort study estimates rates of detectable HIV RNA as a proxy for care engagement during the PP period.

**Methods:** 472 pregnant WWH were enrolled from June 2017-March 2020 and completed sociodemographic and psychosocial assessments at baseline (third trimester) and 6, 12, 18, and 24 months PP. HIV-RNA testing was completed at all timepoints; National Health Laboratory Service (NHLS) data were accessed when study HIV-RNA data were unavailable. Detectable HIV-RNA was operationalized as  $\geq 1,000$  copies/mL or absence of a HIV-RNA value from study or in NHLS for  $\geq 1$  year. Time to event analysis was conducted using the Kaplan-Meier method.

**Results:** 26 participants were excluded from analyses due to detectable HIV-RNA at baseline, leaving 446 participants (mean age= 28.92 years, SD= 5.10 years; mean years since diagnosis = 4.30 years, SD=12.19 years). Overall, 31% reported at least part-time employment, and 96% reported being in a relationship with the partner of the index pregnancy at baseline.

There were 297 detectable HIV-RNA events during the observation period (incidence = 0.66): 48 WWH had detectable HIV-RNA, and 249 did not have HIV-RNA value from study or in NHLS for  $\geq 1$  year.

Across participants, follow-up time ranged from 1.6 to 49.1 months, for a total time at risk of 8,432.3 person-months (incidence rate = 35.2 events per 1,000 person-months). Median time to event was 18.1 months (95% confidence interval: 18.0 – 18.2 months).

**Conclusions:** Over half of participants exhibited detectable HIV-RNA, which is likely indicative of disengagement from care. Data must be interpreted in context of the

COVID-19 pandemic, which may have created additional and time-limited barriers to HIV care engagement. Algorithms for identifying which PP women are vulnerable to experiencing PP viremia are needed.

## TUPED433

### Integrating disaster management and HIV care in flood-affected areas of Pakistan

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**Background:** This research, using data from Pakistan's Ministry of Health and NIH, examines the experiences of PLHIV during monsoon floods. It blends health data analysis with interviews to understand their challenges in accessing healthcare and maintaining treatment.

The goal is to identify gaps in disaster management for HIV/AIDS care and suggest improvements for policies and practices, focusing on the needs of vulnerable groups like PLHIV during natural disasters.

**Methods:** The study, conducted in monsoon-affected areas of Pakistan, used a mixed-methods approach with quantitative data and qualitative techniques like semi-structured interviews and focused group discussions. It applied grounded theory, using frameworks like the sustainable livelihood and natural hazard research approaches, and health behavior theories. Data from the Ministry of Health and NIH were analyzed to examine HIV management during floods.

Ethical protocols were strictly followed, with informed consent obtained for all participant interactions. The study aimed to uncover patterns in the impact of floods on HIV/AIDS management and behaviors of PLHIV.

**Results:** The study found that PLHIV in Pakistan face significant challenges during monsoon floods, including decreased clinic visits and medication adherence, especially among those above 45 and males. Interviews highlighted increased feelings of isolation and vulnerability and a rise in unsafe behaviors among younger PLHIV.

These findings point to the need for disaster management strategies tailored to the specific needs of PLHIV.

**Conclusions:** The study emphasizes the necessity of integrating HIV services into disaster management, especially for monsoon-prone regions. It shows the impact of natural disasters on healthcare access for PLHIV, highlighting the need for age and gender-specific interventions.

The research advocates for policy changes and a specialized "HIV/AIDS prevention framework" for better HIV management during natural disasters like floods, crucial in South Asian contexts.



## TUPED434

## Moving beyond singular 'key population' categories to inform more nuanced and effective HIV and other health interventions: an intersectional analysis of the 'Mombasa Key Pop Study'

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**Background:** HIV 'key populations' typically include sex workers, people who use drugs, and sexual and gender minorities (SOGI). While this framing can help inform health interventions, many programs – and funders – reinforce mutually exclusive categorisation of key populations. To recognise the complexity of human behaviour and identity, an intersectional approach to defining key populations is needed.

**Methods:** The Mombasa Key Pop Study is a repeated cross-sectional survey of key populations in the Kenyan city of Mombasa. The first wave of data was collected in June-September 2023. Participants were asked to self-report identities and behaviours, which were used to classify them as non-exclusive and intersecting key population groups (e.g., sex workers who use drugs).

Between intersectional configurations, bivariable and multivariable analyses compared scale scores on physical health (SRH-7), mental health (PHQ-2), well-being (WHO-5), and general access to healthcare. Where necessary, we controlled for sociodemographic differences between population configurations.

**Results:** 673 people representing key populations participated in Wave 1. Non-mutually, 345 (51.3%) participants reported sex work, 449 (66.7%) drug use, and 326 (48.4%) SOGI. In total, 332 (49.3%) participants reported multiple key population experiences including 94 (14.0%) engaged in sex work and drug use, 182 (27.04%) SOGI who used drugs, 56 (8.3%) SOGI sex workers, and 114 (17.1%) SOGI sex workers who used drugs.

More intersecting key population experiences were associated with poorer outcomes; for example, SRH-7 scores of physical health were 5.05 among just who were SOGI, compared with 4.9 among SOGI sex workers, 4.82 among SOGI who used drugs, and 4.71 among those with all three experiences ( $p < 0.001$ ).

Similarly, 28.0% of just sex workers had indications of depression, compared with 37.9% of sex workers who used drugs, and 41.2% of sex workers who used drugs and were SOGI ( $p < 0.001$ ). Other similar relationships were observed for well-being and general healthcare access.

**Conclusions:** A large proportion of key populations experience multiple identities. Those with intersecting key population experiences had consistently poorer health, healthcare, and well-being outcomes than those with a singular experience. These results support the need for intersectionally grounded interventions to more effectively engage with the diverse experiences of key populations.

## TUPED435

## Developing a community-based HIV status-neutral mobile clinic strategy to improve access to HIV prevention and treatment for people at high risk for or living with HIV in Alameda County

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**Background:** The traditional health system poses significant barriers that limit access to HIV prevention and treatment for African-American (AA) people in Alameda County. Mobile health clinics (MHC) offer convenient care that may overcome structural barriers to care engagement which can include medical mistrust, living in "medical deserts," and prior experiences of racism, homophobia, and transphobia.

We sought to develop a mobile clinic model acceptable to the AA community offering integrated status-neutral HIV prevention and care services.

**Methods:** We established a community/academic/public health partnership to develop a mobile clinic model called HOPE (Healthy Outcomes for People Everywhere) to offer services to reduce HIV, STIs, hepatitis C, and COVID-19 response within the AA community in Alameda County. We conducted in-depth interviews with 10 AA community leaders and 7 AA clients to identify key determinants and stakeholder preferences for HOPE following the framework of our logic model. Rapid qualitative analysis was conducted using the Intersectionality-Enhanced Consolidated Framework for Implementation Research (IE-CFIR). Resulting themes using rapid qualitative analysis were discussed among partners for feasibility and presented back to community stakeholders in 3 co-design focus groups for additional feedback to inform the final model. We piloted the intervention in 50 individuals in an encampment in Oakland, CA.



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**Results:** Solutions to barriers to care engagement (i.e. medical mistrust, living in "medical deserts," and prior experiences of racism, homophobia, and transphobia) were to have a team of culturally-competent staff and providers that look like the population being served.

Nearly all stakeholders highlighted the importance of community relationship building and establishing trust by having a consistent presence in community. In addition to core services (i.e. HIV/STI testing, PrEP/PEP/Rapid ART, COVID-19 testing/vaccination), housing referrals, mental health, food assistance, and showers were critical services. Stakeholders identified the urgent need for coordination among providers serving AA to maximize the collective impact of these agencies.

HOPE effectively reached vulnerable communities, specifically the homeless, create a safe environment addressing stigma and mistrust, and had ability for telehealth and referrals to CBOs and community providers.

**Conclusions:** Comprehensive person-centered MHC services may improve engagement and access to HIV-syndemic care services to meet EHE goals along the continuum of care.

## TUPED436

Psychologist-trained peers' contribution in reducing HIV transmissions risks in Kyrgyzstan prisons: results of a pilot clinical trial

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**Background:** HIV prevalence in Kyrgyzstan prisons (10,3%) is 50 times higher than in the community; 75% of prisoners have injection drug use history that is comorbid with mental disorders and increases HIV risk.

We explored the feasibility and preliminary effectiveness of an intervention administered by a psychologist and a former prisoner peer to improve prisoners' mental health, thereby reducing HIV risk.

**Methods:** A 12-week intervention was conducted from January-March 2022, in two male prisons, with two comparable prisons serving as control. 98 HIV negative participants with injection drug use history were surveyed at baseline, immediately after the intervention, and at 3- and 12-months follow-up. Mental health assessments included SWLS for life satisfaction, PHQ-9 for depressive symptoms, and BRS for resilience. Data analyses used R Statistical Software (v4.3.1; R Core Team 2023).

**Results:** At baseline, participants' mean age was 43; 53 (54.1%) were from intervention facilities. Mental health indicators were similar between two groups, with controls scoring slightly better: SWLS scores were 20.3 for intervention vs 22.8 for controls ( $p = 0.004$ ), PHQ9 scores 19.0 vs 17.0 ( $p = 0.11$ ), BRS scores 2.9 vs 3.2 ( $p = 0.019$ ). At 12-month follow-up, intervention participants scored better than controls on SWLS (26.1 vs 20.0,  $p = <0.001$ ), PHQ9 (12.5 vs 18.6,  $p = <0.001$ ), and BRS (3.5 vs 2.9,  $p = 0.002$ ) (Table 1).

Per multivariate logistic regression, intervention vs control group was a significant predictor of mean scores for SWLS (beta coefficient 7.5,  $p < 0.001$ ), PHQ9 (beta coefficient -5.4,  $p = 0.003$ ) and BRS (beta coefficient: 0.55,  $p = 0.042$ ).

**Conclusions:** The pilot clinical trial suggests the intervention's potential in improving mental health among prisoners with injection drug use history, furthermore, effects increased overtime. A randomized controlled trial should examine the full intervention effects on improving mental health and reducing HIV risk behaviors among prisoners with injection drug use history.

## TUPED437

Riding the waves of health: achieving HIV viral suppression in Migori county's fisher-folk

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**Background:** The effective management of HIV through Antiretroviral Therapy (ART) and achieving virological suppression play a pivotal role in reducing morbidity, mortality, and HIV transmission. This compelling case study centers on the fisher-folk community in Migori County, Kenya,

Characteristic	Baseline			Month 1			Month 3			Month 6			Month 12		
	Experiment, N = 53 (95% CI) <sup>1</sup>	Control, N = 45 (95% CI) <sup>1</sup>	p-value <sup>2</sup>	Experiment, N = 47 (95% CI) <sup>1</sup>	Control, N = 44 (95% CI) <sup>1</sup>	p-value <sup>2</sup>	Experiment, N = 46 (95% CI) <sup>1</sup>	Control, N = 43 (95% CI) <sup>1</sup>	p-value <sup>2</sup>	Experiment, N = 44 (95% CI) <sup>1</sup>	Control, N = 43 (95% CI) <sup>1</sup>	p-value <sup>2</sup>	Experiment, N = 38 (95% CI) <sup>1</sup>	Control, N = 36 (95% CI) <sup>1</sup>	p-value <sup>2</sup>
Life Satisfaction Score, Mean (95% CI)	20.3 (19.0, 21.6)	22.8 (21.7, 23.9)	0.004	22.2 (21.0, 23.3)	21.9 (20.7, 23.0)	0.7	21.5 (20.5, 22.5)	23.1 (21.9, 24.2)	0.045	23.3 (22.2, 24.5)	22.6 (21.3, 23.8)	0.4	26.1 (25.0, 27.2)	20.0 (18.3, 21.6)	<0.001
PHQ 9 Score, Mean (95% CI)	19.0 (17.0, 20.5)	17.0 (15.0, 18.0)	0.11	15.3 (13.0, 16.5)	16.8 (14.0, 18.5)	0.3	14.5 (12.5, 15.5)	14.1 (12.0, 15.0)	0.6	15.2 (14.0, 16.5)	15.5 (13.5, 16.5)	0.8	12.5 (11.0, 13.5)	18.6 (15.5, 21.0)	<0.001
BRS Score, Mean (95% CI)	2.9 (2.7, 3.1)	3.2 (3.0, 3.3)	0.019	3.0 (2.8, 3.2)	3.0 (2.8, 3.2)	0.9	3.1 (2.9, 3.3)	3.2 (3.1, 3.3)	0.6	3.2 (3.1, 3.4)	3.4 (3.1, 3.6)	0.4	3.5 (3.2, 3.8)	2.9 (2.6, 3.1)	0.002

TUPED436 Table 1. Comparison of intervention and control groups at baseline and at follow-ups <sup>1</sup>CI = Confidence Interval

<sup>2</sup>Welch Two Sample t-test; Wilcoxon rank sum test

a high-risk population with elevated HIV prevalence attributed to factors such as engaging in transactional sex for fish.

**Description:** The intervention implemented a unique fisher-folk model of service delivery, where peer educators from the community, carefully selected and approved by the Ministry of Health and partnered with CIHEB, served as essential allies. Linked to health facilities situated near targeted landing sites, these dedicated educators facilitated unhindered access to HIV care and treatment services for the fisher-folk population.

Comprising adult fisher-folk individuals on first-line ART for varying durations of 6, 12, 24, 36, and ≥48 months, the study employed individual-based viral load (VL) testing to evaluate virologic suppression (VL <1000 copies/mL) and identify potential drug resistance.

**Lessons learned:** Results unveiled a remarkable overall virological suppression rate among fisher-folk, with an astounding 96% (384 of 402) achieving viral suppression. Although these high rates are noteworthy, the study underscores the crucial significance of timely treatment switching and unwavering adherence support to optimize treatment outcomes for this highly mobile population. Additionally, the adoption of pooled VL testing emerges as a potentially cost-effective measure, particularly in resource-limited settings.

**Conclusions/Next steps:** This illuminating case study highlights the paramount importance of HIV viral suppression in promoting healthy longevity within the fisher-folk community in Migori County.

This captivating study underscores the transformative power of empowering the fisher-folk community to achieve optimal HIV viral suppression. By integrating science-driven strategies, fostering community engagement, and recognizing the potential of cost-effective innovations, we unite in our commitment to safeguard the health and longevity of these resilient communities in Migori County, Kenya.

## TUPED438

### Suicidality, forced sex, depression, and alcohol use among young men who have sex with men PrEP users in Vietnam: an urgent call to action

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**Background:** Young men who have sex with men (YMSM) have higher suicide rates and higher HIV incidence than the general population. According to syndemics and minority stress theories, mental health conditions are also associated with HIV risks.

At the same time, daily PrEP users are often assumed to have access to healthcare more frequently and is more "in the know" than MSM who are not on PrEP. However, this assumption may be wrong.

This study aims to examine suicide-risks, depression, and alcohol use disorders among YMSM PrEP users from Ho Chi Minh City, Vietnam.

**Methods:** Between March and June 2023, 613 YMSM PrEP users aged 16-29 years residing in Ho Chi Minh City were recruited through various social media platforms and local NGO networks. Participants completed self-administered online survey on demographics, first sexual experience, partner seeking, MSM disclosure, depression (CESD-R-10), alcohol use disorders (AUDIT-C), social support and *The-Suicide-Behaviors-Questionnaire-Revised* (SBQ-R) was used to assess suicide-risks. Multivariable logistic regression was used to examine correlates of suicide-risks.

**Results:** Among participants, 111 (17.79%) reported suicide-risks. Independent correlates of suicide-risks included not consenting to having sex for the first time (AOR=3.70, 95% CI: 1.13-13.27), experiencing depression (AOR=3.53, 95% CI: 2.20-5.68), drinkers of alcohol (AOR=2.12, 95% CI: 1.17-3.82 and AOR=2.75, 95% CI: 1.57-4.80, respectively), and having low social support (AOR=1.70, 95% CI: 1.03-4.80).

**Conclusions:** YMSM PrEP users in Vietnam have high suicide-risks. These risks may be associated with trauma from forced first sexual experience, current depression, and alcohol use. A comprehensive and integrated approach to HIV prevention that encompasses mental



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health services is urgently needed. YMSM who are daily PrEP users should not be assumed that they are free from minority stress or syndemics production.

VARIABLES	THE SUICIDE BEHAVIOUR QUESTIONNAIRE REVISED (SQ-R)			
	Univariable model		Multivariable model <sup>a</sup>	
	OR (95% CI)	p-value	OR (95% CI)	p-value
Age				
15-19	1.38 (0.65-2.94)	0.423	1.90 (0.41-2.42)	0.394
20-24	1.01 (0.65-1.56)	0.960	0.96 (0.53-1.55)	0.876
25-29	Ref		Ref	
What is your current employment status?				
Full time	1.15 (0.56-2.41)	0.070		
Part time	2.27 (1.17-4.45)	0.015		
Not working	Ref			
What is your household total monthly income?				
< 5 million VND	2.91 (1.30-6.13)	0.005	1.71 (0.74-3.95)	0.205
5 million - 9,999,999 VND	2.71 (1.45-5.20)	0.003	1.69 (0.83-3.45)	0.146
10 million - 14,999,999 VND	1.62 (0.79-3.33)	0.180	1.91 (0.46-2.17)	0.980
15 million - 19,999,999 VND	2.04 (1.80-4.17)	0.051	1.49 (0.53-3.23)	0.320
more than equal 20 million VND	Ref		Ref	
Consenting to having sex for the first time				
Yes	Ref		Ref	
No	4.11 (1.46-11.50)	0.000	3.70 (1.13-12.27)	0.027
Not sure	0.83 (0.34-2.02)	0.680	0.94 (0.36-2.51)	0.901
The first time you had anal intercourse, did you or your partner use condoms?				
Yes, some of the time when we had anal sex	1.50 (1.04-2.42)	0.033		
Yes, for the entire time we had anal sex	Ref			
Partner working online				
Often or sometimes	1.92 (1.07-3.44)	0.020		
Never	Ref			
MSM disclosure (people in your family)				
Yes, told or expressed it to everyone	Ref			
Yes, told or expressed it to most people or some people	1.55 (1.11-3.48)	0.021		
Did not tell or express it to anyone or not applicable to me	2.91 (1.65-5.15)	<0.001		
Depression (C-ESQ-R)				
Yes	4.71 (3.03-7.33)	<0.001	3.63 (2.20-6.68)	<0.001
No	Ref		Ref	
Alcohol use disorders (AUDIT-C)				
Never drink alcohol	Ref		Ref	
Risk drink alcohol	3.20 (1.86-5.54)	<0.001	2.12 (1.17-3.82)	0.012
Risk drinkers	3.40 (2.01-5.73)	<0.001	2.79 (1.57-4.99)	<0.001
Social Support				
High (above median)	Ref		Ref	
Low (below median)	3.22 (2.00-5.09)	<0.001	1.70 (1.03-2.82)	0.030

Table 1. Factors associated with suicidality among YMSM PrEP users in Ho Chi Minh City, Vietnam (N = 613).

<sup>a</sup>The multivariable model included age, income, not consenting to having sex for the first time, depression, alcohol use disorders, and social support.

## TUPED439

"Alora Centres": youth-led model for accelerating HIV testing and treatment among adolescents, Mizoram India

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**Background:** As per national program data, between 2010-2021, India showed 46% decline in newly diagnosed HIV cases, while Mizoram showed 3.5% increase, in which youth (15-30 years), accounted for 40% of new cases. To promote healthy behavior among adolescents, a youth friendly center was initiated. Alora was initiated in March 2023 by MSACS within a government college in Aizawl, funded by PEPFAR/CDC through PATH, aimed to generate interest around HIV testing by promoting integrated comprehensive health services.

**Description:** Between March-September 2023, 84 students were trained as peer volunteers (PV) who promoted the centre on commemorative days significant to AIDS, Hepatitis, drugs and suicide prevention.

This initial outreach for youth engagement was pivotal in designing the centre and disseminating HIV prevention messages. PVs conduct quizzes with college students on HIV and substance use, display standard promotional material on the centre's Instagram page to dispel mis-

conceptions around HIV. Beyond HIV testing, the centre distributes condoms, provides mental health counseling; life-skills education; and blood sugar/hypertension screening.

**Lessons learned:** Incorporation of other health services into Alora served dual-purpose of reducing stigma and attracting youth. PVs felt a sense of ownership while leading promotional activities and participating in group discussions for improving access to health. They acted in an Instagram reel showcasing process to avail services with confidentiality and created a photo gallery at centre presenting their activities. Of the 1,100 students enrolled in college, 465 students (42%; 142 males, 323 females) accessed services during March-September 2023. 87% (404/465) of these were below 24 years. Out of 49 people tested for HIV, two were diagnosed and linked to treatment.

Service	Number (%)
Blood pressure measurement	217 (47%)
Random Blood Sugar	37 (8%)
Blood grouping for blood group	28 (6%)
Mental health counselling	22 (5%)
HIV test	49 (11%)
Only information provided	133 (29%)

Table. Breakup of people access services from Alora centre (March-Sep 2023) n=465.

**Conclusions/Next steps:** Engagement and ownership helped in reaching non-Key Population in Mizoram and enabled youth to talk freely about HIV. The successful implementation was shared with stakeholders in Mizoram and other states to replicate Alora as a person-centric model within universities for awareness; access to integrated HIV and other health services.

## TUPED440

Enhancing HIV testing in female sex workers through co-creation, a social and behavioral change approach

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**Background:** In Cameroon, recommended routine HIV testing every three months for female sex workers (FSWs) faces obstacles, including stigma, discrimination, criminalization, and limited awareness. Moreover, inconsistent commodity supply and low adoption of HIV self-testing further impact testing rates among FSWs.

**Description:** In 2023, as part of the PEPFAR-funded CHILL Project in Cameroon, we collaboratively addressed low HIV testing rates among FSWs. Through focus group discussions with FSWs and community-based organization (CBO) service providers, we evaluated and modified as-

pects of testing uptake, including the program's services and delivery methods, employing a co-creation approach. The proposed solutions were pre-tested, adjusted based on client feedback, and then implemented.

**Lessons learned:** Barriers to HIV testing among FSWs included stigma and limited access to tailored services. FSWs expressed concerns about privacy at hotspots and preferred daytime testing. They also solicited the bundling of HIV testing with services other services like family planning, cervical cancer screening and distribution of sanitary products.

This led to the development of tailored service delivery models, including revised counseling checklists, shortened sensitization sessions, and nighttime sensitization at hotspots followed by daytime testing at the drop-in centers (DIC) where privacy was assured.

Also, HIV testing was bundled with other services like STI screening and management, family planning, mental health screening and management, cervical cancer screening and distribution of sanitary products at the DICs. FSW peer leaders and educators also engaged in community education to reduce stigma related to HIV testing.

HIV testing uptake among FSWs increased from 28% (2,674/9,438) in Q1FY23, 24% (2,729/11,315) in Q2FY23, to 40% (2,882/7,249) when we started the co-creation, 48% (2,178/4,497) in Q4FY23, and now 50% (2,473/4,910) in Q1FY24 when the program has implemented some form of all the proposed solutions. This demonstrates the effectiveness of involving FSWs through a co-creation session in designing services that are more responsive and accessible to their unique needs.

**Conclusions/Next steps:** In conclusion, involving FSWs in designing and tailoring demand creation strategies significantly boosted HIV testing rates. Adjusted counseling techniques, strategic sensitization, and bundling testing with other services proved effective, addressing barriers and emphasizing the value of participatory healthcare interventions for stigmatized groups

## TUPED441

'Dirt just has to come down': body perceptions and lived experiences of female sex workers in Côte d'Ivoire (ANRS 12361 PrEP-CI and ANRS 12381 PRINCESSE projects)

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**Background:** Female sex workers' (FSWs) representations of their bodies, situated at the intersection of intimate and professional spheres, can shed light on their perceptions and acceptability of health services, including pre-exposure prophylaxis (PrEP).

This analysis focuses on the body perceptions of FSWs in Côte d'Ivoire.

**Methods:** Qualitative interviews were conducted among FSWs in multiple waves within two successive projects.

The first project was a cross-sectional study conducted in 2016-2017 to assess the relevance of PrEP in Abidjan and San Pedro, which included 22 interviews and 8 focus groups in 2016.

The second project evaluated a comprehensive sexual and reproductive health program, including PrEP, on prostitution sites in the San Pedro region (16 interviews and 4 focus groups in 2019, 5 interviews in 2021, 17 in 2022). On-site observations at prostitution sites supplemented the interviews.

**Results:** The interviews revealed the concept of fluid circulation and its importance in maintaining balance. Some FSWs expressed concerns that health interventions, particularly blood draws, might weaken the body, causing fatigue if not offset by ingesting energizing substances. The high number of blood sample tubes and the absence of snacks were barriers to engagement in care. Fluid circulation was also related to the expulsion of 'dirt', as bodily fluids such as semen or menstrual blood are frequently defined. In cases of condom breakage, FSWs often cleanse their bodies with cola or enemas, which is perceived to be more effective than taking pills for treating sexually transmitted infections (STIs), post-exposure prophylaxis for HIV, or emergency contraception.

FSWs were often reluctant to use contraceptive injections or implants due to concerns about menstrual retention rather than expulsion.

Additionally, some FSWs considered hormones to be impure or harmful to the body.

Although most FSWs expressed interest in PrEP, some considered it 'tiring' and 'unnecessary', as it could upset the balance of a healthy body.



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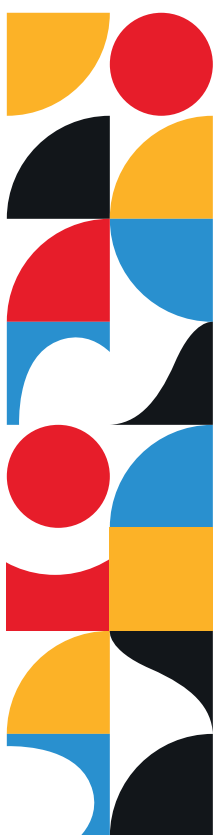
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**Conclusions:** FSWs have a different perception of bodily fluids compared to the medical viewpoint on preventing STIs, HIV, and unwanted pregnancies. Their body perceptions offer insights into their reservations about health services, which helps to understand the barriers that prevent them from accessing and remaining in care.

## TUPED442

**Invisible, alone, and forgotten- an exploration into experiences of male sex workers vis-à-vis sexual health services, mental health, and financial stability during COVID-19 lockdown in three Indian cities**

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**Background:** In India, men in sex work (MSWs) faced financial, mental and sexual health challenges during COVID-19 lockdowns that were exacerbated by prevalent social stigma toward same-sex relationships and legalities affecting sex work.

Our abstract presents findings from a qualitative study that explored access to health and support among MSWs during the COVID-19 lockdowns

**Methods:** We conducted six focus group discussions; nine in-depth interviews; and nine key informant interviews in total in Mumbai, Thane, and Delhi in October-December 2022.

Eligibility criteria were:

- Aged 18-45 years and consent;
- Currently living in Mumbai/Thane/Delhi for ≥1 year;
- Self-identified MSW as per Indian HIV interventions criteria and,
- Reporting transactional sex with ≥1 man in last one month.

Maximum variation purposive sampling was used and data was transcribed and thematically analyzed.

**Results:** The mean age of FGD participants (n=40) was 28.3 years; >64% were at-least college educated. Around 78% reported part-time sex work. Most participants shared that while they had stopped seeing clients in early lockdown, financial constraints/mounting debts prompted them to reinstate sex work. Some sustained themselves financially by performing sexual acts on live cams. Participants reported the following sexual health challenges:

- Agreeing to riskier sexual acts/condomless sex for more money
- Not having access to condoms/other prevention
- Avoiding HIV tests due to fear of being shamed/stigmatized
- Not having means to travel for health services.

Most participants shared their ineligibility for government aid/support schemes for sex workers because there was

no understanding/acknowledgement of sex work by men. While most participants lacked support for mental health distress/loneliness, the following were reported as support avenues:

- Local not-for-profits,
- Long-time/regular clients, and,
- Peers.

While majority MSWs reported ever experiencing some form of physical violence, coercion and blackmail by clients threatening to leak the MSWs explicit pictures/videos were more frequent during the lockdown

**Conclusions:** Our findings strongly recommend pandemic preparedness for under-served communities such as MSWs vis-à-vis access to stigma-free sexual health services including availability of provisions such as PrEP/PEP and HIV self-tests, and via dedicated interventions/local programs targeting MSWs exclusively. Social media/other virtual approaches too may be explored for outreaching hidden MSWs.

## TUPED443

**Emerging trends in unsafe sexual behaviors and prevalence of syphilis among HIV-positive MSM in the southern region of Vietnam from 2015 to 2022: need for novel approaches**

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**Background:** Vietnam's southern region (VN\_SR) stands as the nation's HIV epicenter, accounting for 65% of national HIV cases, with men who have sex with men (MSM) representing nearly 60% of the VN\_SR cases as of 2023.

This study investigated trends in unsafe sexual behaviors and the prevalence of syphilis and their associated factors among HIV-positive MSM (H\_MSM) in VN\_SR.

**Methods:** There were 620 H\_MSM being identified through HIV sentinel surveillance in VN\_SR from 2015 to 2022. Unsafe sex was defined as inconsistent condom use when having anal sex with male partners in the past month, and syphilis cases were confirmed by being positive with both rapid plasma reagin and the Treponema pallidum hemagglutination assay.

Multivariable Poisson regression (with robust variance) was used to identify factors associated with infrequent condom use and the prevalence of syphilis in H\_MSM.

**Results:** More than half (53.1%) of H\_MSM aged ≤ 24 years, and 50% of them had a sexual debut at ≤ 19 years old. Approximately 30% had never tested for HIV, and 80% did not have an STI examination in the past 3 months. Among H\_MSM, 52.6% did not consistently use condoms, rising from 41.2% (2015) to 63.2% (2020) (p-trend=0.005)



and slightly decreasing to 50.0% (2022). The prevalence of syphilis was 27.2% (95% CI: 23.7%-30.7%), increasing from 10.7% (2015) to 26.0% (2022) ( $p$ -trend<0.001).

Inconsistent condom use was more likely in H\_MSM who reported having group sex ( $aOR$ =1.34, 95% CI: 1.03-1.75,  $p$ =0.028), and less likely in those being aware of HIV testing centers ( $aOR$ =0.75, 95% CI: 0.61-0.92,  $p$ =0.001).

The prevalence of syphilis was significantly higher in H\_MSM under 30 years old ( $aOR$ =1.50, 95% CI: 1.05-2.15,  $p$ =0.029) but lower in those cohabitating with a male partner ( $aOR$ =0.48, 95% CI: 0.26-0.88,  $p$ =0.018).

**Conclusions:** The study reveals a rapid increase in unsafe sex and the co-occurrence of syphilis among H\_MSM, with a substantial proportion never seeking HIV testing and STI examination. Interventions should focus on HIV/STI screening and treatment, behavior changes communication with novel approaches to minimize the HIV/STI transmission.

## TUPED444

Using male engagement champions to reach male sexual partners of female sex workers with HIV prevention interventions: learnings from a demonstration project in 3 districts in Zimbabwe

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**Background:** Studies suggest male sexual partners (MSP) of female sex workers (FSW) attending venues with high volumes of sex work are sub-optimally engaged in HIV prevention and care and at high risk of HIV. Reaching MSPs with effective HIV interventions in programs focused on reducing HIV risk among FSWs may leverage resources for improved outcomes among both groups.

We designed a differentiated HIV intervention to improve access, uptake of HIV services of MSPs in three districts in Zimbabwe (Beitbridge, Bulawayo and Gweru) and implemented within a key populations programme serving FSW.

**Description:** We selected MSPs ( $n$ =36) frequenting venues with high volumes of sex workers and trained them as Male Engagement Champions (MEC) to engage individual MSPs and refer them for HIV services. Implementation review with MSPs, MEC and FSWs resulted in context specific service-delivery modifications to address identified service access barriers.

Bulawayo increased frequency of night and weekend community outreach to MSP boosting service uptake by those unable to access services during regular working hours; Gweru engaged eight FSWs as MECs to replace artisanal miners who had been trained as MECs due to high mobility and Beitbridge clinic's location by the border post enabled 100% linkage of referred MSPs to services while they engaged in their regular economic activities.

MECs referred 1,762 MSPs between October 2022 and December 2023. 1524 (86%) of these were linked to clinical services. Uptake of HIV testing was 71% (1080/1524).

Positivity rate was 3.0% with 32/1080 testing HIV positive. 1048 HIV negatives were screened for PrEP, 84% (878/1048) being eligible and offered PrEP an uptake of 72% ( $n$ =752). Additionally, 19,482 condoms were distributed to MSP reached.

**Lessons learned:** MSPs can access health services within a key populations programme with MECs providing health education, creating demand for services. Services for MSPs required context-specific adaptation for increased access. Uptake of HIV prevention options was high, particularly oral PrEP. Services in locations distal from MSP economic activities experience lower service linkage and require additional outreach resources for engagement in services.

**Conclusions/Next steps:** We intend to expand the scale up the intervention to all program sites and further develop and document the model.

## TUPED445

The Safety Network: collectivising sex worker-led self-help groups in Zimbabwe for stigma reduction

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**Background:** Female sex workers (FSW) in Zimbabwe operate in a complex legal and social environment with elevated levels of stigma, discrimination, and associated structural barriers. We have augmented comprehensive HIV services with microplanning FSW and supporting sex worker led self-help groups (SHG) since 2018. The Safety Network (SN) model, to collectivise SHGs for stigma reduction, increased social cohesion, resilience, and empowerment was co-developed with Zimbabwean sex workers and piloted in one district from 2022 - 2023. We documented SN implementation to assess its impact on empowering FSW for stigma reduction.

**Description:** 72 FSW from 10 SHGs constituted The Safety Network. Each SHG nominated two members to form the SN's governing structure known as the Empowerment Resource Group (ERG). ERG members were trained on 7 pre specified topics - stigma and discrimination, conflict management, governance, paralegal support, case care



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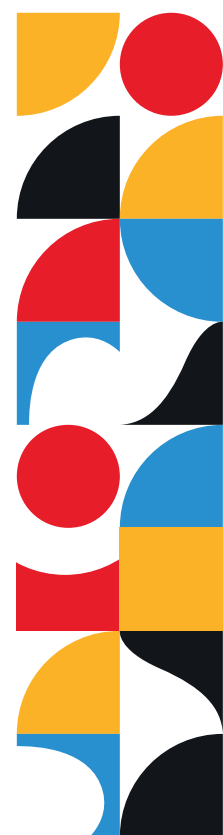
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work and financial literacy. Additional economic strengthening training priorities were identified by the SN. The 10 SHGs leveraged established networks to improve local access to resources.

**Lessons learned:** Support from the local government and traditional leaders significantly reduced FSW stigma in the general community. The SN invoked a strong sense of solidarity and resilience among FSW as they addressed daily challenges, established and scaled up businesses and developed a self-financing mechanism.

The ERG disseminated skills and information, empowering a wider sex worker community for collective action. The benefits of collectivisation included registration with government as a cooperative, opening a bank account and increased individual SHG income levels from an average of USD80 per group per month to USD535.00 per month. Our process evaluation suggested sex workers perceived a favourable shift in how they were viewed by the wider community, a perception endorsed by community stakeholders.

**Conclusions/Next steps:** The integration of the SN into community structures and participation in district and provincial level advocacy activities suggests reduction in stigma. Strengthening and collectivising SHGs empowers sex workers and increases financial resilience. The SN model builds community leadership and ownership for FSW initiatives sustainably. The SN will be replicated in other districts with opportunities for strengthening linkages to HIV services explored.

## TUPED446

Is it possible to recruit and retain participants in the Human Papilloma Virus (HPV) Cohort study among key populations? Challenges, and lessons learnt, in Nairobi Kenya

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**Background:** SWOP (Sex Workers Outreach Program) clinics offer services to key populations within Nairobi County. HPV-associated cervical cancer is a major cause of global morbidity and mortality. HPV is now vaccine-preventable but a large number of men and women with HPV may not benefit from the existing vaccines.

Therefore, therapeutic options for HPV management are needed but they are not currently available. In trying to understand how we can fast-track the development of an HPV therapeutic vaccine, we are going to look into some issues affecting recruitment and retention of participants into a prospective cohort.

**Description:** We invited key populations enrolled in SWOP Clinics, aged ≥18-45, willing to give informed consent, complete a questionnaire, donate required biological

samples, healthy but tested positive for HPV at screening, willing to be tested for HPV clearance/ persistence every 2 months for 12 months.

**Lessons learned:** 1968 participants were pre-screened for the study, 1901 met the inclusion criteria and signed the informed consent of which, 701 were enrolled. 670 of the enrolled presented for their month 2 follow-up visits, 609 for month 4, 402 for month 6, 290 for month 8, 11 for month 9, 217 for month 10 and 146 clients had presented for the month 12 follow-up visits. Follow-up is still ongoing.

Challenges experienced included some participants getting pregnant and hence taking a break, participants withdrawing from the study when they felt that the samples were too much every two months, and HPV has no cure.

Others included a frequent change of phone numbers, not honoring appointments, fear of or stigma associated with cervical cancer screening and cryotherapy, fear of results just in case they have HPV or something that could advance to cancer, participants relocating from the study area, and political tension.

Despite the many challenges, mitigation measures included offering psychological support, initiating visit reminders earlier, physical tracing, biweekly meetings with community champions, continuous health education, and engaging a cervical cancer survivor to support sensitization activities.

**Conclusions/Next steps:** Our retention rate seems great despite the challenges experienced. Meaningful community engagement is crucial in the recruitment and retention of participants in a vaccine trial among key populations.

## TUPED447

High rates of discrimination among young Black transgender men and non-binary persons in Brazil: results from the Conectad@s Study

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**Background:** Intersectional discrimination based on race, class, gender, and sexual orientation profoundly impacts the lives of young Brazilians, and is associated with elevated HIV risk. The political identities of young sexual and gender minorities (SGM) are shaped by these intersecting factors, resulting in distinct challenges related to health access, and social visibility. This complex interplay of factors creates significant barriers, impacting the well-being and quality of life of SGM.



We assessed factors associated with discrimination among young (18–24 years) cis/trans men and nonbinary people assigned male sex at birth who have sex with men (YMSM).

**Methods:** We analyzed baseline data from the Conectad@s study, which recruited 409 YMSM through respondent-driven sampling in Rio de Janeiro, Brazil, between November/2021–October/2022.

We used the 18-item Explicit Discrimination Scale [EDS], with scores ranging from 0–54. EDS was developed in Brazil to measure proximal, medial, and distal experiences of discrimination.

Negative binomial regression models assessed associations of discrimination with gender and race, adjusted by age, sexual orientation, education, and income.

**Results:** Median age was 21 years (IQR:20–23); 91% were cis-man, 7% non-binary, 2% trans-man. Most were Black (42%), than *Pardo* (29%) and White (28%); 60% had £secondary education and 71% monthly income per capita of £USD230.

Overall, mean score of discrimination was 9.1 (SD7.3). Black participants had higher mean discrimination scores (13[SD7.9]) compared to *Pardo* (7.6[SD7.0]) and White (7.1[SD5.3]) ( $p<.001$ ) participants. Trans-man also reported higher discrimination scores (20.2[SD12.0]) than non-binary (14.0[SD9.5]) and cis-man (8.4[SD6.5]) ( $p<.001$ ).

In adjusted models, trans-man and non-binary showed increased odds of discrimination compared to cis-man (estimate 0.79 [SD0.24],  $p<0.001$ , and estimate 0.36[SD0.15],  $0=0.020$ , respectively), and Black participants compared to White (estimate 0.48[SD0.09],  $p<0.001$ ).

**Conclusions:** We found high rates of discrimination experienced by young MSM in Brazil compared to the general population (scores 9.1 vs. 2.3, respectively).

Our results demonstrate high rates of discrimination against young Black trans-man and non-binary persons, reflecting the intricate nature of structural and social inequalities in Brazil.

Systemic racism disproportionately affects Black persons, while trans/non-binary persons face violence/discriminations due to societal homophobia/transphobia. Inclusive policies and social interventions that recognize and address the multiple forms of discrimination against these populations are imperative.

## TUPED448

### Connecting Latinos en Pareja: a couples-based HIV prevention intervention for Latino male couples

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**Background:** While recent HIV diagnosis rates for gay and bisexual Black and white men in the United States have decreased, rates for gay and bisexual Latinx men have increased significantly, hence "The Invisible US Hispanic/Latino HIV Crisis."

New interventions are urgently needed to address the various social and structural conditions—e.g. discrimination, stigma, immigration experience, housing conditions, and marginalization—that create a complex vulnerability to HIV among Latinx men who have sex with men (LMSM).

**Description:** *Connecting Latinos en Parejas (CLP)* is a 3-session online intervention for intimate partners that is grounded in Social Cognitive Theory and a Relationship-Oriented Ecological Framework designed to:

1. Provide information and knowledge to promote accurate risk appraisal;
2. Build social and self-regulatory skills through problem solving, role plays, and other cognitive behavioral strategies;
3. Increase self-efficacy to engage in HIV risk reduction;
4. Increase positive outcome expectancies regarding HIV protection strategies; and,
5. Build enduring social support for HIV protection.

**Lessons learned:** As we scale up to a national study, impactful insights gained include:

1. Ensuring the integration of rigorous designs for adaptation, refinement of intervention, and implementation, focusing on appropriate representation of individuals impacted by or living with HIV;
2. Creating comprehensive assessments addressing specific needs of LMSM couples (e.g., the impact of immigration and discrimination on HIV prevention);
3. The importance of cultural and linguistic considerations when engaging community advisory board (CAB) members and future study participants;
4. Engaging with the CAB to center the diverse perspectives and experiences of gay, Latino men; and,
5. Establishing collaborations with prominent HIV/AIDS service organizations (e.g., Latino Commission on AIDS), amplifying our national reach and sustainability, and,



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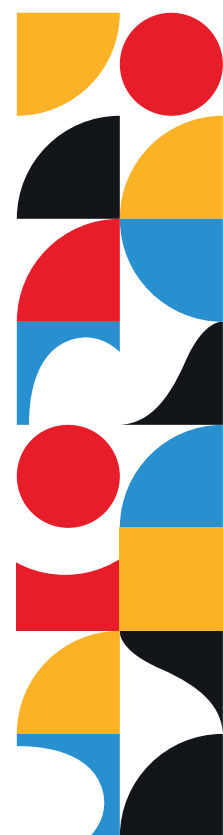
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6. Collaborating with for-profit partners (e.g., Boombox and Build Clinical) who can accelerate and leverage the latest technologies and recruitment strategies.

**Conclusions/Next steps:** The forthcoming full efficacy trial—and other studies with LMSM—will benefit from an emphasis on cultural and linguistic considerations, empowerment of LMSM throughout the spectrum of research activities, and authentic engagement with the CAB and future participants on relevant social and structural conditions to end the HIV disparity and epidemic among LMSM.

## TUPED449

### Sexual health risks and wellbeing among migrants in Latin America: a qualitative study

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**Background:** Migrants encounter numerous problems throughout their journey; however, individuals from the LGBTQ+ community may experience additional challenges. Little is known about LGBTQ+ migrants in transit in Latin America; this study seeks to understand their vulnerability to sexual health risks.

**Methods:** As part of USAID's Prevention Services against HIV project in Central America, 1855 questionnaires were applied among migrants in Honduras, Guatemala and Mexico (2022-2023). Among them, 125 participants identified as LGBTQ+, and a convenient sample, selected based on time availability and willingness-to-participate, was invited for qualitative interviews.

We used a hermeneutic-phenomenological approach to explore participants' health experiences throughout the first stages of migration as proposed by Zimmerman et al.

**Results:** Eight LGBTQ+ migrants were interviewed (four gay men, one bisexual man, three trans women and one trans man).

**Pre-migration:** Participants had endured situations of political, domestic, and sexual violence, often related to their sexual identity, alongside economic challenges that had forced them to migrate. Economic precarity had also pushed some individuals towards involvement in sex work. They shared experiences of depression, anxiety, violence-induced injuries, and, in some cases, an HIV diagnosis (n=4). In certain instances, they reported how their situation had led to suicide attempts.

**Movement:** Participants had confronted food and lodging shortages and violence during their journey. The need to move quickly had often compelled them to endure

health difficulties; those with HIV had carried their medication but had suspended its usage due to a lack of food or theft.

**Arrival:** Participants who arrived in Mexico presented compromised health due to pre-existing conditions and journey challenges while feeling an urgent need to address issues like financial constraints and regularization of immigration status. Mental health symptoms sometimes intensified, and the desperation for economic resources drove some towards sex work. Health services tailored to the LGBTQ+ population were highly appreciated but were perceived as limited, also for those requiring HIV treatment.

**Conclusions:** The journey of LGBTQ+ migrants in Latin America is marked by violence, economic adversity, and mental health struggles, putting their sexual health at risk and making them vulnerable to exploitation. Sexual and mental health services tailored to LGBTQ+ migrants remain insufficient.

## TUPED450

### Sustaining HIV prevention services to stigmatized key populations - a lesson from the east-central region of Uganda before and after the signing of the anti-homosexuality act

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**Background:** Uganda has made significant gains towards HIV epidemic control. However, to maintain the gains made with the dwindling HIV funding, the country has embraced precision prevention which involves reaching the right populations with the right interventions.

Local data aligns with the global picture of 50-70% of new HIV infections being among key populations (KPs). This underscores the need for targeting KPs with effective HIV prevention interventions to accelerate progress.

The East Central region of Uganda has been supporting community structures to offer targeted HIV prevention services to KPs. Among these are KP-led civil society organizations (CSO) and non KP-led CSOs which offer services to all categories of KPs. These are facilitated to reach out to highly stigmatized KPs with person-centered HIV prevention services.

**Description:** At the start of the year 2023, Uganda started debating the revised Anti-homosexuality bill criminalizing promotion of homosexuality. Consequently, stigma against KPs increased, affecting access to and utilization of HIV prevention services.

Amidst such an environment the USAID LPHS-EC project continued offering support to the KP-led and non-KP led CSOs.



Around March 2023, six (6) members of a KP-led CSO were arrested by police and kept in remand for four months. This further increased stigma and all the KP-led CSOs closed shop and stopped offering services. However, the non KP-led CSOs continued providing services to the LGBTQ community throughout the year.



**Lessons learned:** Although engagement of KP-led CSOs improves access to HIV prevention services by the highly stigmatized KPs, their ability to reach the marginalized populations drastically drops during unfavorable legal environments. The non-KP led CSOs continued to provide HIV prevention services during the same stigmatizing environment.

**Conclusions/Next steps:** A mix of KP-led and non-KP led CSOs is recommended in regions/countries with punitive laws. This mix ensures sustainability of HIV prevention services to stigmatized KPs targeted by these legal structures.

## TUPED451

### The role of sensitisation and testing in tackling the gender disparity in HIV in Ghana

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**Background:** Young girls are considered a vulnerable population when it comes to HIV. Out of the 352,927 persons living with HIV (PLWH) in Ghana, 40,497 people are aged 15-24. In 2019, 79% of new HIV infections among young people were females.

In Sub-Saharan Africa, young girls are disproportionately affected because of biological, socio-economic, and gender-associated factors.

Poorer young girls are at a heightened risk because they may have to exchange (often unprotected) sex for money. Inclusive Health for Africa in partnership with Ghana AIDS Commission conceived a project that aimed to pay

greater attention to the specific needs of young girls in order to arm them with the right resources to protect themselves.

**Description:** The project focused on education and voluntary testing of young girls in senior high schools in the Tamale Metropolis, which is located within the poorest part of Ghana, between August and November of 2023. Its objectives were to educate young females aged 15-24 about HIV, its transmission modes, ways of protecting oneself, and resources to seek information or help. There was counselling and voluntary testing, and the required follow-ups were made.

**Lessons learned:** The project reached 1,158 young girls and women. Out of this number, 875 underwent testing, and 18 were referred for follow-up. Engagements were held with the participants, and it was discovered that issues such as period poverty, gender-based violence, ignorance, and peer pressure were some of the factors that prevented the girls who were sexually active from protecting themselves. A hotline was provided to them so that they could reach out concerning any SRHR issues they faced.

**Conclusions/Next steps:** Of every 3 people that are living with HIV, 2 of them are female. This is alarming on many different levels, and part of the problem is the lack of information some of these young people possess.

Addressing issues of poverty in deprived regions such as the Northern Region might give more power to young ladies, but it is also vital that they are given the right resources to protect themselves and be protected against stigma if they live with the disease.

## TUPED452

### Socio-demographic and behavioral patterns associated with HIV positivity among incarcerated population shows the importance of customized service provisions in prisons: results from Plan India's Prison intervention in 13 Indian states

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**Background:** Though estimated national adult prevalence remained low in India 0.20% (0.17-0.25%) in 2022, the observed HIV prevalence among inmates in central jails remained very high. 1.93% (95% CI: 1.75-2.12). Complementing Govt. of India's effort to end AIDS by 2030, Plan India is implementing Prison and Other Close Settings (OCS) intervention in 13 priority Indian states through an integrated HIV prevention project funded by The Global Fund.

**Description:** Plan India in collaboration with state and central Govt., has introduced an Integrated HIV prevention service along with STI, Hep-B, Hep-C and TB for the incarcerated population in 357 prisons and 218 Other Closed Settings since September, 22 with a focus to undertriads.



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The project targeted to:

- A. Mapping all the prison and OCS in project states,
- B. Based on the HIV testing service availability customize service package,
- C. Capacitate Prison Peer Volunteers (PPVs) among prison inmates towards sustainability.

Project data for the period of September, 22 to September, 23 has been analyzed using SPSS-26.

**Lessons learned:** Out of the total received HIV testing ( $n = 320,825$ ), 87% remained undertrial inmates during the period of September, 22 to September, 23. Total 1,479 inmates identified as HIV positive while positivity varied widely within the project states 0.44% (0.1-4.97). 60% of the total registered inmates comes with an injecting drug use background. HIV positivity remained significantly higher among PWID compared to other (OR=2.761; CI: 1.935 – 3.939) inmates, and even higher with those using Pharmaceutical drug (OR=9.989; CI: 4.723 – 21.125) when compared to non-Pharmaceutical drug users. HIV positivity remained higher among the illiterate and primary educated inmates (OR=1.607; CI: 1.156 – 2.236) compared to inmates educated with higher education. Inmates identified as Self-employed showed higher positivity (OR=1.580; CI: 1.141 – 2.187), compared to rest groups.

**Conclusions/Next steps:** The result suggests that HIV positivity varies along the socio demographic and behavioral profile of inmates in the prison. While Plan India's Prison intervention has paved the pathways to expand and saturate the incarcerated population with integrated HIV and other priority screening services; it suggests the importance of customized service package for the incarcerated population based on the specific need associated with the client's profile.

## TUPED453

### A qualitative study to understand migrant men's use of HIV services in Johannesburg, South Africa

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**Background:** Johannesburg, South Africa is a major destination for men coming from within (internal migrants) and outside (international migrants) the country. Migrant

men face challenges across the HIV care continuum. We used qualitative methods to explore factors influencing migrant men's use of HIV prevention and care services.

**Methods:** From March to May 2023, we recruited 29 migrant men  $\geq 18$  years old in community sites in Johannesburg (workplaces, public parks) for in-depth qualitative interviews, and 12 healthcare providers who care for migrants for two focus groups.

We purposively sampled 9 international migrants and 9 men living with HIV. Semi-structured guides explored factors influencing HIV prevention and care for migrant men. Interviews and focus groups were recorded, transcribed, and, if necessary, translated to English from isiZulu, Sesotho or isiXhosa. We used inductive and deductive thematic analysis to generate codes and identify themes.

**Results:** Migrant men participants had a median age of 34 (range 22-56). Our data revealed barriers to HIV care related to masculinity (e.g., perceived stigma toward men in clinics, masculine social norms discouraging care seeking), barriers related to migrant status (e.g., perceived stigma toward foreigners in clinics, language barriers, unfamiliarity with local services, documentation required for services), and barriers compounded for migrant men (frequent travel needs, opportunity costs of seeking care, lack of resources).

Healthcare providers also identified challenges in providing care to migrants, including resource constraints and provider burnout.

We ultimately identified nine HIV service characteristics important to migrant men, including:

1. Spoken and
2. Written service languages,
3. The need to report and
4. Provide documentation of migrant status,
5. The friendliness of providers,
6. The ease of inter-clinic mobility,
7. The frequency of medication collection,
8. The ability to have someone else collect medications on one's behalf, and;
9. Peer support.

**Conclusions:** Initiatives to increase migrant men's use of HIV services must account for barriers to care relating to masculinity and migration status, as well as provide resources and support to healthcare providers.

These data will inform attributes for a discrete choice experiment to elicit user preferences for the design of HIV services for migrant men.

## TUPED454

### Beyond Borders: lessons learned and best practices in addressing human rights barriers for illegal immigrant sex workers - Insights from WAPCAS human rights Global Fund GC6 intervention 2021-2023 in Ghana

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**Background:** Illegal immigrant sex workers (IISW) in Ghana face compounded challenges, including discrimination, limited access to healthcare, gender-based violence and legal vulnerabilities, intensifying their risks for HIV/AIDS. IISW are nationals of other West African countries who usually do not need visa to enter Ghana but have overstayed the legal period without visas.

This abstract explores the lessons learned and best practices from WAPCAS in addressing human rights barriers among this marginalized population in Ghana.

**Description:** The WAPCAS program provided HIV and other human rights-related services to sex workers across 53 districts of Ghana. The program extended its reach to IISW who faced unique challenges. Experienced Peer Educators, trained as Peer Paralegals, offered legal literacy education to these IISW. Additionally, they provided legal support in cases where the sex workers experienced gender-based violence (GBV) or police abuses.

The project, in collaboration with pro bono lawyers and Legal Aid Officers, organized various empowerment activities, including community engagement and community dialogues. These initiatives aimed to address the legal needs and challenges faced by sex workers. Furthermore, concerted efforts were made to assist the IISW in regularizing their stay in Ghana legally. The program worked towards creating a comprehensive support system, combining legal education, advocacy, and practical assistance to enhance the well-being and rights of sex workers in the targeted districts.

**Lessons learned:** There was a positive shift in awareness, access to healthcare, and a reduction in instances of discrimination among IISW. The success of the intervention is attributed to community-led strategies, collaborative partnerships, and nuanced advocacy efforts targeting legal and policy reforms.

It was also observed that integrating comprehensive healthcare services, including sexual and reproductive health, mental health, and substance abuse support, is crucial in addressing the diverse needs of IISW.

Empowering sex workers with knowledge on their rights and legal literacy enhances their resilience against human rights violations.

**Conclusions/Next steps:** The insights from WAPCAS' intervention provide valuable guidance for organizations and policymakers working to address human rights barriers among IISW. By understanding the nuanced dynamics of this population, interventions can be tailored to effectively enhance their rights, well-being, and access to essential services.

## TUPED455

### The Aya Circle of care: creating a sustainable model for a primary healthcare HIV clinic for African Caribbean and Black (ACB) communities in Toronto, Canada

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**Background:** The Greater Toronto Area (GTA) is the epicenter of the African, Caribbean, Black (ACB) HIV epidemic in Canada. The GTA alone accounted for 60% of the HIV diagnoses among ACB people. Despite this, we have limited access to culturally and racially effective HIV primary healthcare services to improve health and well-being and reduce HIV acquisition.

Within this context, the Aya Circle of Care program located at TAIBU Community Health Centre has been created as the first intensive HIV case management primary healthcare program for ACB communities in Canada.

**Methods:** Our objective is to understand the necessary core components required for implementing an intensive HIV case management program within a primary healthcare clinic for ACB community members. We conducted a descriptive qualitative study using face-to-face semi-structured key informant interviews (N=20) with policymakers, researchers, service providers, and healthcare providers with expertise in HIV and ACB communities. A majority of the informants identified as living with HIV (55%). Data was analyzed using conventional content analysis.

**Results:** Informants proposed key themes for the foundation of the program. The program should centralize the social determinants of health and address health disparities experienced by ACB populations. The program should develop effective pathways to increase the timeliness of linking to primary healthcare, retention in care, adher-



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ence to treatment and maintaining viral suppression. The program should be geographically focused, grounded in Africentric principles, and focus on navigating the effects of structural anti-Black racism. Services should be led by Black providers within Black-focused organizations, address HIV stigma, provide services for family units and support those at risk for HIV.

**Conclusions:** The Aya Circle of Care is positioned for success in its development as the first primary healthcare clinic for ACB community members living with HIV in Canada. Locating these services within an existing primary healthcare clinic that serves ACB communities ensures intensive HIV case management services are supported and surrounded by an environment of trust, expertise and accessibility.

Access to intensive case management and primary healthcare services that are comprehensive and culturally, and racially appropriate is crucial for improving health and well-being among ACB communities living in the Canadian context.

## TUPED457

### Factors influencing sexualized drug use during condomless anal sex among Brazilian transgender women

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**Background:** The prevalence of sexualized drug use (SDU) has gained recognition as a significant factor in the HIV epidemic, contributing to a higher risk of intoxication and overdose, especially among vulnerable populations.

We aimed to assess SDU prevalence before/during condomless anal sex and identify its associated factors among Brazilian transgender women (TGW).

**Methods:** We analyzed baseline data from Transcendendo, an ongoing, clinic-based cohort of TGW aged 18 and above in Rio de Janeiro, Brazil. The cohort includes individuals either living with HIV or at risk for HIV. Participants undergo structured interviews and perform laboratory testing annually. Positive depression screening was defined as scores  $\geq 10$  (CES-10, score range: 3-27). SDU was characterized by the use of any substance, including alcohol, before or during condomless anal sex in the prior six months. Multivariate logistic regression (stepwise) was utilized to identify potential associations with SDU (significance level: 5%).

**Results:** Of the 925 TGW enrolled from July 2015 to December 2023, median age was 29 years (IQR: 24-37), 44.1% and 29.6% self-identified as Pardo or Black, respectively, and 54.2% were living with HIV.

Overall, 36% reported condomless anal sex in the prior 6 months, 89.4% exhibited positive depression screening, and 27.8% reported previous suicide attempt. The prevalence of SDU was 12%. Higher odds of SDU were linked with self-identification as Black or Pardo (aOR: 2.31[95%CI: 1.26-4.59]), positive depression screening (aOR: 3.98[95%CI: 1.41-16.68]), and binge drinking (aOR: 2.63[95%CI: 1.69-4.08]). Those living with HIV showed reduced odds of SDU (aOR: 0.58[95%CI: 0.37-0.89]).

Variables	Levels	No condom	Condom	OR (univariable)	OR (multivariable)
Age	<=	50 (21.88)	27 (21.81)	0.87 (0.55-1.39)	-
	>=	294 (89.2)	86 (82.8)	-	-
Over 8 years of education	Yes	331 (87.6)	75 (82.4)	1.16 (0.77-1.76)	-
	No	214 (92.4)	27 (7.4)	-	-
Race	Black/Pardo	586 (85.5)	85 (81.7)	2.00 (1.18-3.34)	2.31 (1.26-4.59)
	Mo	501 (88.0)	88 (82.0)	-	-
Current resource	Yes	302 (87.3)	89 (82.5)	1.05 (0.69-1.57)	-
	No	457 (89.6)	53 (30.4)	-	-
Binge Drinking	Yes	170 (74.4)	52 (23.4)	2.64 (1.73-4.22)	2.63 (1.69-4.08)
	No	31 (24.6)	3 (3.2)	-	-
Depression Screening	Yes	686 (86.7)	105 (13.3)	4.94 (3.73-19.13)	3.98 (1.41-16.68)
	No	594 (89.6)	60 (30.4)	-	-
suicide Attempt	Yes	215 (85.5)	42 (38.5)	1.70 (1.12-2.56)	-
	No	411 (89.0)	51 (31.0)	-	-
suicide ideation	Yes	384 (87.0)	59 (31.0)	1.20 (0.81-1.80)	-
	Negative	342 (89.4)	62 (34.6)	-	-
HIV status	Positive	433 (90.4)	48 (9.6)	0.62 (0.42-0.92)	0.58 (0.37-0.89)

Figure 1. Logistic model for associated factors of sexualized drug use during condomless anal sex among Brazilian transgender women, Brazil.

**Conclusions:** The intricate interactions among demographics factors, mental health issues, and HIV-negative status concerning SDU underscores the complexity of substance use during sexual activity. This accentuates the critical need for comprehensive, multifaceted intervention strategies that are culturally sensitive and specifically designed to address the sexual health needs of TGW. It emphasizes the urgency for targeted harm reduction initiatives.

## TUPED458

### Access to health services by travestis and transgender women living with HIV or at risk for HIV

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**Background:** Travestis and transgender women (TGW) face significant socioeconomic challenges and health vulnerabilities, contributing to elevated rates of HIV infection rates and other sexually transmitted infections (STIs). We aimed to estimate the prevalence of, and factors associated with access to health services among TGW in Brazil.



**Methods:** Transcender is a prospective cohort study on TGW aged 18+ years, either living with HIV (LWH) or at risk for HIV infection.

The study was conducted at a major HIV prevention and care referral center in Rio de Janeiro/Brazil. We analyzed baseline data collected from July 2015 to August 2021. Participants were categorized based on their self-reported HIV status (LWH, negative, or unknown).

Access to health services was evaluated through the question, "Has the participant been evaluated by a health professional in the past 6 months?".

Analysis was performed using generalized binomial linear models, with separate models for LWH participants and those with negative or unknown HIV status. Multivariate models adopted a 5% level of significance ( $p \leq 0.05$ ), and those with a lower Akaike information criterion were elected.

**Results:** Overall, 527 TGW were enrolled, 57.7% of whom self-reported as LWH. Prevalence of accessing health services was 72.7% among LWH and 64.4% among those with negative or unknown serological status.

Factors associated with increased access to health services among HIV-negative/unknown status participants included being 25 years or older ( $aOR: 2.04 [95\%CI: 1.05-3.99]; p=0.036$ ), and awareness of PrEP ( $aOR: 3.49 [95\%CI: 1.83-6.73]; p=0.001$ ). Decreased odds of accessing health services were noted among those reporting unprotected anal sex in the last 6 months ( $aOR: 0.40 [95\%CI: 0.21-0.77]; p=0.006$ ).

Among TGW LWH, those engaging in non-sex work-related activities ( $aOR: 2.34 [95\%CI: 1.20-4.78]; p=0.015$ ) were more likely to access health services, whereas engagement in sex work-related activities was associated with lower access ( $aOR: 0.42 [95\%CI: 0.23-0.76]; p=0.004$ ).

**Conclusions:** The study highlights the intricate interplay between social determinants and health service accessibility among TGW in Brazil. Efforts to disseminate health information outside traditional healthcare settings are essential to reach those currently underserved.

Additionally, implementing flexible service hours may further enhance access to health care for this highly vulnerable population.

## TUPED459

### Assessing the impact of climate disasters on HIV service delivery: lessons from cyclone Freddy in Malawi

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**Background:** In March 2023, Cyclone Freddy hit the southern part of Malawi, the region with the highest HIV burden. The impact was catastrophic, with loss of lives, livelihood, and destruction of the already fragile and vulner-

able health infrastructures. The health system suffered a severe setback, with widespread disruption of health services, limiting the access and uptake of HIV services such as delivery of life-saving antiretroviral drugs.

This study aims at evaluating the impact of cyclone Freddy on the utilization of HIV services.

**Description:** A cross-sectional study deploying the Mann-Whitney test was conducted to evaluate the impact of cyclone Freddy on health service utilization. This non-parametric approach analysed service usage data six months pre- and post-cyclone, focusing on HIV testing, Sexually Transmitted Infection (STI) cases, Antenatal care (ANC) cases, and Alive on anti-retroviral (ART) services using Malawi's routine program data from 7 health facilities and 4 most affected districts.

**Lessons learned:** The study found no significant change in HIV testing and ART services ( $p = 0.716$  for both), indicating stability post-cyclone. In contrast, STI services showed significant disruption ( $p = 0.029$ ), and ANC services exhibited a marginally significant decline ( $p = 0.064$ ), underscoring the cyclone's varied impact on healthcare services

Service	Pre_Mean	Pre_SD	Post_Mean	Post_SD	Z	P_Value
Total HIV Tests	117.39	232.40	110.21	201.22	0.36	0.7161
Total STI Clients	19.99	57.85	11.49	30.35	2.19	0.0286
ANC Attendance	25.69	51.90	17.91	41.21	1.85	0.0642
Alive on ART	157.64	603.30	177.90	595.29	-0.36	0.7160

**Conclusions/Next steps:** With the widespread destruction of healthcare infrastructure and disruption of Health Services, we anticipated a significant impact on the HIV program. However, the study found that while HIV testing and Antiretroviral therapy (ART) services remained stable post-cyclone, STI and Antenatal service uptake declined significantly.

These findings demonstrate the resilience and adaptability of the HIV program to disaster; and underscores the differentiated level of adaptability of the various health intervention to climate crises.





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## TUPED460

Using culture-centered, sex-positive qualitative formative research to design a PrEP campaign for Black gay, bisexual, queer, same gender-loving, and other men who have sex with men

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**Background:** Disparities in HIV incidence, pre-exposure prophylaxis (PrEP) uptake, and interventions designed for Black gay, bisexual, queer, same gender-loving, and other men who have sex with men (Black SGL/MSM) suggest the need to develop stigma reducing PrEP social marketing initiatives that support engagement in the HIV status-neutral care continuum.

**Methods:** To inform the development of a community-level PrEP campaign as part of a larger study focused on improving PEP/PrEP use and HIV self-testing, we conducted four focus group discussions with Black SGL/MSM (n=20) residing in New York City from February to June 2023.

The focus groups inquired about individuals' articulation of sexuality and race, experiences with HIV preventions methods including PrEP, attitudes and awareness of past HIV prevention campaigns, the suitability of messaging, and the utilization of social marketing channels for distribution to inform the development stigma reducing PrEP campaign.

The data analysis procedure employed the grounded theory approach to identify emerging themes.

**Results:** Analysis of the qualitative data revealed how racialization processes intersect with sexuality to inform sexual decision-making including engagement in the HIV care continuum. Most participants demonstrated knowledge of PrEP and expressed a willingness to utilize. However, they also encountered barriers that were influenced by the overlapping inequalities related to race, sexuality, and socioeconomic status. They were consistently subjected to pop-up adverts on applications and billboards that operationalized "culture" by tailoring surface features of health messages.

Participants expressed that the messages would benefit from including further details regarding PrEP administration preference, PrEP efficacy, and supplementary educational resources to improve their credibility and relevance. The participants expressed a preference for using a va-

riety of images that promote a positive attitude towards Black men and sexuality with a focus on Black SGL/MSM-centered messaging to reduce stigma. Recommendations for campaign dissemination combined multiple modalities that included highlighting individual stories, building relationships with community members, and engagement on social media platforms.

**Conclusions:** The findings highlight the potential of culture-centered, sex positive PrEP marketing to address different levels of stigma encountered by Black SGL/MSM. Understanding the sociocultural context for sexuality beyond HIV among Black SGL/MSM is crucial for developing effective PrEP messaging with a sex-positive lens.

## TUPED461

Accelerating HIV prevention through KP-led community-based PrEP intervention: what to do and how to do it right in a rural setting

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**Background:** In Liberia, the HIV epidemic is driven by key populations (KPs) and at-risk individuals, facing challenges in accessing services, particularly oral pre-exposure prophylaxis (PrEP). The Global Reach II Project in Nimba County targets KPs—sex workers, men who have sex with men, people who inject drugs, and transgender. To overcome persistent barriers, the project introduces community-based oral PrEP, emphasizing joint prevention, resource availability, and heightened HIV case finding.

**Description:** Advocacy efforts engaged the National AIDS Control Program (NACP), community gatekeepers, and Civil Society Organizations, establishing a multi-stakeholder group and locally adapted roadmap. Key populations were linked to KP-friendly health facilities through community-based organizations, ensuring coordinated demand creation and safe service delivery. A monitoring team ensured quality assurance, conducting regular visits, while peer-to-peer community-based services provided invaluable support. Quarterly Technical Working Group meetings facilitated experience collation and discussions on program improvement approaches. This targeted initiative addresses specific challenges KPs face, enhancing overall HIV prevention.

From June 15 to September 30, 2023, 1092 clients were screened for oral PrEP. 1065 were eligible, and 559 started PrEP (373 daily, 186 event-driven). 27 were ineligible (2.5%



HIV positive), linked to treatment. 58 had acute HIV infection. 479 eligible clients couldn't start PrEP due to commodity shortages. 343 clients returned for refills (61.3%) with zero Sero-conversion.

#### Lessons learned: Effective Strategies for KPs on PrEP:

Peer-led approach: Recruit Peer Educators based on KP type and location.

Community-based approach: Engage existing structures and individuals as allies.

PrEP champions and Hotspots engagement.

Supply Chain Management.

Learning Exchange with Sierra Leone.

#### Guidance for Future HIV Programs:

Prioritize KP-led grassroots organizations.

Ensure educated, empowered KP Peer Educators.

Strategize PEs' assignments, and set weekly targets.

Implement flexible Data Management.

Collaborate with existing community and health structures.

**Conclusions/Next steps:** Successful advocacy and stakeholder engagement facilitated the implementation of PrEP services, addressing HIV prevention in rural Liberia. The initiative not only prevented HIV transmission but also identified new cases.

## TUPED462

### Mobility, sex work, and intersectional HIV vulnerabilities: qualitative insights from Venezuelan migrants in Lima, Peru

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**Background:** Latin America is facing its largest recorded mass migration with over 7.4 million displaced Venezuelans. Lima, Peru, hosts the largest Venezuelan population outside Venezuela. Venezuelan migrants who engage in sex work (VSW) face unique HIV needs, yet this population remains understudied.

**Methods:** From April 2023-December 2023, we conducted in-depth interviews with 69 VSM who engage in sex work, reside in Lima, Peru, and are: cisgender men who identified as gay, bisexual and other men who have sex with men (GBMSM), cisgender women (CW), or transgender women (TW).

Interview guide queried: migration and sex-work related vulnerabilities (e.g., informal labor structure, violence, precarity, documentation), HIV prevention and care

needs, and relocation strategies (e.g., resource sharing, connectedness). Analyses included inductive and iterative processes.

**Results:** Among 69 participants, median age was 31 years, 20% self-identified as a transgender woman, 49% as a cisgender woman, and 31% a cisgender man. Intersectional HIV vulnerabilities were described across three axes:

1. Mobility patterns: Routes of migration and frequency, targeted violence;
2. Labor conditions: descriptions of physical (e.g., streets, brothels) and virtual spaces (whatsapp, Facebook), security, and client factors (alcohol, drugs);
3. Access to health services: Economic, knowledge, and legal barriers heightened by intersectional stigmas (xenophobia, transphobia, and sex-work discrimination). Increased violence (repressive policing), substance use, and high-risk sexual behaviors were described with street-based versus online client recruitment. CW and TW frequently described street/venue-based sex work and increased precarious labor (limited client negotiations and increased xenophobia). For CW discussions of HIV prevention and care frequently included description of reproductive health needs.

**Conclusions:** VSW described intersecting forms of socio-structural disadvantage that negatively impact their health—precarious employment, xenophobia and material deprivation— and heighten known HIV vulnerabilities. HIV prevention and treatment guidelines and interventions in Peru are needed to mitigate HIV vulnerability among migrant sex workers, including keen attention to the relationship between gender, sex, sexuality, and gender identity, intersecting stigmas, and ongoing social and health inequities.



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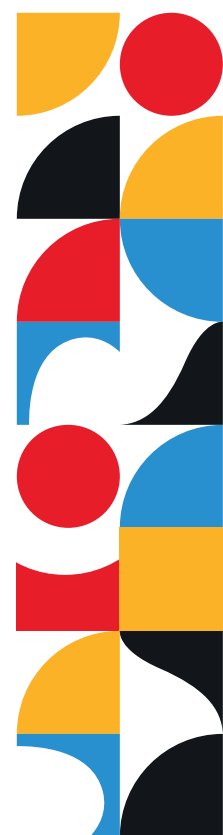
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## TUPED463

Is perceived provider sex approval associated with HIV and STI testing uptake among adolescents? The effects of sexual and gender minority status

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**Background:** In the United States, adolescents and young adults (AYAs) are disproportionately impacted by HIV/AIDS. Despite the significance of HIV and STI testing in curbing transmission rates, testing among AYAs remains suboptimal.

Although perceived stigma and provider mistrust are barriers to testing, the influence that perceived provider approval of sexual behaviors has on HIV and STI testing among AYAs, particularly among sexual/gender minorities, is not well understood.

**Methods:** This study analyzed baseline data from two randomized controlled trials focusing on HIV/AIDS prevention in AYAs. A total of 150 participants, averaging 19.27 years of age (SD=1.82, range=13-21), were recruited from a youth-centric health clinic in Southeast Michigan.

Among them, 42.7% identified as sexual or gender minorities, and 45% identified as non-Hispanic White, 39.6% African American, 10.1% multiple race/ethnicity, and 3.4% Hispanic or Latino.

Additionally, 71.1% identified as female, 14.1% male, 8.1% trans male, and 2% trans female. Data were analyzed using logistic regression analysis in SPSS 28.0.1.0.

**Results:** Descriptive statistics revealed that 70.5% and 74.7% of participants had undergone lifetime HIV and STI testing, respectively. Perceived provider approval ranged from 1 to 5 (1 = youth perceives provider strongly disapproves of having sex, 5 = youth perceives provider strongly approves of having sex), with a mean score of 3.39 (SD=0.80). Logistic regression analysis showed a one-unit increase in perceived provider approval of sex was associated with increased odds of lifetime HIV testing (OR=2.42, 95%CI [1.27, 4.58], p=.007) and STI testing (OR = 2.39, 95% CI [1.26 to 4.54], p=.008) for heterosexual youth, but not for sexual/gender minorities.

**Conclusions:** Study findings highlight significant effects of sexual/gender minority status on the relationship between perceived provider sexual behavior approval and

HIV and STI testing. Specifically for heterosexual AYAs, this perception notably influences their testing behaviors. These findings demonstrate the complex dynamics of provider-client interactions and their impact on sexual health behaviors in diverse AYA populations. Findings have implications for provider training interventions.

## TUPED464

Sexual risk behavior among people living with HIV not virally suppressed in Lesotho

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**Background:** As more people living with HIV (PLHIV) take antiretrovirals (ARVs), new HIV acquisitions may increasingly stem from PLHIV who are on ARVs but not virally suppressed or unaware of their status. We compared sexual behaviors among PLHIV on ARVs who are virally suppressed and unsuppressed, as well as PLHIV unaware of their status in Lesotho.

**Methods:** We used data from the Lesotho Population-based HIV Impact Assessment, a population-based, nationally representative HIV survey conducted from December 2019 to March 2020.

Among the 15,349 respondents, 3,686 PLHIV were included in the analysis and divided into three groups: PLHIV who were virally suppressed (PLHIV-VS), PLHIV who were not virally suppressed but aware of their status during the survey (PLHIV-nVS), and PLHIV who were not virally suppressed because they were unaware of their status during the survey (PLHIV-unaware).

All analyses were weighted to account for complex survey design.

**Results:** Overall, 81 percent of PLHIV were virally suppressed (N=3,039), 9.5% were PLHIV-nVS (N= 332) and 9.5% were PLHIV-unaware (N= 315). Fifteen percent of PLHIV-VS had two or more sexual partners outside the household in the past 12 months, compared to 20% PLHIV-nVS and 22% of PLHIV-unaware (Figure 1).

Among PLHIV-VS, 70% used a condom with a non-marital partner in the past 12 months, PLHIV-nVS 65% and PLHIV-unaware 52%. Among those 25-34 years old, 68% of PLHIV-VS used a condom with a non-marital partner in the last 12 months, 59% PLHIV-nVS and 39% of PLHIV-unaware. Condom use with a non-marital partner did not differ by group among those ages 15-24 and 34-44.



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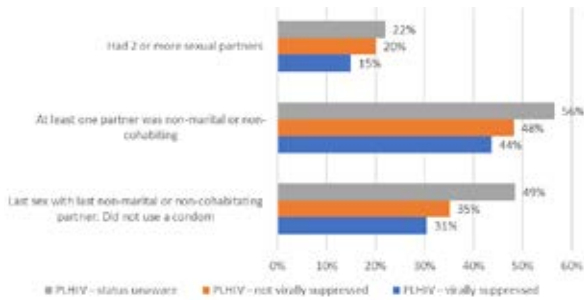


Figure. Sexual risk behavior in the past 12 months among PLHIV in Lesotho by viral load suppression and status awareness.

**Conclusions:** In Lesotho, PLHIV-nVS exhibit high risk behaviors compared to PLHIV-VS, calling urgency to enhancing prevention with PLHIV, especially those nVS. Those unaware of their status exhibit highest risk behavior. Wide-ranging prevention and testing strategies are needed to prevent and rapidly identify incident HIV acquisition.

## TUPED465

Mitigating the effects of gender-based violence on the HIV clinical cascade: a literature-informed framework to inform interventions

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**Background:** Gender-based violence (GBV), including intimate partner violence and sexual violence, is negatively associated with each component of the HIV clinical cascade (i.e., testing, treatment, and viral load suppression [VLS]). Understanding how GBV intersects with these components can help inform interventions. We sought to develop a framework that examined the relationship between GBV and these components and assess inclusion of those relationships within GBV-HIV interventions to inform future efforts.

**Methods:** First, we conducted literature reviews (1) to identify associations between GBV and HIV clinical cascade components, including mediators and moderators collapsed into themes, and (2) to assess which associations have been included in recent GBV-HIV interventions. We searched publications between 2017-2022 using terms including "violence", "HIV testing", "HIV care", and "interventions." Non-HIV interventions were excluded. Then, we developed a framework that (1) illustrates complex pathways between GBV and each HIV cascade component and (2) mapped interventions to cascade components, mediators, and moderators addressed (Figure).

**Results:** From 1,665 unique publications, we identified

52 studies that provided evidence on relationships between GBV and HIV (n= 46) or were interventions (n=6). Pathways were identified between GBV and all cascade components, and numerous mediators and moderators. Although interventions mapped to each component and mediators (health behaviors and effects, alcohol/substance use, mental health, internalized stigma, compounding trauma), coverage varied (testing = 3, treatment = 5, VLS = 2) or aspects not included (e.g., moderators of time on treatment and food insecurity; pathway between alcohol/substance use and testing).

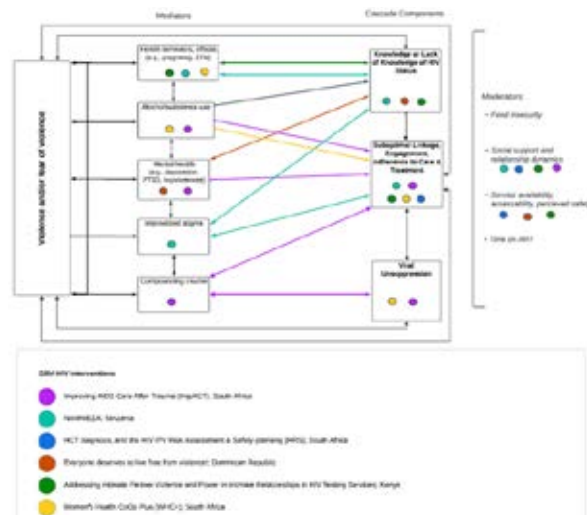


Figure 1. Mitigating the effects of gender-based violence on the HIV clinical cascade: A literature informed framework to inform interventions.

**Conclusions:** Despite the documented association between GBV and HIV, there are limited published interventions mitigating GBV effects on the HIV clinical cascade. Our framework illustrates numerous and complex GBV-HIV pathways that serve as barriers to ending HIV as a public health threat. Expansion of GBV interventions that support a person-centered approach may positively impact the entire HIV cascade.

## TUPED466

Enhancing visibility and shifting perspectives: lessons from the 'we are alike' TikTok campaign for trans communities in the HIV/AIDS context

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**Background:** The 'We Are Alike' TikTok campaign, initiated by trans people in the EECA region, received support and implementation from the ECOM, addressed the heightened vulnerability of trans people to HIV/AIDS. In the context of the EECA region, trans communities were notably absent from targeted prevention programs. The campaign aimed to bridge this gap by increasing visibility and fostering positive attitudes towards trans individuals.



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**Description:** Launched in 2023, the second wave of campaign exclusively featured content created by trans people, sharing personal experiences and insights. Targeting cisgender women aged 18-35, the primary goal was to transform neutral or uninformed attitudes into positive ones. The TikTok campaign became a pivotal platform for communication, with 20 curated videos engaging users in a meaningful discourse.

**Lessons learned:** The campaign's unprecedented success included 5 million views and 3.2 million unique users. The TikTok platform facilitated over 14,000 comments, creating a space for dialogue. Lessons learned include the effectiveness of user-generated content in challenging stereotypes and the importance of ongoing engagement in changing perceptions. The campaign not only increased visibility but also initiated constructive conversations, establishing itself as a valuable resource for information dissemination.

**Conclusions/Next steps:** The findings underscore the significance of utilizing social media for advocacy and awareness in HIV/AIDS prevention, particularly for marginalized communities. The campaign's success in challenging perceptions and fostering dialogue highlights its potential as a model for future initiatives. Moving forward, sustaining the TikTok platform as an ongoing space for interaction is crucial for continued impact. The 'We Are Alike' campaign sets a precedent for leveraging social media in the broader context of public health campaigns, emphasizing the importance of user-driven narratives in promoting inclusivity and understanding.

## TUPED467

Predictors of adolescent fatherhood in Kenya: a retrospective study using the Kenya demographic health surveys

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**Background:** Sexual debut in adolescence presents new challenges and risks of pregnancy and STIs and is associated with the highest HIV risk burden among all age groups globally. While adolescent pregnancy and motherhood have been heavily explored, there remains a critical gap in understanding the circumstances and risk factors for adolescent fatherhood, especially in the context of African countries where the burden of adolescent HIV infection is highest.

**Methods:** This study utilized an observational cross-sectional analysis using deidentified data from the 2022 Kenya Demographic Surveys (KDHS) to identify the predictors of early fatherhood among Kenyan males. Participants were included in this analysis if they self-identified as male, had a biological child by the time they were 24 years old, and were 25 years old or younger at the time of the survey.

The study employed descriptive, bivariate, and multivariate analyses to explore the trends and patterns of adolescent fatherhood, with specific responsiveness to demographic, knowledge, behavior, and household structure domains.

**Results:** The prevalence of adolescent fatherhood in the KDHS sample was 3%, of which 7.5% reported living with HIV. Adolescent fathers (n=439) mostly commonly lived in rural settings (63%), had primary (36%) or secondary (45%) education and held manual labor jobs (45%). Bivariate analysis show a statistically significant relationship between adolescent fatherhood and experiences of emotional (p=0.03) and physical violence (p<0.00) and living with or being married to your sexual partner (p<0.00). Multinomial logistic regression revealed that adolescent fathers were more likely to have good contraception knowledge (OR=1.89, p=0.058), to have three or more lifetime sexual partners (OR=2.52, p=0.008), and to have previously tested for HIV (OR=3.4, p<0.00); they were less likely to have a female head of household (OR=0.46, p=0.034) or to have used a condom during their last sexual encounter (OR=0.32, p<0.00).

**Conclusions:** These findings emphasize the importance of providing comprehensive services that are tailored to the needs of young people, especially in terms of integrating HIV and other sexual and reproductive health care for this vulnerable population.

## TUPED468

Sexual behaviors and vulnerability to HIV among adolescent girls and young women in Cameroon

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**Background:** Adolescent girls and young women (AGYW) are one of the population groups most affected by HIV in Cameroon, emphasizing the necessity for context-specific and targeted preventive strategies. Therefore, this study aimed to assess sexual behaviors and their social determinants among AGYW in Cameroon.

**Methods:** A cross-sectional study was conducted among 637 AGYW in Yaounde, Cameroon, from February through June 2023. An online survey was utilized to collect AGYW's sexual behaviors and vulnerability to HIV as well as their history of sexually transmitted infection (STI) diagnosis,


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HIV testing history, and awareness of pre-exposure prophylaxis (PrEP). Data were analyzed using R software, employing descriptive statistics and logistic regression.

**Results:** The mean age of participants was 22 ( $\pm 3$ ) years, of whom 84.9% had received secondary education or above and 6% identified as sexual minorities, such as bisexual and lesbian. Among the 637 AGYW surveyed, 25.3% reported the likelihood of having condomless sex with multiple partners in the next 12 months, 43.8% reported the likelihood of condomless sex with someone of unknown HIV status, and 22.4% reported the likelihood of condomless sex with someone known to be HIV positive but with unknown treatment status.

Additionally, the percentages of participants who reported having been diagnosed with the following STIs within the past six months were: chlamydia (15.7%), gonorrhoea (3.3%), syphilis (5.7%), hepatitis B (15.9%) and hepatitis C (8.2%). Furthermore, 32.8% of AGYW reported having tested for HIV within the past 12 months and 19% had heard of PrEP.

Vulnerability to HIV was more likely among AGYW who identified as bisexual or lesbian ( $aOR=2.04$ , 95% CI=1.05–3.98), those with primary or no education ( $aOR=1.87$ , 95% CI=1.08–2.65) and those who were employed ( $aOR=1.63$ , 95% CI=1.09–2.42).

**Conclusions:** The study findings highlight the vulnerability of AGYW to HIV in Cameroon. There is a critical need to initiate sexual education and innovative interventions focusing on promoting condom use and PrEP uptake among AGYW, particularly among sexual minorities and individuals with lower education.

## TUPED469

### Male sex workers: a neglected community in HIV intervention programs

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**Background:** India's national HIV response has not adequately included Male Sex Workers (MSW) as a key population requiring special attention. The HIV burden among these sex worker groups is increasing, and the COVID-19 pandemic has possibly increased their vulnerability. MSWs are extremely diverse populations across India, there is little research and understanding available about their way of working, social environment, and mental wellbeing, including their HIV vulnerability and livelihood challenges.

The learnings are gathered from evidence from an innovative virtual HIV intervention project in India - 'NETREACH', implemented by The Humsafar Trust, Mumbai.

**Description:** MSWs offer sex to most men and women, regardless of their sexual orientation. Because of their involvement with both men and women, they are at higher risk. Also, when comparing the inclusion of FSWs in the HIV

response programs, MSWs are not adequately represented. Understanding their needs is essential at a policy level to assess health, especially Sexual health and social welfare-related services. Project NETREACH functions in virtual spaces such as Dating Apps, Social media groups, and WhatsApp groups. Over 500 MSWs have been reached across India and were provided with HIV-related information which motivated them to access HIV-related services.

#### Lessons learned:

- Sex workers in India continue to be a marginalized group and are subjected to stigma and discrimination, which acts as a barrier to accessing health care services.
- Through a specialized targeted approach, we have been able to connect with the MSW's operation in online spaces.
- It is important to work around the issues of mental health and self-acceptance so that the intervention can be strengthened.

**Conclusions/Next steps:** The current National program should be strengthened to incorporate the specific needs of the Male sex worker community.

## TUPED470

### "Adolescents will always be adolescents": nurses' experiences of adolescent engagement in HIV healthcare in South Africa

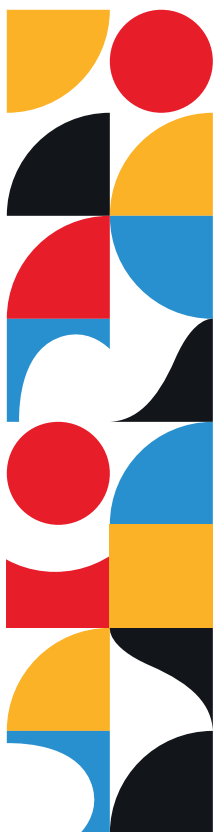
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**Background:** Nurses' interactions with adolescents and young people (AYP) can shape their health behaviours, including their willingness to access and engage with HIV and sexual and reproductive (SRH) health services. There has been little research from low- and middle-income contexts exploring nurses' firsthand perspectives regarding their relationships with AYP in this setting.

This study focused on the perspectives, experiences, and strategies of nurses working with AYP in government health facilities of the Eastern Cape province of South Africa.

**Methods:** Semi-structured interviews were conducted with n=20 nurses (16 women, 4 men) providing HIV and SRH-related services to AYP based at public health fa-







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cilities in urban, peri-urban, and rural areas in a health district of the Eastern Cape. Interviews took place in mid-2022 and data were analysed using an inductive thematic approach.

**Results:** While many nurses described the challenges of AYP in an empathic way and expressed a desire to engage with them productively, they found it "difficult to break through [to] them".

Nurses linked this difficulty to the shame that AYP feel when discussing HIV concerns, noting that the "stigma [is] still there", but also to AYP having "attitude", being "impatient", and "not listening".

Nurses also expressed gendered views on adolescent boys' and girls' engagement with HIV-related services, expressing that "boys are shells" and avoid coming to the clinic, while girls will come to the clinic but "don't listen".

Findings highlight that while nurses care about providing quality services to AYP, they may be influenced by societal stigma and internal biases that impact their willingness to support AYP within the context of HIV and SRH-related service provision.

**Conclusions:** Nurse-adolescent engagements within HIV and SRH-related healthcare provision are complex. They call for a holistic approach that acknowledges the need to address historically neglected systemic and structural challenges within the health sector, as well as the need to strengthen interpersonal relationships to create a more responsive healthcare environment for AYP.

Findings highlighted several opportunities for improving the delivery of HIV and SRH-related health services. Age and context-specific interventions, confidential service provision, and support programmes for nurses focused on compassionate care are needed.

## TUPED471

Changes in young women's relationships with male partners during the Chak a Chaka economic empowerment project in Western Kenya

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**Background:** Over a 30-month period from 2021-2023, the PATH-led Chak a Chaka program supported 1,225 DREAMS-graduated young women in western Kenya to form savings groups and build financial capability to address structural barriers that increase vulnerability to HIV among young women, while concurrently facilitating health education and services.

**Description:** The program conducted 5 focus group discussions (FGDs) among 60 young women participants to understand the program's impact on participants' relationships with male partners, gender-based violence (GBV), health self-efficacy in relationships, and perceived roles in their relationships as related to their gender.

**Lessons learned:** FGD participants highlighted positive changes in their relationships with male partners and increased gender equity as their financial independence increased. Prior to Chak a Chaka, many participants noted being shut out of household decision-making.

As their personal financial power grew, many reported openly sharing their finances, joint expense planning, and making financial and other household decisions with their partners. Most FGD participants said quarrels with male partners had decreased. Women with partners said that with increased financial independence, they could speak up about male partner behavior that they found unacceptable.

One participant shared: "Once a man realizes you depend on him on everything, he can come back home anytime he wants. I have a voice to stop this behavior of coming home late and this is because he respects me."

Single women or women with multiple partners no longer had to engage with multiple sexual partners to obtain money or lines of credit, and could be more selective with men whom they were romantically/sexually involved with.

Through Chak a Chaka health sessions, participants also learned about negotiating pre-exposure prophylaxis (PrEP) and condom use in relationships and gained accurate information about previously held misconceptions, such as not being able to use PrEP as a married couple.

**Conclusions/Next steps:** Increased financial independence enabled more autonomy and decision-making power in relationships among young women, and the ability to negotiate for safer sex practices, including PrEP and condom use, monogamy, and less transactional sex. Economic empowerment initiatives among adolescents and young women can contribute to positive dynamics in relationships that can combat HIV transmission.

## TUPED472

Evaluating change in sexual behaviors and characteristics among adolescent girls and young women receiving peer-delivered pre-exposure prophylaxis and other sexual health services in Kisumu, Kenya

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**Background:** Adolescent girls and young women (AGYW) contributed about 27% of new HIV acquisition in Kenya in 2021. Understanding their sexual behaviors and characteristics is important for developing strategies to reduce HIV transmission and promote their sexual health. We

assessed change in sexual behaviors and characteristics among AGYW receiving community-based, peer-delivered PrEP and other sexual health services.

**Methods:** AGYW aged 16-24 who initiated PrEP in two public clinics in Kisumu Kenya were offered peer-delivery of PrEP refills, testing for sexually transmitted diseases, and contraceptive options. Participants completed surveys at baseline and Month 6, assessing their demographic and sexual behavioral characteristics. We compared these factors by paired t-tests.

**Results:** Seventy-five AGYW participated with a median age of 21.6 years (IQR 20.7, 23.1) and a median year of completed education of 12 (IQR 12, 14). The majority were students (55% [41/75]) and had moderate or severe depression symptoms (56% [42/75]). Comparing baseline to Month 6, decreases were seen in the following behaviors: alcohol use (21% [16/75] vs 8% [6/71],  $p=0.03$ ), transactional sex (64% [48/75] vs 18% [13/71],  $p<0.001$ ), partners of unknown HIV status (76% [57/75] vs 27% [19/71],  $p<0.001$ ), median number of sexual partners IQR (2(1,3) vs 1(1,2),  $p<0.001$ ). There was no significant change in proportion of contraceptive users ([25/71]36% vs [33/71] 46%,  $p=0.1701$ ) and in condom use with both main and casual partners ( $p=0.89$ ) and ( $p=0.20$ ) respectively.

Factors	Baseline	Month 6	p-value
N	75	71	
Number of sex partners, median (IQR)	2.0 (1.0, 3.0)	1.0 (1.0, 2.0)	<b>&lt;0.001</b>
Casual partner, median (IQR)	1.0 (0.0, 2.0)	0.0 (0.0, 1.0)	<b>&lt;0.001</b>
Sexual partners of unknown HIV status	57(76%)	19(26%)	<b>&lt;0.001</b>
Contraceptive use	25(33%)	33(46%)	<b>0.1701</b>
Alcohol use	16 (21%)	6 (8%)	<b>0.030</b>
Transactional sex	48 (64%)	13 (18%)	<b>&lt;0.001</b>
<b>Condom use with main partner</b>			<b>0.89</b>
All the time	6 (11%)	5 (11%)	
Not at all	27 (51%)	22 (47%)	
Sometimes	20 (38%)	20 (43%)	
<b>Condom use with casual partners</b>			<b>0.20</b>
All the time	6 (18%)	6 (29%)	
Not at all	10 (29%)	2 (10%)	
Sometimes	18 (53%)	13 (62%)	

Table 1. Sexual behaviours and characteristics at baseline and month 6.

**Conclusions:** These findings indicate that the delivery model has the potential to positively impact the sexual behaviors and characteristics among AGYW and can be used in promoting safer choices among this demographic, ultimately contributing to improved overall health outcomes. Future studies should explore the long-term impact of the model and whether it may have broader health benefits to optimize its effectiveness while also assessing if the positive effects are sustainable.

## TUPED473

### Sex work, drug use, and HIV among adolescent girls in fishing communities: intersectionality and social determinants

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**Background:** Adolescent girls aged 15 to 19 who engage in sex work and drug use in the fishing communities of the Western region, Ghana, face multiple and intersecting forms of vulnerability that increase their risk of HIV infection. Poverty, migration, violence, stigma, and lack of access to health and social services are some of the factors that shape their lives and health outcomes.

This study explores the nexus between sex work and drug use adolescent girls aged 15 to 19 in the fishing communities of the Western region, Ghana.

**Methods:** This study used a qualitative approach informed by the theories of intersectionality and the social determinants of health to explore the nexus between sex work and drug use among adolescent girls in the fishing communities of Ghana.

The study employed purposive sampling to select four fishing communities with a high prevalence of sex work and drug use among adolescent girls. Data were collected from 10 gatekeepers and from 13 adolescent girls through in-depth interviews. The data were analyzed using thematic content analysis with NVivo 12 software.

**Results:** The study found that adolescent girls started sex work around the age of 13, influenced by peer pressure and poverty. Drug use was prevalent, with participants transitioning from cigarettes and alcohol to harder drugs like marijuana and opioids. Drug use often led to risky sexual behaviors and hindered their ability to negotiate safe sex practices, including condom use.

**Conclusions:** This abstract explores how sex work and drug use affect the vulnerability to HIV among adolescent girls in the fishing communities of Ghana. Using qualitative methods and the theories of intersectionality and the social determinants of health, the study finds that adolescent girls face multiple and intersecting forms of vulnerability, such as poverty, migration, violence, stigma, and lack of access to health and social services.

The study recommends targeted interventions for adolescent girls within an intersectoral approach involving the Ministry of Gender, Children, and Social Protection and the National AIDS response. The paper also suggests more research on this topic in different settings and contexts.



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## Sexualities and sexual cultures: Meanings, identities, norms and communities

### TUPED474

'This is not really Filipino terminology': who are  
men who have sex with men in the Philippines?

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**Background:** The HIV epidemic in the Philippines has been  
expanding over the last fifteen years, and men who have  
sex with men (MSM) account for most new diagnoses.  
Globally, use of the term MSM has intended to be more  
inclusive, shift the focus to sexual behaviour, be less cul-  
turally defined, and incorporate men who do not identify  
with any sexual category in relation to their sexual activi-  
ties but have sex with men. Yet, the term has also avoided  
engaging with diverse local understandings of and terms  
for sex between men.

While contentions with the term are not new, this current  
epidemiological moment in the Philippines necessitates  
revisiting conceptualisations of MSM, examining how this  
epidemiological category has been deployed, interpret-  
ed and used to produce knowledge about the HIV epi-  
demic.

**Methods:** Research was conducted in Manila, the Philip-  
pines, from July 2018 to April 2019. Twenty key-informant  
interviews with healthcare workers, researchers and pol-  
icymakers were conducted, alongside three focus group  
discussions with seventeen participants from communi-  
ty-based HIV organisations.

These explored understandings of:

1. Those whom participants regarded as vulnerable to  
HIV;
2. The social contexts that influence HIV transmission; and
3. How these have influenced who is targeted for health  
promotion and policy.

**Results:** Risk category terms such as MSM were argued  
to be 'not really Filipino terminology', and participants in  
this study still reported discomfort with its use. MSM was  
adopted by some as an identity; however, the term was  
actively rejected by others.

Often the use of the term included trans women and  
others assigned male at birth. Some participants viewed  
MSM as a single homogeneous risk group, an imagined  
community of 'discreet' men, or an unknowable popula-  
tion dispersed in the general population.

**Conclusions:** The ways in which the term MSM was used  
were varied and imprecise, impacting on who was under-  
stood to be vulnerable to HIV, and how health promotion

was targeted. While this imprecision created confusion,  
there was also value in 'targeting' MSM in a variety of  
ways to reach a population that is diverse in its vulnera-  
bilities, and acknowledge the different social contexts in  
which MSM pursue sex and manage risk.

### TUPED475

Strategic implementation of proactive  
interventions for enhancing HIV screening  
utilizing Oral Fluid Testing (OFT) kits among  
substance-using female sex workers in Yala  
Province, Thailand

N. Kanerat<sup>1</sup>

<sup>1</sup>APASS Thailand, Sathorn, Thailand

**Background:** The APASS team's engagement with drug  
users in the three southern border provinces revealed a  
significant gap in HIV testing among female sex workers  
who use drugs. The intersection of drug use and sex work  
poses dual risks, compounded by a lack of awareness re-  
garding government service limitations and pervasive  
stigmas. These challenges deter service utilization and  
contribute to societal and community discrimination,  
particularly in the predominantly Thai and Muslim popu-  
lation of the southern border area.

This study aims to extract valuable insights from the im-  
plementation of HIV testing and harm reduction strat-  
egies among female sex workers engaged in drug use  
within the three southern border provinces of Thailand.

**Description:** Since 2021, APASS Thailand has been deliver-  
ing mobile clinic services through a collaborative effort  
between government and non-governmental organiza-  
tions. The service management model includes health  
examinations and the provision of HIV screening using  
Oral Fluid Testing (OFT) Ash IV test kits at the workplace or  
designated appointments.

This approach ensures flexibility for service personnel, ad-  
dressing concerns related to service times and providing  
preliminary screening and psychological counseling for  
interested individuals.

**Lessons learned:** Between 2021 and 2023, APASS success-  
fully reached 346 female sex workers, with 92.77% (321 in-  
dividuals) undergoing HIV screening using the OFT test kit.  
Of these, 0.62% (2 individuals) exhibited a reaction and  
were promptly referred for treatment. Both cases were  
confirmed as HIV-positive, leading to referrals for antiret-  
roviral medication and continuous follow-up. All 346 cases  
received ongoing support, including information on harm  
reduction, HIV prevention, and mental health counseling.

#### Conclusions/Next steps:

The proactive provision of mobile clinics for HIV screen-  
ing, employing OFT test kits, has proven instrumental in  
overcoming barriers faced by female sex workers who use  
drugs. By creating a safe and friendly environment, free  
from stigma and discrimination, this approach ensures



consistent, timely, and lifestyle-compatible services. The comprehensive support, including peer-to-peer services, distribution of protective equipment, and continuous follow-up, constitutes an important and effective strategy tailored to the specific needs of women engaged in substance use.

## TUPED476

### Emerging virtual sexual networks and implications for implementation of online HIV prevention interventions: a qualitative study among transgender women in India

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**Background:** Few studies from India have investigated how virtual platforms are used by key populations, especially transgender women (TGW), for socialization and finding partners. These virtual networks can be potential platform for introducing HIV prevention interventions as current interventions are based on traditional physical outreach.

We aimed to understand the nature, characteristics and dynamics of emerging virtual sexual networks.

**Methods:** We conducted a qualitative study between January and June 2023 among TGW in three metropolitan cities in India: Chennai, Mumbai and Delhi. Twelve focus group discussions (FGDs) and 12 in-depth interviews (IDIs) among TGW and 6 key informant interviews (KIs) were conducted among community agency leaders and project managers.

A purposive sample of TGW (e.g., sex workers, those who use both physical and virtual platforms, those who exclusively use virtual platforms) were recruited through partner agencies and peers.

Transgender women's familiarity with and access to and use of digital networking spaces and associated risk and protective behaviors were explored. Thematic analysis was conducted.

**Results:** The mean age of FGD and IDI participants (n=96) was 26 years (D 4.8) and 8% reported as living with HIV. The self-identifications included: transgender women-39% and other ethnic identities (*Thirunangai*-31%, *Hijra*-26% and *Kinnar*-4%).

More than 90% of participants used virtual platforms for sexual networking and received money for having sex. Virtual platforms such as dating apps (Grindr, Blued,

etc.) and Facebook were used, especially by the younger and techno-savvy TGW, to reach paying partners during COVID-19 pandemic as offline clients decreased. Reported advantages of virtual platforms were: confidentiality, client screening/filtering and better payment negotiation and advanced payment.

However, virtual platforms posed risks as well: for example, sextortion and verbal harassment. Further, certain TGW (middle/upper socioeconomic status) use only online platforms and lack access to traditional physical outreach-based HIV interventions. TGW found the idea of introducing smartphone-based online HIV prevention interventions through WhatsApp and short videos as appealing and feasible.

**Conclusions:** HIV prevention interventions among TGW should be extended to online platforms, potentially through smartphones, and tailored to the specific needs of the diversity among TGW in terms of sex work engagement, age group, tech savviness and literacy level.

## TUPED477

### The voice within: engaging guardian riders to challenge harmful gender practices, norms and sexual violence among boda boda riders in Siaya county, Kenya

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**Background:** Sexual and gender-based violence (SGBV) continues to adversely affect women in their diversities. Motorcycles (*Boda bodas*) have emerged as the preferred transport option especially in the rural areas owing to their lower fares and ability to access narrow routes.

However, their exponential increase in numbers has had associated social effects including SGBV. Various study respondents have grossly cited male *boda boda* riders among perpetrators of SGBV in their local communities. CMMB operationalized working with champion *boda boda* riders (guardian riders) to influence attitudes and practices of their colleagues.

**Description:** The guardian rider initiative aimed to change the narrative about *boda boda* riders and SGBV by placing them at the center of advocacy efforts against SGBV. Twelve guardian riders (11 male, 1 female) from 12 local bases were selected based on a structured criteria including being of good conduct, an official of their base and being part of the base disciplinary committee. They underwent training on HIV, human rights and the law, gender-based violence (GBV), and reporting mechanisms. Thereafter, they were to advocate against harmful gender norms including those exacerbating SGBV. They were to report SGBV cases perpetrated by their colleagues and were incorporated into the local violence prevention and response teams. Similarly, they facilitated transport for SGBV survivors to access post violence care services.



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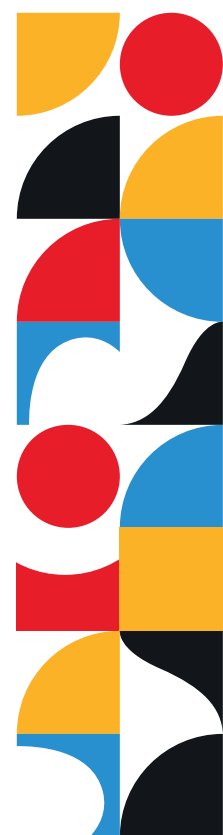
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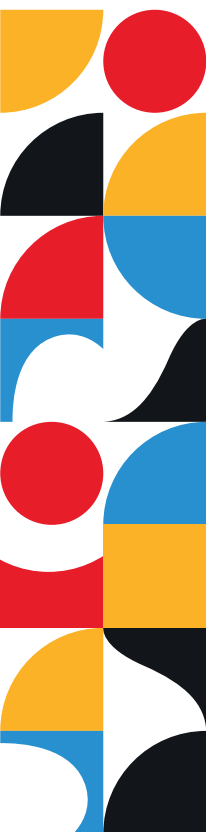
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**Lessons learned:** For nine months, the 12 guardian riders organized for a sensitization session for their base mates of about 15 - 20 members per base on various aspects of HIV and GBV and the law. They linked their bases to community paralegals to aid in follow up and reporting of GBV cases and reported three defilement cases by their members. The alleged perpetrators were excommunicated from the bases and their particulars shared with other bases. The base members cooperated with the police in tracking of their colleague perpetrators who disappeared to evade arrest. The base disciplinary committees assisted the survivors to report the matters to the police.

**Conclusions/Next steps:** The guardian rider's initiative is a catalytic inward looking industry solution to enhance self-regulation among *boda boda* riders on harmful gender norms and practices including SGBV committed by their members.



## Implementation science and scale up of HIV testing

### TUPEE478

Enforcing non-discriminatory codes by  
HIV/STI prevention service provider  
organizations contributes to HIV/STI service  
uptake by Trans, Gender Non-conforming,  
WSW and MSM living with HIV In Uganda:  
a midterm report 2018-2023

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**Background:** The Anti-Homosexuality Act, 2023 (AHA), prohibits aiding and abetting Transgender (TG), Gender-Non Conforming (GNC), Women-who-have-sex-with-women (WSW) and Men-who-have-sex-with-men (MSM) living with HIV and the newly infected in seeking care. Longitudinal HIV sero-conversion and viral suppression studies integrating STI prevention led by institutions enforcing non discrimination promote heterogeneity among health seekers and CBOs enhancing bonding, providing strategic wellness pedagogy, social-economic transformative opportunities catalyze participation in the uptake of HIV/STI services. AHA disrupts early ART initiation. Yet, early ART initiation contributes to breaking the progression and transmission of HIV; reduced morbidity and mortality. Our study examined the benefits of allies in navigating the restrictive anti-gay socio-cultural-politico-legal contexts in Uganda; factors associated with joining Viable CBOs; early ART initiation targeting TG, GNC, WSW and MSM with HIV in Central and Southern Uganda. This mixed cross-sectional study involved 600 adults living with HIV between March 2018-November 2023.

**Methods:** Qualitative and quantitative data were collected using interviewer-administered questionnaires and desk reviews using a data extraction tool. A binary logistic

regression using a hierarchical modelling technique was used at the multivariable level to determine associations at a 95% confidence interval and  $p < 0.05$  using SPSS Statistics software version 23.0.

Overall, 600 participants were enrolled in the study but only 573 remained because they met the criteria of proximity within Masaka Sub-region. The other 27 were attached to another arm of the study in Acholi Sub-region.

**Results:** There is an association between being part of the Viable Support CBOs, linkage to care, early ART initiation, adherence and keeping HIV clinic appointments. The results revealed similar outcomes:

Membership to support groups ( $aOR = 10.85$ , 95% CI: 3.04–32.08); linkage to the HIV clinic the same day HIV test was conducted ( $aOR = 10.85$ , 95% CI: 3.04–32.08); early ART initiation ( $aOR = 10.82$ , 95% CI: 3.04–32.08); adherence to HIV clinic appointments ( $aOR = 10.72$ , 95% CI: 3.04–32.08).

**Conclusions:** Early ART initiation, motivation to engage in the HIVAIDS programming and scaling up same-day ART initiation policy contribute to better outcomes.

Systems, structures and organizations enforcing non-discriminatory codes countering social-cultural barriers contribute to uptake of HIV/STI services.

### TUPEE479

Peer-to-Peer key population-led organizational  
capacity building to scale differentiated HIV  
service delivery in Asia

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**Background:** HIV biomedical or behavioral innovations are typically introduced by international organizations that provide capacity building. We introduced an alternative by supporting experienced local key-population (KP)-led health service (KPLHS) organizations in Thailand to provide capacity building to organizations on HIV innovations in multiple countries in Asia.

**Description:** Using a continuous quality improvement approach, four organizations in Thailand— the Institute of HIV Research and Innovation (IHRI), MPLUS, Rainbow Sky Association of Thailand (RSAT), and Service Workers in Group Foundation (SWING)— transferred knowledge and skills in innovations related to pre-exposure prophylaxis (PrEP), transgender-competent care, integration of substance use and mental health services, and use of electronic mapping systems to identify hotspots to several organizations throughout Asia.



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**Lessons learned:** Since 2020, this peer-to-peer organizational collaboration across Asia has facilitated HIV service scaling, with more than 1,262 service providers and community health workers capacitated together with multiple measurable outcomes. For example:

1. In Laos, collaborative efforts among IHRI, MPLUS, and organizations in Laos launched PrEP services in 2021, incorporating national guidelines and, importantly, virtual telehealth trainings during the COVID-19 pandemic. MPLUS specifically partnered with CHIs, resulting in targeted online demand generation for PrEP and enrolling 1,197 clients since the launch. Additionally, RSAT supported CHIs to expand its outreach program to key populations engaging in chemsex.

2. SWING collaborated with PEDA in Laos to develop the PEDA Spot electronic mapping tool in FY22, facilitating routine mapping updates and identifying 968 additional female sex workers in 153 hot spots for HIV testing.

3. In Burma, virtual technical assistance during COVID-19 from IHRI to Lan Pya Kyel (LPK) enabled the establishment of two transgender-specific clinics, Ma Baydar and Daisy, through a consultative process with the transgender community to design their own services.

These clinics now conduct HIV testing for more than 2,000 transgender women annually.

**Conclusions/Next steps:** South-to-south collaboration among Asian KPLHS organizations and other implementers can efficiently boost HIV innovation scale-up in culturally and socially similar countries. This approach enables both provider and recipient organizations to collaboratively identify shared barriers and issues, devise solutions and key strategies, and continuously engage to monitor quality and scale-up.

## TUPEE480

Improving access to ANC and PMTCT services in Osun State, Southwest Nigeria: the community PMTCT approach

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**Background:** Vertical transmission is almost completely preventable through the prevention of mother-to-child transmission (PMTCT). According to UNAIDS, 26.9% of all cases of MTCT of HIV in the world happen in Nigeria. Antenatal Care (ANC) and PMTCT coverage in Osun State is 27% and 26%, respectively.

Unfriendly attitudes of some healthcare workers, user fees, long waiting times, and cultural and religious beliefs are some barriers to accessing ANC services at orthodox hospitals. APIN Public Health Initiatives implemented the community PMTCT (cPMTCT) program to reach pregnant women wherever they choose.

**Description:** We assessed 40 potential community sites for service readiness to provide cPMTCT based on human resources, physical facilities, equipment, clientele, and services provided. They were categorized into three: CAT 1 is Traditional Birth Attendants (TBAs) manned by healthcare workers;

CAT 2 is TBAs manned by non-healthcare workers; and CAT 3 is Faith-Based Organizations (FBO).

Ten sites from the assessment in five local government areas were selected for the first phase of activation, made up of 4 CAT-1 and 6 CAT-2.

Using the hub-and-spoke model, we supported PMTCT services, including ANC and referral (linkage) services. We trained the TBAs and engaged roving nurses, HTS providers, and monitoring and evaluation officers. Commodities flow from the hubs to the spokes through the pull system. Data reporting is done through the National Data Repository Lite (NDR Lite), a national reporting platform similar to the NDR.

**Lessons learned:** A total of 8,978 pregnant women were reached through the cPMTCT between October 2021 and September 2022; 8,971 were tested for HIV, and 23 positives were identified. Sixteen are newly diagnosed, while seven were previously known. There was 100% linkage to antiretroviral therapy (ART). These contributed 49.8% of the new ANC attendees who knew their HIV status (PMTCT\_STAT) and 7% of the diagnosed HIV-positive pregnant women who commenced ART (PMTCT\_ART) achievements in Osun State.

**Conclusions/Next steps:** cPMTCT is a tool to improve access to and coverage of ANC and PMTCT. Good documentation will help monitor progress and inform planning. We recommend that the Federal Ministry of Health and state ministries consider adopting and scaling up this model of service provision.

## TUPEE481

Peer cyber-educators-led social media platforms strengthen case finding and ART initiation among Haitian migrants and individuals of Haitian descent in the Dominican Republic

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**Background:** The Dominican Republic's national strategy aims to reach Haitian migrants and individuals of Haitian descent — defined as priority population (PP) members — with HIV services. Currently, 76% of PP living with HIV know their serological status and 54% are on treatment (PEPFAR COP21), far from the UNAIDS 95 goals. The HIV Services and System Strengthening (HS3) project and the Enhanced



HIV Services for Epidemic Control (EHSEC) project, funded by the U.S. President's Emergency Plan for AIDS Relief (PEPFAR) through the United States Agency for International Development (USAID), offers HIV testing and treatment services to PP.

**Description:** Between October 2019 and September 2021, HS3 identified 4,399 PP living with HIV, with 5% case finding and 83% treatment initiation. Hence, HS3 consulted with PP to design innovative strategies to increase case finding and treatment initiation. Social media was selected to strengthen PP engagement in HIV services, which resulted in training and engaging 13 peer cyber educators (PCE) to identify PP through Facebook, Instagram, WhatsApp, and dating applications. Beginning in October 2021, Creole- and Spanish-speaking PCE identified PP on social media through keywords related to the Haitian community. Once the connection was established, PCE used specific messages to engage PP in HIV services, virtually navigated PP to testing sites, and provided treatment initiation support after a counselor offered HIV rapid testing.

**Lessons learned:** We analyzed retrospective clients' records from October 2021 to September 2023 using routinely collected, aggregated program data for PP ages 15 and older who received an HIV test and its result. Overall, the projects tested 78,857 PP, with 6% case finding and 96% treatment initiation. The non-social media strategy reported 6% (4,768/77,571) case finding and 96% (4,586/4,768) treatment initiation; the social media strategy reported 11% (145/1,286) case finding and 99% (144/145) treatment initiation.

**Conclusions/Next steps:** The social media strategy contributed to increasing overall case finding and treatment initiation, and it reported a case finding higher than the non-social media testing strategy.

Our study shows that the engagement of PP through social media strategies is feasible and effective in closing the gap of UNAIDS 95 goals in the Dominican Republic.

## TUPEE482

Improving early infant diagnosis testing coverage with a comprehensive quality improvement strategy in Malawi

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**Background:** The introduction of Option B+ in 2011 revolutionized HIV Prevention of Mother to Child Transmission (PMTCT), with a 7-fold increase in the number of PBFW starting ART per quarter in Malawi. However, a decade later, important challenges remain in PMTCT, including missing testing milestones in early infant diagnosis (EID). Partners in Hope (PIH) is a Malawian non-governmental organization supporting HIV care and treatment with

PEPFAR/USAID funding. During March-September 2022, the rates for EID testing in nine PIH-supported districts were insufficient with 91%, 89% and 82% at 2, 12 and 24 months post-partum milestones respectively.

**Description:** In order to increase testing coverage at EID milestones, PIH developed a comprehensive EID action plan for 9 districts. This was based on lessons from health facility-based EID quality improvement projects in Mulanje and Chikwawa districts that had demonstrated improvements after addressing specific health systems gaps.

The plan included appointment of EID focal persons at each health facility, registration of all newly-born HIV-exposed infants with their testing milestones, pre-appointment phone reminders, weekly review of individual HIV-exposed infant medical charts, advance flagging of scheduled mother-infant pair visits when EID testing is due, community tracing of infants who missed appointment within 48 hours and targeted mentoring by district and central teams.

We describe our experiences and lessons after 12 months of implementation of this intervention.

**Lessons learned:** EID testing improved across all testing milestones, in particular at 12 and 24 months (Figure 1). Frequent chart reviews, assigning a focal person and conducting targeted follow up within 48 hours of identifying children missing appointments were the main factors contributing to improved performance.

**Conclusions/Next steps:** Targeted program-wide initiatives based on lessons learnt from health facility-based quality improvement projects have the potential to improve overall program performance. Implementation of this strategy beyond EID as part of standard practice will provide further benefits.

## TUPEE483

Human centered design during war: case study of the CASI-Plus mHealth tool to optimize HIV index testing in Ukraine

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**Background:** There are approximately 200,000 persons living with HIV (PLWH) in government-controlled territories of Ukraine, of whom only three in four know their HIV status. HIV index testing (HIT) can increase HIV case finding, but barriers include stigma in naming partners and health worker (HW) lack of time to deliver HIT services. CASI-Plus is a mHealth tool with a standardized, non-judg-



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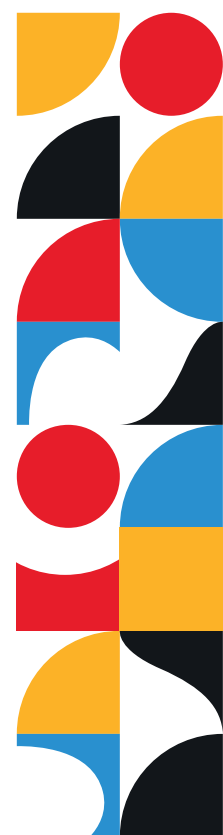
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mental questionnaire through which PLWH clients can learn about HIT and identify partners for partner notification and testing.

**Methods:** This formative mHealth study took place in 2023 in two regions of wartime Ukraine. It included virtual workshops with health workers (HW) and in-person in-depth interviews with clients from vulnerable key population groups. Qualitative human-centered design methods included HIT workflow mapping, discussion of barriers to HIV testing, brainstorming CASI-Plus design features, a features prioritization game, and feedback on the design of the questionnaire and script.

**Results:** Participants included 22 HW in 3 workshops and 10 clients (6 persons who inject drugs and 4 men who have sex with men). Both HW and clients had a favorable perception of CASI-Plus, feeling it would help clients to discuss their partnerships with reduced shame: "Patients are sometimes embarrassed to admit to the doctor how many partners they have... when it's on the tablet, we won't look them in the eye, and maybe they will open up" (HW).

Clients expressed willingness to use CASI-Plus on a tablet within the clinic, and all but one expressed a preference for using CASI-Plus rather than naming partners to a HW. Clients were comfortable with encrypted SMS messaging for on-going communication with HW about partner notification and testing.

HW prioritized features centered on partner elicitation. They expressed concern about using the tool for SMS messaging with clients, additional data entry burden, and physical security of tablet devices. They favored summary displays of information about partners as reported by index clients, and expressed interest in using the summaries for their required data entry into the national HIV data system.

**Conclusions:** Our formative study yielded valuable recommendations from clients and health workers to ensure CASI-Plus is acceptable and feasible to implement in wartime Ukraine.

## TUPEE484

### Lessons learned on implementation of training, support, and mental health services for key populations in Southern, Eastern and Western Provinces of Zambia

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**Background:** Key populations (KP) in Zambia face significant marginalization due to the legal environment and fear of criminalization, which can impact their mental health (MH). The discrimination KPs encounter at health-care facilities leads to fear of, and challenges with, accessing quality and equitable care, including MH services. As part of the comprehensive wellness package, the Community Impact to Reach Key and Underserved Individuals for Treatment and Support (CIRKUIITS) project implemented a MH intervention in KP wellness centers for clients accessing HIV services in three provinces of Zambia.

**Description:** Beginning October 2021, CIRKUIITS implemented the KP Investment Fund model to support KPs in Eastern, Western, and Southern provinces through KP-led initiatives. Between October 2022 and June 2023, we mapped MH nurses, psychologists, and clinicians, to develop a referral directory and network of MH service providers. We conducted technical orientation and trained 61 HIV providers in KP sensitivity, safety, and security, along with . conducting routine MH screenings using standardized tools (PHQ-4 for depression, GAD-7 for anxiety, and CAGE for hazardous alcohol use).

All screening results were documented, and each client was classified based on the score they received- or level of severity - on the screening tools. All KP clients who were identified at the KP safe spaces as requiring additional MH services were referred to trained MH providers at the health facilities.

**Lessons learned:** Overall, 364 KPs were screened for anxiety and/or depression and 236 KPs were screened for hazardous alcohol use. Equipping healthcare workers with skills for routine MH screenings is crucial for successful implementation and referral of KPs to necessary services. Sensitivity trainings for MH service providers foster an inclusive and supportive environment for KPs to access services without discrimination and fear.

Furthermore, establishing a network of MH professionals ensures KPs have access to specialized care, creating a comprehensive support system.



**Conclusions/Next steps:** High-quality mentorship and training for providers on mental health and screening creates a friendly environment to reduce stigma and discrimination.

Collaboration with diverse stakeholders is essential for adapting MH initiatives into local contexts and broadening the positive impact on the health of KPs.

## TUPEE485

### Benefits of assisted partner notification programming in the fight of HIV and AIDS in the informal settlements of Nairobi, Kenya

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**Background:** Several efforts have been put in place to fight HIV and AIDS in Kenya. Several scientific studies have contributed to this fight. Sustainable financing of HIV and AIDS programming has remained a big challenge since a huge amount of money funding HIV and AIDS programs comes from international donors.

Assisted partner notification programming (aPNS) has proved to be not only efficient but also effective in identifying new testers and unknown reactive individuals. The economic and programming benefits are yet to be quantified.

**Description:** In 2023 U-Tena Youth Organization partnered with AHF Kenya to implement the Imarisha Maisha project that was implemented in the informal settlements of Nairobi Kenya. This is a one-year renewable project. Within the Rapid Testing Programme and Rapid result initiatives, assisted partner notification service (aPNS) approaches were used to reach and serve clients. HIV Testing Service providers were placed in six health care facilities where they targeted general outpatients and Antenatal care, clients.

**Lessons learned:** By the end of 2023 U-Tena achieved the following: Tested 17079 clients, identified 400 (2.34%) seropositive clients, and linked 395 (99%) reactive clients to treatment and care. In this project a total of 183 clients were followed through assisted partner notification of which 170 of them were reactive (93%) and were all successfully linked to care and treatment.

Working with the Ministry of Health ensures proper coordination and sustainability, evidence-based intervention that has robust monitoring, evaluation, and learning framework gives a clear picture of the efficiency and effectiveness of HIV programming.

In quest to carry out targeted testing and identification on new reactivities, the Assisted Partner Notification approach boosts HIV prevention and treatment efforts.

**Conclusions/Next steps:** In the era of limited resources, an assisted partner notification system forms an evidence-based (targeted) intervention in the fight of HIV programming and should be embraced within the ethics of fighting HIV and AIDS.

When offered to newly diagnosed HIV reactive client, aPNS, which involves locating and recommending HIV testing to partners of HIV-reactive clients in an ethically safe environment is an effective treatment option in a limited-resourced health care system.

## TUPEE486

### PrEP at your doorstep: revolutionizing HIV prevention for MSM and TGW with courier delivery and a mobile app for seamless access to priority medication

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**Background:** Men who have sex with men (MSM) and transgender women (TGW) are at increased risk of HIV acquisition. Although Pre-exposure prophylaxis (PrEP) is effective to mitigate the disparate HIV burden among these populations, there are factors that hinder the use and uptake of this HIV prevention medication among MSM and TGW.

These factors include stigma, high costs associated with excessive travel costs for individuals, lack of privacy and confidentiality at testing centers discrimination and potentially being "outed" at clinic centers.

**Description:** To mitigate such factors, Aurum in collaboration with Audere and Careworks developed a smartphone mobile application (APP), *Silapha*, which MSM and TGW can use to request their PrEP medication refills. MSM and TGW conduct an HIV-self test in the comfort of their own spaces and upload their test result on the *Silapha* App.

Once the HIV test results have been verified to be negative by the App within seconds, clients are engaged via Careworks for the courier-based delivery of their PrEP to their preferred location. The use of the *Silapha* App resolved the need for clients to present for HTS at clinics, and facilitated their persistence on PrEP.

**Lessons learned:** The integration of an AI-powered self-testing app, telehealth counseling, and a nationwide courier service has revealed that this approach empowers clients, allowing them to take control of their HIV testing and prevention journey with confidence.

By placing a strong emphasis on accessibility, user-friendliness, and client-centricity, the initiative has made significant strides in breaking down barriers to HIV prevention. Guiding clients through the self-testing process and fa-



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cilitating result-sharing with their care team ensures a streamlined and consistent access to PrEP. Moreover, the introduction of AI for result confirmations adds a layer of accuracy, reducing the chances of misinterpretation and enabling continuity of PrEP without clinic visits.

**Conclusions/Next steps:** The commitment to a stigma-free, human-centered app and result delivery system has contributed to increased usability and acceptability, fostering a positive user experience. Looking forward, the potential integration of Large Language Models (LLMs) for counseling services holds promise for further advancements, marking a continuous journey of innovation in HIV prevention strategies.

## TUPEE487

**Increasing access to HIV self-testing and sexual and reproductive health products among adolescent girls and young women by harnessing pro-sociality among drug shopkeepers in Tanzania**

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**Background:** Private drug shops are convenient, one-stop shops for adolescent girls and young women (AGYW) to get HIV and sexual and reproductive health (SRH) services. In Tanzania, shopkeepers' provision of free HIV self-testing (HIVST) to AGYW conferred reputational status as health provider with no direct profit-making. Using behavioral economics insights, we tested a novel intervention harnessing shopkeepers' pro-sociality towards AGYW to encourage their distribution of free HIVST and SRH products.

**Methods:** From July 2022-July 2024, we tested the effectiveness of this intervention by cross-randomizing 158 drug shopkeepers in Shinyanga and Mwanza enrolled in a cluster-randomized trial of an intervention designed to increase the girl-friendliness of drug shops (NCT05357144). Specifically, we gave shopkeepers monthly summary reports of feedback from AGYW customers anonymously collected through post-purchase USSD-based surveys. Reports were designed to stimulate performance by appealing to pro-social motivations for helping AGYW and giving areas for improvement (*Private*). In a subset of shops, we additionally gave publicly displayed certificates of ratings and held awards ceremonies for high performers every 6 months (*Public*). In log-linear models, we examined how *Private* and *Public* feedback each affected monthly shop sales of HIVST and SRH products among AGYW, measured using electronic sales records, relative to shops receiving no feedback.

**Results:** We report preliminary results from 5,502 anonymous AGYW surveys from 103 shops. Shops receiving *Private* feedback did not increase HIVST sales (0.94, 95% CI: 0.79, 1.12), but increased SRH product sales by 50% (95% CI: 1.12, 2.02), notably pregnancy tests (39%, 95% CI: 1.10, 1.77). Shops receiving *Public* feedback did not increase HIVST sales (1.02, 95% CI: 0.86, 1.21), but increased sales to AGYW by 32% (95% CI: 1.03, 1.69), notably oral contraception (2.24, 95% CI: 1.37, 3.66), emergency contraception (1.61, 95% CI: 1.04, 2.50) and condoms (1.49, 95% CI: 1.07, 2.07).

**Conclusions:** Introducing HIVST through drug shops may increase sales of adjacent SRH products when low-cost behavioral interventions are used to harness shopkeepers' pro-sociality towards AGYW.

Future analysis from the entire study period and interviews with shopkeepers will home in on underlying intervention mechanisms to understand how to optimize HIV/ SRH integrated delivery from drug shops.

## TUPEE488

**HIV self-testing as an entry point to HIV status-neutral approach services for transgender women: experiences from real-world implementation at the Tangerine Clinic in Thailand**

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**Background:** HIV self-testing (HIVST) has become available through Thailand's Universal Health Coverage since October 2022 as one key strategy in controlling HIV epidemic. There was limited experience on how to integrate HIVST into existing sexual health services for transgender women.

We described HIVST service uptake and linkages to antiretroviral treatment (ART) or pre-exposure prophylaxis (PrEP) among transgender women clients of the Tangerine Clinic, a transgender-led gender-affirming sexual health clinic in Thailand.

**Methods:** From May 2022-September 2023, HIVST kits were offered to transgender women at the Tangerine Clinic and via Tangerine's telehealth instant-messaging (IM) service. Clinic-based HIVST clients received HIVST kits, pre-test counseling and a demonstration video provided by transgender peer counselors prior to performing self-test at home. Telehealth HIVST clients received HIVST kits via postal delivery. Pre-test counseling, demonstration video and self-administered behavioral risk assessment were provided via IM by transgender peer counselors.


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Test-result follow-up contacts were made at one week after the clients received the kits. Clients had an option to share visual HIVST result with IM administrators for further support and linkage.

Non-reactive testers were offered PrEP via telehealth service.

Reactive testers were offered HIV confirmatory testing and ART initiation at the Tangerine Clinic or referrals to their nearest community-led clinics or registered health facilities.

**Results:** Of 262 transgender women who received HIVST kits (16% clinic-based, 84% telehealth), median (IQR) age was 26 (15-53) years, 35% were HIV first-time testers, 24% engaged in sex work.

Among those receiving kits, 185 (71%) shared their test results and 22/185 (12%) reporting reactive results. Among those with reactive results, 17 (77%) received HIV confirmatory testing and 12 (77%) had HIV infection confirmed. All 12 initiated ART, five within the same day of diagnosis. Median (IQR) CD4 count was 223 (203-330) cells/ul.

Of 163/185 (88%) non-reactive testers, 46/163 (28%) received PrEP via telehealth (80% PrEP initiation, 15% PrEP restart, and 5% PrEP continuation).

**Conclusions:** HIVST is an effective entry point to HIV status-neutral approach services for transgender women. HIVST could facilitate not only new HIV diagnosis and ART initiation but also PrEP uptake, restart, and continuation among transgender women, including those who were HIV first-time testers.

## TUPEE489

Index testing contributes escalating HIV case-finding in AIS project: a successful HIV case finding model in Myanmar

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**Background:** Myanmar is one of 35 fast track priority countries that account for 90% of new HIV transmission globally. In 2022, 270,000 people are estimated to be living with HIV in Myanmar, representing 0.9% prevalence.

The HIV epidemic in Myanmar is concentrated in Key Populations with high positivity rates in people who inject drugs (PWID), men who have sex with men (MSM), female sex workers (FSW) with HIV positive rates of 34.9% (2017), 8.8% (2019) and 8.3% (2019) by IBBS survey data.

Many of the KPs and their partners still have barriers to access HIV testing services due to stigma, discrimination, socio-economic conditions, conflicts and displacement.

To expand the reaching and testing of those people with undiagnosed HIV transmission, USADf funded AIS project implemented the Index Testing and partner notification services in Myanmar in 2021.

**Description:** Index testing is integrated in 29 HIV testing sites of AIS in 4 State and Regions of Myanmar at the end of FY23. The outcome of Index testing is analyzed by its contribution in testing population, positivity rates and case finding in 2-year AIS project implementation.

**Lessons learned:** The overall positivity rate of index testing was significantly higher in index testing (26%) than that of other model case findings (table 1). The contribution of HIV case finding by index testing increases from 8% (314/4124) in FY22 to 17% (822/4775) in FY23.

Testing modality	HIV tests	Positive results	Positive Yield
Voluntary Counseling and testing	57,779	5,492	10%
Provider Initiated testing	4,259	240	6%
Mobile testing	31,609	2,014	6%
Index testing	4,294	1,136	26%
Social Network Strategy	106	7	7%
Others	348	10	3%

Table 1: HIV Test done from October 2021 to September 2023.

**Conclusions/Next steps:** Index testing demonstrated the significant HIV case finding by attaining a high HIV positive yield in AIS project of Myanmar. The index testing is a successful HIV case-finding strategy and should be scaled up nationwide to reach the goal of 95% of people living with HIV are aware of their HIV status in Myanmar.

## TUPEE490

Addressing inequality in access to HIV testing services; and care and treatment of HIV infected patient: a case study of Bayelsa State, Nigeria

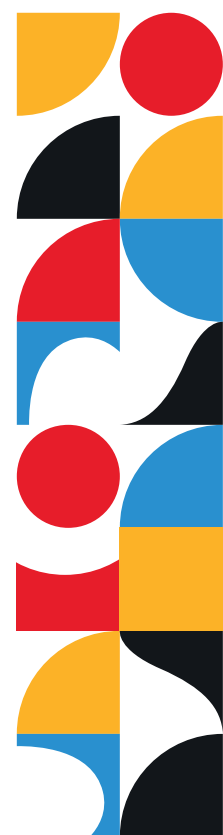
O. Ogungbade<sup>1</sup>, O. Majekodunmi<sup>2</sup>, O. Kalu-Oji<sup>3</sup>, N. Agboola<sup>3</sup>, G. Omubo<sup>4</sup>, A. Ezeadikwa<sup>5</sup>, C. Umeh<sup>2</sup>, O. Chigbundu<sup>3</sup>, B. Ochonye<sup>6</sup>, D. Ogundehin<sup>7</sup>, O. Igboelina<sup>7</sup>, O. Adegbite<sup>3</sup>

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**Background:** Nigeria's HIV prevalence is 1.4% with an estimated HIV burden of 1.9 million people in 2019, the fourth largest globally. Bayelsa State figures are a prevalence of 1.7%, people living with HIV (PLHIV) population of 31840, and antiretroviral therapy (ART) coverage of 18%, with 73% of ART coverage in Yenegoa.







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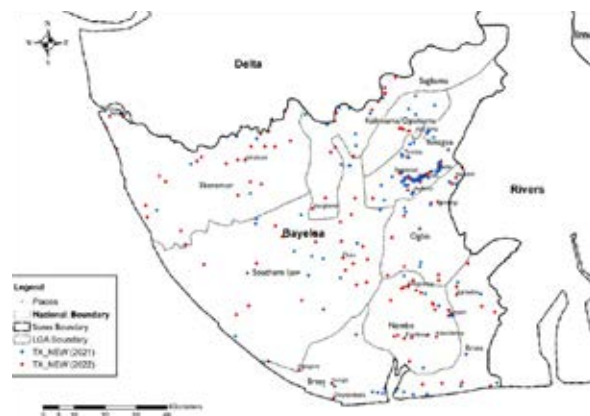
The aim of this study is to showcase the experience in addressing inequality in ART coverage through the US-AID-funded project Accelerating Control of HIV/AIDS Epidemic (ACE) in Nigeria, cluster 6 (ACE 6).

**Methods:** Deploying the effective coverage strategies of program science, a package of interventions was rolled out, including iterative deployment of community testers using prevalence data, daily routine data reporting, and daily situation room meetings. Using Arc GIS and QGIS software, the testing volume, yield, and enrolment spread across Bayelsa State were identified for the period under review.

**Results:** Of the 183,345 clients tested across the state, 2% ( $n = 3958$ ) were diagnosed with HIV and 100% ( $n = 3958$ ) were initiated on ART. A sharp trend of HIV case identification per month from 131 at baseline (January 2022) to a peak of 745 in August 2022 and then declined to 223 in November 2022 as flooding affected activities.

Of the 3958 new cases identified, 2687 (67.8%) were identified outside Yenagoa, and the state's unmet need was reduced from 31,840 to 27,225 (14.4%). All newly infected HIV patients (100%) were linked to ART.

Furthermore, the viral load testing coverage increased from 81% (Baseline Q1, 2022) to 94% (Q2, 2022).



**Conclusions:** Providing ART services in the communities is critical to achieving epidemic control which the ACE 6 project has demonstrated. To fast-track the attainment of UNAIDS 95-95-95 goals, the strategy deployed in this study should be adapted and scaled up in every resource constrain areas.

## TUPEE491

### Leveraging client HIV testing services classifications to identify factors associated with HIV re-diagnosis and antiretroviral treatment interruption in western Kenya

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**Background:** To strengthen provision of differentiated care better tailored to HIV diagnosis and clinical needs of people vulnerable to HIV, the Kenyan Ministry of Health introduced a classification system for HTS outcomes—HIV negative, HIV positive/Re-diagnosis, and HIV positive/ART interruption—with clinicians providing tailored ART initiation, ART re-engagement, and/or HIV prevention packages based on client classification. PATH, through the USAID/Nuru ya Mtoto project, leveraged these HTS classifications to understand the magnitude of and factors associated with HIV re-diagnosis and ART interruption in four counties of western Kenya.

**Methods:** We used an Open Data Kit tool to compile HTS data from October to December 2023 from facility HIV testing registers.

We used Stata 15.1 to analyze data to:

- Compare characteristics of clients newly diagnosed with HIV against those previously diagnosed using descriptive statistics; and,
- Identify factors associated with HIV re-diagnosis and ART interruption/re-engagement using univariable logistic regression.

Data was gathered from 170 facilities across Kisumu, Kakamega, Nyamira and Vihiga counties in western Kenya.

**Results:** Among the 101,353 clients in our analysis, 1,460 (1.4%) received an HIV positive diagnosis. Among the 1,233 (84.5%) with a classified HTS outcome, 65 clients (5.3%) had been previously diagnosed and 36 (55%) were enrolled on ART but subsequently experienced ART interruption. Clients classified as re-diagnosed or interrupted were more likely to be 35 years or older (61.5% vs. 43.6%) and divorced/widowed (27.7% vs. 17.4%) compared to newly diagnosed HIV-positive clients ( $p=.024$ ,  $p=.048$ ). Previous HIV diagnosis was not associated with sex, occupation, and county of residence. Divorced/widowed clients were 2.6 times more likely to be re-diagnosed HIV positive (odds ratio (OR): 2.62; 95% confidence interval (CI): 1.18-5.78). There was a 3% increase in being previously diagnosed HIV positive for every one-year increase in age (OR: 1.03; 95% CI: 1.01-1.05).

**Conclusions:** Our study highlighted marital status and age as key factors associated with HIV diagnosis and ART interruption, with divorced/widowed clients and those 35 years or older at greater risk for re-diagnosis and/or ART interruption. Clinicians should account for these variables in determining provided HIV care to ensure the provision of optimal support packages to strengthen ART enrollment and continuity.

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## TUPEE492

### Piloting interventions to increase uptake of HIV self-testing and linkage to post-services among tertiary education students in Zimbabwe

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**Background:** Young people have poor uptake of HIV testing. To assess feasibility, we piloted two HIV self-testing (HIVST) distribution models among college/university students.

**Methods:** At two colleges/universities, peer-distributors distributed HIVST kits (peer-led distribution); at three colleges/universities students collected kits from campus or nearby clinics/pharmacies (static distribution). HIVST was promoted using posters and e-flyers.

Distribution lasted one-month. Distribution was captured using an online mobile health (mHealth) tool which sent students SMS-invitations to complete online questionnaires about their uptake/experience of self-testing, one-month after distribution.

Audio-diaries and in-depth interviews among distributors, and in-depth interviews among students explored views and experiences of the program. Descriptive analysis was used for survey data, thematic analysis for qualitative studies.

**Results:** From December/2020–December/2021, 1,463 kits were distributed; 1,051 by 16 peer-distributors, 412 kits at static sites. COVID-19 affected HIVST-uptake (Table). Only 131 (8.9%) completed online questionnaires.

Institution type (in order of implementation)	Distribution model	Enrollment	Number of kits distributed (HIVST uptake)
Technical college	Static	110	80 (72.7%)
Teachers' college	Peer-led	700	643 (91.9%)
Polytechnic	Peer-led	1,200	408 (34.0%)
Industrial training college	Static	440	110 (25.0%)
University	Static	1,500	222 (14.8%)

Twenty-three distributors were interviewed (12 female; 16 peer-distributors). Twelve peer-distributors kept audio-diaries (8 female). Twenty students were interviewed (12 female, 8 from sites with peer-distributors).

Distributors and students felt HIVST was novel, private and confidential as well as empowering and user-friendly. Disclosure of HIVST-negative results to distributors and/or peers after testing together, was common. Students were pleased to share their HIV-negative results however distributors thought some felt obligated to disclose. Distributors acknowledged risks of unintended or forced dis-

closure of HIV-positive results following group self-testing. Distributors appreciated being selected though many reported busy schedules. Some felt demand generation worked well; others felt students ignored posters. Students' busy schedules, low risk-perception and doubt about the test's accuracy limited HIVST-uptake.

Peer-distributors kept flexible distribution schedules; for others, distribution was limited to clinic/pharmacy operating hours. The mHealth tool was easy-to-use but affected by poor internet connectivity.

**Conclusions:** Provision of HIVST services using mHealth technology at colleges/universities is feasible, with high uptake achieved before COVID-19. To optimize implementation ahead of a trial comparing the distribution models, we developed an offline distribution tool and improved the design of HIVST promotional materials.

## Implementation science and scale up of prevention

### TUPEE493

#### Bringing PrEP to people living with mental illness: a foundational study to meet the unique needs of a key population for HIV Pre-Exposure Prophylaxis (PrEP) scale-up interventions

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**Background:** People living with mental illness (PLWMI) experience disproportionately high HIV incidence and prevalence, while simultaneously experiencing numerous barriers to care. As such, PLWMI, including those with co-morbid substance use disorder (SUD), are designated as key populations in multiple international HIV prevention strategies. There is an urgent need for research on perceived HIV vulnerability, prevention preferences, and attitudes towards pre-exposure prophylaxis (PrEP) for HIV prevention among PLWMI to understand how best to reduce HIV in this population.

**Methods:** We conducted a mixed-methods study of PLWMI receiving outpatient psychiatric care in Chicago, Illinois, USA. This is one of the U.S. Ending the HIV Epidemic priority jurisdictions due to an excess of new diagnoses.





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PLWMI were eligible for participation if they were sexually active and/or injected drugs, were HIV-negative, and were at least 18 years old. PLWMI were surveyed about their perceived HIV-vulnerability, previous experiences with PrEP, interest in PrEP, and perspectives on integrating PrEP into psychiatric care.

**Results:** Overall, 346 PLWMI participated (47.3% women, 16.8% gender minorities, 57.5% sexual minorities, 49.7% people of color). Regarding diagnosis, 31.8% were diagnosed with a traditionally defined serious mental illness (SMI; e.g., schizophrenia, bipolar disorder, schizoaffective disorder) and 16.8% had at least one SUD. A majority (73.4%) were aware of PrEP and 15.6% had taken PrEP. Of those who had taken PrEP, 38.9% had an SMI diagnosis and 38.9% had an SUD.

For those who indicated interest in taking PrEP (70.0%), 53.4% indicated that daily PrEP dosing was an acceptable modality, 53.2% indicated that LAI PrEP was acceptable, and 38.2% indicated that intermittent dosing was acceptable. Of those who were not interested in PrEP, 66.3% indicated they did not believe they were at high HIV risk. Finally, 48.3% of patients indicated a psychiatrist was an acceptable provider for PrEP prescription including 40.9% of patients with SMI and 53.4% of patients with SUD.

**Conclusions:** In this foundational study, we found that most psychiatric patients were interested in PrEP and that psychiatrists were generally considered acceptable prescribers. Considering the well-documented vulnerability to HIV among PLWMI, integration of PrEP prescription into existing psychiatric care should be pursued.

## TUPEE495

An implementation science approach to understanding determinants of oral HIV pre-exposure prophylaxis use in high-income countries with publicly-funded healthcare systems: a scoping review

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**Background:** Barriers to oral HIV pre-exposure prophylaxis (PrEP) initiation, continuation, and prescribing limit its impact on HIV acquisitions. We aimed to gain a holistic understanding of PrEP-use barriers and facilitators (determinants), to inform effective PrEP implementation.

**Methods:** We searched PubMed, Scopus, and Web of Science for peer-reviewed articles published from Jan 2018-Feb 2023 exploring determinants of PrEP use in high-income countries with publicly-funded public healthcare systems (Australia, New Zealand, Canada, and Western Europe). Determinants were extracted, counted, and categorised into 'initiation' and 'continuation' (consumer determinants), and 'prescribing' (provider determinants). Synthesised category determinants were mapped to adapted Consolidated Framework for Implementation Research (CFIR) domains (outer setting, clinical context, innovation, provider factors, and consumer factors).

**Results:** Of the 127 included articles, most (n=96, 75.6%) focused on men who have sex with men, and healthcare providers (n=22, 17.3%). Disaggregated data from intersecting/marginalised populations (e.g. First Nations, trans and gender diverse, migrants) were limited. Most articles studied 'initiation' determinants (n=91, 71.7%), followed by 'continuation' (n=52, 40.9%) and 'prescribing' (n=16, 12.6%). 118 determinants were identified, reported 562 times (see Figure).

The most frequently reported barriers were cost (n=26, 28.6%), change in perceived risk (n=13, 25.0%), and lack of PrEP knowledge (n=4, 25.0%), for initiation, continuation, and prescribing, respectively. The most frequently reported facilitators were perceived risk of HIV acquisition (n=27, 29.7%), dosing regimen flexibility (n=7, 13.5%), and clinical guidelines (n=5, 31.3%) for initiation, continuation, and prescribing, respectively. Most studies were observational, and did not explore direct links between determinants and implementation or PrEP-use outcomes.



**Conclusions:** Our review identified determinants that PrEP implementers should consider when designing interventions to maximise PrEP use. These determinants may facilitate effective PrEP implementation, however, additional research is needed to assess underlying drivers of outcomes. Future research should also explore determinants affecting PrEP discontinuation and prescribing as well as those affecting intersecting and marginalised populations.

## TUPEE496

### Development and delivery of an online HIV pre-exposure prophylaxis (PrEP) training for community pharmacists for the implementation of pharmacy-based PrEP service in the Klang Valley, Malaysia

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**Background:** Study has shown some key population members in Malaysia prefer to access HIV pre-exposure prophylaxis (PrEP) through pharmacies. We piloted a novel PrEP service delivery via community pharmacies in Malaysia.

In this study, we developed an online self-paced PrEP training program for community pharmacists to equip them with the knowledge required to provide pharmacy-based PrEP service in the Klang Valley, Malaysia; and evaluated the program effectiveness.

**Methods:** In May 2023, a PrEP training committee of 5 experts from professional societies and academia developed an online self-paced training program covering the PrEP fundamentals, including efficacy, safety, eligibility criteria, initial assessment, HIV testing and other baseline tests, prescribing PrEP, and what-if situations; based on current best evidence.

In June 2023, 18 community pharmacists completed the online training via Edpuzzle over 2 weeks. Program effectiveness evaluation was done via pre- and post-training knowledge tests, followed by post-training feedback form. Both tests comprised 20 questions each, with correct answers scoring 5 points and a maximum score of

100 points. The tests were pilot tested with 5 pharmacists and passing mark was determined as 55% based on pre-test median score. Paired t-test was performed to determine the difference between pre- and post-training knowledge scores (significance level of  $p < 0.05$ ).

**Results:** The mean age of the participants was 32 years, with 77.8% females and average 7.9 years of work experience. All participants surpassed the 55% passing mark for post-test. The mean pre- and post-training evaluation scores were 64.72% and 78.89%, respectively. The mean difference was 23.61% ( $p < 0.001$ ). Based on the feedback form, most pharmacists agreed that the training covered the expected content; the content was organized, easy to follow and easy to understand; the duration of training was appropriate; the additional resources were helpful; overall they were satisfied with the training; the training will be useful for their work; and they would recommend to others.

**Conclusions:** The novel approach of using an online self-paced training program to train community pharmacists for PrEP service delivery is an effective tool to increase the community pharmacists' knowledge of PrEP, which can be expanded nationwide to provide greater accessibility to PrEP in Malaysia.

## TUPEE497

### Assessing loss to follow-up among sexual minority men in a mobile health randomized controlled trial in Atlanta, Detroit, and New York City

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**Background:** Loss-to-follow-up (LTFU) is a concern for mobile health (mHealth) interventions, especially those focused on sexual health promotion with online engagement. To the extent that factors associated with vulnerability to HIV are related to LTFU, those at higher risk of acquisition may be less likely to persist with an intervention. The Mobile Messaging for Men (M-cubed) app is an mHealth intervention proven to be efficacious in improving HIV testing and PrEP use in a randomized control trial of sexual minority men.

We sought to analyze LTFU in the trial to better understand how to optimize engagement and health impact during future implementation.



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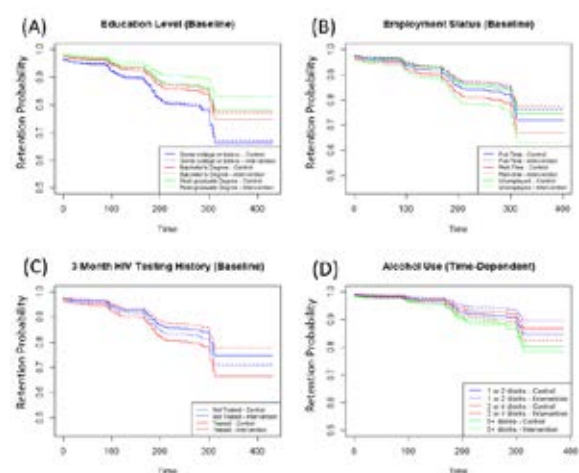
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**Methods:** Data from 1,226 men in the M-Cubed app trial in Atlanta, Detroit, and New York City were analyzed. LTFU was defined as disengagement with the app before the end of the nine-month study. Potential predictors of LTFU included baseline (age, education, employment status, race/ethnicity, testing history) and time-varying (alcohol and drug use, mental health, number of partners) variables. Single- and multivariable Cox regression models were used to assess associations with LTFU and differential LTFU by study arm.

**Results:** Average retention was 251 days (sd = 67 days). LTFU was similar in intervention (17%) and control (18%) arms. Less education, lower income, and greater alcohol use were associated with more LTFU ( $p < 0.05$ ). In multivariable models (Figure 1), education, employment, HIV testing history, and alcohol use were differentially associated with LTFU by study arm ( $p < 0.05$ ).



**Figure 1.** Multivariable Cox regression curves of retention in the M-Cubed app study in Atlanta, Detroit, and New York City. (A) Retention by education level at baseline, showing increasingly higher retention as education level increases and consistently better retention in the intervention arm than the control group. (B) Retention by employment status at baseline, showing that participants who were unemployed in the intervention arm had lower retention in the study than participants who were unemployed in the control group. (C) Retention by 3-month HIV testing history, showing that participants who had not tested in the past 3 months and were assigned to the control group had higher retention than participants who had not tested in the past 3 months and were assigned to the intervention group. (D) Retention by time-varying alcohol use, showing decreasing retention with increasing drinking frequency and that those who typically only had 3-4 drinks in the intervention group had higher retention than other groups.

**Conclusions:** Key variables related to HIV vulnerability were associated with LTFU in the M-Cube app trial, highlighting potential concerns for implementation. Reducing intervention burden and concurrently addressing sexual behavior and substance use may be important areas to improve engagement.

Understanding factors that influence LTFU in mHealth studies can guide implementation strategies and enable us to capitalize on the full potential of mHealth to bridge gaps in HIV prevention.

## TUPEE498

### Early learnings from 2 pilots delivering decentralised HIV services to adolescents and young people (AYP) in Kenya

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**Background:** Due to the ineffectiveness of traditional AYP HIV services, the Elton John AIDS Foundation has funded several pilot decentralised care models in Kenya that use digital platforms to deliver information, care, and products directly to AYP.

**Description:** The Foundation financed Tiko, a digital platform in Mombasa County, linking demand mobilizers with health care providers. Once enrolled, AYP can access clinic services while the platform monitors their user journey. AYP are nudged to return for appointments and receive redeemable points. Platform peers may see AYP's service ratings. EJAF also funds Zipline and AMPATH which setup pop-up events at unconventional locations, enabling AYP to meet healthcare professionals and request SRH/HIV products. These products arrive via drone within 15 minutes of a request, and clients can request refills at various locations.

**Lessons learned:** While appetite for services/products is exceeding targets, decentralized care targeting AYP in both instances appear to be facing the same challenges:

- Shortage of HIV preventive commodities, especially self-tests, as county projections and national budgets do not prioritise them. Zipline helped Mombasa and Nyamira Counties enhance forecast by leveraging their programmatic data on AYP demand from events
- Counties are operating with poor data systems, affecting forecasting and tracking those in HIV care. Third parties cannot currently hold client HIV data. Tiko circumvented this by integrating their platform into public sector facilities, while Zipline developed with counties a process to track clients through anonymous IDs.
- AYP cannot start PrEP or refill ART outside of clinics under current national rules. In addition, PrEP initiation profiling restricts AYP eligibility for PrEP and is not applied uniformly. Zipline has worked with Kisumu County to craft an SOP for PrEP refill deliveries in the field, requiring counties to make changes on how they apply NASCOP Policy.

**Conclusions/Next steps:** By working in partnership with County and national government bodies to adapt policies and clinical guidelines there is an opportunity to capitalise upon the unprecedented demand AYP demonstrated for decentralised services where they can direct their own care journey.





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adaptation of clinic workflows for same-day PrEP (*Inner Setting: Readiness for Implementation*); Leadership buy-in (*Inner Setting: Implementation Climate*) and; 3. Additional factors impacting success included Inter-community relationships with organizations (*Outer Setting: Cosmopolitanism and External Policies*) and Formal evaluation (*Process: Reflecting and Evaluation*).

Theme	Subtheme	Quote	Domain	Construct
Factors necessary and required for same-day PrEP programs	Medical expansion status is a resource for same-day PrEP implementation, but is not required for same-day PrEP programs	"Medical expansion absolutely been a facilitator for my patients receiving PrEP services. I would say a majority of my patients are Medicaid recipients or enrollees, so it's not like we have Medicaid but it's not like we have it. If Medicaid did not, then I would think it'd run into a lot more issues with getting coverage, and I think it would be a lot more challenging for the PrEP managers to navigate PrEP access for them. (FGHC, Medicaid expansion state) ... If they don't have insurance, we do a PAP for them and make sure that they get it right away. (CBO, non-Medicaid expansion state)"	Outer Setting	Patient Needs
	Diversification of funding sources	"... but if we don't have the funding to pay for labs, then we can't do. There are programs that would help us, like the state has a program where we can send samples for STIs for free screenings for that (CBO, non-Medicaid expansion state). We have sample packs on hand, and the pharmaceutical companies, all we have to do is call a rep and say, 'They need some more samples.' The provider signs for the samples, and then we're able to give those samples to them (CBO, non-Medicaid expansion state). Our LabCorp bill, 100 percent comes out of 3400 revenue right now, and I suddenly we don't have that anymore, we would probably have to create a lot of our services for a little while as we figure out another way to pay for them. (CBO, non-Medicaid expansion state) One of the biggest things we've based on for same-day PrEP is sample packs. We've got a really good relationship with our Decoy rep, and she keeps us stocked with these packs, because she knows what we're doing with them. With that, I wish they'd bring back sample packs of Truvada, because that will help us cover everybody else. Right now, our men have a lot of the better coverage, versus women both in and out of HIV, then obviously, they need PrEP. They're lacking in resources for being able to start same-day PrEP like we do. (CBO, non-Medicaid expansion state) Right now we do receive an ending the Epidemic CDC grant, and that is actually what we primarily use to fund our clinic. That grant covers the salaries for our coordinator, our prevention specialist, and our nurse practitioner, who all work in the clinic providing PrEP services. Right now that funding is one of the primary ways that allows us to provide our services at no cost. (CBO, non-Medicaid expansion state)"	Inner Setting	Readiness for Implementation
	Optimization and adaptation of clinic workflows for same-day PrEP	"What we have here is we do a free STI testing, pregnancy testing, morning after pill, so people know us as a place they can come and get tested for free and get tested for free for their STIs. What we did was we took the concept and then came up with the idea that we were gonna offer every single person who comes in for PrEP, and we were gonna offer them same-day PrEP with the thought that if they think they're at risk to get HIV, then obviously, they need PrEP. So they actually have to opt out of same-day PrEP (CBO, Non-Medicaid expansion state)"	Inner Setting	Readiness for Implementation
	Leadership buy-in	"I think you definitely have to have supportive leadership. I think everyone—I think I can safely say that everyone in leadership at CHC is extremely supportive of same-day PrEP services. You have to have those gatekeepers, those champions, to be able to implement these programs. (FGHC, Medicaid expansion state)"	Inner Setting	Implementation Climate
	Intercommunity relationships with organizations	"Once a lot of our partners, especially the partners that don't have their own clinics, they don't about it, they want us to come and bring the PrEP and set up, or they want us bring their patients in. Especially for our partners that are like residential rehab facilities and things like that, they have us come in, they'll get everything tested for STIs, for Hep C, and have us offer PrEP to all of their patients, because most of them have realized the importance of PrEP as well. (FGHC, Medicaid expansion state) No, I would say SOGO we have a lot of our patients do come from the 'bad' center next door. (CBO, non-Medicaid expansion state) I think it's really, really important and vital that we maintain those partnerships because this discussion alone has no thinking. 'Wow, I actually receive a lot of patients from those community organizations that are being referred to us.' I think maintaining those partnerships is fairly crucial to making sure that we can continue to receive patients who might benefit from PrEP services. (FGHC, Medicaid expansion state)"	Outer Setting	Cosmopolitanism and External Policies
Identification of additional factors impacting success	Formal evaluation	"I think we'd be interested in creating a better way to pull that information. We are actually working with the clinic on a way to build reports. (CBO, Medicaid expansion state) I think that retaining patients, patients who are still on PrEP six months, one year later that would still benefit and looking at patients who benefit from PrEP who stay on it. I think that also looking at whether or not the demographics of the patients starting on PrEP are representative of our community. I think that that would also be very successful. (CBO, non-Medicaid expansion state)"	Process	Reflecting and Evaluation

**Conclusions:** Same-day oral PrEP is being provided; however, broader implementation, sustainability, and expansion into same-day LAI PrEP requires new insurance-related policies, continued partnerships clinical, public health, and governmental agencies, and greater transferability of implementation strategies into other settings.

## TUPEE501

### Strengthening the HIV prevention and accountability framework through the community-led monitoring process

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**Background:** With the 2025 HIV Prevention Road Map, the countries of the Global HIV Prevention Coalition (GPC), including India, agreed to finalise country-specific HIV prevention Road Maps. A community-led coalition, convened by Alliance India and supported by Frontline AIDS, consisting of civil society organisations and community networks, works together to assess the country's progress against the 10 Actions outlined in the Road Map. This was done by reviewing key documents, agreeing on collective assessments and gathering inputs from bilateral agencies, government stakeholders and implementing partners. In December 2023, with Frontline AIDS, this data was published as the HIV Prevention and Accountability Report: A Community Perspective 2023 ([https://frontlineaids.org/wp-content/uploads/2023/11/India\\_Shadow-Report\\_DIGITALMASTER.pdf](https://frontlineaids.org/wp-content/uploads/2023/11/India_Shadow-Report_DIGITALMASTER.pdf)).

**Description:** Since 2022, the coalition, convened by Alliance India, collected data with the civil society and community networks, documenting their priorities and perspectives of the HIV prevention landscape. The HIV Prevention and Accountability report is, therefore, a community perspective, and recommendations demonstrate community priorities for the government to consider.

**Lessons learned:** This report cited important findings for the HIV prevention landscape in India. It demonstrates that India has made significant strides in improving HIV data collection and has nearly accurate population size estimates (PSEs) for all the key population groups. This better supports the development of data-driven programmes. The report did, however, highlight that more focus and investment are needed to address and mitigate gender-based violence (GBV) effectively. The report also highlighted that the criminalisation of drugs and personal possession should be reviewed. Basic rights for communities living with and affected by HIV should be enacted to create an enabling environment. Sharing information and meaningfully engaging communities and key populations to monitor and track progress on HIV prevention is a crucial step that India must take urgently.

**Conclusions/Next steps:** The 2025 Prevention Road Map tabled ten essential country-level actions towards a more data-driven, specific, community-centred, scaled, innovative prevention response. This report and its Community Led Monitoring approach helped reveal critical facts and

figures for HIV prevention – to support better what the country should prioritise. Other countries should use this approach to document community-led data collection and perspectives on HIV prevention.

## TUPEE502

### HIV Pre-Exposure Prophylaxis adherence among men who have sex with men in Hanoi, Vietnam 2023

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**Background:** Effectiveness of HIV Pre-exposure Prophylaxis (PrEP) depends on levels of adherence. However, optimal adherence ranged from 30% to 70% among men who have sex with men (MSM), the sexual minority group is disproportionately impacted by HIV.

We conduct this study to assess factors associated with PrEP optimal adherence among MSM in Hanoi, Vietnam.

**Methods:** A cross-sectional study was conducted at an MSM-friendly sexual health clinic in March to May 2023. Eligible participants were aged 18 or older, on daily oral PrEP, and had a male sex partner or male lover in the past year. Data collection included age, education (university or higher/high school or lower), employment (yes/no), number of sexual partners in past 12 months, condom use in past 12 month (always/not always), PrEP self-efficacy (measured by a 9-item scale), depression (measured by PHQ-2), and months on PrEP (<3 months, 4-12 months, and > 12 months).

PrEP adherence was measured by self-reporting; Optimal adherence was defined as not missing any pill on any day within the last 7 days. Multivariable logistic regression was used to identify factors associated with optimal adherence.

**Results:** Among 309 respondents, most (63%, 194 participants) reported optimal adherence. The majority were older than 24 years old (64%), graduated university or higher (58%), and employed (87%).

In the adjusted model, PrEP self-efficacy was positively associated with optimal adherence (aOR = 1.15, 95% CI: 1.00 – 1.32). Twenty-four years old or younger (aOR = 0.49, 95% CI: 0.27 – 0.88) and having more sexual partners (2-5 partners vs ≤ 1 partner: aOR = 0.30, 95% CI: 0.13 – 0.68; ≥ 5 partners vs.

≤ 1 partner: aOR = 0.25, 95% CI: 0.10 – 0.59) were negatively associated with optimal adherence. Other factors were not statistically associated with optimal adherence.

**Conclusions:** There is a moderate proportion of PrEP optimal adherence among MSM in Hanoi, Vietnam. To improve effectiveness of HIV PrEP program, tailored interventions needed to address multiple factors, such as improving users' self-efficacy as well as reducing the number of sexual partners.

According to our data, younger MSM should be prioritized for adherence intervention. Further research should explore IPV prevalence in diverse settings.

## TUPEE503

### "I had not fully understood how it works:" key influences on adolescent girls and young women's decisions to decline or delay daily oral PrEP initiation in Western Kenya

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**Background:** Adolescent girls and young women (AGYW) have high HIV incidence and are a priority population for ending the HIV epidemic. While daily oral PrEP is an effective HIV prevention strategy, uptake among AGYW has been limited. Better understanding why high-risk AGYW delay rather than decline PrEP initiation may identify strategies for overcoming initial barriers to uptake among this key population.

**Methods:** Within an ongoing programmatic trial evaluating PrEP integration into family planning (FP) clinics in Western Kenya (FP Plus project), we conducted semi-structured individual interviews (IDIs) with AGYW who declined or delayed PrEP initiation. IDIs were conducted at two FP clinics between Sept-Nov 2023 by trained Kenyan social scientists and were audio recorded, translated, and transcribed.

We conducted a thematic analysis of IDI summaries and a subset of full transcripts to explore and compare experiences, beliefs, and rationale between AGYW who delayed versus declined PrEP.

**Results:** Twenty AGYW completed IDIs, including 10 who declined PrEP use and 10 who delayed PrEP initiation. AGYW were a median of 23 years (IQR 20-24) and the majority were single/never married (55%). All AGYW noted that alternative PrEP modalities, such as long-acting injectables or vaginal rings would improve PrEP utilization. Most described having insufficient information on PrEP



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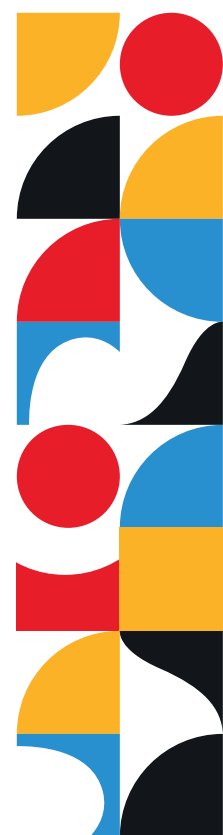
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after receiving initial counseling, leading them to feel unprepared to accept PrEP and fear side effects, including infertility. AGYW also noted concerns about pill size, conflation of PrEP pills with ART and fear of stigma as key influences on initial decisions to decline.

For AGYW who never initiated PrEP, concerns about negative partner reactions, inability to conceal PrEP pills, and daily pill burden were primary reasons for declining use. AGYW who delayed initiation sought support from peers, partners, and family members, and searched for additional information, before deciding to initiate.

Among delayed initiators, HIV risk perceptions and a desire to remain HIV negative overcame pill-taking concerns and contributed towards PrEP acceptance.

**Conclusions:** Community support opportunities and improved access to information could improve uptake of oral PrEP among AGYW who perceive themselves at higher HIV risk, while additional PrEP options may improve overall PrEP initiation.

## TUPEE504

Laboratory and patient acceptability and feasibility of self-collected capillary blood samples for plasma cabotegravir drug-level measurements to support safe discontinuation of long-acting injectable PrEP

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**Background:** One implementation challenge of long-acting injectable cabotegravir (CAB-LA) for pre-exposure prophylaxis (PrEP) is its long, variable "tail" period post-discontinuation, where subtherapeutic drug levels could select for antiretroviral resistance if HIV is acquired. Current recommendations advise oral PrEP coverage for at least one year post-discontinuation, but variations in individual drug clearance and sexual behavior may warrant differing coverage periods. Timely drug-level information could support HIV prevention counseling for safer CAB-LA discontinuation.

**Methods:** We assessed the acceptability and feasibility of novel blood sampling approaches to measure plasma cabotegravir levels. We recruited adult patients at NewYork-Presbyterian Hospital (8/2023-1/2024) who received cabotegravir-containing injections within one year. Participants provided samples via three methods: phlebotomist-collected venous blood (VB), and self-collected capillary blood via dried blood spot (DBS) from fingerstick and a blood lancet device (BLD) used on the upper arm.

Patient acceptability and feasibility were surveyed using the Acceptability of Intervention Measure (AIM) and Feasibility of Intervention Measure (FIM) (5-point Likert scale; 3=neutral, 5=strongly positive). Laboratory feasibility was based on sufficient sample collected for assay administration, and temperature- and time-based stability testing. Laboratory acceptability was assessed by concentration correlation between DBS and BLD versus VB (reference).

**Results:** Thirty participants provided 44 VB, 41 DBS, and 41 BLD samples. Twenty-six were surveyed (57% male, 37% Hispanic, 67% Black, median age 43 years). Mean AIM and FIM scores were higher for BLD (4.1) vs. DBS (3.3) ( $p=0.01$ ). More participants found BLD acceptable (mean AIM $\geq 4$ ; 77% vs. 42%,  $p=0.01$ ) and feasible (mean FIM $\geq 4$ ; 81% vs. 58%,  $p=0.07$ ) than DBS. No meaningful differences were found by sex, ethnicity, race, age, or duration of injectable medication use.

In laboratory testing, concentrations from VB and BLD samples were highly correlated ( $R^2=0.98$ ), demonstrating acceptability. During stability testing, BLD samples maintained measured concentrations after storage for seven days (room temperature) or 24 hours (40°C), demonstrating feasibility. DBS sampling was not feasible; 18/41 (44%) samples did not yield sufficient blood.

**Conclusions:** BLD sampling, but not DBS sampling, for cabotegravir monitoring was acceptable and feasible from laboratory and patient perspectives. These findings support developing a personalized drug level-informed HIV prevention counseling intervention for safer CAB-LA discontinuation.



## TUPEE505

### In-person pick-up versus postal delivery: PrEP service and its association with adherence and retention among Chinese MSM

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**Background:** Differentiated services are critical for scaling up PrEP in diverse settings. Postal delivery of PrEP drugs could help people who are doing well and do not need an in-person encounter.

We conducted a demonstration study to compare the effects of in-person pick-up and post-mail delivery on facilitating PrEP retention and adherence among Chinese MSM.

**Methods:** MSM in Wuhan and Guangzhou, China were recruited by online ads, clinic flyers, and community referrals to a PrEP demonstration trial to start a 12-month TDF/FTC as oral PrEP. Behavioral data were collected at baseline and quarterly follow-ups over 12 months. At each follow-up, participants were allowed to refill the medication either by in-person pick-up at the study hospital or by post-mail.

Generalized linear models were used to assess key outcomes (self-reported good adherence [primary definition: <60% vs. 60% to almost 100% compliance with PrEP dosing schedule in last 30 days], loss to follow-up [LTF], and usage of postal PrEP), adjusting for age, sexual orientation, employment status, monthly income, and PrEP dosing strategies. We defined LTF as either voluntary withdrawal or not completing the survey within 4 reminders of scheduled follow-up.

**Results:** By September 8th 2023, 945 MSM (mean age=28.2, IQR 24.1-31.4) were enrolled and should have reached their 6-month follow-up. A quarter (n=199) of participants were LTF before six months. About 54.4% of the participants used only in-person PrEP pick-up, 19.6% only used postal PrEP, and 26.0% used both delivery methods during follow-up. No sociodemographic characteristics were found significantly associated with postal PrEP usage.

In multivariable-adjusted models, participants who ever used postal delivery (aOR=0.17, 95% CI=0.11-0.27), had lower monthly income (<715 USD versus >1430 USD, aOR=0.55, 95% CI=0.31-0.97), and of younger age (aOR=0.92, 95%

CI=0.88-0.95) were less likely lost to follow up. Self-reported good adherence to PrEP was not different among those who used postal PrEP and in-person PrEP (aOR=0.63, 95% CI=0.30-1.31).

**Conclusions:** Postal PrEP delivery is feasible and well-accepted among Chinese MSM and has the potential to increase PrEP persistence by increasing accessibility. Future research into diversifying PrEP provision models outside of traditional clinical settings while maintaining high adherence and quality of care is needed.

## TUPEE506

### Event-driven PrEP: a panacea for high PrEP continuation among men who have sex with other men (MSM). Evidence from a low-resource setting

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**Background:** Pre-exposure prophylaxis (PrEP) is a feasible HIV prevention option worldwide. Since PrEP inception in 2015, Zimbabwe has reached its annual targets. However, PrEP continuation rates have been low, especially among men who have sex with other men (MSM), at around 30% at 3 months follow-up. Pill burden has been cited as one of the biggest barriers to continued PrEP use. WHO approved event-driven PrEP in 2019, and Population Solutions for Health (PSH), Population Services International (PSI), and the Ministry of Health and Child Care conducted a study to measure the impact of event-driven PrEP on continuation in comparison to oral PrEP.

**Methods:** We employed a two-arm, open-label, prospective pilot in two urban districts of Zimbabwe (Harare and Bulawayo), among adult MSM aged 18-54 years. We recruited 789 participants with 396 in the PrEP daily arm and 393 in the event-driven PrEP arm. The groups were comparable by age, education level, employment status, and engagement in transactional sex or sexual roles. Participants were followed at one-, two- and three-month periods from initiation date.

Further, we conducted qualitative in-depth interviews with purposively selected MSM to assess barriers and motivations as well as the benefits of event-driven over oral PrEP.

**Results:** The event-driven PrEP cohort's continuation rates were significantly higher compared to the oral PrEP cohort. From qualitative interviews, most participants preferred event-driven PrEP as it had no pill fatigue and fewer side effects.

Participants also reported correct and consistent taking of the drugs as instructed. Only 2 out of the 393 event-driven PrEP participants had seroconverted after 3 months.



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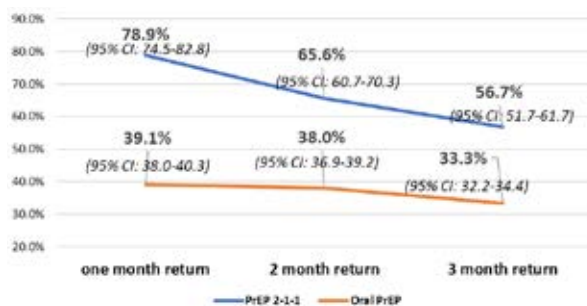


Figure. Continuation rates by PrEP method and follow up period.

**Conclusions:** Event-driven PrEP is a solution to low PrEP continuation, especially among key populations who are less motivated for daily medication uptake without feeling ill. Scale-up ensures continuous protection against HIV seroconversion especially in low-resource settings where pill dispensing can be regulated to save funds.

## TUPEE507

A quality improvement tool to advance person-centered care delivery among ART provision teams: evidence from HIV treatment settings in Ghana and Zambia

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**Background:** Person-centered care (PCC) is a best practice in serving the needs of persons living with HIV and ending HIV as an individual wellbeing and public health threat. Despite emerging evidence, there is scarce information on how to systematically measure and assess it. JSI developed a PCC assessment tool (PCC-AT) to strengthen health facilities' ability to operationalize PCC in HIV treatment settings. The PCC-AT measures health facility PCC service delivery using a benchmarking approach across 3 domains (staffing, service provision, direct client support) and 12 subdomains.

**Methods:** JSI piloted the PCC-AT among health facilities in Ghana (n=5) and Zambia (n=30) between May and September 2023. Antiretroviral treatment (ART) provision teams implemented the PCC-AT and used subdomain scores (ranging from 1=standard never met to 4=standard always met) to facilitate action planning that identified PCC-strengthening activities for action and reassessment as part of continuous quality improvement. The study team conducted descriptive analyses on PCC-AT scores and thematic analysis on action plan data using descriptive coding.

**Results:** Median PCC-AT performance was highest in the staffing domain (Ghana=3.0; Zambia=3.0), followed by service provision (Ghana=2.5; Zambia=2.5) and direct

client support (Ghana=2.0; Zambia=2.5). Analysis of action plans elucidated major themes in areas for improvement and recommended action that were common across country contexts, with most relating to the higher-scoring staffing and service provision domains (Table 1).

Domain	Improvement Area (subdomain)	Action Theme(s)
Staffing	Staff composition	Training and/or compensation for supportive peer positions
	Staff competency	Stigma and/or client rights training for all staff
	Client feedback mechanisms	Make feedback channels more user-friendly; establish system to track, review and use feedback; seek routine/formal input from community groups
Service provision	Service efficiency and integration	Establish system to track and reduce client wait-times
	Digital health worker support tools	Incorporate digital tools that improve information exchange between service providers and/or provide clinical decision support
Direct client support	Client agency	Adapt information, education and communication (IEC) materials to local language and/or include pictures, videos, radio to support diverse clients

Table 1. Common Action Plan Themes by Improvement Area.

**Conclusions:** PCC-strengthening actions prioritized by ART provision teams in Ghana and Zambia did not necessarily correspond with low-scoring PCC-AT subdomains, but rather, areas perceived most within their control or feasible to address with limited resources. Findings also identified areas perceived as outside staff control, requiring administrative advocacy and strategic community partnerships.

This study is a critical step toward providing service providers a quality improvement tool to assess, measure, and advance their delivery of PCC to increase engagement and retention in ART services.

## TUPEE508

### Mortality analysis among children with advanced HIV disease in Eastern Province, Zambia

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**Background:** In 2022, Zambia's infant mortality rate was 40 per 1,000 live births. HIV positive status increases the likelihood of death before infants' first birthday, particularly in the absence of antiretroviral therapy (ART). Determining final status of HIV-exposed infants (HEIs) at 24 months or six weeks after cessation of breastfeeding remains challenging.

The FHI 360-led technical assistance project funded by PEPFAR through CDC analyzed routinely collected surveillance data from Eastern Province to explore the rates of mortality and causes of death, and survival periods among pediatric clients diagnosed with HIV.

**Description:** We conducted a retrospective analysis of routine data reported in the mortality surveillance system and registers to assess infant mortality rates within the pediatric population affected by advanced HIV disease (AHD). In addition to these data, we reviewed routine mortality data obtained from medical records and health worker accountability trackers.

Our retrospective analysis aimed to quantify the mortality rate in infants with AHD and compare them to the national infant mortality rate overall.

**Lessons learned:** From January 2021 through November 2023, a total of 156 HEIs were confirmed HIV positive within 12 months of birth. Eleven died within the year of birth, translating to 70.5 deaths per 1,000 infants among positive HEIs. This is significantly higher when compared to 40.6 deaths per live birth overall ( $p=0.044$ ).

However, the number and proportion of HEIs with documented HIV status at 24 months improved each year as follows: 1,943/2,303 (84%) in 2021; 2,112/2,326 (91%) in 2022, and 2,280/2,383 (96%) in 2023. Overall HIV positivity among HEI by year was 2% in 2021 and 1% in subsequent years. The annual mortality rate averaged 1% each year.

**Conclusions/Next steps:** Infant mortality is significantly high in Eastern Province among HEIs despite the early ART initiation policy. We recommend improvements in the diagnosis and management of communicable diseases in infants and strengthening systems for integrated care, as

providing ART appears insufficient to prevent premature deaths. Our results also demonstrate that it is possible to improve the number of HEIs with final HIV status outcome at 24 months and reduce transmission rates through accountability.

## TUPEE509

### Community pharmacy initiated and management of oral pre-exposure prophylaxis (PrEP) among men and women at substantial risk HIV acquisition in South Africa: interim results

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**Background:** South Africa has over 3,500 community pharmacies offering an array of sexual and reproductive services. In a country with a high burden of HIV acquisition, daily oral HIV pre-exposure prophylaxis (PrEP) is mostly available in clinical settings. Pharmacies present an opportunity to provide PrEP in a non-clinical setting.

The PPREP-SA project is currently being implemented in three metropolitan cities in South Africa with the aim to evaluate the acceptability and feasibility of pharmacy initiated and management of PrEP. We provide a report on interim results after 6 months of implementation.

**Methods:** Trained health care providers at 10 community pharmacies screen men and women ( $\geq 18$  years) for HIV risk, conduct HIV testing, baseline investigations as per National PrEP guidelines, consent if eligible and dispense PrEP with telemedicine support.

Routine project data for the period July 2023 and January 2024 were analysed using STATA/SE 18.0 to determine uptake and continuation.

**Results:** A total of 745 participants were screened with 87% (653) initiating on PrEP. Most (91%, 594) were PrEP naive. From the 653 that initiated, the mean age was 29 and 51% (329) were female. In terms of socio-demographic characteristics, 87% (329) were unmarried, 96% (626) were black, 57% were employed and 53% (342) had a personal income of less than \$261 per month.

All participants completed a risk assessment questionnaire; 76% (494) reported inconsistent condom use, 47%, (304) did not know their partners' HIV status, 39% (256) have sex under the influence of alcohol and drugs, 27% (175) have multiple partners, 24% (154) are in an age disparate relationship and 8% (53) were recently diagnosed with an STI/recurrent STI. PrEP continuation at month 1 was 42% (275) and 6% (39) at month 4.

**Conclusions:** A program that links high-risk PrEP-candidates, identified within well-prepared local pharmacies can potentially expand South Africa's PrEP coverage among women and men at substantial risk of contract-



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ing HIV. Pharmacy delivered PrEP has the potential to reach populations that do not access clinical facilities and should be considered as options for PrEP differentiated service delivery.

## TUPEE510

Advanced HIV disease screening for clients with low viremia (viral load 500 To 999 Copies) at a rural HIV clinic in south west Uganda

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**Background:** Advanced HIV disease(AHD) places people living with HIV at high risk of opportunistic infections. Despite efforts to diagnose and treat in HIV programs, AHD still remains a challenge especially in sub-Saharan Africa. WHO recommends people with Advanced HIV are given priority for clinical assessment and treatment initiation. In Uganda, program reports indicate AHD ~25,000 PLHIV in care acquire AHD annually with 30% of non-suppressed contributing to this number. Screening is recommended for all People Living with HIV who have high level viremia (viral load result >1000 copies/ml). At Mbarara Regional Referral Hospital (MRRH), we conducted screening for AHD among PLHIV with low level viremia (VL 500-999 copies/ml) to understand its prevalence in this population.

**Description:** The goal of AHD screening in the Uganda HIV program is early identification to ensure timely provision of beneficial interventions and care, reducing unwanted morbidity and early mortality hence contributing to the HIV epidemic control.

To contribute to this goal, MRRH listed PLHIV with low level viremia (defined as 500-999 copies/ml for purposes of this project), placed phone call for clinic appointment reminders, provided intensive adherence counselling, monthly psychosocial support and screened and treated them for AHD from September 2022 to January 2024. Results of screening were obtained through routine laboratory testing.

**Lessons learned:** Of the 70 PLHIV listed and screened, 15/70 (21%) PLHIV had a CD4 less than 200 cells/mm<sup>3</sup>, 7/15(47%) of these were positive for TB urine Lam and received treatment for Tuberculosis but were negative for Serum CrAG. These PLHIV despite having low viremia, had similar psychosocial challenges like those with high level viremia and needed the same approach to their management.

**Conclusions/Next steps:** PLHIV with low level viremia need to be considered for AHD screening to ensure early identification and management. There is need for more research to understand the prevalence of AHD in the Uganda context in this population.

## TUPEE511

Bridging hard-to-reach gay and bisexual men who have sex with men (MSM) in a criminalized setting like Bangladesh with HIV testing and STI treatment through peer-led virtual platforms

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**Background:** The HIV epidemic presented a public health challenge among gay and bisexual Men who have Sex with Men (MSM) in Bangladesh, due to healthcare inequities emerging from legal repercussions and associated stigma.

This abstract highlights a pilot intervention that leverages peer-led virtual platforms to increase HIV testing and STI treatment among hard-to-reach gay and bisexual MSM in Bangladesh.

**Description:** A holistic intervention was conceptualized and implemented by programmatic experts and gay community members amid the context of criminalization and associated socio-structural challenges experienced by these populations.

This intervention reaches these populations through virtual platforms, i.e., social media (Facebook, Messenger, Whatsapp) and dating apps (Grindr, Tinder, etc). A total of 5874 participants were reached via 471 gay groups in four divisional cities from January 2023 to December 2023. Self-identified gay virtual peer educators from the target community have been trained in delivering information, administering online counseling, anonymous HIV testing (using self-testing kits) and STI treatment services.

**Lessons learned:** Fifty percent of the target population were aged 15-25 years. Around 91.2% of the participants tested their HIV status through oral fluid-based self-testing during the last year, of which 0.62% positive cases were identified, 83.7% were enrolled in ART. Moreover, 9.2% reported at least one STI symptom and received telehealth treatment. Sixty-five participants were enrolled in PrEP. Around 150,000 condoms and 20,000 lubricants were distributed via courier.

Preliminary results indicated a significant increase in participants reached through virtual platforms, who would not have been reachable through conventional HIV interventions. This peer-led intervention approach created trust within the hidden MSM/gay community, reduced stigma, and encouraged uptake of HIV testing and STI treatment services. Telehealth consultations opened avenues for confidential discussions, thus invoking trust, ensuring privacy for participants seeking healthcare.

**Conclusions/Next steps:** Integrating virtual platforms and peer-led approaches was shown as a promising approach for overcoming HIV prevention, testing and treatment barriers among these populations in Bangladesh. This approach demonstrates the potential for virtual in-

novations to address healthcare disparities in marginalized communities. Future efforts should emphasize scale-up, continuous improvement in programming through implementation science, and dialogue with stakeholders to ensure long-standing impact in the fight against the HIV epidemic.

## TUPEE512

### PrEP telematic services from community-based services

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**Background:** Kimirina, in coordination with the Ministry of Public Health, initiated the PrEP program in Ecuador in August 2019. Initially, in-person medical services were offered, which were obviously suspended during the lockdown in Covid-19 pandemic. During this period, a telematic scheduling and PrEP service system was developed, allowing users to access the service through a computer or a mobile phone. Between August 2019 and July 2023, a total of 1,338 individuals, including MSM, transfeminine, sex workers, and serodiscordant, have accessed PrEP.

#### Description:

Kimirina's telematic system employs three types of tools:

1. A social network through which scheduling is established, and the user opens their file;
2. Interactive telemedicine through video calls using a web platform;
3. Digital health records developed in compliance with standard care requirements, incorporating the specificity of PrEP care. These records are stored to ensure the confidentiality and integrity of information;
4. The use of a widely used social network for receiving examination requests and prescriptions.

The telematic system is supported by Kimirina's network of community centers.

**Lessons learned:** During the analysis period, there is a clear upward trend in the number of individuals accessing the PrEP program each year. In 2019, 93 individuals were served, which increased to 555 in 2021 and 819 until July 2023 through the telematic system. It is worth noting that Kimirina provides in-person services, but these are rarely requested by PrEP users. Through the telematic system, users from 22 out of 24 provinces in Ecuador have been attended to.

**Conclusions/Next steps:** The potential to utilize technological systems enables greater access to combined prevention mechanisms and contributes to achieving the goal of ending the AIDS epidemic by 2030. Kimirina's telematic system is well-received by users as it reduces waiting times and facilitates access to complementary services, such as in-person HIV screening and laboratory testing.

## TUPEE513

### Provider preferences on injectable PrEP Scale-up in Malawi: a qualitative study

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**Background:** Injectable PrEP has the potential to substantially impact HIV incidence in Malawi, however, its rapid and efficient scale-up is dependent on identifying issues that may facilitate or hinder effective service delivery and demand creation.

This paper examines and describes health care worker preferences, perceived challenges, and enablers in delivering and scaling up injectable PrEP in Malawi.

**Methods:** From May-December 2023, we conducted 20 in-depth interviews with healthcare workers providing oral PrEP as part of a pre-implementation mixed methods study to assess preferences for injectable PrEP delivery. The interview guide included questions to explore providers' experiences with oral PrEP and how that can be used to facilitate scale-up of injectable PrEP, as well as any anticipated barriers and facilitators.

Interviews were translated and transcribed into English, followed by a rapid analysis of interview summaries. Data were then coded and analysed using NVivo 1.7.

**Results:** Respondents felt that injectable PrEP had a relative advantage compared to oral PrEP, including reducing pill burden, promoting adherence, ensuring privacy, and reducing stigma toward users.

All but one provider was willing to recommend injectable PrEP to clients, suggesting high acceptability of injectable PrEP.

Respondents believed that injectable PrEP could be easily introduced and built from the experience of oral PrEP integration with other services, including family planning, ante/postnatal care, STI clinics and drop-in centres.

Respondents did not recommend integration with ART and OPD services due to concerns that these channels may promote stigma.

Despite indicating high feasibility, providers also noted potential barriers to injectable PrEP delivery and scale-up, including increased workload, overcrowding at clinics, and expressed the need for additional training and client education.



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**Conclusions:** Despite barriers remaining to be addressed, injectable PrEP was found to be more acceptable and feasible to integrate with other services, including oral PrEP. Injectable PrEP can leverage a strong existing platform for rapid scale-up in Malawi.

## TUPEE514

Pre exposure prophylaxis for special categories; a multi-faceted approach to improve PrEP uptake among pregnant and breastfeeding women in Ankole sub-region, Uganda

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**Background:** Pregnant and breastfeeding women experience heightened risk of acquiring HIV, increases the risk for vertical HIV transmission. Pre-exposure prophylaxis (PrEP), as part of a combination prevention package, Despite PrEP implementation progressing nationally, PrEP implementation for pregnant and postpartum women significantly lags behind other populations, inadvertently affecting realization of HIV epidemic control by 2030.

Bottlenecks to effective PrEP enrollment Uganda include declining PrEP stigma towards taking PrEP in society, feared side effects to the unborn child, lack of behavioral risk screening in MCH settings, has been sub-optimal, and lack of integration of PrEP services at MCH services points. Using a collaborative QI approach, we set out to improve PrEP enrollment among Pregnant and Breastfeeding women in the region.

**Description:** Held an onsite skills training to integrate PrEP eligibility screening, risk-based counseling and establish systems for client literacy at ANC and PNC service points with follow up for initiation focusing on MCH staff, mentor mothers and linkage facilitators.

Integrating PrEP talking points during group education and individual counselling at MCH, task shifting behavioral risk screening to mentor mothers and G-ANC peers and CLFs, establishment of a one stop shop PrEP service point at MCH, identified and attached G-ANC peers and KP peers at designated entry MCH points as change agent to provide peer counseling, experience sharing, follow up mothers for PrEP initiation.

**Lessons learned:** Screening of mothers at ANC and PNC, improved from 29% Nov 2022 to 93% August 2023, a total of 143 mothers were enrolled on PrEP over the same period. PrEP acceptance and Enrollment improved from 40% Nov 2022 to 100% September 2023 at 10 PrEP high volume collaborative sites.

**Conclusions/Next steps:** Utilizing a multifaceted approach that capitalized on addressing access barriers, Peer led demand creation, improving risk-based counseling and is effective in improving uptake of PrEP services among PBFW.

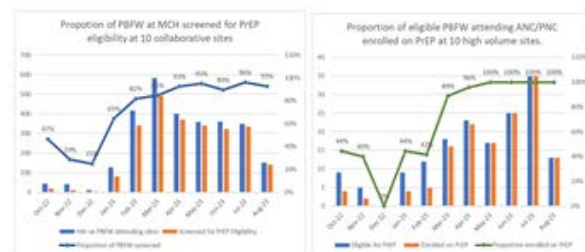


Figure.

## TUPEE515

Online delivery of HIV prophylaxis services in Kenya: results from the ePrEP Kenya pilot study

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**Background:** In many African settings, access to smartphones and supporting applications is on the rise and could be leveraged to reach new populations with HIV pre-exposure and post-exposure prophylaxis (PrEP/PEP) services. Licensed online pharmacies are a novel platform for PrEP/PEP service delivery and overcome barriers to clinic-delivered PrEP/PEP services, including stigma and long travel times. In collaboration with MYDAWA, a private online pharmacy in Kenya, we pilot- tested this new delivery approach.

**Methods:** In the ePrEP Kenya Pilot, PrEP/PEP services were advertised in Nairobi and Mombasa counties via the MYDAWA website and outreach events. Interested clients completed a telehealth visit to assess PrEP/PEP eligibility (i.e., ≥18 years, no medical contraindications); those eligible were delivered HIV self-tests (HIVST) or counselor-conducted rapid diagnostic tests (RDT) for a respective \$3 or \$2 USD fee. Clients' whose HIV-negative status was confirmed (via uploaded images of used tests) were delivered a 30-day PrEP/PEP supply for a \$1 USD delivery fee at a location of their choice.

Clients interested in continuing PrEP services one month following initiation received a 90-day PrEP supply once their continued eligibility was confirmed.



**Results:** From October 2022–December 2023, 2,257 MYDAWA clients were assessed; 63% (1428/2257) were men, 80% (1796/2257) never married, and 72% (1631/2257) were  $\geq$  25 years. Most (77%, 1808/2357) were determined PEP eligible (HIV exposure in  $<$ 72 hours) and 12% (268/2357) were PrEP eligible.

Most PrEP/PEP eligible clients (93%, 1926/2076) ordered an HIV test (HIVST: 83%, 1723/2076; RDT: 10%, 203/2076); among those who ordered HIVSTs, 90% (1551/1723) uploaded an image of their test. Most PEP-eligible clients (87%, 1569/1808) received PEP via MYDAWA; one month later, 6% (89/1569) of them transitioned to PrEP. Most PrEP-eligible clients (76%, 205/268) also received PrEP via MYDAWA. PrEP continuation did not differ between those who initially received PrEP (205) and those who transitioned from PEP (89) and was as follows for months one (43%, 122/286), four (17%, 35/205), and seven (16%, 19/119).

**Conclusions:** We found that online PrEP/PEP service delivery was feasible in Kenya and might best serve clients with acute HIV prevention needs. More implementation strategies are needed to engage online clients in ongoing HIV prevention.

## TUPEE516

*IFE4Her pilot study findings: participation and perceptions of a Mobile Medical Unit Intervention offering HIV pre-exposure prophylaxis provider consultations to southern women in low-income communities in the United States (US)*

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**Background:** Women in low-income southern US neighborhoods have increase HIV risk, but few use pre-exposure prophylaxis (PrEP) due largely to nonawareness and inequitable access.

We pilot-tested the feasibility and acceptability of *I'm-Fully-Empowered (IFE) 4Her*, a community-based intervention integrating PrEP awareness messaging, peer networkers, and mobile medical unit (MMU) for women in low-income communities in North Carolina.

**Methods:** A PrEP MMU was offered in four pilot communities (one visit/week) 4/17/23 to 11/28/23. Services included PrEP consultation (labs and prescription if PrEP elected), blood pressure (BP) checks, fingerstick glucose monitoring and rapid HIV tests. The MMU and PrEP were publicized

in pilot communities through posters, door-to-door informational flyers, and peer-to-peer communication. Services delivered were tracked. Participant satisfaction surveys were collected.

**Results:** Out of 78 interested women (reached via phone, email, and in-person), 34 (84% African-American, 13% White) elected to receive MMU services and 31 of these completed a satisfaction survey. Of these, 68% found the MMU facilitated easier access. Twenty (65%) underwent PrEP consultation, 27 (87%) BP check, 23 (74%) glucose monitoring, and 14 (45%) HIV testing. Seven women who received PrEP consultation wanted to start PrEP during the study but none could due to challenges conducting field-based laboratory tests (six) and elevated creatinine (one). Notwithstanding, 84% of the 20 women undergoing PrEP consultation rated their overall satisfaction as excellent/very good. Satisfaction was high for time spent with provider (80%), comfort with van environment (75%), and information received (85%). Of those who received HIV-related services, 90% expressed comfort doing so in their neighborhood. Among women declining a PrEP consultation, reasons included: no interest in PrEP (55%); dislike taking medicine (27%); side effects (18%); accessing follow-up (18%); ability to pay (18%); no chance of getting HIV (9%), condom use (9%), and perceptions that PrEP is more for men (18%). Competing peer networker demands, weather, mechanical constraints, and lack of a consistent van schedule presented challenges to service delivery.

**Conclusions:** Women were satisfied with *IFE4Her* mobile services; fewer than expected accessed the unit despite robust awareness-raising. One fifth of those receiving PrEP consultation wanted to initiate PrEP but were thwarted by challenges to prescribing it in the field.

## TUPEE517

*Male sexual partners' preparedness to embrace the Dapivirine Vaginal Ring (DVR) as new biomedical HIV prevention technology. CHEDRA's experience with high risk men in fishing communities of Masaka, Uganda.*

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**Background:** Although the Dapivirine Vaginal Ring is designed to be a female-initiated option to reduce the risk of HIV infection, male partner influence has been identified as one of the most significant factors impacting women's willingness and ability to use it. With support from the International Partnership for Microbicides (IPM), Community Health, Empowerment, Development and Relief Agency (CHEDRA) popularized the Dapivirine vaginal ring among high risk men within fishing communities to assess preparedness to embrace their sexual partners uptake of the DVR.



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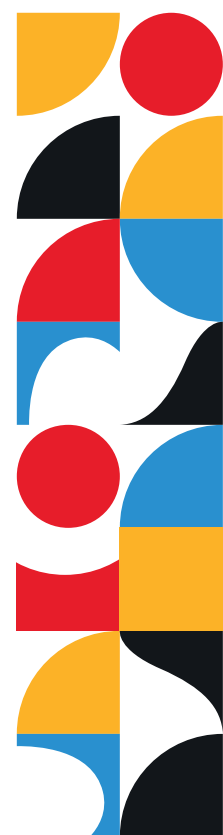
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**Description:** With the Village Health Team, we conducted mobilization for integrated health outreaches in fishing communities targeting men in male friendly places such as bars, cinema halls, discotheques, play stations, and gathered at community venues. We delivered integrated HIV prevention packages including HIV testing, male circumcision, STI management, condom and lubricant distribution, counseling. Trained staff conducted health education, intensified awareness and advocacy for choice in HIV prevention. The DVR was introduced as a new female initiated HIV prevention option and demonstration on how to use it was done using a prototype of the vaginal ring, two penis models, a fabric model of a vagina (vulva puppet) as well as vaginal ring demonstration videos acquired from IPM. During outreaches, we conducted 14 men only FGDs following a semi-structured guide. Men were asked to discuss their perceived ring's impact on sexual engagement with the ring inserted in the woman. Interviews were facilitated by trained male social scientists in local language, together with a note take, interviews were audio-recorded, translated into English, and analyzed thematically.

**Lessons learned:** In total, 66 men participated in FGDs. 29 (44%) reported perceived incorrect ring insertion, 53(81%) expressed that ring use was partners a shared responsibility, 33 (50%) expressed concern that the ring may pose trust issues. All men expressed high HIV risk perception, only 8 (12%) had knowledge about the DVR.

Misconceptions, attitudes and perceptions towards the DVR impacted on their willingness to allow their partners to use it. All the men were happy that DVR could reduce HIV risk.

**Conclusions/Next steps:** DVR uptake can only be effective with active engagement of male sexual partners.

## TUPEE518

**Breaking barriers: harnessing artificial intelligence for precision in HIV risk assessment and reporting in South Africa**

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**Background:** Gathering comprehensive sexual histories from clients to determine HIV risk can be hindered by stigma and discrimination, resulting in incomplete or inaccurate information. We co-designed and evaluated, with potential clients, a prototype of a Large Language Model (LLM)-powered app, "Your Choice". This app gathers de-

mographic and behavioural data to estimate HIV risk for clients and provides efficient summaries for the health-care provider.

**Methods:** We used a mixed-method approach to inform the design and key attributes of the "Your Choice" app. Participants were allocated between experiences powered by different underlying LLM models, GPT 3.5 or Claude Instant 1, for hypothetical (i.e., data not used for clinical care) HIV risk screening. Subsequently, clients completed three scales; Acceptability of Intervention Measure (AIM); Intervention Appropriateness Measure (IAM); and System Usability Scale (SUS). Twenty-five participants were purposively selected and interviewed. Qualitative data were thematically analysed.

**Results:** Enrolled 100 clients between August-November 2023 (58% male, 46% aged 25-34 years, 21% with > one sexual partner; 51 % used Claude Instant 1). Surveys revealed that participants found the app to be an acceptable and appropriate intervention for HIV risk screening. Over 90% of clients rated the app "strongly agree" on all measures of acceptability and appropriateness and the mean SUS score indicated excellent usability for the GPT 3.5 (82.19; SD=10.75) and Claude Instant 1 (79.75; SD=7.05) respectively. Qualitative analysis showed that the app provided a confidential space for honest discussions, offering empathetic and judgment-free information on sex, sexuality, and sexual health. It changed participants' knowledge about PrEP. Shortcomings included failure to contextualise, incorrect terminology and language and outdated information, impacting viability. Participants who struggled with literacy struggled at times and requested audio/voice interaction.

**Conclusions:** An AI-powered app with tuned prompts and guardrails, like "Your Choice", shows potential as a tool for private, stigma-free counseling which may encourage at-risk individuals to pursue HIV prevention methods such as PrEP. This can help providers direct care appropriately and efficiently when resources are limited. While promising, there remain significant gaps in the evidence. Further technology investments are also needed before integration into HIV clinical care.



## TUPEE519

### Experiences of health providers using standard national tools for classifying clients into key population groups in Manica province, Mozambique

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**Background:** Members of key populations (KP) encompass sex workers, men who have sex with men, transgender individuals, people who inject drugs, and individuals in prisons and other confined settings. Globally, over half of the estimated new HIV infections among adults (15–49 years) occur among KP and their partners.

Healthcare providers play a vital role in identifying clients as KP members, facilitating the provision of tailored HIV prevention and care services. The USAID-funded Efficiencies for Clinical HIV Outcomes (ECHO) project conducted a survey to explore Mozambican healthcare providers' experiences using standard national tools to classify clients into KP groups to provide them tailored services.

**Methods:** ECHO conducted an anonymous paper-survey among doctors, clinical officers, nurses, and psychologists who provide healthcare services at various entry points in 49 health facilities in Manica province. Survey questions focused on three areas:

1. Collecting sociodemographic information;
2. Understanding healthcare provider's experiences discussing sensitive topics such as sexual health, non-heterosexual identities, exchange of money or goods for sexual services, and substance use; and,
3. Exploring the influence of religious beliefs when addressing these sensitive topics.

**Results:** Among the 88 healthcare providers surveyed, 51% were male, with a median age of 29 years (IQR: 26–34). This group comprised 68% clinical officers, 18% psychologists, 9% nurses, and 5% doctors. The majority (61%) had worked in HIV programs for 1–4 years, and 53% reported receiving specific training on KP topics. 34% of respondents experienced some discomfort when discussing sexual health, non-heterosexual identities, or the exchange of money or goods for sexual services. This discomfort reached 49% when specifically discussing sexual practices. The majority (94%) felt comfortable asking clients about substance use. While 60% of respondents had no issues providing services to KPs, 31% believed specialized healthcare providers (psychologists or others) should attend to members of this group. For the majority (82%), religious beliefs did not interfere when providing services to KPs.

**Conclusions:** Most healthcare providers surveyed in Man-

ica province, Mozambique, did not report major issues using national standard tools for classifying clients into KP groups. However, one-third respondents expressed some level of discomfort, highlighting the need for further qualitative research.

## Implementation science and scale up of treatment

## TUPEE520

### Mechanism for remote registration with AIDS Center for Kyrgyz citizens who find out about their HIV status abroad to facilitate immediate ART initiation

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**Background:** Migration affects more than 20% of the population in Kyrgyzstan. HIV trends are also affected: 30%–40% of newly diagnosed PLHIV self-report recent migration experience. The major migration destinations in the region are Russia and Kazakhstan, where ART is not available for foreigners. Many migrants return home with advanced HIV stages. To tackle this, the Kyrgyz Ministry of Health piloted a groundbreaking mechanism for remote registration and immediate treatment initiation for Kyrgyz PLHIV diagnosed abroad without returning home.

**Description:** Approved on June 27, 2022, the mechanism specifically caters to the unique needs of Kyrgyz PLHIV diagnosed abroad, who are unable to return to their home country for ART initiation. The mechanism leverages telemedicine technologies and facilitates remote doctor counseling and recognition of prescribed test results (VL, CD4, etc) made in the migrant's current residence. With online counseling, examinations, and ART prescriptions, the mechanism enables a seamless journey from diagnosis to treatment, eliminating the need for migrants to physically return to Kyrgyzstan. Migrants can delegate trusted individuals to collect medications and send them to their destination countries. This flexibility empowers migrants to access crucial healthcare services remotely, ensuring prompt care irrespective of their geographical location.

**Lessons learned:** As of the end of 2023, 31 migrants used the mechanism, 29 started ART with medications sent to their destination countries from Kyrgyzstan. 12 of them returned home and continued treatment, 17 continue receiving treatment remotely, and 2 lost to follow-up. Viral suppression is confirmed in 17 clients. Collaboration with NGOs in both migrant-sending and receiving countries



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is crucial to the successful implementation of the mechanism. NGOs play a pivotal role in raising awareness of migrants about HIV, providing testing, informing PLHIV about the remote registration with the AIDS Center, aiding document collection, coordinating required tests, sending ARVs, and facilitating adherence support.

**Conclusions/Next steps:** The mechanism's success has prompted its extension to Tajikistan and current consideration in Uzbekistan. As major migrant-sending countries in Central Asia, they stand to benefit from this highly effective approach. The mechanism is the sole means for migrants to receive HIV treatment in Russia and Kazakhstan. Widespread adoption across the region could substantially reduce AIDS-related deaths.

## TUPEE521

**A Combo Pack (pill pack, alarm clock, and water bottle) for improved antiretroviral therapy adherence among adolescents and young people living with HIV in Kisumu County, Kenya?**

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**Background:** Adherence is critical for antiretroviral therapy (ART) treatment success and long-term viral suppression. Adolescents and young people living with HIV (AYPLWH) face challenges in ART adherence which leads to viral replication, increased risk of HIV transmission, disease progression, drug resistance and preventable HIV-related deaths. Commonly cited factors of poor adherence include stigma, pill burden and poor medication time keeping. Promoting strategies such as using alarms, calendars and pillboxes are individually effective in facilitating ART adherence but we do not know their combined effect.

**Methods:** We employed a randomized trial design, with improved ART adherence as the primary outcome. We enrolled AYPLWH aged 15-24 years with documented high viral loads (>1000 copies/ml), enrolled in care in 3 public health facilities in Kisumu County, Kenya. We randomized half to intervention arm and half to control arm. Participants in the intervention arm received a combo package consisting of an Ankara print bag with enough space for a water bottle, pills and an alarm clock. Participants in the control arm received the standard of care from the health facility. We abstracted data on pill count from participating facilities and Viral Load from the Ministry of Health data base.

**Results:** We enrolled 202 participants and randomized them 1:1 to two study arms. Mean age was 17.9 years and 51.5% were females. The proportion of AYPLWH reporting missed clinic visits in the intervention arm declined by 8.0%, compared to the control arm, where the proportion increased by 1.6%. Forgetfulness, which was cited as the major reason for missing pills, declined in the intervention group by 20.7% as well as in the control arm by 15.3%. In-

terms of pill count, a comparable proportion, 37.0% in the intervention arm and 37.3% in the control arm, achieved good adherence. Regarding VL; participants with VL >300 c/ml declined by 1.0% in the intervention arm compared to control arm where the proportion declined by 3.9%.

**Conclusions:** The intervention showed minimal impact on ART adherence when assessed using both pre-post intervention and control designs.

Further research may be needed to understand factors influencing adherence and to explore additional interventions or modifications to the combo pack to enhance its effectiveness.

## TUPEE522

**Multisite validation of the Visitect point-of-care CD4 platform among persons with advanced HIV disease**

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**Background:** The Visitect CD4 test (AccuBio, Alva, United Kingdom) is a rapid, semi-quantitative assay that estimates CD4 results above or below 200 cells/mL. In many resource-limited settings, the Visitect assay is being rolled out as the primary method of CD4 testing. We evaluated the performance of the Visitect CD4 assay in semi-urban laboratories in Uganda.

**Methods:** We performed a pragmatic laboratory validation of the Visitect CD4 platform in four routine HIV clinics in Uganda, nested within a cluster randomized trial evaluating an enhanced package of screening and treatment for persons with advanced HIV disease (NCT05085171). As part of the clinical trial, samples run on the Visitect CD4 platform were confirmed using another CD4 testing method. Confirmatory testing was performed using flow cytometry, Alere PIMA, or BD FACSPresto. Both the Visitect and confirmatory CD4 tests were run on venous blood per the manufacturers' instructions. We compared the diagnostic performance of the Visitect CD4 platform against the confirmatory method by evaluating the sensitivity, specificity, positive and negative predictive values.



**Results:** From May 5, 2022 to October 5, 2023 we collected 1495 venous blood samples that were run both by the Visitect CD4 test and another confirmatory CD4 platform at four peri-urban clinics surrounding Kampala, Uganda. The specificity of the Visitect test was 81% (95% CI: 79% to 84%) and the positive predictive value was 69% (95% CI: 66% to 73%). There were no samples for which the Visitect test was >200 and confirmatory test was ≤200 cells/mL, resulting in a sensitivity and negative predictive value of 100% with no variability around these estimates to report. Among those Visitect CD4 tests read as ≤200 cells/mL, with confirmatory results >200 cells/mL, median confirmatory CD4 cell count was 397 cells/mL (IQR, 281 to 590 cells/mL). Among persons with true advanced HIV disease (confirmatory CD4 ≤200 cells/mL), all were accurately classified as ≤200 by the Visitect CD4 platform. By clinic, specificity varied from 63% to 99%.

**Conclusions:** Given imperfect specificity of the Visitect CD4 platform, implementation science studies to understand which settings would be most appropriate for Visitect testing are needed to guide rollout.

## TUPEE523

### Improved CD4 access through scaling CD4 testing using device free CD4 test kits (VISITECT) in East Central, Uganda

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**Background:** Uganda adopted the World Health Organization (WHO) recommendation of use of Visitect as an alternative to the existing CD4 platforms that require machines and extra technical expertise, to increase CD4 access among eligible persons living with HIV (PLHIV). VISITECT is an instrument free point of care kit, that estimates CD4 quantities within 45 minutes.

In January 2022, only 28.6% (37/129) ART sites in East Central Uganda had functional CD4 machines (Pima and BD FAC presto machines), with 92/129 sites relying on sample referrals to hub laboratories. The frequent CD4 cartridges stock-outs, machines breakdown and long turnaround time (TAT) for results exacerbated access to CD4 testing in the region.

Consequently, only 31% of new HIV clients and 6% of non-suppressing clients accessed CD4 testing which is below the MoH target of 95%.

**Description:** USAID's Local Partner Health Services in East Central (LPHS-EC) collaborating with MoH-ACP trained health providers on CD4 testing using Visitect. The trainings were phased starting with regional trainers who cascaded to facilities, training and activating 92 facilities in a staggered approach depending on kits availability. The mechanism collaborated with Central Public Health Laboratories to provide kits, post training mentorships

to facilities on quality assurance, data quality, reporting and ordering through National Medical Stores and stock management.

Weekly internal review meetings were held to track CD4 access, followed by line listing and follow up of eligible clients for testing through community activities for those who missed the service.

**Lessons learned:** Access to CD4 testing improved from 31% to 80% among new persons living with HIV and from 6% to 75% among the non-suppressing PLHIVs comparing FY22Q4 and FY23Q3. Due to the short TAT, PLHIVs with advanced HIV disease (AHD) were screened for Tuberculosis (TB) and Cryptococcosis. A total of 413 TB and 91 Cryptococcosis PLHIVs were identified in FY23, all initiated on life saving treatment, averting AHD-related deaths.

**Conclusions/Next steps:** The activation of sites on CD4 testing using Visitect which is point of care test requiring no additional equipment, easy to use any trained personnel within the health facility including lay workers greatly improved the CD4 access within the East central region.

## TUPEE524

### Effect of community-based adherence support group on treatment outcome among people living with HIV/AIDS in Addis Ababa

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**Background:** A community-based adherence support group in HIV care and support for people living with HIV (PLHIV) in Ethiopia is a new intervention to improve adherence to care and ultimately contribute to viral suppression. A community-based adherence support group is a group-based case management intervention involving 15-20 PLHIV to discuss their antiretroviral therapy (ART) adherence and their socioeconomic issues in a community setting.

This study assessed the effect of community adherence support groups on viral load suppression among PLHIV in Addis Ababa, Ethiopia.

**Methods:** A community-based cross-sectional study design was conducted on 379 PLHIV enrolled into the community adherence support group in care and support in Addis Ababa. Study participants who were in the community adherence support group from 2021 to 2023 were selected using a systematic random sampling technique. Sociodemographic characteristics, enrollment status, psychological support, adherence support group and current viral load data were extracted from electronic



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medical records and entered into SPSS 26. Descriptive and multivariate logistic regression analysis was conducted to test the main hypothesis at a 95% CI with a  $P < 0.05$ .

**Results:** Overall, 379 PLHIV with a mean age of 35 years with a standard deviation of 10 years were included in this study. Of these, most (310=81.79%) were female, and 152(40.1%) were enrolled in the community-based adherence support group. Ninety percent of the study participants achieved viral suppression (96.05% in the support group vs 83.59% not in the support group). The adherence support group was also associated with higher odds of viral load suppression (less than 50 copies/ml) with (AOR 4.23, 95% CI 1.67-10.73  $p=0.002$ ) but there was no significant difference in psychosocial support, sex, enrollment status and routine adherence with ( $p=0.16$ , 0.30, 0.199 and 0.122) respectively.

**Conclusions:** The results of this study suggest enrollment in the community adherence support group is associated with viral load suppression. However, intervention research is needed to determine the extent to which enrollment in community adherence support group is causally associated with improved viral suppression and to identify the most effective policies and programs to improve treatment outcomes.

## TUPEE525

Are health facilities prepared to provide care for people with HIV with advanced disease? A global survey

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**Background:** Advanced HIV/Aids is a public health problem. We investigated the availability of supplies/infrastructure required to provide care for this population in healthcare facilities, exploring correlations with local demands.

**Methods:** Aids Healthcare Foundation's partner facilities were invited to respond to a survey addressing the availability of services to support clients with advanced HIV. We present results per continent using percentages and confidence intervals (95%CI). We generated country-level scores taking the average percentage of facilities with available resources on 10 key items.

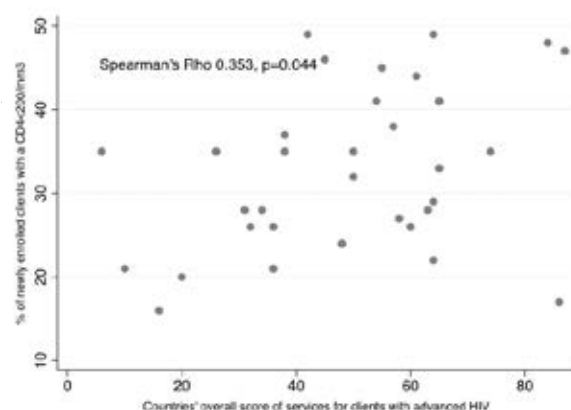
We used Spearman correlation to investigate relationships between country scores and local demands, depicted by the percentages of PWH newly enrolled in care with CD4  $< 200/\text{mm}^3$  in 2022.

**Results:** 643 facilities from 37 countries responded the survey (September-December/2021). Services requiring more costly equipment/supplies were less frequently available. Among European facilities, availability was  $> 90\%$  for all items, except for tuberculosis molecular tests and cryptococcal antigen. Facilities in Africa, Asia, and Latin America/Caribbean had lower availability of diagnostic and therapeutic resources (Table 1).

Although availability of services correlates with local demands across 33 countries (Figure 1), 19 (58%) had scores  $< 60\%$  despite having  $> 20\%$  of newly enrolled PWH with CD4  $< 200/\text{mm}^3$ .

	Africa 330 facilities	Asia 163 facilities	Europe 44 facilities	Latin America/ Caribbean 106 facilities
CD4 test available and performed within the facility*	56% (50-61)	56% (48-63)	93% (81-99)	58% (48-67)
Tuberculosis symptoms screening done for most clients with advanced HIV	100% (98-100)	96% (92-99)	100 (92-100)	92% (86-97)
Sputum microscopy exam available	81% (77-86)	88% (82-92)	95% (85-99)	67% (57-76)
Molecular test for tuberculosis available	53% (48-59)	76% (69-82)	57% (41-72)	55% (45-64)
Cryptococcal antigen test available	52% (47-58)	33% (26-41)	48% (32-63)	25% (18-35)
Lumbar puncture can be performed routinely at the facility	17% (13-22)	53% (45-61)	73% (57-85)	36% (27-46)
Urgent tomography referral available	60% (54-65)	80% (73-86)	100% (92-100)	58% (49-68)
Chest x-ray available at the facility	23% (19-28)	89% (83-93)	98% (88-100)	73% (63-81)
Oral fluconazole/ cotrimoxazole available	82% (77-86)/ 84% (80-88)	91% (85-95)/ 88% (81-92)	98% (88-100)/ 100% (92-100)	92% (84-96)/ 82% (73-89)

Table 1. Service availability to support clients with advanced HIV [percentages(95%CI)].



**Conclusions:** We found that essential healthcare services to support clients with advanced HIV are often unavailable, despite high local demands.

## TUPEE526

Shout it from the rooftops: evolving Undetectable = Untransmittable (U=U) and Status Neutral concepts for a celebratory biomedical HIV paradigm to empower key populations and resolve HIV-related stigma

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**Background:** Vietnam was the first PEPFAR and South-east Asian country to adopt U=U as a primary strategy to reach epidemic control. The Ministry of Health (MOH) released U=U guidelines in 2019, promoting the versatility of the message for key populations (KP), health providers, and program managers throughout the HIV cascade and for the public for stigma elimination.

Although viral suppression rates increased from 94% in 2018 to 97% in 2022, persistent stigma challenged the ability of people with HIV (PLHIV) to reach the '4th 90'- quality of life. To address rising infections among young men who have sex with men (MSM), the MOH also committed to scaling up PrEP in 2020.

**Description:** Vietnam evolved the U=U concept into Status Neutral-Biomedical HIV prevention messaging to address changing program needs. National campaigns from 2018-2021 promoted anti-retroviral medication as an easy, effective method for HIV prevention.

The campaigns promoted sex-positive, destigmatizing, and celebratory messaging to transform conceptions of HIV from a 'death sentence' to 'Live, love. Like everyone else.'

An accompanying viral load literacy initiative focused on PLHIV education through facility-level interventions to empower clients with U=U knowledge. In 2020, PEPFAR launched status-neutral "One-Stop Shop" clinics providing tailored services to MSM.

**Lessons learned:** MOH and community collaboration ensured endorsement and effective messaging. An LGBTQI+ commercial firm led creative direction and brought in influencers and commercial brands to reach a younger, wider, and more diverse audience.

The 2021 Status Neutral 'Love is Hard, HIV Prevention is Easy' campaign reached 32 million social media users—1/3 of the Vietnamese population- with 6.2 million engagements and 79% brand recall. In intervention sites, viral load literacy began to approximate undetectable levels

(94%). Twenty-three One-Stop Shops accounted for 72% of PrEP users, and Vietnam reported a 59% increase in PrEP users in 2022 compared to 2021.

**Conclusions/Next steps:** The versatility of U=U and Status Neutral can help HIV programs reach KP. Broader interventions to change public perceptions of HIV can resolve the intersectional stigma faced by MSM and PLHIV. In 2023, Vietnam signed the U=U Multi-National Call to Action to institutionalize U=U and Status Neutral to resolve equity gaps in reaching epidemic control.

## TUPEE527

Community ART groups transforming HIV care in Kirwara sub-county hospital, Murang'a County, Kenya

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**Background:** Kenya's HIV Prevention, Care, and Treatment Guidelines recommend differentiated service delivery (DSD) models, including Community ART groups (CAGs) for established HIV-positive clients on Antiretroviral Therapy (ART). However, in Murang'a County, stigma remains a significant barrier to acceptance of CAGs.

To overcome these challenges, client-centric CAGs were introduced at Kirwara Sub-County Hospital in April 2022 to enhance HIV care, combat stigma, decongest the clinic, reduce missed appointments, and offer more personalized care to clients.

This study describes the implementation of CAGs, service uptake, and client outcomes in a high HIV stigma setting.

**Methods:** The formation process involved identifying clients established on ART per national guidelines and those with high missed appointment rates. Through well-structured individualized health education; clients were informed about the purpose and functioning of the groups, emphasizing that participation was voluntary. The first group meetings were held in July 2022 where CAGs norms and terms of reference were explained.

**Results:** Daily health talks led to a steady increase in interested clients and currently, 363 out of 950 clients are now participating in 19 groups from diverse areas. The adherence and retention rates among these clients are above 95% with an improved viral suppression rate of 98% (viral loads of < 50 copies/MLS) from 82% as of December 2023. The missed appointment rates have also been reduced from 5% to <1% with 90% of the clients in the CAGs expressing a sense of belonging.

**Conclusions:** Implementing Community ART Distribution Groups at Kirwara Sub-County Hospital has yielded numerous advantages for persons living with HIV. These groups encourage viral suppression, provide individualized care, reduce missed appointments, and alleviate the burden on healthcare systems.



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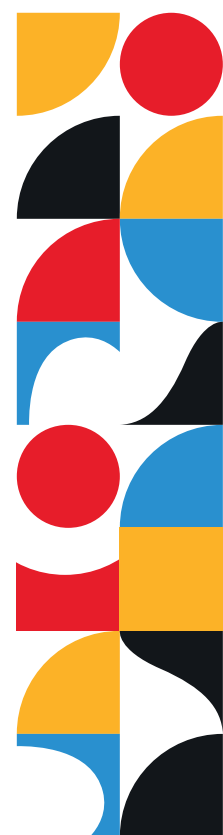
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The clients' feedback highlights the sense of belonging and time-saving benefits experienced within these groups. Overall, CAGs serve as a successful model for enhancing HIV care and empowering persons living with HIV in the Murang'a community.

## TUPEE528

Improving accuracy of reporting people living with HIV actively on treatment in a high HIV burden setting relying on a paper-based data collecting system: lessons from Zimbabwe program implementation 2023

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**Background:** Zimbabwe, like most low to middle income countries, relies mainly on paper-based data collection systems to capture and report HIV program data at site level. Paper-based systems are more laborious and less efficient in counting the number of persons active on treatment than electronic systems. To mitigate human resource challenges and to increase efficiency, many sites in Zimbabwe use a cohort adjustment method wherein the previously reported number of persons active on treatment is adjusted by adding new initiations, transfers in, and reinitiation, and subtracting losses through transfers out, interruption of treatment, and deaths.

**Description:** According to the UNAIDS HIV estimates 2022, Zimbabwe has achieved the 95-95-95 targets. However, program data showed above 100% treatment coverage in some geographic areas and age and sex bands and plateauing viral load coverage despite improved uptake. To better understand this phenomenon, the program instituted a physical count of clients' files to establish the number of PLHIV currently active on treatment using a standard data quality assessment (DQA) methodology. The activity was conducted in 373 supported sites in two provinces.

**Lessons learned:** The site level review of all available client files revealed that the actual number of clients active on treatment was 10.5% lower than reported (pre-DQA 221,050 vs. post DQA 200,052). Historical losses (from more than a year prior to the DQA) accounted for 48% of the reduction. Viral load coverage increased by 6% from the reported figure (pre-DQA 72% vs post DQA 78%). There was a reduction of the proportion of clients aged 0-24 years from 13.5% to 10.3%. The results of the DQA were shared with relevant stakeholders and corrected in the reporting system.

**Conclusions/Next steps:** This DQA provided an opportunity for a setting relying on a paper-based system to accurately report clients by age and sex. This exercise improved data accuracy in interpreting treatment and viral

load coverage by age and sex. Consequently, resource allocation will be based on real burden and gap. Similar settings should conduct routine total file counts periodically to calibrate the number of clients on HIV treatment for effective programming.

## TUPEE529

Re-thinking 'community' in the implementation of long-acting injectable Cabotegravir and Rilpivirine: qualitative findings from the ILANA study

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**Background:** Delivery of long-acting injectable Cabotegravir and Rilpivirine (CAB+RPV) in community settings may increase acceptability and accessibility of treatment, where stigma is a concern.

However, evaluation has so far been minimal. ILANA is the first mixed-methods implementation study examining the acceptability and feasibility of CAB+RPV in six UK clinics and community settings across Brighton, Liverpool and London.

This presentation focuses on the views of community healthcare providers (CHCPs) and people living with HIV regarding delivery of CAB+RPV in community settings.

**Methods:** ILANA patient participants received CAB+RPV in clinic for the first six months of the study and could then choose to switch to their clinic's chosen community setting at month 6, with 23.7% (27/114) opting to do so. Three clinics provided treatment at the patient's home, two offered it at an HIV community-based organisation (CBO), and one offered treatment at a satellite clinic (Fig. 1). Longitudinal semi-structured interviews were conducted with patient participants (n=14) at baseline (Aug-Nov '22), with CHCPs (n=12) at month 8 (June-Aug '23) and with both participant groups at study end (Sept-Nov '23) and analysed thematically.

**Results:** Most patient participants felt comfortable at their clinics and were reluctant to move. Stigma played a nuanced role in influencing patient preferences for treatment setting. For some, treatment at home or a CBO presented differing issues around inadvertent disclosure, confidentiality, and professionalism.

Among those opting for community, many described receiving injections at home as more personalised and discreet, while CBOs offered a more relaxed setting and the opportunity to connect to the HIV community.



The views of CHCP participants on delivery in community settings were mixed, with many highlighting logistical and capacity challenges.

**Conclusions:** Our findings illustrate that the dichotomy of 'clinic versus community' does not reflect the diversity in community settings and the varying barriers or facilitators they present. They also challenge assumptions around who might benefit from community delivery in relation to stigma. Service providers should carefully consider how a particular community setting may help to address challenges for patients and be aware that the offer of a single community setting may be insufficient to increase accessibility overall.

## TUPEE530

### Assessing the impact of multi-month dispensing of antiretroviral therapy on viral load suppression among people living with HIV in Papua New Guinea

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**Background:** Multi-month dispensing (MMD) decreases clinic visits and enhances HIV treatment outcomes but remains underutilized among people living with HIV (PLHIV). As of 30<sup>th</sup> September 2019, only about 50% of PLHIV receiving antiretroviral treatment (ART) utilized MMD in the National Capital District (NCD). With the advent of COVID-19, the National Department of Health expanded MMD to reduce frequency of clinic visits and decongest facilities. The 11 President's Emergency Plan for AIDS Relief supported sites in NCD then scaled-up MMD and initiated enhanced viral load (VL) activities among PLHIV. We retrospectively examined changes in MMD and viral load suppression (VLS) among PLHIV from 1<sup>st</sup> October 2018 to 30<sup>th</sup> September 2023 using routinely collected program data.

**Description:** We assessed MMD coverage and VLS in PLHIV 2 years and above before and after the intervention. MMD involving ART dispensed for 3+ months, was categorized as 3-5MMD or 6+MMD. VLS was defined as a VL <1,000 copies/ml. We tracked MMD coverage and VLS rates, comparing characteristics of PLHIV with and without MMD using descriptive statistics. During the intervention, we provided technical support, provider mentorship including weekly data reviews, site prioritization and line-listing for eligible PLHIV for both MMD and VL.

**Lessons learned:** The proportion of PLHIV over 2 years receiving MMD increased from 51.91% (422/813; baseline FY19) to 95.23% (2,713/2,849; endline FY23). In FY19, 50.31% (409/813) received 3-5MMD, and 1.60% (13/813) were on 6+MMD. By FY20, 74.56% (1,023/1,372) adopted 3-5MMD,

with 4.01% (55/1,372) utilizing 6+MMD. In FY21, 72.66% (2,025/2,787) opted for 3-5MMD, and 16.00% (446/2,787) for 6+MMD. In FY22, 66.11% (2,218/3,355) adopted 3-5MMD, while 27.84% (934/3,355) utilized 6+MMD. While in FY23, 56.48% (1,609/2,845) opted for 3-5MMD, while 38.75% (1,104/2,845) received 6+MMD. VLS improved from 78.35% (637/813; baseline FY19) to 94.52% (2,675/2,830; endline FY23).

**Conclusions/Next steps:** There was greater improvement in VLS among PLHIV that had higher utilization and adoption of MMD. Expanding eligibility criteria, monitoring ART supplies, analyzing routine data and line-listing eligible clients for MMD and VL positively effected implementation. Further efforts should focus on increasing the adoption of MMD while aligning client ART-refills with VL sample collection to boost intervention effectiveness.

## TUPEE531

### Documentation of HIV care and treatment outcomes: a quality improvement experience in Liberia

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**Background:** The PEPFAR/USAID-funded Meeting Targets and Maintaining Epidemic Control (EpiC) project in Liberia supports the National AIDS Control Program (NACP) to provide comprehensive HIV care and treatment in 21 health facilities. Initially there were notable gaps in meeting key indicators such as linkage to treatment, treatment interruption, viral load testing coverage, viral load suppression rates, and complete documentation of relevant outcomes. The project launched a quality improvement intervention comprised of intensive mentorship in the 21 supported facilities.

**Description:** Between October 2021 and September 2023 EpiC supported 21 facilities to establish quality improvement teams, including dedicated EpiC staff dubbed "shadow director" who provided intensive mentorship to facility staff through in-person meetings, phone calls and WhatsApp messaging to review data and provide feedback to facility directors. The entire clinic team met weekly to review data, discuss gaps, and monitor actionable quality improvement activities to reach 100% linkage, increase VL testing coverage, reduce treatment interruption, and improve overall documentation. Data in the registers for these indicators among all people living with HIV (PLHIV) on treatment were monitored at baseline and at 24 months, extracted from these registers and entered into the District Health Information System 2 (DHIS-2) eTracker.



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**Lessons learned:** After the quality improvement activity, linkage to treatment improved from 76.8% (1151/1499) to 96.4% (1376/1427), treatment interruption improved from 39.5% (5823/14740) to 8.6% (1583/18436), Viral load coverage improved from 65.7% (7901/12031) to 91.8% (14216/15489), and viral load suppression improved from 81.8% (6465/7901) to 96.7% (13751/14216). Data quality measured as 100% completeness of chart per 100 charts improved from less than 50% to more than 90%.

Indicators	Oct-Dec 2021	Jul-Sep 2023
Linkage to treatment	76.8%	96.4%
Treatment interruption	39.5%	8.6%
Viral load coverage	65.7%	91.8%
Viral load suppression	81.8%	96.7%
Data quality through chart completeness	<50%	>90%

Table: Indicators status at baseline and follow up.

**Conclusions/Next steps:** Intensive mentorship integration, using the approach described above, into ART clinic routine contributes to improved treatment outcomes and documentation. EpiC will continue working with NACP to expand this approach to new facilities and to advocate that the Ministry of Health adopts and implements such intensive mentorship to improve ART service delivery throughout Liberia.

## TUPEE532

Transitioning children to pediatric dolutegravir (TORPEDO) study: endline results in Benin, Nigeria and Uganda

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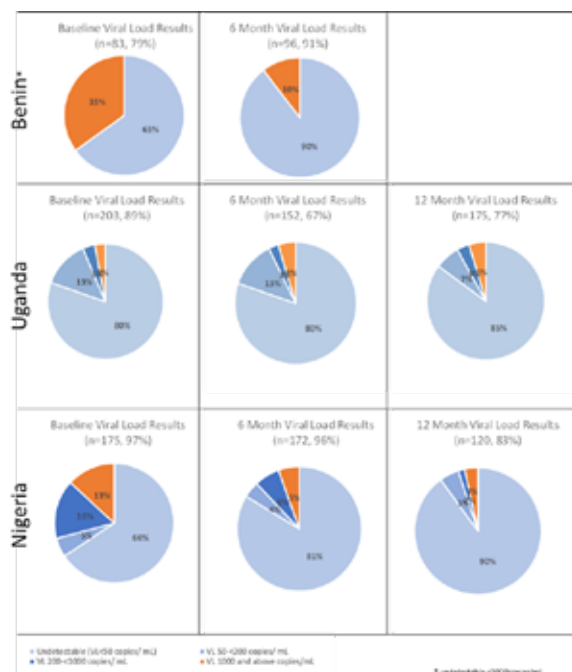
**Background:** A pediatric dolutegravir formulation (pDTG) became available in late 2021. To inform introduction of this optimal treatment for children living with HIV (CLWH), we evaluated client and parent/caregiver experiences with pDTG, as well as health outcomes.

**Methods:** TORPEDO is a mixed-methods, prospective cohort study of CLWH initiating pDTG at 19 pediatric HIV treatment sites in 3 countries with early access to pDTG: Benin (6 sites), Nigeria (7 sites), and Uganda (6 sites). Data was collected at baseline, 6, and 12 months (except in Benin), including surveys of participants' experiences with pDTG and health record reviews of viral load (VL) results and height/weight data. Weight-for-height and weight-for-age z-scores were calculated using WHO Anthro package. Data were analyzed for trends and differences.

**Results:** 510 CLWH were enrolled from 10/2021 - 06/2022 (105 Benin, 180 Nigeria, 225 Uganda). 52% were male; average age was 5.2 years. Over 86% of participants were treatment experienced, 85% were previously on a lopinavir-ritonavir regimen; 98% of parent/caregiver respondents believed their child preferred pDTG compared to the previous regimen.

Most notably, 'improved taste' (96%) and 'improved ease of administration' (79%) were reported. The two most frequent side effects were increases in appetite (24%) and in energy (16%). Viral suppression (<1000 & <50 copies/mL) increased over the course of the study.

Overall, there was no significant difference in proportion of overweight and obese participants from baseline to endline.



**Conclusions:** In this large prospective study of CLWH initiating pDTG, we found it to be greatly preferred over previous regimens, with no increase in overweight/obese BMIs and higher rates of viral suppression. While longer-term outcomes need to be evaluated, this study provides strong evidence that dolutegravir will finally help HIV-endemic countries to achieve UNAIDS viral suppression targets in CLWH comparable to adult.

## TUPEE533

### Factors associated with unsuppressed viral load among HIV clients on antiretroviral therapy in Eswatini

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**Background:** Understanding unsuppressed HIV viral load (VL) and its determinants is critical to reaching and sustaining epidemic control. Unsuppressed VL is associated with increased risk of HIV-related morbidity and mortality, and onward transmission.

**Methods:** Performed a cross-sectional analysis of data from clients currently on antiretroviral therapy (ART) at facilities using the national client-level Electronic Medical Record (EMR). Data were analyzed using STATA® version 18. To assess the magnitude of unsuppressed VL (>1,000 copies/mL) and associated factors, the study used multivariable logistic regression, adjusted odds ratios (AOR), and 95% confidence intervals calculated at a significance level of <0.05.

**Results:** Data from 163,074 ART clients with a recent VL result (<12 months) at the end of June 2023, were analyzed. Females represented 66% of the population. Prevalence of unsuppressed VL was 2.11% (N=3,447).

Study found that males had higher odds of unsuppressed VL (AOR 1.25, CI 1.15-1.37) compared to females. Odds of unsuppressed VL were higher amongst clients on Tenofovir/Lamivudine/Efavirenz (TLE) compared to Tenofovir/Lamivudine/Dolutegravir (TLD) (AOR 2.59, CI 2.18-3.094). Young adults (15-34 years) had higher odds of unsuppressed VL, compared to 35-44-year-olds (15-24 (AOR 2.93, CI 2.58-3.33), 25-34 (AOR 1.52, CI 1.37-1.69)).

Compared to clients on ART for 5-10 years, those on ART <1 year had the highest odds of unsuppressed VL (AOR 2.25 CI 1.93-2.63), while 15-20 years had the lowest (AOR 0.79 CI 0.63-0.99). With regard to differentiated service delivery (DSD) modalities, clients receiving <3 multi-month dispensing (MMD) (AOR 6.16, CI 5.44-6.97), and 3-5MMD (AOR 1.81, CI 1.59-2.04) had higher odds of unsuppressed VL compared to 6MMD.

Compared to "Mainstream Care", all DSD models had lower odds of unsuppressed VL, except "High Viraemia Clinics" (AOR 18.60 CI 13.71-25.24), while "6MMD" (AOR 0.39, CI 0.32-0.46) had lowest odds.

**Conclusions:** Eswatini has low prevalence of unsuppressed VL. Importantly, clients on 6MMD had the lowest odds of unsuppressed VL compared to all other service delivery modalities. Higher odds of unsuppressed VL were noted amongst clients who are male, on non-TLD regi-

mens, and are young adults (15-34 years). Clients in these categories may need interventions tailored to their needs to address unsuppressed VL.

## TUPEE534

### Access to HIV viral load testing services in underserved security prone setting of Taraba State in Nigeria

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**Background:** The current treatment goal for HIV recipients of care (RoCs) is to achieve viral load (VL) suppression at an undetectable level. Access to VL services is pivotal for monitoring this outcome. However, access to VL services was limited in Taraba State due to the rising spade of generalized insecurity, difficult remote mountainous terrains and border settlements, irregular systems for VL services characterized by inadequate human resources for health (HRH) with inadequate capacity, and poor laboratory infrastructures.

Here we described the outcome of the innovative strategies we implemented to provide access for VL services amidst insecurity.

**Methods:** We conducted a retrospective descriptive study of VL services provided to RoCs on Treatment in 29 Health Facilities (HF) from 1<sup>st</sup> October 2021 to 31<sup>st</sup> March 2023. We engaged stakeholders in the health sector, security operatives, vigilantes, representatives of vulnerable communities, and support groups in co-designing strategies. We formed the VL commandos who provided VL services in a manner that was culturally, linguistically, and socially relevant to eligible RoCs in security prone communities. We augmented and built the capacity of HRH, upgraded existing infrastructures, strengthened the specimen referral, and provided adequate laboratory commodities. We abstracted data from the VL register and EMR, and conducted descriptive and independent samples t-test analyses for viral load coverage (VLC), viral load suppression (VLS), and turnaround time (TAT) at p<0.05 using the SPSS.

**Results:** VL services increased significantly from 11.2% (3,394/30,399) in October 2021 to 93.2% (36,748/39,414) in March 2023 (p<0.05). There was a significant improvement in VLC from 11.2% (3,394/30,399) to 93.2% (36,748/39,414) and VLS from 81% (2,857/3,394) to 97% (35,338/36,478) (p<0.05) within this period. Undetectable viremia, defined as VL<50 copies/ml improved from 64% to 82%, and uptake of post-enhanced adherence counseling VL increased from 0% to 81% (p<0.05). There was also a significant reduction in TAT from 90 days to <10 days (p<0.05).



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**Conclusions:** Our collaboration with the applicable stakeholders in health, security outfits, and support groups contributed to significant improvement in the uptake of VL services despite the rising spade of insecurity in Taraba State. Working with existing security structures made it possible to provide services in security-prone communities.

## TUPEE535

The impact of financial incentives on viral suppression among adults initiating HIV treatment in Tanzania: a hybrid effectiveness-implementation trial

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**Background:** Small incentives or "nudges" may improve engagement in HIV care. We evaluated the short- and longer-term effects of financial incentives on viral suppression among adults initiating antiretroviral therapy (ART) in Tanzania.

**Methods:** In a Type 1 hybrid effectiveness-implementation study (ClinicalTrials.gov NCT04201353), we randomized 32 HIV primary care clinics in four regions 1:1 to usual care or the intervention (usual care plus ≤6 monthly incentives (22,500 TZS/each), conditional on visit attendance). Adults initiating ART (<30 days) who owned a mobile phone and had no plans to transfer were eligible.

The primary outcome was retention on ART with viral suppression (<1000 cp/ml) at 12 months.

Secondary outcomes included retention on ART with viral suppression at 6 months and viral suppression at 6 and 12 months using a lower threshold (<50 cp/ml). Intent-to-treat analysis was used to evaluate the effect of incentives on outcomes.

**Results:** The study included 1990 participants (n=1059 in intervention, n=931 comparison), enrolled between May 28, 2021 and March 8, 2022. There were no study related adverse events. Overall, 88% and 83% of participants were on ART with viral suppression at 6 and 12 months, respectively. At 6 months, 90% of intervention participants were on ART with viral suppression compared to 86% of comparison participants (adjusted risk difference (RD)=5.1 percentage points (pp), 95% CI 1.1, 9.1).

This effect was statistically similar at 12 months, 6 months after the incentive intervention ended (85% vs. 81%; RD=4.4pp, 95% CI: -1.4, 10.1). The intervention was more ef-

fective when the lower threshold for viral suppression was applied (6 months: RD=8.8pp, 95% CI: 3.9, 13.6; 12 months: RD=5.0pp, 95% CI -0.8, 10.8); with no statistical difference between the 6 and 12 month effects (p=0.10).

**Conclusions:** In this rigorous study, short-term incentives had modest benefits on viral suppression and did not harm retention or viral suppression after discontinuation. These findings suggest the need to understand subgroups who would most benefit from incentives to support engagement in HIV care.

## TUPEE536

Implementing global positioning system (GPS) to improve continuation in HIV treatment for children: lessons from the District Hospital and Urban Clinic in Petauke, Zambia

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**Background:** Zambia has made considerable progress toward scaling antiretroviral therapy (ART), with 98% of people who know their HIV status on ART. However, this causes increased workload in health facilities amid personnel shortages, adversely affecting continuation in care, particularly for children.

In April 2022, the CDC technical assistance project piloted the use of global positioning system (GPS) technology to improve accuracy of tracking clients with interruption in treatment (IIT).

**Description:** The implementation had a pilot phase conducted at Petauke District Hospital, and scale-up phase which included Petauke Urban Clinic. Steps included:

1. Orienting community health workers on GPS
2. Deploying CHWs to capture coordinates for children active in care.
3. Utilizing MS Excel template to download and store coordinates.
4. Employing clustering and proximity methods in quantum geographic information system (QGIS)
5. Generating shape files and layered maps using QGIS.

The pilot captured 154 pediatric clients active in care: 107 residing within a 20km radius and 47 beyond 20km. Of the 107 residing within a 20km radius, 87 (81%) were mapped.

**Lessons learned:** During pilot phase, 12 pediatric clients or adolescents and young people (AYP) had IIT: eight due for viral load (VL) sample collection and four for ART refill. Utilizing coordinates obtained previously, Google Maps navigation led to all 12 (100%) correct addresses within an



hour. Of the eight clients due for VL, seven were found at home and 100% VL sample collection achieved. The four due for ART refill all received their medication.

During scale-up, an additional 197 children were mapped. Of these, 33 had IIT: 66% (22) missed ART refill appointment and 33% (11) VL sample collection. GPS was successful in tracking all 22 houses for children that missed their appointment within four hours. Outcomes were: 18% (4) re-located and 72% (16) returned to care. All 11 (100%) children due for VL had samples collected.

**Conclusions/Next steps:** GPS technology implemented with real time tracking of appointments quickens the location of clients missing appointments. When implemented and scaled up while incorporated in electronic health medical records systems, it could contribute to improving continuation in treatment and care and attaining HIV epidemic control in Zambia.

## TUPEE537

**Lessons learned from an open-source mobile platform for returning HIV viral load results directly to clients and healthcare providers in Malawi**

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**Background:** Malawi has 986,000 people living with HIV. Viral load testing is the gold standard to monitor ART adherence and treatment response. Malawi faces significant delays returning results from laboratories to facilities, resulting in poor client outcomes. We developed an open-source application that leverages technology for mobile phone users (SMS and USSD) to expedite VL results (VLRR) directly to clients and healthcare providers.

**Description:** We piloted VLRR at 4 health facilities from April 2022 to August 2023, scaled to 5 sites in October 2023 and an additional 5 sites in January 2024 in Malawi. VLRR is integrated with the laboratory information management system (LIMS) and specimen transportation system. VLRR sends an SMS to consenting patients when a result is received from LIMS. Clients then securely check their results through a USSD channel which also guides care-seeking behavior.

**Lessons learned:** During the pilot period, clients with feature phones experienced USSD session timeouts. We developed a personal identification number workflow specific to the client to address this. We also had challenges with backend synchronization between databases due to API and server issues, which delayed results return. Upon fixing this, clients received their results in near real-time. Additionally, we implemented a notification system through SMS for healthcare providers to know which results are ready to view.

**Conclusions/Next steps:** Lessons learned through the pilot allowed us to ensure patients receive their results ~24 days faster than standard practice. Clients and health staff can now access results quickly, conveniently, and perpetually. The changes implemented at the four pilot sites have allowed us to see faster uptake of the application at the 10 additional sites, an increased open rate by clients and healthcare providers, and a faster turnaround time of results return. We hope the challenges and lessons here provide a landscape for use in other contexts as the backend architecture will be shared freely to the global community for implementation wherever useful.

## TUPEE538

**Optimized paediatric focused care towards achieving high viral suppression among children and adolescents living with HIV in resource-constrained setting: North Central, Nigeria**

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**Background:** In Nigeria, despite increased availability of resources to ensure uninterrupted access to ARVs, retention among children and adolescents living with HIV (CALHIV) has been challenging. Viral load coverage (VLC) and suppression (VLS) rate for children(0-14) were 56% and 53.8% respectively while for adolescents(15-19), 59.6% and 51.7% respectively (FMOH, 2020).

The aim of the study was to evaluate effectiveness of paediatric focused intervention package in improving viral suppression among CALHIV.

**Methods:** Mixed method that collected data of children and adolescents living with HIV from Kwara and Niger states, Nigeria between October, 2022 and September 2023 was employed. Focused group discussion was conducted with randomly selected 8-13 adolescents from each of 4 sites to explore the root-causes of the poor



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VLC and VLS with suggestions to address them. Inductive analysis was conducted to construct themes. Based on the findings, we had consultative workshop with key stakeholders across the states and rolled out intervention package - **VEMCLEEP** targeting CALHIV, and they include:

- Paediatric Viraemia clinic targeting all unsuppressed CALHIV
- Extending clinic days/hours to facilitate seamless access to ARVs
- OTZ clubs/Meetings
- Caregivers forum – to engage and provide disclosure, literacy and adherence messages to caregivers
- Link up to OVC program
- Engage dedicated paediatric healthcare providers
- Engage dedicated paediatric case managers
- Paediatric surge team saddled with responsibility to drive and coordinate implementation of the intervention.

Retrospective program data was reviewed and descriptively analysed to evaluate VLC and VLS among CALHIV.

**Results:** Some of the identified causes of suboptimal VLC and VLS include long client wait time, conflicting social engagement, poor treatment literacy, disclosure and difficulty navigating health facilities. The adolescents requested special interventions/support. At the end of Sept. 2023, program data revealed sustained increase in VLC and VLS among CALHIV. The VLC increased from 86% to 95% and 89% to 96% among children and adolescents respectively while the VLS increased 83% to 90% and 86% to 88% among children and adolescents respectively.

**Conclusions:** The study delineates excellent potential for use of client-centric approach in improving HIV/AIDS program quality. It clearly indicates that the interventions are effective in improving VLC and VLS and deserve been adopted among other struggling populations.

## TUPEE539

HealthMPowerment (HMP) Stigma: digital intervention increases undetectable viral load among Young Black and Latinx MSM and Transgender women living with HIV

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**Background:** HealthMPowerment Stigma (HMP) is an app-based intervention designed to reduce intersectional stigma and improve HIV-related outcomes among young Black and Latinx men who have sex with men and

transgender women who have sex with men (YBLMT). Our primary goal was to test whether participants randomized to the HMP app reported improvements in HIV prevention and care continuum outcomes compared with an information-only control arm.

**Methods:** We enrolled 750 participants in a 12-month online randomized controlled trial to increase HIV testing and viral suppression. Eligible participants resided in the United States, were 15 to 29 years old, identified as YBLMT, and reported condomless anal sex with men or transgender women. Using an HIV-status stratified, randomized trial design, participants were randomized to one of three HMP conditions: information-only control arm (Arm 1), researcher-created network intervention (Arm 2), or peer-referred network intervention (Arm 3).

We recruited 230 participants living with HIV (PLHIV). 74 (32.2%) were randomized to Arm 1, 75 (32.6%) to Arm 2, and 81 (35.2%) to Arm 3. Successful engagement in care was operationalized as maintaining a consistent undetectable viral load (CUVL).

**Results:** We observed differences between treatment arms in participants' successful engagement in care: 45/74 (60.8%) in Arm 1, 60/75 (80%) in Arm 2, and 60/81 (74.1%) achieved CUVL ( $\chi^2=7.1$ ;  $p=.029$ ).

Comparison Groups	OR	95% CI	p-value
Arm 2 vs Arm 1	2.5	1.2, 5.3	0.011
Arm 3 vs Arm 1	1.8	0.9, 3.6	0.079
Arm 2 vs Arm 3	1.4	0.6, 2.9	0.381
Intervention (Arm 2 and Arm 3) vs Control (Arm 1)	2.1	1.2, 3.9	0.012

Table 1. Odds Ratio and 95% CI for achieving a consistent undetectable viral load among PLHIV.

Participants in Arm 2 were 2.5 (95% CI:1.2-5.3) times more likely to achieve a CUVL as compared to Arm 1. In exploratory analyses, we combined Arms 2 and 3 and compared them to Arm 1. Participants in the combined intervention arm were 2.1 (95% CI:1.2-3.9) times more likely to achieve CUVL than the control arm.

**Conclusions:** YBLMT living with HIV who had access to the HMP intervention were more likely to achieve and maintain viral suppression over a 12-month period. This intervention has the potential to significantly impact the disproportionate burden of HIV among YBLMT in the United States.



## TUPEE540

### Successful implementation of multifaceted approach structured across four pillars to effectively retained people living with HIV in care and treatment in four provinces of Mozambique

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**Background:** USAID-funded Efficiencies for Clinical HIV Outcomes (ECHO) project supports the Mozambique Ministry of Health in implementing its national HIV program across four provinces. These provinces vary in HIV prevalence from 7.9% to 13.2% and encompass diverse socio-demographic contexts. This diversity posed a significant challenge in locally adapting and scaling up strategies to retain people living with HIV (PLHIV) in care and treatment (C&T).

We describe the interventions, outcomes and lessons learnt from the period between 2019 and 2023.

**Description:** ECHO adopted a multifaceted approach of interventions to retain PLHIV in C&T, structured across four pillars: reducing treatment interruption, increasing reintegration, involving health providers, and community involvement.

Under pillar one, ECHO implemented SMS reminders for upcoming appointments and preventive home visits during the first six months of treatment, using a 'client tracker tool' developed via the electronic patient tracking system. 3-month dispensing of antiretrovirals was extended to all supported health facilities (148), with 24 facilities initiating 6-month dispensing.

Under pillar two, ECHO expanded the cohort of community health workers for conducting home visits, involving mentor mothers for pregnant and breastfeeding women and their infants. ECHO also outlined and implemented ART community dispensing through health providers for those who missed drug pick-ups.

Under pillar three, ECHO established a WhatsApp network for the daily sharing of outcomes, challenges, and best practices.

Under pillar four, ECHO collaborated with community and faith-based organizations, formed community dialogue groups and supported health committee interventions aiming to improve the quality of services provided by facilities.

**Lessons learned:** Between October 2019 and September 2023, the number of PLHIV active engaged in C&T grew more than doubled, from 207,753 to 417,059. Among these, 73% were adults aged 25-49, 65% were female, and 78% were enrolled in either 3 or 6-multi month dispensing. The percentage of individuals interrupting treat-

ment dropped from 14.1% to 1.9%. Despite this progress, reaching more males, adolescents, and young people remained a challenge.

**Conclusions/Next steps:** Effectively retaining PLHIV in C&T demands a comprehensive approach, involving people-centered-care, collaboration with health providers, and engagement with communities. Tailored interventions for specific population groups are imperative to ensure inclusivity and prevent anyone from being left behind.

## TUPEE541

### Community antiretroviral treatment dispensing by health providers for people living with HIV who missed their drug pick-ups/clinical appointments: lessons learnt after over two years of implementation in four Mozambican provinces

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**Background:** In the context of the COVID-19 epidemic, the USAID-funded Efficiencies for Clinical HIV Outcomes (ECHO) project outlined an intervention for community-based dispensing of antiretroviral treatment by health providers (CDAHP), focused on people living with HIV (PLHIV) who missed their drug pick-up/clinical appointments because of transportation or financial constraints. We describe the outcomes and lessons learnt after over two years of implementation.

**Description:** ECHO initiated CDAHP implementation in June 2020 in 42 health facilities (HFs) in four project-supported provinces and expanded to 149 HFs by the end of December 2022. For expansion, ECHO trained health providers and allocated resources (transportation, airtime, incentives). Eligibility criteria included PLHIV on antiretroviral treatment (ART) aged ≥2 years, excluding pregnant and breastfeeding women, with telephone contact and/or consent to receive home visits.

On a weekly basis, HFs elaborated a list of individuals who missed their drug pick-up/clinical appointments and contacted them via phone calls or home visits to offer CDAHP and schedule the date/location for ART delivery.

All clients were counseled to return to the HF within 30 days to benefit from a less-intensive differentiated service delivery (DSD) model, according to their eligibility. Community health workers provided support for clients' residence location.

**Lessons learned:** From June 2020 to December 2022, 46,536 individuals received ART in their communities. The percentage of PLHIV enrolled in CDAHP in relation to the total number of PLHIV active on ART in the four prov-



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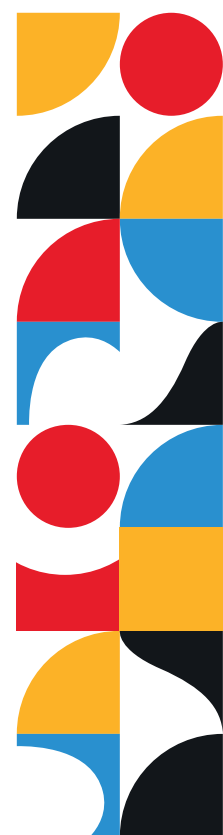
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inches grew from 4% (9,004/231,299) in June 2020, to 12% (45,870/378,875) in December 2022, corresponding to a percent increase of 200%. CDAHP was well accepted in the communities and facilitated access to ART for those facing challenges to regularly visit HF, and the Ministry of Health included CDAPH in the national guidelines for DSD released in 2023.

However, although CDAHP was not designed as a long-term DSD model, the main challenge was to transition the clients to other DSD models after first ART delivery in the community.

**Conclusions/Next steps:** CDAHP likely helps prevent loss-of-follow-up of individuals on ART who missed their drug pick-up/clinical appointments. Further analysis will be necessary to assess the long-term health outcomes of this intervention.

## TUPEE542

Perspectives on shared decision-making for HIV treatment in the era of long-acting injectable antiretroviral therapy: qualitative interviews with medical and social service providers across six U.S. cities

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**Background:** Long-acting injectable antiretroviral therapy (LAI ART) was approved in the U.S. in 2021, giving people living with HIV (PLWH) an alternative to daily oral ART. HIV providers play key roles in offering and helping PLWH choose between ART modalities.

It is therefore important to understand how providers engage their clients in shared decision-making regarding HIV treatment.

**Methods:** We conducted 38 in-depth interviews with medical and social service providers in HIV clinics across six U.S. cities from 09/2021-03/2022. Providers described their approach to decision-making when initiating or switching a client's ART regimen, including the impacts of recent development and clinical availability of LAI ART. Interviews were recorded, transcribed, and analyzed using thematic analysis.

**Results:** Providers believed that choosing between LAI and oral ART, "will require a lot of joint decision-making" and stressed the need for comprehensive decision support tools to facilitate this process.

Four themes emerged:

1. Providers' time in the field shaped their decision-making approaches: More experienced providers described familiarity with choosing between ART combinations ("*learning [decision-making] on-the-job was easier than it is now*"), whereas newer providers had primarily used first-line once-daily single tablet regimens, lowering their comfort with prescribing other modalities ("*there's so many options that they'll probably just stay away from [LAI]*");
2. Providers endorsed initiating the decision-making process by offering clients a "menu" of ART options based on their clinical profile, and also recognized that clients may ask to change medications, requiring providers to "*work backwards*";
3. Most providers saw PLWH as "*absolutely the final decision makers*," though described heterogeneity by subgroup, often by gender or cultural background ("*females tend to say yes to everything*"); and
4. Providers highlighted external constraints to modality choice including insurance ("*a stronger persuader than I am*") and specific clinical program requirements.

**Conclusions:** The advent of LAI ART requires a new approach to client-provider decision-making regarding ART modality, considering PLWH preferences, eligibility considerations, and structural barriers to potential uptake.

To optimize PLWH informed choice around evolving ART options, innovative decision support tools for provider-client shared decision-making are urgently needed.

## TUPEE543

Client education approaches that enhance equity: benefits, challenges, and early lessons from eight clinics across the United States implementing long-acting injectable antiretroviral therapy

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**Background:** Long-acting injectable antiretroviral therapy (LAI ART) can dramatically transform HIV care for those who are not well-served by oral regimens. Programmatic choices regarding which clients are educated about LAI ART can have profound impacts on equity.



**Description:** The ALAI UP Project provides technical assistance and implementation coaching to eight US clinical sites to ensure that the introduction of LAI ARTs does not deepen health disparities, and to accelerate the equitable implementation of LAI ART, starting with injectable cabotegravir/rilpivirine (iCAB/RPV).

We report on early benefits of universal education of iCAB/RPV, challenges, and lessons learned after one year of ALAI UP implementation support as reported by clinics through quarterly surveys and process monitoring calls.

**Lessons learned:** Over the first year of ALAI UP, three clinics changed workflows to educate clients without first assessing their clinical eligibility or insurance coverage. Benefits of universal education include: centering equity as a primary goal, addressing provider's implicit bias, and motivating clients and care teams to work towards viral suppression to enable switching to LAI ART.

Sites that have not adopted this workflow cite the following challenges related to provider buy-in: concern that demand will exceed current capacity, desire to learn from "ideal" clients first, and worry that interested clients will feel disappointed if they are not clinically eligible or cannot afford the regimen.

Clinics used a variety of implementation strategies to increase the reach of their education efforts: passive (n=3) and active education (n=8), group (n=5) and individual education (n=8), and task shifting to train non-clinical staff to conduct education (n=2).

An ongoing challenge among all clinics is documenting education in health records: to date, only two clinics collect data on clients educated.

**Conclusions/Next steps:** Educating all people with HIV about the availability of LAI ARTs – regardless of clinical eligibility, perceived "fit", or outcome of insurance coverage investigation – and documenting who does and does not receive education, is a precursor to equitable delivery of LAI ART. Providing clinics with implementation support (infographics for passive education, training and educational scripts, data support to monitor progress) can increase adoption of universal education strategies.

## TUPEE544

Does integrated clinical/orphans and vulnerable children (OVC) programming improve viral load (VL) outcomes among children and adolescents living with HIV (CALHIV)? Factors impacting VL uptake and suppression in western Kenya

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**Background:** In Kenya, only 85% of children living with HIV are on treatment, while 74% of those on treatment are virally suppressed. While many face adherence-re-

lated challenges, CALHIV also have poorer access to and use of comprehensive HIV care further impacting treatment continuity. We analyzed records for CALHIV receiving treatment in four western Kenyan counties to understand factors associated with VL uptake and suppression among CALHIV.

**Methods:** We accessed data for 4522 CALHIV under 18 years enrolled on treatment at 128 health facilities across Kakamega, Kisumu, Nyamira, and Vihiga counties as of November 2023, and triangulated data between facility electronic medical records and the Child Protection Information Management System. We used Stata 15.1 to analyze the data.

We compared characteristics of CALHIV who had viral load tests with those without viral load tests using descriptive statistics and determined if enrolment of CALHIV in the OVC program was associated with viral suppression using univariable Poisson regression.

**Results:** Among the 4,522 CALHIV (2129 males and 2393 females), 4,487 (99.2%) were eligible for VL tests and 3,110 (69.3%) had valid VL results, with 2,795 (89.8%) with VL below 200 copies/ml.

CALHIV without valid VL tests were more likely to be: under five years of age (8.1% vs. 5.9%); not enrolled in the OVC program (37.8% vs. 30.9%); and not on multi-month dispensing (49.8% vs. 39.6%) compared to CALHIV with valid VL ( $p=.007$ ,  $p<.001$ ,  $p<.001$ ).

CALHIV with unsuppressed VL were more likely to be under five years of age (9.9% vs. 5.4%) and not on multi-month dispensing (74.9% vs. 35.6%) compared to CALHIV with suppressed viral load ( $p<.001$ ,  $p<.001$ ). CALHIV enrolled in the OVC program were 10% more likely to achieve viral suppression (unadjusted incident rate ratio: 1.10; 95% confidence interval: 1.05–1.15).

**Conclusions:** Our analysis revealed that enrollment in the OVC program and multi-month dispensing were associated with improved VL uptake and suppression, likely due to specific interventions provided through the OVC program to improve treatment and VL outcomes among CALHIV.

Enhanced collaboration between clinical HIV and OVC programs is essential for improved VL outcomes for CALHIV and supporting Kenya achieve durable HIV epidemic control.



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## TUPEE545

Community-led same day antiretroviral therapy initiation successfully closes linkage to treatment gaps at a sex worker-led clinic in Bangkok, Thailand

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**Background:** To address low linkage to antiretroviral therapy (ART) services among key populations diagnosed with HIV in community-led clinics in Bangkok, Thailand, the Service Worker in Group (SWING) Foundation, a sex worker-led organization in Bangkok piloted community-led and delivered same day ART (SDART). Here we report the ART-initiation cascade of the first year.

**Description:** Thai nationals who test HIV-positive at SWING, are at least 13 years and have never received ART, are eligible for and offered SDART. If accepted, clients are screened for opportunistic infections (OIs), and referred for OI treatment if indicated, or initiated on ART. After follow-up of 45 days, clients are referred to their long-term ART maintenance facilities. All procedures, including HIV testing, OI screening and ART initiation, are conducted by trained key population lay providers. Data from clients presenting between April 2022-April 2023 were analysed to depict an HIV treatment cascade for this period

**Lessons learned:** A total of 13,747 clients received HIV testing, 475/13,747 (3.5%) were confirmed positive: 440 (92.6%) men who have sex with men, 28 (5.9%) transgender women, 7 (1.5%) female sex workers. 266/475 (56%) were eligible and offered SDART, 266/266 (100%) accepted and 261/266 (98%) initiated ART: 236/261 (90.4%) on the day of HIV diagnosis, 24/261 (9.2%) within 3 days, 1/261 (0.4%) after 7 days. At their long-term ART maintenance facilities, 166/261 (63.6%) underwent viral load testing, 161/166 (97.0%) achieved viral suppression. 5/266 (1.9%) clients who did not initiate SDART showed symptoms of OIs and were referred; all (100%) have initiated ART at their referred hospital. Of 209/475 (44.0%) clients who were not eligible for SDART, 67/209 (32.1%) were non-Thai and were referred to ART migrant support funds, 142/209 (67.9%) were diagnosed out of SDART service hours, and were referred out. All 209 initiated ART at their referred facility.

**Conclusions/Next steps:** Community-led SDART, delivered by trained lay providers is feasible, acceptable and closes linkage to treatment gaps among key populations in Bangkok. Community-led SDART service hours should be extended. National policies should integrate community-led SDART in the health system and to allow non-Thai to receive ART at community-led clinics to ensure equitable health access to all.

## TUPEE546

Enhancing retention strategies for newly-initiated antiretroviral therapy clients in low-resource settings: the impact of an innovative case management program in Malawi

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**Background:** In Malawi, people living with HIV (PLHIV) encounter several barriers to optimal antiretroviral therapy (ART) adherence, including discontinuation from care. The Elizabeth Glaser Pediatric AIDS Foundation (EGPAF) pioneered a novel case management initiative for PLHIV at risk of discontinuing care. Utilizing a risk assessment tool, the program provided personalized support through psychosocial counselors, adherence support officers, and expert clients. Our evaluation assessed the impact of this initiative on retaining newly initiated ART clients in care.

**Methods:** Our study involved a retrospective analysis of individual-level data extracted from electronic medical records and case management registers across ten EGPAF-supported health facilities in Blantyre and Zomba districts. Employing stratified random sampling (with the primary strata being two districts where the initiative was fully implemented), we tracked PLHIV newly initiated on ART before (January to June 2019) and after (January to June 2021) implementing the intervention program for 12 months. We used descriptive statistics and Cox regression analysis to estimate retention rates over a follow-up period of 12 months. We defined retention as adhering to scheduled treatment refill visits.

**Results:** Among the 1,466 clients, 33.8% (n=496) were from the pre-intervention and 66.2% (n=970) from the post-intervention period. Comparing pre- and post-intervention, we noted an overall increase in retention at six months from 81.2% (n=332) to 90.1% (n=749), respectively, p=0.02. Subgroup analyses exhibited notable improvements in retention rates between pre- and post-intervention periods among males (80.5% versus 93.2%, respectively, p=0.001), children (<15 years) (81.3% versus 100.0%, p=0.04), and clients with WHO clinical stage 3 or 4 (81.0% versus 97.4%, p=0.002).

Additionally, PLHIV starting ART after program implementation showed an increased likelihood of being retained in care over 12 months compared to the pre-intervention cohort [odds ratio (OR) 1.35, 95% confidence interval 1.11-1.61].

**Conclusions:** EGPAF's case management program markedly improved retention rates among newly-initiated ART clients, particularly among populations at higher risk of loss to follow-up, such as men and children.



## TUPEE547

## Effect of Directly-Observed Treatment Support (DOTS) on viral load suppression among children and adolescents: a cross-sectional analysis in Bunyoro Region, mid-western Uganda

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**Background:** Literature on antiretroviral therapy directly-observed treatment support (DOTS) among children and adolescents living with HIV (CALHIV) optimised to the dolutegravir (DTG) regimens is scarce.

The overall HIV viral suppression among children and adolescents on ART in Bunyoro region was 80-82% in Jul-Dec 2022 and re-suppression after IAC in Jul-Sept 2022 was 66%, so we implemented DOTS in mid-western Uganda among CALHIV who were on optimised ART regimens to improve adherence and resultant suppression.

**Methods:** During Oct-Dec 2022, 204 CALHIV aged 0-19 years on DTG regimens with  $\geq 2$  consecutive non-suppressed viral load (VL)  $>1,000$  copies/ml were enrolled on DOTS during their first or second intensive adherence counseling (IAC) session from 38 ART sites. Home locations of the CALHIV were mapped and treatment supporters from the same/neighbor village were identified, trained and assigned to the enrolled children.

A total of 100 treatment supporters, mainly expert clients and village health teams (VHTs), each assigned two non-suppressed children, observed daily treatment swallowing, offered adherence counseling, and improved caregivers' ART literacy.

The three months of DOTS were phased; intensive (daily visits in first month), semi-intensive (alternate day visits in the second month) and wean-off (weekly visits during third month).

Facility health workers made weekly follow-up phone calls and two physical home visits (a month apart) to assess whether treatment supporters adhered to the DOTS visit schedules and closing ART literacy gaps among Caregivers. This was through triangulating DOTS observation logs and Caregiver verbal reports of the DOTS visits.

**Results:** Of the 204 CALHIV, 114 (56%) were females, mean age of 11 years (SD=1.1). We excluded 12 (6%) children who dropped out during the intensive month and 6 (3%) whose repeat VL results were never returned to the health facility. The re-suppression rate among CALHIV on DOTS was 77% (143/186).

Of the 43 CALHIV who remained non-suppressed, 16 (37%) were only partially on DOTS due to mobile/multiple caregivers, 12 (28%) had irregular visits from treatment supporters due to long distances, and 12 (28%) had Caregivers who reported HIV-related stigma.

**Conclusions:** DOTS improved re-suppression among CALHIV. Selecting treatment supporters located near the non-suppressing children may potentially improve DOTS effectiveness.

## TUPEE548

## Access to advanced HIV disease interventions and testing outcomes among new and unsuppressed treatment-experienced people living with HIV: observational lessons from Uganda.

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**Background:** The Ugandan HIV treatment guidelines recommend the Advanced HIV Disease (AHD) package of care (PoC) for all new people living with HIV (PLHIV) diagnosed with HIV and those failing on their antiretroviral treatment (ART).

This analysis compares access to some components of the AHD PoC and the testing outcomes between newly diagnosed and unsuppressed treatment-experienced PLHIV.

**Description:** The Uganda Ministry of Health (MOH) with support from partners scaled-up the AHD PoC in 2021 following initial implementation in focal facilities. The AHD interventions included CD4 testing to identify AHD PLHIV; screening for opportunistic infections (OIs); prophylaxis and treatment for OIs; and rapid ART initiation.

We have analyzed DHIS2 data on AHD service delivery among new and unsuppressed treatment-experienced PLHIV from October 2022 to September 2023 to identify any gaps along the AHD cascade in these two client populations.

**Lessons learned:** As shown in the figure, access to CD4+ testing was higher (84%) among the new PLHIV compared to the unsuppressed treatment-experienced PLHIV (57.3%).



Figure. Comparison of AHD service uptake between new and unsuppressed treatment experienced clients.

While access to TB-LAM testing was also better among the new PLHIV with AHD compared to the failing PLHIV, a greater proportion of the unsuppressed treatment-experienced PLHIV received CrAg testing.



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On testing outcomes, AHD prevalence and TB-LAM positivity among new PLHIV was marginally higher than the unsuppressed treatment-experienced PLHIV. However, CrAg positivity was slightly higher among unsuppressed treatment-experienced PLHIV than new PLHIV.

**Conclusions/Next steps:** Our findings showed lower uptake of CD4+ and TB LAM testing among unsuppressed treatment-experienced PLHIV, revealing gaps in AHD screening. This results in missed opportunities to identify and manage life-threatening OIs. Further research is warranted, and it is essential to strengthen AHD interventions for this population to effectively reduce AIDS morbidity and mortality.

## TUPEE549

### Declining ART linkage among people with TB who are HIV-positive in PEPFAR-supported sites, 2020–2023

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**Background:** The U.S. President's Emergency Plan for AIDS Relief (PEPFAR) supports and monitors HIV testing and ART linkage among TB clients in program-supported sites, corresponding to the first two "95's" of the UNAIDS 95-95-95 targets. In 2023, PEPFAR began collecting ART linkage data annually instead of quarterly. Results suggest linkage has fallen below the 95% benchmark.

**Methods:** We analyzed routine age- and sex-stratified data from 2020–2023 that was collected in PEPFAR-supported TB and TB/HIV clinics. We included data on HIV testing, HIV positivity, and ART linkage among people receiving TB treatment. Countries with incomplete data on ART linkage for any year in the study period were excluded.

**Results:** Eighteen countries in Africa were retained for analysis, representing 80% of people with TB recorded during the study period. Within this subset, 94–95% of people knew their HIV status and HIV positivity remained between 34–36%. The absolute number of people with TB and HIV increased 24%, from 180,319 in 2020 to 223,306 in 2023. Annual ART linkage increased from 93% to 96% from 2020–2022, then decreased to 88% in 2023. This change was driven by decreases in eight countries, which accounted for 62% of people with TB reported in 2023. ART linkage was 1–2% lower in males compared to females from 2020–2022; in 2023 this gap widened with 90% linkage in females compared to 87% in males. ART linkage fell among all age groups. In 2023, linkage was highest among those aged 5–14 years (91%), and lowest among those under five years of age (86%).

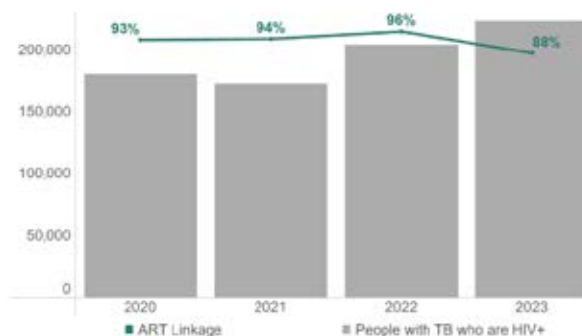


Figure 1. ART coverage among people on TB treatment who are HIV positive.

**Conclusions:** PEPFAR's most recent data suggest ART linkage has declined in 2023. Changes in data collection practices may account for issues with data quality. Further investigation and continuous monitoring are needed to distinguish factors related to programmatic performance and to confirm potential trends.

## TUPEE550

### Stigma and nondisclosure remain important barriers to early HIV treatment retention during the early treatment period in Zambia and South Africa

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**Background:** Attrition from HIV treatment is highest during the first six months after antiretroviral therapy (ART) initiation. Despite years of public education and health messaging, early ART clients surveyed in South Africa and Zambia continued to identify stigma and fear of disclosure as important reasons for disengagement. We explored clients' experiences around stigma and disclosure during their first six months after ART initiation or re-initiation.

**Methods:** From 8/2022–6/2023, PREFER conducted a quantitative survey of adults (≥18) who were starting, restarting, or on ART for ≤6 months at 12 facilities in Zambia (ZM) and 18 facilities in South Africa (SA) and conducted focus group discussions with a subset of survey participants up to 12 months later.

**Results:** We enrolled 771 clients in Zambia (median age 32; 67% female) and 1,098 clients in SA (median age 33; 72% female). Among those who had an opportunity to disclose, two thirds in South Africa and half in Zambia had not disclosed their status to anyone (SA 15%, Zambia



10%) or to just 1-2 others (SA 52%, Zambia 42%). Females had lower odds of disclosing their status to their partner/spouse than did males (SA OR 0.57 (IQR 0.40, 0.83); ZM 0.57 (0.46, 0.91)). Key themes around non-disclosure reported by FGD participants (n=226) included fear of not be loved if a partner knew their status, leading to treatment interruption in an effort to conceal their status.

Clients also described a perceived lack of family support, ridicule, and stigmatizing behaviors within households. FGD participants reported a reluctance to visit a clinic due to concerns regarding privacy and confidentiality, seeing familiar faces, and speculation within communities.

Some clients described bypassing their nearest facility and seeking care at distant clinics to avoid stigma, leading to discouragement, financial and opportunity costs, and ultimately inconsistent engagement in care.

**Conclusions:** Twenty years after the launch of national HIV treatment programs in sub-Saharan Africa, stigma and fear of involuntary disclosure remain major barriers to retention on ART. Models of care for clients in the early treatment period should emphasize maintaining privacy and address ongoing, multi-level stigma fears.

## TUPEE551

Understanding client experience and acceptability of a decentralized drug distribution model for antiretrovirals through private pharmacies in Mozambique: a mixed-methods analysis

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**Background:** Evidence on decentralized drug distribution (DDD) models of antiretroviral therapy (ART) is needed to better respond to client needs and increase service uptake.

This study aimed to understand client experience with and acceptability of DDD through private pharmacies in Mozambique, as piloted by Central Medical Stores (CMAM) and the Meeting Targets and Maintaining Epidemic Control (EpiC) project.

**Methods:** We used a cross-sectional, mixed-methods design, conducting 120 surveys and 12 qualitative interviews with pharmacy DDD clients in three provinces from May through June 2023. Eligible clients were adults who had

been using the pharmacy DDD for at least six months. We conducted quantitative descriptive analysis and qualitative thematic analysis to summarize the data.

**Results:** Most survey respondents were female (61%), married or cohabiting (57%), and an average age of 45 years. Enrollment in DDD was generally easy and motivated by perceptions that services would be more confidential (74%), faster (60%), and require less travel time than facility-based services (53%). More than 95% of pharmacies operated for long hours on weekdays, affording clients more flexibility with drug pick-ups than facilities. Only half of pharmacies kept similar schedules on weekends and holidays. Clients reported typical pick-up visits at the pharmacy as simple, quick, and totally confidential. Most respondents (82%) had refilled at least three-quarters of their antiretrovirals (ARVs) at a private pharmacy. Survey data showed increased access to multimonth dispensing, shorter times traveling to and waiting at the pick-up location, and increased perception that private information was more protected since clients had joined DDD.

Overall, pharmacy DDD was highly acceptable owing to multiple advantages clients linked to better ARV continuation, improved access to high-quality and adequate services, and reduced risk of stigma and discrimination. All clients said they would recommend the model to other PLHIV.

**Conclusions:** The pharmacy DDD model appeared highly acceptable among ART clients in Mozambique. Client experience with the model was described as positive overall. Efforts to scale up this model in Mozambique and similar contexts should consider extended hours of operation on weekends and holidays and supporting clients who may occasionally pick up ARVs at a health facility.

## TUPEE552

Index testing as a strategy to reach out to the highest HIV vulnerable population - sexual partner of people living with HIV in India

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**Background:** In India estimated that people living with HIV are 2.3 million with an adult prevalence 0.21%, out of these 1.6 million PLHIV are under active care as on Dec 2022.

Secondly, India's progress on 95-95-95 targets shows that much more needs to be done to achieve the first 95 target, the achievement reported 74-84-85. India's efforts to identify the most at risk population become very essential to reach on SGD targets. Hence, testing among index partners becomes very essential.



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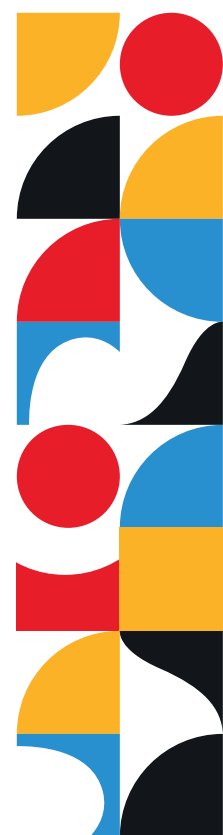
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**Description:** Alliance India is implementing nation-wide outreach-based care and support (CSC) programme with the support of GFATM and NACO. During the implementation of the programme, identified 119,551 sexual partners who have not tested or were not aware of their HIV status and 195,171 people as discordant couple. Alliance India through its outreach programme have identified most at-risk population and started working with these population to promote secondary prevention methods such as safe sex practices, using condom, partner notification and testing for HIV periodically.

During April, 21 to Sept, 22 a total 31,732 partners of PLHIV were tested for the first time, among them 2,189 (7%) were detected HIV positive; 21,174 discordant couples were also tested and 324 (2%) tested positive.

**Lessons learned:** The sexual partner of PLHIV are more at a higher risk, both sub groups (first time and repeat testing) shows higher positivity as compared to general adult prevalence, the positivity among first time testing is second highest after PWID in India, whereas positivity among discordant couple was at 2% which is 10 times higher than general population. Several PLHIV are not aware about the status until they come for testing, many of them have not used condoms and unknowingly carry HIV virus their sexual partners.

**Conclusions/Next steps:** Identification of the most at-risk among index and discordant couples is very important; the country needs to prioritise testing for all sexual partners and eligible family members of PLHIV to achieve their SDG goal, especially the first 95% target.

## TUPEE553

Comparative analysis of the effectiveness of two psychosocial support approaches in enhancing the quality of life of elderly persons living with HIV in Ghana; a quasi experimental study

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**Background:** The introduction of Antiretroviral Treatment (ARTs) has increased the life expectancy of Persons Living with HIV (PLHIV). Ageing with HIV is associated with psy-

chosocial challenges, impacting the quality of life (QoL). Conventionally psychosocial support is delivered in-person during clinical visits. The use of mobile technology in psychosocial support intervention delivery among adolescents has been documented to improve their QoL. This study sought to compare the effectiveness of delivering psychosocial support through the conventional approach to mobile technology in improving the QoL in Elderly Persons Living with HIV (EPLHIV).

**Methods:** The study was conducted in two high burden ART facilities in the Greater Accra region of Ghana from January to December 2023. The facilities were purposively designated to deliver the intervention by the conventional approach (F1) and MTech through Short Voice Messages (SVM)(F2). The study participants were consenting EPLHIV (>50 years) who were on treatment for at least one year in the study facilities.

In addition, participants in F2 were to have mobile phones. Participants in F1 were exposed to a Health worker led EPLHIV specific psychosocial support package for a period of 6 months. While participants in F2 received the psychosocial support package through SVM thrice a week for the same duration. The content of the messages was informed by the WHOQoL domains.

The primary outcome was QoL measured by a questionnaire based on the WHOQoL Bref tool. The data was analysed using STATA version 17.0.

**Results:** A total of 303 participants took part in the study (F1, n=152, F2, n=151). At baseline there, there was no difference in the proportion of clients with good quality of life reported in both arms [F1=41.45% (CI:33.2- 42.4), F2=46.36% (CI: 25.3 - 52.8), P= 0.09]. At endline, participants in F1 had a drop in the proportion with good QoL (36.24% (CI: 26.5 - 38.9) compared to those in the F2 who had an increase in the Proportion with good QoL (78.52% (CI: 66.5 - 82.9), P <0.000.

**Conclusions:** The MTech approach through the SVM significantly improved the QoL of EPLHIV. The National AIDS/STI control Programme should consider integrating SVM as part of Differentiated Service Delivery package to EPLHIV.



## TUPEE554

### Lessons learnt from implementing the hub and spoke differentiated service delivery model for antiretroviral therapy in Cross River, Nigeria

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**Background:** National HIV programs need to be more sustainable and efficient in the context of declining donor funding. The Hub-and-Spoke Differentiated Service Delivery (DSD) model for Antiretroviral Therapy (ART) was introduced in 2021, leveraging primary healthcare facilities (PHFs) to enhance sustainability and efficiency. This paper describes lessons learnt from implementing the model in Cross River State, Nigeria.

**Description:** The implementation involved four steps: a review of program ART data and National policies on ART delivery; identification of barriers to optimal ART service delivery; defining the target population for the hub-and-spoke DSD model; and implementation of the model based on the four building blocks of "What" services will be differentiated, and "When", "Where" services will be provided, and "Who" provides the services.

Pre-implementation activities involved stakeholder engagement, mapping of spoke PHFs to the hub facilities, and baseline assessment of the spokes for basic requirements including audio-visual privacy in service areas, availability of  $\geq 2$  healthcare workers (HCWs), secure storage for antiretroviral medications, and HCWs' willingness to participate. PHFs that met all requirements were activated as spokes, and their HCWs were trained; data capturing/reporting tools were deployed, and willing clients were devolved for ART services.

Continued onsite capacity building and on-the-job training were provided to HCWs at the spokes. The number of spokes providing ART services and the number of clients devolved were assessed as of May 2023.

**Lessons learned:** In total 239 PHFs were assessed: 76% (n=181) had audio-visual privacy, 43% (n=102) had  $\geq 2$  HCWs, 49% (n=118) had secure storage facilities, and 38% (n=91) were willing to participate. Eighty-four (35%) facilities that met all requirements were activated. Forty-six months post-activation, 90% (n=76) of spokes provided ART services with 1,753 devolved clients.

Despite ART being a basic health service <40% of PHFs met the minimum requirements to provide ART services. In addition, >60% of assessed sites were unwilling to participate in integrating ART with existing service delivery.

**Conclusions/Next steps:** The hub-and-spoke DSD model was successfully implemented in this setting and enhanced ART service delivery for recipients of care.

Further investigation of factors affecting HCWs' willingness to participate in implementing this model is recommended.

## TUPEE555

### The impact of changes to South Africa's viral load monitoring guidelines, on progress towards 95-95-95 targets

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**Background:** Historically, South Africa has been ahead of the curve in terms of viral load monitoring, introducing 6-monthly viral load testing in 2004, and defining suppression below 50 copies/ml since 2019. However, the country continues to fall short of the third UNAIDS 95-95-95 goal for 95% of people on sustained ART treatment to achieve viral suppression.

We describe progress towards the third 95 following recent changes to how viral load is monitored in the country.

**Description:** A new viral load management algorithm was adopted nationally in April 2023, which stipulates that the first viral load after initiation should be done after three dispensing cycles, or about three months post-initiation. Previously, the first post-initiation viral load was done after six months on ART. This change has several benefits for people on ART, including earlier detection of factors influencing viral suppression and earlier decanting for virally suppressed individuals, which help retain people in care and improve viral load suppression rates.

**Lessons learned:** The District Health Information System (DHIS) data up to September 2023 was analysed. Based on the HIV 95-95-95 cascade performance, the results show that viral load done for adult women and men is 78%, with a viral suppression rate of 93%. Since the introduction of the new ART guidelines, the viral load suppression



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sion rate has improved. This provides an opportunity for clients with a viral load lower than 50 copies/ml to be decanted to a Differentiated Model of Care (DMOC) to optimize retention in care and treatment access.

**Conclusions/Next steps:** South African ART programme has introduced a game changer in ensuring that viral load monitoring of PLHIV on ART is implemented earlier after treatment initiation. This achievement takes South Africa further in the quest to close the gap on the 3<sup>rd</sup> 95, to address sub-optimal viral load suppression in the country, while maximising measures to address gaps in viral load monitoring and suppression among all populations.

## TUPEE556

### Preferences and treatment outcomes of differentiated service delivery models for HIV care: a retrospective cohort study of women living with HIV in Southern Nigeria

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**Background:** Women living with HIV (WLHIV) have changing needs, and Differentiated Service Delivery (DSD) of antiretroviral therapy (ART) is a client-centred approach that is responsive to individual needs.

This study described DSD model preferences and assessed treatment outcomes among (WLHIV) devolved to DSD in Southern Nigeria.

**Methods:** This retrospective cohort study utilised data from electronic medical records of WLHIV aged 15-49 years, devolved to DSD models in three 12-month cohorts (October 2019-September 2020 [C1], October 2020-September 2021 [C2] and October 2021-September 2022 [C3]) at 154 health facilities supported by PEPFAR/USAID in Akwa Ibom and Cross River States, Nigeria. Explanatory variables include age, sex, DSD type and date devolved. ART status and viral load (VL) results with dates were outcome variables. DSD was categorised as facility-based (FBM) or community-based (CBM) in line with National guidelines; ART status was "active" if alive and in care, otherwise "inactive".

DSD model preferences were described using proportions, while retention in treatment (proportion active) and viral suppression rates (proportion with VL <1000 copies/ml) were compared across DSD models 12 months post-devolvement within each cohort, using Chi-square on SPSS with significance level at .05.

**Results:** Over the 3 years, 85,011 WLHIV were devolved; 87.6% (74,436/85,011) were aged ≥25 years, and 56.2% (47,797/85,011) were devolved to FBM. In C1, 84.7% (5,547/6,549) were in CBM, while the majority of those devolved in C2 (60.5% [42,539/70,353]) and C3 (52.5% [4,256/8,109]) were in FBM.

Overall retention was 96.4% (81,982/85,011), and out of 78,431 WLHIV who had VL tests 99.3% (77,872/78,431) attained viral suppression.

Retention was comparable across DSD respectively in C1 (FBM:99.1% vs CBM:98.6% [p=0.286]) and C3 (FBM:84.5% vs CBM:85.7% [p=0.143]) cohorts, but better in CBM compared to FBM (CBM:97.0% vs FBM:98.3% [p<0.001]) in C2. VL suppression rates were comparable across DSD models in C1 (FBM:99.7% vs CBM:99.3% [p=0.266]) and C3 (FBM:98.8% vs CBM:99.1% [p=0.290]), but higher in CBM compared to FBM (CBM:99.1% vs CBM:98.8% [p<0.001]) in C2.

**Conclusions:** DSD preferences for WLHIV in our setting moved from CBM to FBM between 2020 and 2022, with comparable treatment outcomes across models.

Investigation of factors influencing DSD model preference among WLHIV is recommended, to support sustained optimal treatment outcomes.

## TUPEE557

### Viral suppression patterns among children on dolutegravir-containing ART in Western Kenya

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**Background:** Starting in 2019, the WHO recommended dolutegravir (DTG)-containing antiretroviral therapy (ART) as a preferred first-line option for children and adolescents living with HIV (CALHIV).

We sought to characterize patterns in viral suppression after initiating DTG and factors associated with viral failure.

**Methods:** We conducted a prospective cohort analysis of children who participated in the Opt4Kids study in Kisumu County, Kenya (n=704) who transitioned to DTG-containing ART. We included children who had been on DTG for at least 6 months and had at least one viral load (VL) result available while on DTG. We assessed VS patterns descriptively and factors associated with time from initiating

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DTG to viral failure (defined as plasma viral load (VL) >200 copies/ ml), via a multivariate Cox proportional hazards model.

**Results:** We identified 479 children who had switched to DTG-containing ART and had at least one VL available for analysis. The median age at study enrollment was 9 years (IQR 7,12), 229 (48%) were female, and the median time on ART was 6 years (IQR 3, 8). Subsequently, 27.1% (130/479) had a VL>200 copies/mL and their median time to first viral failure was 33 months (IQR 27, 41).

Factors associated with time to viral failure included being on a protease inhibitor-containing ART prior to DTG transition (HR 2.40, 95% CI 1.42, 4.00), primary caregiver age < 24 years (HR 3.82, 95% CI 1.57, 9.30), and lacking electricity in the home (HR 1.71, 95% CI 1.17, 2.51). All 130 CALHIV with viral failure had a history of viral failure prior to DTG initiation.

**Conclusions:** A sizeable portion of CALHIV on DTG may have viral failure, which was significant even among our studied cohort which is relatively well-engaged in care. This has direct implications for DTG resistance, which requires further exploration, and durability of DTG-containing regimens for CLHIV.

History of prior viral failure, baseline ART regimen, caregiver age, and household economic status may be important factors for programs to consider utilizing to identify CALHIV at risk for viral failure while on DTG.

## TUPEE558

### Scaling up access to HIV treatment services among children and adolescents enrolled in a PEPFAR Program in Nigeria: lessons and experiences from State Health Insurance Schemes

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**Background:** Nigeria has poor viral-suppression-rates among children and adolescents (0-19 years) living with HIV (CALHIV). The problem is largely due to inadequate access to treatment and affordable healthcare. Evidence shows access to health insurance improves viral-suppression-rates and health outcomes among adults living with HIV, however the extent to which current health insurance mechanisms affect children and adolescents remains unknown. This study examines the access to health insurance and viral-suppression-rates over time among children and adolescents living with HIV enrolled in Nigeria over a four-year period.

**Description:** The United States Agency for International Development (USAID) funded Orphans and Vulnerable Children Program in Nigeria, through the Integrated Child Health and Social Services Award projects which commenced in December 2019, collaborated with State Contributory Health Management Agencies to enroll children/adolescents and their caregivers in State Health Insurance Schemes in five states namely Adamawa, Bauchi, Bayelsa, Edo and Lagos States.

Beneficiaries were selected for enrollment into Health Insurance Schemes using a standardized program assessment tool. In addition to HIV treatment services, the scheme provided access to general medical services at the health facilities including immunization, nutrition, TB services, which would have been otherwise covered by out-of-pocket expenses.

We analyzed viral-suppression-rates of CALHIV enrolled in health insurance in five participating states, as well as viral-suppression-rates of CALHIV in five other program states without health insurance over the four-year period.

**Lessons learned:** A total of 8,661 (4,449 Females & 4,212 Males) children and adolescents (0-19 years) were enrolled in State Health Insurance Schemes in five States. Of the total enrolled, 5,299 (61%) had a positive-HIV-status. HIV viral-suppression-rates from the five states rose from 64% to 93% over the four-year period. Viral-load-suppression-rates of 6,922 (3,614 Females & 3,308 Males) CALHIV enrolled in five other program states without health-insurance rose from 63% to an average of 90%.

**Conclusions/Next steps:** The implementation of health insurance schemes resulted in increased health access for children and adolescents, which led to improved viral-suppression-rates across participating states, with nearly half achieving rates exceeding 95%, highlighting the potential efficacy of incorporating access to health insurance in policies to enhance HIV treatment outcomes in Nigeria among children and adolescents in Nigeria.







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## Global and national financing, economic evaluation and sustainability

### TUPEE559

Measuring sustainability among more than  
50 Department of Defense HIV/AIDS Prevention  
Program (DHAPP) military programs, 2016 – 2022

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**Background:** As the global HIV/AIDS response shifts from emergency to sustained programming, the U.S. State Department, Bureau of Global Health Security and Diplomacy (GHSD) and the Department of Defense HIV/AIDS Prevention Program (DHAPP) are challenged with equipping partner nations to sustainably ensure ongoing treatment and prevention. In 2016, DHAPP created the Military Sustainability Index Dashboard (MILSID), an adaption from the PEPFAR Sustainability Index Dashboard (SID), to track national sustainability of DHAPP-supported programs and inform strategic planning.

**Description:** The MILSID is a 52-item questionnaire categorized into four domains and thirteen elements scored between 0 (unsustainable) to 10 (sustainable) to measure the sustainability of military HIV programs.

The MILSID is completed annually by a multi-disciplinary team including partner militaries, implementing partners, DHAPP Program Managers, and other relevant stakeholders. This exercise is accompanied by a country discussion about short and long-term objectives to improve program sustainability.

The completed questionnaires are reviewed by DHAPP headquarters to identify trends and shifts along the sustainability continuum utilizing a summary dashboard and Tableau® visualizations.

**Lessons learned:** Since the inception of MILSID, the overall sustainability score for military programs supported by DHAPP has increased from 5.02 in 2016 to 6.05 in 2022, a 20.52% improvement. Three of four domain categories showed positive overall score improvement while Strategic Investment, Efficiency, and Sustainability domain increased slightly.

	Overall Score (2016)	Overall Score (2022)	% Change
Leadership and Accountability	6.24	7.65	22.60%
Military Health System and Service Delivery	4.78	6.22	30.13%
Strategic Information	5.11	5.74	12.33%
Strategic Investment, Efficiency, and Sustainability	3.62	3.66	1.10%

Table.

**Conclusions/Next steps:** The MILSID results successfully demonstrate DHAPP's movement towards building sustainability within military programs globally.

The improvement of overall MILSID scores across time illustrates DHAPP's achievement in reaching over the targeted 15% increase in the sustainability metric, a Defense Health Agency's indicator for the Division.

MILSID results suggest that, while DHAPP-supported countries made progress towards sustainability in programming and policy, there must be a stronger focus on effectively transitioning DHAPP partner militaries to national financial resources to reach and maintain comprehensive HIV program sustainability.

### TUPEE560

Value for money in resource-limited settings:  
improving HIV allocative efficiency in Sri Lanka,  
Mongolia, and Bhutan

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**Background:** As HIV funding for the Asia-Pacific region gradually shifts away from international donor support, countries face a growing financing gap in their HIV response despite increases in domestic funding. More efficiency is needed in HIV control efforts and allocating limited resources.

The Global Fund-funded SKPA-2 program conducted an allocative efficiency simulation to inform HIV resource allocation in Sri Lanka, Bhutan, and Mongolia.

**Methods:** HIV epidemiological data, program spending, and intervention cost data were collated from each country. The Optima HIV mathematical model was used to:

1. Determine the optimized allocation of HIV prevention and testing spending to reduce new HIV acquisitions and deaths from 2023-2030, and;
2. Estimate reductions in new HIV acquisitions and deaths under different funding scenarios compared to if 2021 baseline spending allocations were continued.

**Results:** The efficiency gain is highly dependent on each country's HIV epidemic, the structure of its response, and HIV program expenditures, ranging from a 2% to 20% reduction in projected cumulative new HIV acquisitions from 2023-2030 with existing spending optimized.

The investments that should be prioritized varied in each context, but generally shifted towards additional resources to community-based interventions, including pre-exposure prophylaxis, tailored to specific key population groups (Figure 1).

In Sri Lanka, testing and treatment targets could be within reach by 2030 if spending on HIV prevention and testing increases by 170% and is targeted toward key populations. In Mongolia and Bhutan, additional impact may be possible by scaling up innovative testing strategies and stigma reduction interventions, respectively. Removing HIV prevention and testing spending could lead to a 20-80% increase in cumulative new HIV acquisitions by 2030.

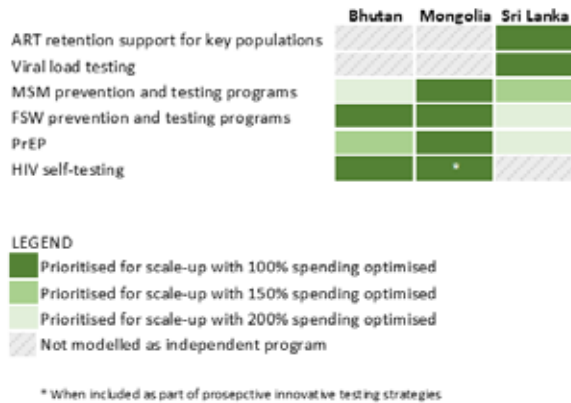


Figure 1. Selected interventions for scale-up at 100%, 150% and 200% HIV prevention and testing spending optimized.

**Conclusions:** To meet national HIV strategic planning targets with the goal of ending AIDS by 2030, it is most cost-effective to tailor HIV services for specific key population groups and prioritize the scale-up of PrEP.

## TUPEE561

Context and circumstance are everything: different pathways to social contracting reform in low HIV-prevalence Asian countries

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**Background:** Mongolia, Bhutan, and Sri Lanka all have general community HIV prevalence below 1%. Young men who have sex with men, female sex workers, and transgender women are the most affected populations. With financial support from external donors, key population-led organizations (KPOs) are often the primary providers of essential health services and information to peers. Social contracting is promoted as a policy solution to domestically finance KPO programs after external donors exit. However, it takes significant political will and time to implement appropriate foundational policies and domestic resource mobilization initiatives.

**Description:** The Global Fund multi-country grant program titled Sustainability of HIV Services for Key Populations in Asia (SKPA-2) supports Mongolia, Bhutan, and Sri

Lanka to accelerate financial sustainability through social contracting reform. A baseline assessment was done in 2022, and a guiding roadmap was co-drafted with stakeholders. Originally, swift pilot implementation was expected to follow. An in-depth political economy analysis was conducted in each country in 2023 to refine an approach to promote dialogue into action.

**Lessons learned:** Social contracting reform in these countries will be a long road, plagued with:

1. Complex politics,
2. Persistent legal and regulatory barriers,
3. A "head-in-sand" mentality regarding transition, and
4. Operational issues requiring broader systemic change.

In Sri Lanka and Bhutan, there is little prospect within the medium term of domestic budgets replacing external donor assistance to sustain KPO involvement in the HIV response.

It is still feasible in the short term to strengthen the national disease control program's capacity to leverage sophisticated contracts with KPOs to generate results and use them for advocacy in budget decision-making.

This would require coaching in better management practices, establishing good monitoring systems, and, in Bhutan, aligning the provider payment model to domestic public financial management practices.

In Mongolia, given frequent changes in government, the best current option to domestically finance KPO-led programs would be to integrate KPOs into the national health insurance provider network for a limited scope of work.

**Conclusions/Next steps:** Social contracting is not a silver bullet. Sometimes circumstances are only suitable for incremental changes. Contextualized synergistic approaches are the key to achieving results.

## TUPEE562

Meeting 95-95-95 targets in Vietnam: an analysis of decreasing HIV prevalence in Quang Ninh Province over the last decade

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**Background:** Provincial HIV prevalence and incidence vary considerably in Vietnam, with evidence of emerging and decreasing sub-epidemics. Quang Ninh, a province with previously high HIV prevalence, has made significant progress against the 95-95-95 targets. Incidence dropped from 0.7 per 1,000 population in 2006 to 0.1 per 1,000 population in 2022, and prevalence decreased from 0.67% in 2006 to 0.42% in 2022.



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We aim to describe trends in HIV testing, new HIV diagnoses, and enrollment in care and treatment over the past 10 years in Quang Ninh to help characterize the province's progress in epidemic control.

**Methods:** We reviewed de-identified data for newly diagnosed HIV clients from 2013 through 2023 from the provincial case reporting system and data from HIV testing and care and treatment programs. Linear regression analysis was used to assess temporal trends and Chi-square to identify significant differences.

**Results:** From 2013 to 2023, 2,465 individuals were newly diagnosed with HIV, of whom 90.6% (2,233/2,465) started treatment at some stage. The number of new cases decreased significantly over time, with an annual average change (AAC) of -12.7% (95% CI: -22.0% to -3.4%;  $p < 0.05$ ). Statistically significant decreases were found among most subpopulation analyses, with the largest changes among people who inject drugs (AAC -19.3%, 95% CI: -35.7% to -3.1%;  $p < 0.05$ ), individuals 35-44 years (AAC -15.2%, 95% CI: -31.4% to 1.0%;  $p < 0.05$ ), people living with HIV in the province (AAC -11.8%, 95% CI: -22.8% to -0.8%;  $p < 0.05$ ), and those categorized as other key populations (AAC -8.8%, 95% CI: -25.9% to 8.3%;  $p < 0.05$ ).

The number of HIV tests conducted and number of HIV clients on antiretroviral therapy (ART) increased, with AACs of 3.7% and 2.4%, respectively. ART clients maintained a high rate of viral load suppression (five-year average of 98.3%).

**Conclusions:** The decrease in newly diagnosed individuals from 2013 to 2023, coupled with increased coverage of HIV testing and treatment uptake in Quang Ninh province, reflect a potentially positive trend toward epidemic control. Ongoing efforts should concentrate on community-led outreach to determine if risk networks remain untapped, transition to provincially funded community-to-facility models, promote biomedical prevention (pre-exposure prophylaxis), and data-driven resource planning.

## TUPEE563

Strengthening organizational capacity to diversify financing and sustain KP-led CSOs in India

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**Background:** Key population-led civil society organizations (CSOs) play a critical role in health care delivery. Many CSOs rely on inconsistent financing and have limited access to capacity strengthening (CS) support for financial diversification. The Meeting Targets and Maintaining Epidemic Control - EpiC India project strengthens organizational systems of local KP-led and KP-serving CSOs to diversify financing to sustain their engagement in the HIV response.

EpiC supported CSOs to develop a CS plan (CSP) to strengthen systems to improve readiness for diversified financing and assessed funding changes after two years.

**Description:** EpiC worked with 32 CSOs in Maharashtra and Telangana from October 2021 to September 2023. EpiC mentors provided targeted CS to CSOs, and after 18 months of mentorship, 87% of CSP goals were achieved. EpiC worked with CSOs on compliance with statutory requirements to improve readiness for different types of funding. CSOs were supported to improve their visibility through website development, promotional materials, and enhanced social media presence. All 32 CSOs received training in proposal development, and 40 proposals were developed, 33 submitted, and 18 approved.

**Lessons learned:** A structured, CSO-led CS process enhanced organizational and resource mobilization systems. In total, 81% of CSOs (increase from 28%) had human resources (HR) policies aligned to Indian HR standards, 81% of CSOs (increase from 13%) had an active website, and 84% (increase from 38%) adopted financial management policies aligned to best practices. CSOs successfully accessed diversified funding. Of 32 partners, 44% ( $n=14$ ) accessed at least two types of funding including social contracting, corporate social responsibility, crowd funding, and social enterprise revenue.

Between July 2022 and September 2023, organizations self-reported **38,984,500 Indian rupees (INR) (US\$475,421)** in grants, **INR3,041,443 (US\$37,091)** in donations, and **INR27,105,148 (US\$330,551)** as revenue from social enterprises. The majority of CSOs increased their annual operating budgets (average growth across CSOs ~25%), with 10 CSOs more than doubling annual operating budgets from 2021 to 2023.

**Conclusions/Next steps:** As funding for HIV programming decreases and priorities shift, CSOs need to identify alternative mechanisms and diversify funding to continue service delivery. Strategic technical assistance projects can successfully support partners in preparing for and accessing diverse funding streams.

## TUPEE564

Building blocks for sustainability: comprehensive preparedness assessments empower local organizations to contract with government entities to advance epidemic control

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**Background:** As Vietnam approaches epidemic control, donors including PEPFAR are discussing phased transition by 2030. Vietnam's social health insurance scheme covers HIV care and treatment including exams, basic lab tests,

antiretrovirals, and viral load testing. It serves as a model for domestic financing, yet gaps remain funding community-based services, hindering achievement of 95-95-95 targets.

**Description:** Vietnam Administration for HIV/AIDS Control is implementing a nine-province social contracting pilot to make the case for local investment in community complementarity to the response. In support, the USAID/PEPFAR-funded projects are assessing civil society organization (CSO) capacities and providing tailored technical assistance.

Since March 2022, 23 CSOs in five provinces in Vietnam completed Community Organizational Sustainability Assessments (COSA) to gauge preparedness for social contracting across five domains. EpiC and Life Centre, a local organization, co-facilitated in-person assessments with CSO representatives by asking open-ended, probing questions to encourage group discussions and reflection. CSOs then scored themselves using a five-part scale with rubrics, and were encouraged to identify gaps and solutions to address them. CSOs jointly developed and implemented capacity strengthening plans and completed reassessments after one year.

**Lessons learned:** Experienced facilitators to guide the process were critical to identifying each CSO's strengths, gaps, and goals. CSO partners' diverse needs depended on their organizational goals and stage of development. Required improvements varied by domain. Twelve CSOs advanced the most in financial management and sustainability, reflecting gains in legal registration (required for social contracting), and/or alignment of financial systems with government bidding regulations.

This is foundational to government funding, and therefore social contracting. Nine CSOs improved the most in communications, which allows for successful online engagement via popular social media platforms and enhanced demand generation skills, both critical to reach clients and meet social contracting targets with limited funding for demand generation.

**Conclusions/Next steps:** The assessment process familiarized CSOs with the complexity of successfully implementing with government-provided funds compared with donor-funds and underscored the urgency to prepare for that transition.

The results informed tailored actions for technical assistance, with annual reassessment allowing for ongoing adaptation of those plans and tracking progress on the pilot and the move towards more sustainable community interventions.

## TUPEE565

### Peer-led social enterprise 'by' and 'for' people living with HIV paves the way for self-sustainability

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**Background:** While there is free antiretroviral treatment available in India, people living with HIV (PLHIV) who can afford to pay, prefer seeking treatment from the private sector due to fear of stigma and discrimination, loss of confidentiality, and challenges in quality of care in government hospital settings due to high patient load.

There was a need for avenues that provided subsidized medications to PLHIV in a community-friendly and stigma-free environment.

Treatment, Adherence, Advocacy and Literacy (TAAL) was conceptualized as a peer-led pharmacy in 2006 by Network of Maharashtra by People Living with HIV (NMP+).

**Description:** Drugs for a month's treatment cost between US \$15 to \$62 at pharmacies. TAAL tapped into the corporate social responsibility programs of pharmaceuticals and received the medications for less than US \$5, passing the benefit to clients.

With USAID support, TAAL grew into TAAL+ an integrated health center (IHC) that offers diagnostics and medication for HIV, coinfections like tuberculosis, hepatitis B & C, HIV associated cancers, renal and bone issues, access to prevention tools like PrEP and PEP, screening, and medication for non-communicable diseases like hypertension and diabetes, as well as mental health services including counseling on U=U, marriage, and pregnancy.

Since October 2022, EpiC has been supporting TAAL+ in business planning, financial modeling, and adoption of newer demand generation strategies, including launch of online sales platform (Website).

**Lessons learned:** With the help of newly launched services and novel demand generation strategies, TAAL+ expanded its client base from 790 in 2022 to 1,200+ in 2023 through sale of PrEP and ARVs. TAAL+ empaneled as a supplier of the State AIDS Control Societies resulting in bulk ARV procurement.

These efforts led to 75% increase in revenue from US \$155,034 in 2022 to US \$328,212 in 2023. With 7-10% profit generated annually, TAAL+ addresses quality of care needs of PLHIV, including 3rd line treatment for few clients. Today, TAAL+ contributes to 16% of the total annual revenue of NMP+.

**Conclusions/Next steps:** Community led pharmacy models are critical in ensuring care and can be made self-sustainable with strategic planning, partnerships, and use of innovative approaches for demand generation.



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## TUPEE566

### Scaling up PrEP and leveraging financing options to end AIDS by 2030 in Vietnam

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**Background:** HIV pre-exposure prophylaxis (PrEP) was piloted in Vietnam in 2017 and subsequently scaled-up with 65,500 people currently on PrEP by the end of 2023. The Vietnam National Strategy to End the AIDS Epidemic by 2030 set MSM population PrEP targets at 30% by 2025 and 40% by 2030, but a recent impact analysis estimated that total KP PrEP coverage would need to be 70% to achieve 2030 goals.

We estimated the gap between current PrEP coverage and what is needed under this new scenario and identified possible financing options to cover the gap.

**Methods:** Based on population size estimation studies and recommendations from UNAIDS, the MSM population was estimated at 1% of the adult male population. MSM were likewise estimated to contribute 80% to total PrEP need and to total number of PrEP clients. Coverage targets were set to increase gradually from 25% in 2022 to 70% in 2030.

Free donor-sponsored PrEP was projected to account for over 50% of PrEP services until 2025 and to decrease gradually from 2026, with simultaneous transition to partial subsidy or commercial full fee options until 2030.

**Results:** Seventy percent KP PrEP coverage by 2030 translates into 236,880 individuals, more than three times the number of clients on PrEP in 2023. By 2030, partial subsidies at private clinics and fully commercial PrEP will need to be the two main categories contributing to the PrEP market (40% and 42% respectively, see Figure 1).

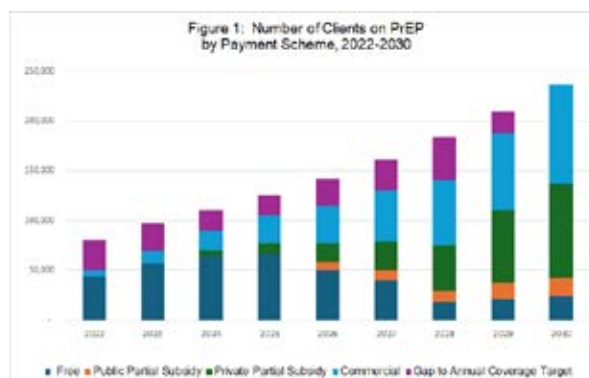


Figure 1. Number of clients on PrEP by payment scheme, 2022-2030.

**Conclusions:** Vietnam will need to more than triple the current number of clients on PrEP, in combination with high coverage for ART and other prevention services, to reach the goal of ending AIDS by 2030. A total market ap-

proach is needed to leverage different payment options, especially the private sector and out-of-pocket payments from clients, to optimally address unmet PrEP needs.

## TUPEE567

### Could primary health care be the answer? Sustainability of HIV program through integration into the broader primary health care system: lessons from Zambia's intervention strategy

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**Background:** In the past two decades, global efforts by international donors, including PEPFAR, Global Fund, and World Bank, have significantly funded and addressed the HIV/AIDS epidemic, leading to a substantial scale-up of services. However, recent funding reductions may undermine the gains made thus far, in resource-constrained nations. Therefore, there is a need to establish HIV/AIDS program sustainability and explore efficient strategies to maintain program coverage gains amid financial constraints. The USAID DISCOVER project implemented by JSI structured a strategy of integrating HIV services and systems within the broader primary health care (PHC) platform to sustain HIV program gains in the midst of reduced external support.

**Description:** The study assessed sustainability outcomes of a one-year strategy implemented in pre-existing health posts (HPs) and standalone non-conventional (SNC) facilities supported by the project across eight provinces in Zambia from October 2019 to September 2023. A facility was defined as sustainable if it maintained 98% continuity in antiretroviral treatment, had Ministry of Health PHC-supported staff to provide HIV services, integrated PHC and HIV health system programming, and could operate without project support for at least a year. Facilities were categorized as sustainable, partial, or unsustainable based on meeting all, some, or none of the standards respectively.

**Lessons learned:** In the initial year (October 2019 to September 2020), 114 facilities participated, with 52% deemed sustainable, 47% partial, and 1% unsustainable. Year 2 saw 118 facilities, of which 72% achieved sustainability, 13% were partial, and 15% unsustainable. In the third year, 126 facilities participated, with 75% sustainable, 16% partial, and 8% unsustainable. The final year (October 2022 to September 2023) involved 66 facilities, with 88% achieving sustainability, 12% partial, and 5% unsustainable.

HPs were 1.5 times more likely to be sustainable than SNC ( $p < 0.01$ ). Facilities with people on ART below 1000 were 2.8 times more likely to be sustainable than those serving more than 1000 people ( $p < 0.01$ ).



**Conclusions/Next steps:** Integration of HIV and primary health care services proved to be a viable strategy of sustaining HIV program coverage gains in Zambia. This approach may provide a hopeful glimpse of the HIV program sustainability beyond epidemic control in resource constrained countries.

## TUPEE568

Analyzing mechanisms for HIV, hepatitis, and STI testing programs in Uganda: exploring transitional financing trends (2018-2023) and impact on healthcare

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**Background:** Laboratory testing for HIV, Hepatitis, and STIs is pivotal for patient diagnosis and management, playing a crucial role in detecting emerging diseases. The recent outbreaks of Ebola and COVID-19 underscore the importance of laboratory diagnosis. Despite the commitment of African governments to increase health financing through the Abuja declaration, the attainment of this goal remains elusive.

This research investigates transitional financing trends to identify shifts in funding models, government contributions, and international support, aiming to understand the sustainability and effectiveness of testing programs.

**Description:** This study employs a comprehensive approach to examine the financial structures supporting HIV, Hepatitis, and STI testing programs managed by Uganda's AIDs Control Program and the Department of Laboratory and Diagnostic Services in the Ministry of Health. Document reviews, encompassing quantification, supply planning, and procurement reports from 2018 to 2023, were conducted.

The analysis scrutinizes transitional financing models, including donor funding, government allocations, and collaborations with international organizations. Using Microsoft Excel (2021), descriptive analysis summarizes funding commitments, illustrating trends and commodity availability.

The department advocated for funding by presenting gap analysis and stock-out reports to the government and stakeholders.

**Lessons learned:** The study highlights key lessons from transitional financing trends. Funding trends improved from 59% in 2018 to 71% in 2023, resulting in increased commodity stock availability from 48% to 78%. Government funding for lab commodities increased fivefold from 3% in 2018 to 15% in 2023.

These improvements positively impacted on diagnosis and management, emphasizing the importance of program sustainability and considerations for equitable healthcare delivery. Advanced technologies, including Point of Care Testing, are now integral to the department's operations.

**Conclusions/Next steps:** Adequate funding for laboratory commodities is crucial for ensuring quality service delivery. Governments have opportunities to enhance domestic health financing, supporting the transition from donor aid and ensuring financial sustainability for HIV, Hepatitis, and STI testing. To secure adequate government funding, increased domestic investment and the development of a clear framework for donor transition are essential and require ongoing monitoring and implementation.

## TUPEE569

Improving the quality of Global Fund applications and prioritisation of HIV prevention: the effect of a peer-learning network

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**Background:** South-South HIV Prevention Learning Network (SSLN), a Global HIV Prevention Coalition (GPC) initiative was founded to support countries to strengthen HIV prevention programmes. Of the 36 GPC countries SSLN currently supports 15 in Africa. SSLN aims to enhance prevention programmes by fostering shared learning and best practices among countries, including strengthening Global Fund (GF) applications. During the GF's grant cycle 6 (GC6) concerns arose regarding the underemphasis on prevention.

We assessed the effect of SSLN on the prioritisation of HIV prevention, comparing budgets and alignment to normative guidance in GF applications.

**Methods:** Among 36 GPC countries eligible for GF funding, 23 (12 SSLN and 11 non-SSLN countries) submitted in windows 1-3 of GC7. To assess the impact of SSLN we undertook a desk based comparative quantitative and qualitative analysis by country and cluster, SSLN vs. non-SSLN. We examined whether HIV prevention budgets increased, whether prevention prioritisation and alignment to normative guidance (quality) improved in GC7 requests compared to GC6. Data was sourced from the GF data explorer.

**Results:** Across the 23 countries studied, there was a \$57,234,423 increase in HIV prevention funding requests in GC7 compared to GC6, increasing the proportion of HIV prevention funding from 13.4% of total HIV allocations in GC6 to 14.8% in GC7. SSLN countries increased the total amount requested for HIV prevention by 11.6% in GC7,



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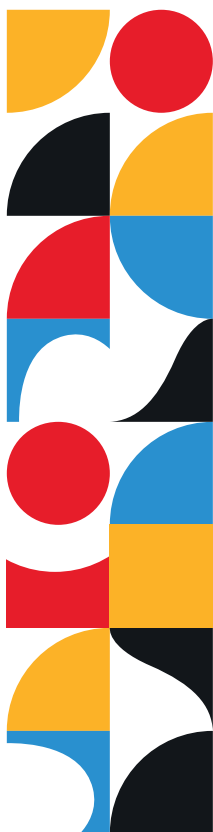
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compared to 8.3% among non-SSLN countries. SSLN countries also increased the proportion of funding requested for prevention in GC7 by 12.3%, compared to 6.7% among non-SSLN countries.

Quality of HIV prevention requests improved from 44% in GC6 to 64% in GC7. SSLN- compared to non-SSLN countries had higher quality HIV prevention requests in both GC6 (quality scores: 48% vs. 40%) and GC7 (quality scores: 69% vs. 59%). Additionally, SSLN countries were more likely to set ambitious prevention targets that align to global goals (50% vs. 27%).

**Conclusions:** This study demonstrates a positive effect of a peer-learning network on funding applications. Participation in peer-learning networks may help strengthen budget allocations and programme quality.

## Costing, cost effectiveness and affordability

### TUPEE570

Cost-consequence analysis of demand creation strategies for the Pre-Exposure Prophylaxis (PrEP) use in the most vulnerable population for HIV between 15 and 19 years old

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**Background:** The HIV epidemic affects population groups unequally, with a higher incidence in populations of men who have sex with men, transgender women (TGW) and the Black population, in Brazil. The extent of the coverage of PrEP and the subsequent reduction in HIV transmission rely heavily on Demand Creation Strategies (DCS) designed to inform and facilitate access to services.

The objective of this manuscript is to evaluate the costs and outcomes of DCS for starting PrEP, with focus on the most vulnerable populations aged between 15 and 19 years in Sao Paulo.

**Methods:** A cost-consequence analysis was conducted, comparing six PrEP DCS implemented by PrEP1519 Study. The strategies evaluated were: Amanda Selfie – chatbot, peer-educator recruitment (PER) on dating apps, PER on social media, face-to-face PER, NGO referrals and direct referrals to health centers. The cost analysis included direct costs related to human resources, promotional materials, testing, equipment, services. The outcome assessed was the effectiveness of linking participants to PrEP initiation ("Rate of PrEP Initiation" - RPrEPi).

**Results:** The DCS that showed the highest inclusion of participants aged 15-17 years and individuals of Black ethnicity was face-to-face PER (RPrEPi: 1.03; CI 0.54 – 1.51 and

RPrEPi: 1.51; CI 0.92 – 2.10, respectively). TGW and non-binary people were included in PER mainly via social media strategy (RPrEPi: 0.20; CI 0.12 – 0.68 and RPrEPi:0.13; CI 0.03 – 0.47, respectively). The lowest cost per participant included was presented by direct referrals strategy and the highest, by chatbot (cost per included participant ranging from US\$ 209.52 to US\$ 184,934.30).

	Online demand creation strategies				Face-to-face demand creation strategies			
	Amanda Selfie chatbot	PER on dating apps	PER on social media	Face-to-face PER	NGO referrals	Direct referrals		
Total people approached	2722	1822	2020	1888	1712	119		
Total participants with first PrEP prescription	10	282	80	24	17	119		
15 - 17 years								
Participants with first PrEP prescription	7	80	20	17	4	28		
RPrEPi	0.30	0.25	0.31	0.30	0.34	0.31		
95% CI	0.09 – 0.57	0.04 – 0.32	0.09 – 0.77	0.06 – 0.51	0.00 – 0.58	0.07 – 0.54		
cost per participant	US\$209.52	US\$209.52	US\$209.52	US\$209.52	US\$209.52	US\$209.52		
18 - 19 years								
Participants with first PrEP prescription	3	212	60	17	13	91		
RPrEPi	0.14	0.37	0.30	0.33	0.34	0.38		
95% CI	-0.02 – 0.30	0.01 – 0.73	0.08 – 0.50	0.04 – 0.61	0.00 – 0.67	0.20 – 0.51		
cost per participant	US\$184,934.30	US\$209.52	US\$209.52	US\$209.52	US\$209.52	US\$209.52		
Black people								
Participants with first PrEP prescription	8	288	48	30	18	104		
RPrEPi	0.42	0.21	0.17	0.31	0.31	0.32		
95% CI	0.18 – 0.70	0.03 – 0.39	0.00 – 0.49	0.07 – 0.55	0.04 – 0.58	0.20 – 0.58		
cost per participant	US\$209.52	US\$209.52	US\$209.52	US\$209.52	US\$209.52	US\$209.52		
White people								
Participants with first PrEP prescription	2	8	2	2	4	8		
RPrEPi	0.08	0.08	0.20	0.12	0.34	0.38		
95% CI	-0.08 – 0.24	0.01 – 0.16	0.12 – 0.48	-0.08 – 0.28	0.00 – 0.68	0.01 – 0.74		
cost per participant	US\$184,934.30	US\$209.52	US\$209.52	US\$209.52	US\$209.52	US\$209.52		
Transgender people								
Participants with first PrEP prescription	0	18	0	2	3	4		
RPrEPi	---	0.00	0.18	0.12	0.33	0.31		
95% CI	---	0.00 – 0.18	0.00 – 0.37	-0.08 – 0.32	0.00 – 0.67	0.00 – 0.67		
cost per participant	---	US\$209.52	US\$209.52	US\$209.52	US\$209.52	US\$209.52		
Men who have sex with men								
Participants with first PrEP prescription	2	148	32	24	11	79		
RPrEPi	0.30	0.14	0.30	0.31	0.33	0.35		
95% CI	0.09 – 0.57	0.02 – 0.26	0.07 – 0.53	0.06 – 0.56	0.00 – 0.66	0.17 – 0.53		
cost per participant	US\$209.52	US\$209.52	US\$209.52	US\$209.52	US\$209.52	US\$209.52		
Women who have sex with men								
Participants with first PrEP prescription	2	184	20	8	8	48		
RPrEPi	0.14	0.35	0.31	0.48	0.35	0.34		
95% CI	-0.02 – 0.30	0.01 – 0.69	0.07 – 0.61	0.18 – 0.82	0.00 – 0.69	0.19 – 0.58		
cost per participant	US\$184,934.30	US\$209.52	US\$209.52	US\$209.52	US\$209.52	US\$209.52		
Indigenous people								
Participants with first PrEP prescription	---	0	0	---	0	4		
RPrEPi	---	---	---	---	---	0.31		
95% CI	---	---	---	---	---	0.00 – 0.62		
cost per participant	---	---	---	---	---	US\$209.52		
Others								
Participants with first PrEP prescription	0	10	0	1	0	0		
RPrEPi	---	0.00	0.00	0.00	---	---		
95% CI	---	0.00 – 0.00	-0.00 – 0.10	-0.00 – 0.10	---	---		
cost per participant	---	US\$209.52	US\$209.52	US\$209.52	---	---		

**Conclusions:** Despite incurring higher costs, the implementation of complementary and more effective DCS (such as face-to-face and on dating apps) has the potential to reduce HIV transmission within populations facing greater vulnerability. Consequently, this approach could save resources that would otherwise be allocated to the treatment of people living with HIV/AIDS.



## TUPEE571

### The cost of implementing HIV self-testing in India through online platform

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**Background:** To address barriers such as stigmatization and limited accessibility to HIV testing, the ACCELERATE program, funded by PEPFAR/USAID, has introduced HIV self-testing (HIVST) through the Safe Zindagi initiative webpage. This online platform provides information and services related to HIV testing, prevention, and treatment in India.

Our analysis examines the programmatic costs associated with implementing HIVST across districts in India from 2021 to 2022, which will help guide decision-making, policy formulation, and resource allocation for future program development.

**Methods:** We estimated the total programmatic cost of conducting HIVST via the Safe Zindagi platform from July 2021 to July 2022. Start-up and recurrent costs were captured at the programmatic level, excluding the costs of HIVST kits. Retrospective expenditure data, including personnel, training, operation, supplies/equipment, and travel costs were collected. We retrieved data on the number of HIVST kits ordered online, received, clients screened for HIV, shared results, confirmed HIV positive, and initiated on ART for each district. The per unit cost for each outcome were calculated.

**Results:** Between July 2021 and June 2022, 4,455 HIVST kits were ordered across 27 states in India. Maharashtra accounted for the highest number of kits at 36.3%, followed by Telangana at 21.1% and Delhi at 10.5%. The total programmatic cost of HIVST was estimated at \$64,626.71, with 97.2% attributed to recurrent costs and 2.8% to start-up costs. Personnel costs constituted the highest component of recurrent cost at 55.3%, followed by capital, supplies, and equipment at 30.4%. Of clients receiving HIVST kits, 92.6% conducted the test and reported the results to Safe Zindagi. Among those with a reactive test and confirmed as HIV positive, 80.5% were initiated on ART. The unit cost per PLHIV initiated on ART is estimated at \$627.44.

**Conclusions:** This analysis provides crucial financial data to inform decision-making and policy development, facilitating the expansion and sustainability of HIVST ser-

vices. The findings are valuable for revising budget allocations to ensure the accessibility and affordability of HIV self-testing in India.

## TUPEE572

### The evolving landscape of economic evaluations of HIV pre-exposure prophylaxis reveal evidence gaps: findings from a systematic review

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L. Masucci<sup>10</sup>, B. Skidmore<sup>11</sup>, D.R. MacFadden<sup>2</sup>, K. Thavorn<sup>2,12</sup>,  
S. Mishra<sup>1,4,5,6,7,8,13</sup>

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**Background:** Economic evaluations of HIV pre-exposure prophylaxis (PrEP) and associated implementation strategies guide policies, programs, and resource allocation. The last decade has seen an evolution in PrEP modalities, implementation strategies, and prioritization of key populations at significant risk of HIV acquisition and transmission, alongside the scale-up of other HIV prevention interventions.

Our systematic review describes the evolving landscape of economic evaluations of PrEP to help identify evidence gaps relevant to the current HIV epidemic and response (PROSPERO: CRD42016038440).

**Methods:** We searched five databases, without language restrictions, for peer-reviewed economic evaluations from inception to December 23, 2021. We describe the following over time: study characteristics (model type, perspective of analysis, region, population); PrEP intervention (modality, implementation strategy); and comparators.

**Results:** We screened 3,877 abstracts and 231 full-texts. Among 87 included studies, 66 were published post 2014, including 58 examining HIV epidemics beyond 2014, 58 utilized transmission dynamics models, and 69 adopted a health system perspective.



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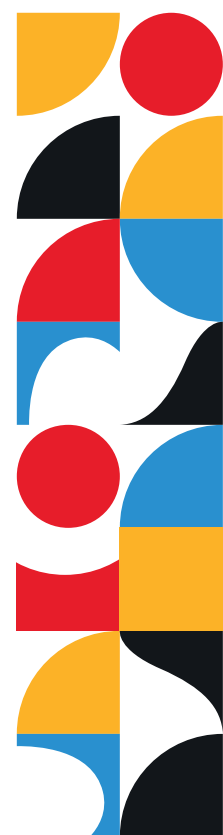
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The most common regions examined were: Sub-Saharan Africa (N=34), North America (N=25), Europe (N=11). The most common study populations included: gay, bisexual, and other men who have sex with men (N=47), sex workers (N=15), serodifferent partnerships (N=14), persons who inject drugs (N=10). Most studies examined oral, daily PrEP (N=50). Few examined other modalities (oral, on-demand PrEP [N=9], long-acting injectable PrEP [N=5], other [e.g., vaginal ring, topical gel; N=7]). Only two studies compared different PrEP modalities.

One study evaluated the cost-effectiveness of different implementation strategies to increase PrEP uptake, adherence, and persistence. Of the 82 studies that compared PrEP to a combination of other HIV prevention interventions, only 19 scaled up at least one comparator intervention over time.

**Conclusions:** The increasing number of economic evaluations of PrEP have not kept pace with economic evaluation guidelines and the HIV epidemic and response. To support decision-making, future economic evaluations should consider benefits beyond the health system (societal perspective) and use comparators that are more relevant to the current HIV response across regions and populations. The increasing availability of other PrEP modalities provides an opportunity for future studies to evaluate a mix of PrEP modalities and person-centered implementation strategies.

## TUPEE573

### Economic evaluation of a facility-based HIV and STIs self-screening program in northern Thailand

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T. Ponsuntikul<sup>2</sup>, G. Jourdain<sup>2</sup>

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**Background:** Since 2023, the World Health Organization (WHO) has recommended HIV self-testing as an additional facility-based option. However, the cost-effectiveness of this approach is unknown. We conducted an economic evaluation of a facility-based HIV and STIs self-screening program in northern Thailand.

**Methods:** Individuals aged ≥15 self-screened for HIV, syphilis and hepatitis B and C using rapid tests in six participating facilities (NCT04585165). Several users could simultaneously self-screen in separate private areas under the supervision of a single healthcare worker connected through a tablet web-based application providing detailed instructions and a series of short videos in addition to HIV/STIs educational content.

Sociodemographic and behavioral data were collected during the waiting time for test results. In case of positive test, blood was sampled for immediate confirmation and personalized advice for referral was provided. The service

was promoted primarily on social media. We estimated the program's cost per new HIV diagnosis and cost per HIV transmission averted in the population of users, and cost per disability-adjusted life year (DALY) averted specifically in men who have sex with men (MSM).

The number of transmissions averted was estimated using the Bernoulli-process model of HIV transmission, and the number of DALYs averted using Markov chain modeling. All costs were converted to US dollars (\$). A 3% discount rate was applied.

**Results:** Between 19 October 2020 and 31 March 2023, 7,916 screenings in 6,047 individual users took place, and the program incurred a total cost of \$348,573. Overall, 105 users previously unaware of their HIV status were newly diagnosed, resulting in a cost per new HIV diagnosis of \$3,320. An estimated 27 HIV transmissions were averted (including 25 MSM), yielding a cost per transmission averted of \$12,859 – below the mean lifetime HIV-related medical care cost per capita (estimated between \$14,654–\$29,803). An estimated 292 DALYs were averted among MSM, with a cost per DALY averted of \$1,344 – far below the WHO cost-effectiveness threshold of one-time gross domestic product per capita (\$7,047).

**Conclusions:** Well-organized facility-based self-tests can be cost-effective for HIV screening and provide opportunities for personalized counseling, referrals, as well as screening for other STIs.



## TUPEE574

## Cost and cost-effectiveness of scaling-up point-of-care very early infant diagnosis in Mozambique and Tanzania

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**Background:** Prompt HIV early infant diagnosis (EID) is critical, especially for neonates acquiring HIV *in-utero* who, without treatment, have high mortality rates in the first months of life. Late diagnosis causes delays in access to lifesaving antiretroviral treatment (ART). Point-of-care (PoC) testing at birth offers an opportunity for same-day treatment initiation, however, cost and cost-effectiveness evidence is needed for planning scale-up and assessing sustainability of EID programs.

**Methods:** We estimated the health system cost of birth plus 4-6-week testing (very early infant diagnosis; VEID) compared to standard of care (SoC) at 4-6 weeks only. The study was nested within the cluster-randomized LIFE trial conducted at 28 primary health facilities in Mozambique and Tanzania (7 facilities per arm per country).

We evaluated cost and cost-effectiveness of PoC-VEID using Abbott mPIMA in Mozambique and Cepheid GeneXpert in Tanzania. We report empirical costs during the study, simulate costs scaled to routine demand for EID, and assess cost-effectiveness in terms of age at ART initiation.

**Results:** Estimated cost per PoC-EID test in our study was \$39.12 (95% CI: \$37.69-\$39.99) for VEID versus \$40.57 (\$40.57-\$42.84) for SoC in Mozambique and \$36.23 (\$34.99-\$38.40) for VEID versus \$43.88 (\$41.12-\$45.21) for SoC in Tanzania. Estimated cost per HIV-exposed infant tested and initiating ART was \$126.56 (\$123.06-\$135.68) for VEID versus \$71.48 (\$71.48-\$76.24) for SoC in Mozambique and \$92.16 (\$72.64-\$119.91) for VEID versus \$70.28 (\$52.11-\$128.05) for SoC

in Tanzania. Incremental cost effectiveness ratios for median 3.7 additional weeks on ART in Mozambique and 5.6 in Tanzania (both  $p < 0.0001$ ) were \$673.32 (\$636.74-\$679.82) in Mozambique and \$386.96 (\$366.37-\$397.04) in Tanzania, representing 147% (139%-149%) of GDP per capita in Mozambique but only 35% (33%-36%) in Tanzania.

Scaling costs to routine EID demand reduced the test cost by 20-25% in Mozambique and 10-23% in Tanzania. Utilization of PoC analyzers varied across time and sites, with many sites exhibiting potential to increase cost-effectiveness of PoC analyzers by increasing utilization.

**Conclusions:** Birth PoC-EID is likely to be cost-effective in primary care, sub-Saharan African settings. When considering scale-up of EID programs, multiplexing for cost-sharing across programs or increasing access to testing through hub-and-spoke delivery could further reduce costs, particularly using GeneXpert.

## Health systems, health systems strengthening and partnerships

## TUPEE575

## Scale-up of viral load access in Panama: ensuring leadership and high-quality testing delivery

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**Background:** World Health Organization (WHO) strongly recommends HIV-1 Viral Load testing (VL) as the preferred monitoring tool for antiretroviral treatment efficacy measurement. In 2022, 19,000 people living with HIV were receiving ART in Panama, distributed across 16 ART clinics. In 2021, in a joint effort from the Ministry of Health (MoH) and Gorgas Memorial Institute (ICGES), with technical assistance from ICAP and CDC, through PEPFAR funds, a baseline evaluation was performed on the VL network with the purpose to improve performance.

**Description:** Existing molecular biology platforms and potential VL laboratories were mapped. Two instruments were used to measure different standards regarding access to VL testing. For VL laboratories, the HIV-VL and EID Scorecard 3.1, developed by the CDC, was adopted. ICAP adapted a WHO tool for evaluating and strengthening VL testing data for clinics and laboratories that collect and send samples. Field visits were conducted by MoH, ICGES and ICAP teams to apply the tools through staff inter-



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views. A national VL technical working group (TWG) was established, with leadership from MoH and ICGES and supported by ICAP. This TWG has led the decision-making and new guidelines based on the mapping results.

**Lessons learned:** The assessment identified, only one of five laboratories using a WHO-recommended VL test and complying with external quality control assessments. As a result, the VL TWG decided on decentralization of VL test in phases.

Phase one was the centralization of VL test back to the ICGES, and the second phase consisted in an organized decentralization to a second laboratory with a WHO-recommended VL platform done in late 2022, with technical assistance from ICAP and ICGES for quality assurance.

**Conclusions/Next steps:** By September 2023, 86% of VL coverage was reported at PEPFAR supported sites, an improvement of 49% and 23% compared to FY20 (37%) and FY21 (73%), respectively. Constant training for health staff to improve VL uptake and quality assurance continues to be done. High levels of leadership and collaboration between MoH, ICGES and PEPFAR partners was crucial to success. Ensuring quality in new laboratories, as well as working with facilities to solve challenges in sample referral is essential to continued success.

## TUPEE576

### Data triangulation for monitoring the Dablapmeds programme in Thabo Mofutsanyane District in the Free State

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**Background:** The significance of data quality in programme implementation has increased and is important because it ensures that the information used to make key decisions is reliable, accurate, and complete. The Dablapmeds programme performance is reported on SyNCH (Synchronized National Communication in Health), Tier.net and the Service Provider (Medipost Pharmacy) platforms. Discrepancies and gaps in data were identified that impacted effective management of the programme. Data triangulation was conducted to facilitate validation of data across the three data sources to increase chances for facilities to assess and control some of the factors influencing data quality issues.

**Methods:** Dablapmeds data from January to March 2023 were extracted from SyNCH, Tier.net and the Service Provider reports and analysed by M&E officers. Data triangulation was conducted to test the consistency of findings obtained from data collected using different methods. Data discrepancies were investigated and verified on patient files. SyNCH and Tier.net systems were updated to align the data.

**Results:** There were discrepancies and variations in numbers across the three data systems. Tier.net discrepancies were attributed to challenges with capturing where DMOC was not ticked on the system as well as capturing delays due to network and ongoing electricity supply issues. SyNCH discrepancies were attributed to clinicians not having access to the system, files not captured in the consulting rooms and lack of training on SyNCH.

The Service Provider discrepancies were attributed to transition from the previous service provider to the new service provider who started the Dablapmeds contract in October 2022. After the triangulation, the discrepancies were actioned by the clinicians and data quality mentors and that resulted to a balance in numbers.

**Conclusions:** Data triangulation should be a routine activity and not an ad-hoc one. Triangulation can help M&E and programme managers find meaningful information that can be used to identify gaps, make timely recommendations for programme planning and improvement, and provide useful insights for strategic decision-making.

## TUPEE577

### Sustaining high-quality HIV services through the HIV disease-specific care certification program in Thailand, 2020-2023

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**Background:** Thailand Ministry of Public Health, Healthcare Accreditation Institute, and PEPFAR Thailand collaborated to create the HIV Disease-Specific Certification (DSC) program, which includes a standardized approach and certification metrics based on national HIV guidelines, ensuring that hospitals deliver high-quality HIV services. To obtain DSC, hospitals must achieve second and third 95 targets along the HIV cascade and recertify every 3 years.

**Methods:** In 2020, ten hospitals applied for DSC. Participating hospitals established an interprofessional team composed of nurses, physicians, pharmacists, laboratory

technicians, and quality improvement specialists. During 2020-2022, we conducted baseline assessments, DSC standards training, and multiple onsite/virtual coaching sessions at five hospitals in four certification areas: leadership and program management, support system for HIV service delivery (laboratory, pharmacy, infection control, environment, and information system), clinical care delivery (counseling and testing, antiretroviral treatment (ART), opportunistic infections, preventing mother-to-child transmission, and sexual transmitted infections), and performance measurement.

We compared 2020 baseline vs. 2022 certification year vs. 2023 after certification to ensure sustained gains using Chi-square and McNemar's test.

**Results:** Five tertiary care hospitals received DSC certification (one University Hospital, two Bangkok Metropolitan Administration hospitals, one Air Force Hospital, and one regional hospital) in 2022.

Compared to baseline data, % PLHIV receiving ART, initiating rapid ART, on treatment, retained in care, receiving viral load (VL) test, and suppressed significantly increased in 2022. Three indicators increased in 2023 compared to 2022. Two indicators (newly on ART and VL testing) slightly decreased in 2023 but remained >95%.

All certified hospitals reported improved HIV workflow, referrals, consultations, and treatment linkage due to better teamwork, communication, and leadership engagement.

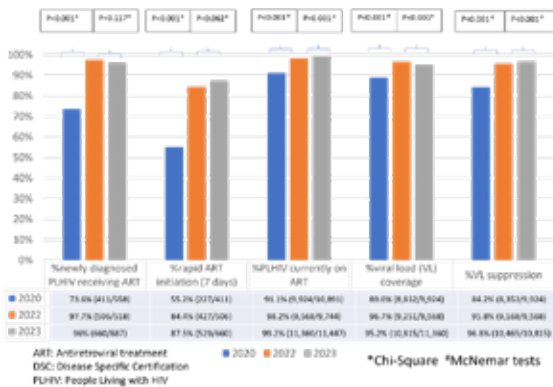


Figure. HIV performance indicators across five HIV DSC-certified hospitals, Thailand 2020 - 2023.

**Conclusions:** HIV DSC promotes multidisciplinary teamwork to improve PLHIV treatment outcomes, increase visibility of HIV program to hospital leadership, and sustain quality after certification. The DSC model could be expanded to other hospitals as a best practice.

## TUPEE578

A comprehensive analysis of the impact of war and external migration on the provision of services to people living with HIV in Ukraine

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**Background:** In the backdrop of ongoing conflict post the Russian invasion, Ukraine is witnessing a surge in domestic and international migration. The primary focus of the nation's healthcare system is to ensure uninterrupted medical services, particularly for PLHIV. The need for enhanced statistical data exchange between European and Ukrainian health institutions becomes evident.

As of January 1, 2024, the Ministry of Health's information system reports that 7,943 PLHIV who migrated abroad after February 24, 2022 are undergoing antiretroviral therapy (ART). At the same time 1,908 individuals having returned to Ukraine. The challenge lies in ensuring the continued provision of ART upon their return.

**Methods:** An assessment of the cohort of PLHIV who went abroad since the beginning of the war in Ukraine after February 24, 2022 was carried out by analyzing the data of the electronic health information system "MSSD"

**Results:** The study encompasses 7,943 PLHIV, with 42% falling in the 40-49 age group and 32% in the 30-39 age group.

The majority were women (56.8%), and the median CD4 count was 586 cells/mL, with 89.5% having HIV RNA levels below 40 cop/mL. A notable 98.4% received ART, while 23 had never undergone ART, and 106 had prior ART experience. Dominant regimens included 86.1% on DTG and 92.5% on TDF, with 95.2% adhering to fixed drug doses, primarily 80%-TLD.

	0-17 years	18-24 years	25-29 years	30-39 years	40-49 years	50-59 years	60 or > years	total
female	152	79	263	1498	1827	636	159	4312
male	139	69	204	1051	1502	471	95	3431
total	291	148	467	2549	3329	1107	254	7943

Table. Distribution of the study group by gender and age.

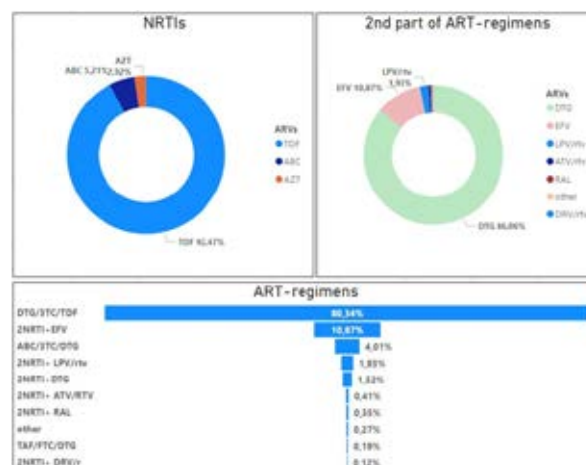


Figure.



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**Conclusions:** The migration of PLHIV poses a substantial challenge to both Ukrainian healthcare and global public health. Procuring antiretroviral drugs (ARVs) in Ukraine demands careful consideration of factors such as PLHIV flows, adherence to national ART standards, risks of resistance due to treatment interruptions, and mental health concerns.

Addressing these challenges is imperative for ensuring the continuity of ART for returning PLHIV, emphasizing the urgent need for international collaboration.

## TUPEE579

### The added value of human-supported digital HIV care

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**Background:** The value of digital HIV care is unclear when offered by a human provider, as opposed to automated chatbots, including those operated by generative artificial intelligence (AI). To contextualise the value of human interaction, this systematic review and realist synthesis investigated *how, why, for whom, and in what context* digital care that connects with human providers adds more value than interventions that are automated.

To the best of our knowledge, this is the first systematic review and realist synthesis of evidence on human-supported digital HIV care.

**Methods:** Evidence across multiple databases was assembled via systematic and iterative searching processes, identifying a total of 14056 records, of which 77 documents, including primary studies, key reviews, theoretical literature, and commentaries, contributed to this synthesis. Data was included and synthesised according to realist principles.

An explanatory realist theory was produced that can be empirically tested, refined, confirmed, or refuted across HIV care settings and contexts.

**Results:** The added value of human support appeared within four interconnected domains.

First, engagement with care can improve through tailored content offered by responsive providers.

Second, a therapeutic relationship appears to develop when patients trust and feel cared for by providers.

Third, the digital platform appears to facilitate the safe sharing of concerns in multimedia forms.

Fourth, patients and providers can be empowered to work towards holistic care.



**Conclusions:** Given staff shortages across various global settings and the emerging possibilities to offer care via chatbots, it is crucial to consider when to offer human-supported digital care and when to use AI alternatives.

Using the findings of this synthesis, we provide a checklist of recommendations on when and how to use human support and when and how to emulate aspects of a therapeutic relationship in interactive digital health, in ways to enhance intervention safety, usefulness, and compatibility with holistic care needs.

## TUPEE580

### Optimizing real-time data flow from community outreach to public facility HIV confirmatory testing and treatment for key population clients in Ho Chi Minh City, Vietnam

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**Background:** Approximately 6,500 key population (KP) clients are referred annually from community outreach to HIV facilities (HFs) in Ho Chi Minh City (HCMC), Vietnam. Early data management using an offline Excel tool lacked seamless flow between community outreach and facilities, resulting in inaccuracies in client records and suboptimal tracking.

To enhance program management, EpiC collaborated with the Ho Chi Minh City Center for Disease Control (HCDC) to introduce an online platform (KP eLog) in October 2022.

**Methods:** The KP eLog web-based platform enables outreach and facility workers to refer and track KP clients from community testing to confirmatory testing and treatment at HFs. Lay workers input client and HIV screening data using internet-enabled devices. HFs then access individual records online to offer clients tailored services. Prior to KP eLog, testing record crosschecks were conducted manually on Excel. KP eLog employs user interface indicators to notify whether a testing record has mismatched information.



We compared data flow between a 21-month period prior to KP eLog implementation (January 2021–September 2022) and a one-year period after implementation (October 2022–October 2023) in HCMC, Vietnam. We exported databases before and after implementation in JSON format and analyzed the data using Excel and Python.

**Results:** In the period prior to KP eLog, 48.25% of unique IDs from community testing records matched with HF records (89,441 records). Following KP eLog implementation (October 2022–October 2023) alignment increased to 94.1% (234,599 records). Real-time data flow enabled HFs to validate unique IDs assigned to community workers and client data entered during initial contact.

Routine data quality assurance led to improved consistency for key information (i.e., PrEP registration date) between community and HF records – from 25% with the same values prior to implementation, to 80% after. Improvements helped HFs track ART/PrEP referrals with treatment data from the national HIS, enhancing client management across the cascade.

**Conclusions:** Seamless, real-time data flow can strengthen community-facility referrals, promote complementarity and public health response, and improve outcomes. HCDC will expand KP eLog to all community partners and HFs in HCMC, and share lessons with other provinces preparing to roll out KP eLog.

## TUPEE581

Expanding the PrEP program requires finding new approaches to keeping track of client data

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**Background:** In 2017–2018, the introduction of PrEP in Ukraine started with 120 clients MSM. Despite the full-scale invasion of Ukraine by Russia, PrEP services were not stopped (in 2022 – 9075 clients received PrEP, in 2023 – 13147). Data collection and analysis play an essential role in service quality improvement. In Ukraine, data on PrEP are recorded in real-time using a medical information system (IS MSSD).

**Description:** Service providers enter data into the IS MSSD (date of registration, HIV testing, risk behaviour, key population, stopping PrEP). In 2023, new options were added to the IS MSSD to allow for accounting of new forms and modes of PrEP. Medical client's information in the electronic card include the regimen and mode of PrEP (PrEP on demand, daily, injectable). Aggregation of data allows the evaluation of PrEP provision at the regional and national levels, including the distribution of clients by type of key population, regimen, and scheme.

**Lessons learned:** Increasing the number of clients, decentralization of sites, and the use of new models and forms of PrEP require new approaches to data collection. Ana-

lyzing the distribution of clients by PrEP regimens will allow us to estimate demand and calculate the procurement need for PrEP of drugs. Given the large amount of data, to assess the quality of PrEP services, not only additional options for analytical reports and electronic medical card needed, but also the ability to automatically calculate data by generating a reporting form (number of clients who received PrEP, new clients, experience of taking PrEP, HIV testing, cases of seroconversion).

**Conclusions/Next steps:** Further expansion of PrEP programs requires finding new solutions for data recording, which is especially important in the context of military conflict. IS MSSD and automated reports are very convenient for obtaining and evaluating data in real time. However, due to the increase in the number of service providers and the number of clients, there is a need to generate more automated reports with deeper disaggregation on clients receiving PrEP in order to respond quickly to any changes at the regional and national and to make proper management decisions.

## TUPEE582

Re-engaging people living with HIV (PLHIV) back to care and reduction of HIV viremia in communities: a peer-driven community-based approach to PLHIV who are lost to follow up

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**Background:** Globally, there are commitments to end AIDS by 2030 with championship by the UNAIDS. To realize this commitment, there should be no new HIV infections by keeping the people living with HIV (PLHIV) in care with non-detectable HIV copies in their blood among other strategies. When PLHIV are lost to follow up from their clinics, the HIV viremia increases and this increases the risk of transmitting HIV.

This project aimed at diminishing HIV viremia within southwestern Uganda communities by leveraging the strength of peer support networks to re-engage lost clients into care.

**Description:** Rushere Community Hospital serves 1,710 PLHIV under care in the HIV clinic. By September 2023, 392 PLHIV had been lost to follow up from the HIV clinic. The health workers at the HIV clinic identified PLHIV who were willing to serve as role models to their fellows and offer peer support. These peers had good adherence to HIV care services and had non-detectable viral load for the past three consecutive years. They were adopted to actively participate in health facility activities, and providing essential human resources in the fight against HIV/AIDS. The peers offered crucial psychological support to their fellow community members living with HIV, thereby fostering a holistic and empathetic healthcare environment



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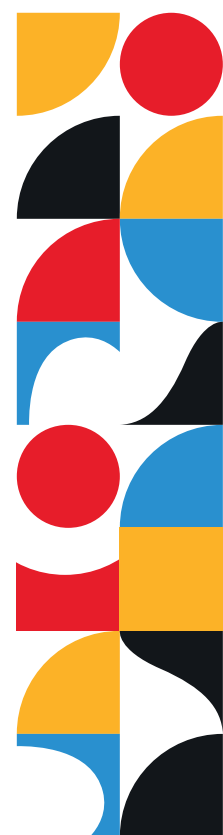
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to re-engage these lost clients back into care. The follow up of lost clients was done for three months through invitation to the facility and home visits within the communities. Peers delivered the messages on positive living and the risks of non-adherence to treatment.

**Lessons learned:** Within three months, 359 out of the 392 clients were engaged back into care and the other remaining clients were accounted for regarding their locations, whether and where they were getting treatment from. The clients were supported and re-integrated into care for continuity.

**Conclusions/Next steps:** Peer-led interventions reduce the overall burden of HIV by re-engaging and maintaining PLHIV in care. As we seek innovative strategies to address the HIV epidemic, we should harness the transformative impact of peers in the fight against HIV at community level. We thus recommend the integration of peers into healthcare teams to end AIDS by 2030.

## TUPEE583

Scaling up HIV services in Metropolitan Atlanta: a mixed-methods community needs assessment to support the 'Ending the HIV Epidemic' initiative

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**Background:** Atlanta, Georgia is among 57 jurisdictions currently prioritized by the United States (US) Ending the HIV Epidemic (EHE) initiative to reduce HIV incidence 90% by 2030. Geographic and racial/ethnic disparities in HIV challenge EHE efforts in the southern US.

We conducted a mixed-methods evaluation to assess community needs, service availability and public health infrastructure to support Atlanta's HIV/AIDS response.

**Methods:** We distributed an online survey to key stakeholders working at major HIV care agencies and community organizations across the 20-county Atlanta eligible metropolitan area (EMA) to assess service availability (including pre-exposure prophylaxis (PrEP) prescribing) and organization infrastructure. The Organizational Readiness for Implementing Change (ORIC) questionnaire assessed organization climate for services in need

of scale-up or implementation. We conducted a thematic content analysis of qualitative responses and identified key themes related to perceived barriers and recommendations for local EHE efforts.

We additionally collected 2021 county-level data from multiple sources on HIV prevalence, new diagnoses and service locations.

**Results:** Survey respondents (N=48; 54% primary care staff, 35% community-based organization staff, 10% state/county public health department/other organization staff) highlighted urgent needs for subsidized HIV testing, sustainable PrEP access, comprehensive HIV prevention, enhanced support and education for non-HIV specialists, meaningful community engagement and flexible funding to better accommodate client needs.

A lower proportion of non-HIV specialist prescribers felt able to determine PrEP indication (75%), and felt comfortable prescribing PrEP (63%), compared to HIV specialists (94%, 94% respectively;  $p<0.05$ ). Respondents recommended expanding drug assistance programs, anti-stigma and anti-racism training across care settings, ensuring adequate living wages for public health staff, Medicaid expansion, and community-driven EHE leadership. ORIC ratings ranged from 33% of respondents indicating organizational readiness for partner services expansion to 96% for HIV self-testing kits expansion.

Five southern EMA counties (not prioritized by EHE) accounted for 16% of the EMA's new diagnoses, but <9% of its 177 testing sites and <7% of its 130 PrEP sites.

**Conclusions:** Reaching EHE goals in Atlanta will require increased resources across all EHE pillars and enhanced structures for leadership driven by community members most affected and care providers. Geographic analysis can support strategies for equitable access to HIV care.



## TUPEE584

### Identifying opportunities to strengthen early infant HIV diagnosis through integration with national infant immunization programs: an analysis of 14 sub-Saharan African countries

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**Background:** Despite high national infant immunization rates and global guidance and supporting evidence to integrate early infant HIV diagnosis services (EID) within established immunization programs, EID coverage for infants aged <2 months (<2m) lags global standards.

To identify opportunities for improving EID coverage through better integration, EID data from USAID/PEPFAR-supported country programs and national immunization coverage data were reviewed.

**Methods:** Proxy <2m EID coverage was calculated (*number of infants born to women living with HIV with sample collected <2m of age/number of women living with HIV receiving ANC services*) using routine 2022 data from 14 USAID/PEPFAR programs (Burundi, Democratic Republic of the Congo [DRC], Eswatini, Kenya, Lesotho, Malawi, Mozambique, Nigeria, South Africa, South Sudan, United Republic of Tanzania [Tanzania], Uganda, Zambia, and Zimbabwe). EID coverage >100% was analyzed as 100% (EID coverage >100% indicates infants reported in the numerator but whose mothers were not reported in the denominator). First dose of DTP-containing vaccine (DTP1) coverage estimates from the 2022 WHO/UNICEF Estimates of National Immunization Coverage database were used as a six week (6w) immunization coverage proxy. Quadrant analysis assessed <2m EID vs. DTP1 coverage by country using <90%/≥90% cutoffs.

**Results:** EID <2m coverage averaged 79% across the 14 country programs. Five country programs with <90% EID <2m coverage (Lesotho, Uganda, Tanzania, Burundi and Kenya) operated in settings with ≥90% national DTP1 coverage.

Six country programs had EID <2m coverage <90% in the context of DTP1 coverage <90% (DRC, Malawi, Mozambique, Nigeria, South Sudan, Zambia). Countries with 100% EID <2m coverage included South Africa (DTP1 coverage <90%), Zimbabwe, and Eswatini (DTP1 coverage ≥90%).

**Conclusions:** High DPT1 coverage in the face of lagging EID<2m in Lesotho, Uganda, Tanzania, Burundi and Kenya suggests that integrating EID into the 6w immunization visit may be an important strategy to increase EID <2m coverage in these countries.

Further analysis can identify best practices, feasibility, acceptability, and resource considerations from programs that successfully integrated EID into immunization services. In addition, analysis of birth immunization coverage among countries implementing birth EID services may also reveal opportunities for integration.

## TUPEE585

### Establishing a robust logistics and supply chain system to reach and sustain HIV epidemic control in the Teso region of Uganda

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**Background:** A reliable supply chain system is key in ensuring the availability of essential health commodities for accelerating HIV epidemic control. However, late/inadequate ordering of commodities, stock outs and lack of a monitoring system for stock levels are common. Through a CDC-funded health system strengthening project in the Teso Region, Uganda, we identified bottlenecks in logistics and supply chain, with the aim of building a robust and reliable system responsive to the needs of the facilities and surrounding communities.

**Description:** At the start of the project in 2017, there were frequent stockouts of HIV-related commodities, including antiretroviral medicines and HIV test kits. We identified late submission of orders (26.7%) to national warehouses, lack of knowledge in forecasting and lack of a system to visualize stock as common causes of stock-outs.

To address these gaps, in February 2018, we conducted a refresher training in supervision performance assessment and recognition strategy (SPARS) for 35 medicines management supervisors (MMSs) across 10 districts in



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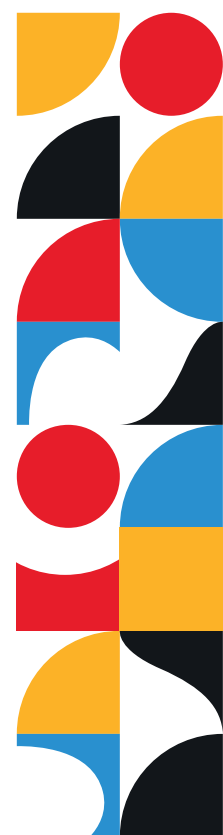
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Teso, trained 168 health facility stores in-charges and records assistants in Real-time ARV Stock Status (RASS), an online system which uses short message services (SMS) to collect real-time stock status from health facilities to a central dashboard. The MMSs conducted facility-level mentorships and coaching in logistics and supply chain management.

Additionally, we provided airtime and internet bundles to MMSs and facilities to facilitate data entry into electronic systems and created a social media platform (WhatsApp) for quick feedback loops during ordering and reporting RASS. With these interventions, late submission of orders reduced to 0% while stock out of HIV/TB commodities reduced to <2% in 2023.

**Lessons learned:** Monitoring of HIV-related commodities using RASS was sustained during the post project period. Facilitating and building capacity of MMSs in supply chain activities and use of RASS to enhance visibility of HIV/TB commodities resulted in sustained availability of commodities and improved service delivery in the Teso sub-region.

**Conclusions/Next steps:** It is possible to build a robust and sustainable supply chain system for HIV epidemic control which relies on district health systems.

## TUPEE586

### Assessment of social contracting pilot implementation: building the case for expanding publicly financed HIV services in Vietnam

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**Background:** As a part of Vietnam's transition from reliance on donor funding to domestic financing for HIV response, PEPFAR and UNAIDS supported the Ministry of Health (MOH) implementing a social contracting pilot from 2022-2024, with community-based organizations and social enterprises (CBOs/SEs) delivering HIV services through the government contract modality.

A mid-term assessment of the pilot implementation is conducted to identify progress and challenges to be addressed to improve pilot implementation and build the case for future scale-up of social contracting

**Methods:** The assessment was conducted in nine pilot provinces from October 2023 to March 2024 and used mixed methods including secondary data review, 39 in-depth interviews, 22 focus group discussions with key informants from MOH, Departments of Health (DOH), pro-

vincial Centers for Disease Control (CDC), and 13 CBOs/SEs participating in the pilot. Questionnaires were also completed by 36 CBO/SE outreach workers

**Results:** All nine provinces demonstrated improved competencies in the governance, management and coordination of the program, from the national level (MOH) to provincial level (DOH and Provincial CDC) and community level CBOs/SEs.

Within two years of preparation and implementation, the pilot received support from all provincial authorities to enable CDCs to directly contract CBOs/SEs for the delivery of HIV services to nearly 4,000 clients. Results are achieved at ranges from 20- 70% of contract targets, depended on actual contract time for performance.

Trust was built up and pay for performance (P4P) is showed manageable throughout contracting process. Those with proactive engagement from CDC leaderships and well-established partnership between government and CBOs/SEs are far more progressing in contract implementation.

Key challenges identified in low performing provinces include overestimation of targets, and burdensome process of government bidding. Other obstacles included complex case verification required for payment and reimbursement rate is below market prices.

**Conclusions:** The findings indicate that social contracting is a feasible strategy to help Vietnam achieve the sustainable epidemic control by expanding access to HIV services for under-served key populations through CBOs/SEs.

Policy framework for social contracting is under development using the case from the pilot, but challenges on procurement, bidding and reimbursement need to be addressed to enable smooth implementation.

## TUPEE587

### How a targeted community case manager model reduces mother to child transmission (MTCT) of HIV in Central and Copperbelt provinces of Zambia

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**Background:** In 2023, children aged 0 to 14 years contributed to 13% of the total new HIV incidence in Zambia (MOH, 2023). Children are vulnerable and perform poorly on the UNAIDS 95 95 95 targets compared to adults.

With the aim of improving maternal, newborn and child health (MNCH) outcomes in HIV services, the USAID DISCOVER-Health project, implemented by JSI, strengthened prevention of mother to child transmission services through the implementation of a dedicated community case manager model at health posts, across different districts in Zambia.

**Description:** In 2019, the project introduced a dedicated community case manager model to improve the quality of care for maternal and breastfeeding women on ART in 66 supported health posts of Central and Copperbelt provinces. The model involves assigning a community health care worker to each pregnant woman living with HIV at the booking stage, as they are considered high risk. The model helps to educate the client about HIV, enhances their adherence to HIV medication, and allows for the timely tracking for viral load monitoring and HIV testing for exposed infants. Data was collected and analyzed at baseline and endline.

**Lessons learned:** From 2017 to 2023, the Project enrolled 25,416 pregnant women on ART. The expected live births were 25,416 and early infant diagnosis (EID) coverage at 12 months was 21,736 (86%) in the same period. The infant HIV incidence reduced from 79/2091 (3.8%) in 2019 to 47/3171 (1.5%) in 2023. There was a 68% reduction in HIV incidence rate among infants in 2023 compared to 2019 (p-value=0.001). Linkage to ART among identified infants in the same period was 45/47 (96%).

**Conclusions/Next steps:** A dedicated community case-manager model, targeting HIV pregnant or breastfeeding women, significantly reduced maternal to child transmission (MTCT) of HIV through optimized treatment literacy. This model may be recommended to improve adherence, timely ART monitoring and EID to eliminate MTCT of HIV and help end AIDS in children by 2030.

## TUPEE588

### From policy to practice: the HIV Care and Treatment Project's experiences in transitioning to an optimized regimen in Honduras

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**Background:** Honduras has 60 HIV clinics throughout the country. USAID's HIV Care and Treatment Project, supports 80% of people living with HIV in 10 clinics. Honduras has an integrated health services model to ensure universal health coverage and access. This structure facilitates adherence to standards by promoting coordination among suppliers, efficient management, and implementation of unified protocols. According to 2019 WHO surveillance report, Honduras has resistance to Enfavirenz above 10%; thus, transition to optimized regimens is a priority.

**Description:** Starting in January 2022, the National Secretary of Health (SESAL) developed a national transition plan to Dolutegravir-based regimens covering new and eligible users according to established criteria. This plan ensured inter-institutional coordination at different levels

with international technical cooperation from USAID and CDC implementing partners. The plan categorized active ART users and assigned a transition goal to each clinic. SESAL led monitoring by creating an ARV technical working group comprising expert infectologists to support transition in complicated cases. By creating eligibility criteria and updated norms of ARV care and accessibility, updated training for clinic personnel, and supported local programmatic actions by educating clients on the benefits of optimized regimens.

Despite the challenge of maintaining a balance between previous (non-optimized) stock and procuring newer TLD-based ARVs, the transition resulted in a 60% increase in clients on optimized treatment regimens between Q1FY22-Q4FY23, thus far reaching 80% of persons on treatment.



Figure 1. Optimized treatment regimen transition, Honduras FY22-23. Source: DATIM

**Lessons learned:** Transition of regimens in a dynamic cohort represents a logistical challenge at health system. Considering the integrated health services model in Honduras, the dissemination of the norm under a regulatory framework was successful to promote universal health coverage.

**Conclusions/Next steps:** To guarantee sustainability of global coverage in optimized regimens, it is important to constantly monitor and analyze progress through nominal (name-based) and updated cohort data, as well as comprehensive coordination of key actors.

## TUPEE589

### Enhancing community health: insights from a dynamic public-private partnership in Limpopo, South Africa

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**Background:** Public-private partnerships (PPPs), funded through corporate social investment, play a pivotal role in driving public health initiatives and reducing countries' dependence on donors in response to HIV. Anglo American (AA) and Right to Care (RTC), in partnership with the Limpopo Department of Health, implement the Com-



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munity Health and Wellbeing Programme (CHWP) to enhance health outcomes in peri-mining communities in Limpopo, South Africa.

**Description:** The CHWP, integral to AA's sustainable mining plan and guided by a mixed-method baseline assessment, aligns with SDG3 and WHO targets for ending the HIV epidemic. It comprises three distinct components:

1. Healthcare System Strengthening (HSS): Optimizing primary healthcare services to achieve 80% compliance with national quality assurance requirements.
2. Peer-Navigated HIV Treatment Support (PHTS): Employing a peer-navigated approach to enrol 80% of eligible clients.
3. Treatment Dispensing, Distribution, and Collection Support (TDDCS): Focusing on decentralized dispensing through electronic lockers for medicine collection to align with national strategies and targets.

Commencing in 2022, the CHWP's phased implementation began in June 2023 across twelve facilities in Limpopo.

**Lessons learned:** The CHWP's phased development and implementation have dynamically progressed toward the annual targets across its three components. HSS achieved 50% performance in 6 months, PHTS reached 41% in 3 months, and TDDCS initiated with 23% performance in the first month.

The successes to date underscore the importance of involving stakeholders at all levels, ensuring comprehensive support and effective implementation. Early target determination emerges as a fundamental factor, providing a solid foundation for programme direction and success. The nature of funding for the CHWP presents distinctive challenges tied to market volatility, economic stability, and governance structures. Addressing these challenges necessitates meticulous planning and communication, with a dedicated focus on sustainability and managing expectations.

**Conclusions/Next steps:** The CHWP provides valuable insights into the impact of corporate social investment, through PPPs, on community health outcomes in low- and middle-income countries.

The success criteria, management structures, and initial outcomes underscore effective strategies for strengthening healthcare and bridging access gaps while reducing dependency on external donor funding and fostering shared accountability for community health and wellbeing.

## TUPEE590

### Optimal management of cervical precancerous lesions in a single visit approach by use of thermal ablation among HIV positive women in Kenya

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**Background:** Cervical cancer is a significant public health issue, causing over 340,000 deaths worldwide in 2020. In Kenya, it is the leading cause of cancer-related deaths among women, 9 women die daily. Women living with HIV(WLHIV) face a sixfold higher risk of developing cervical cancer. WHO recommends using HPV DNA as a primary screening test with triage for WLHIV.

Clients with positive screening results are eligible for thermal ablation (TA) on the same visit (the single-visit approach). We present findings and lessons learned from implementation of TA in Kenya.

**Description:** Implementation took place through a collaborative effort involving the National Cervical Cancer Program (NCCP), Clinton Health Access Initiative (CHAI) and county health departments. Training and mentorship was facilitated by a team of master and county-level trainers and attended by a diverse team comprising nurses, clinical officers, and medical officers.

Training covered screening techniques including; HPV testing, Visual Inspection with Acetic Acid (VIA), and cytology and treatment of pre-cancerous lesions by TA.

**Lessons learned:** Currently, over 1000 high-quality, portable thermal ablation (TA) devices including; Liger© (Liger Medical LLC) and Wisap© (Wisap Medical Technologies GmbH) have been disseminated and over 6,000 health-care professionals have been trained on cervical cancer screening and treatment using TA.

The impact of TA on treating precancerous lesions in the focus counties has increased from 0% in January-December 2019 to 43.8% in January-December 2023. Notably, treatment can now be administered at lower-level primary care facilities, including dispensaries and health centers.

**Conclusions/Next steps:** Embracing TA has the potential to enhance cervical cancer screening and treatment within primary care settings.

Nonetheless, ongoing mentorship is vital to ensure sustainability of these interventions, while upholding the quality of the screening program.



## TUPEE591

### Nothing for us without us: strengthening community networks to scale the enrollment of people living with HIV/AIDS in financial protection schemes in South-West Nigeria

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**Background:** In Nigeria, the Federal and State Governments subsidize the cost of health insurance premiums through programs such as the Basic Health Care Provision Fund (BHCPF) and State equity funds for vulnerable groups including PLHIV. However, since the inception of these programs in 2018 and 2020 respectively, the uptake of financial protection schemes among PLHIV has been sub-optimal.

In Lagos State, there is a HIV prevalence of 1.3%, with 130,000 Persons Living with HIV (PLHIV) on life-saving Anti-retroviral medication which means there is a need to increase the use of financial protection schemes to improve PLHIV and orphans and vulnerable children's (OVC) ability to access a broad range of health services, reduce out of pocket expenditure for health care and donor dependence, and improve health outcomes for these populations.

In September 2022, USAID's Local Health Systems Sustainability (LHSS) Project instituted an intervention to increase the enrollment of PLHIV in financial protection schemes through the PLHIV community networks.

**Description:** LHSS facilitated stakeholder engagements between PLHIV networks, state HIV/AIDS control agencies-Lagos State AIDS Control Agency (LSACA) & Lagos State AIDS and STI Control Program (LSASCP), the State Health Insurance Agency-Lagos State Health Management Agency (LASHMA) and PEPFAR-implementing partners to identify opportunities within health facilities and communities to support the enrolment of PLHIV in financial protection schemes.

During this process, LHSS strengthened the capacity of PLHIV-led civil society organization, Network of People Living With HIV/AIDS in Nigeria (NEPWHAN) to use context specific vulnerability assessment templates for the identification and targeting of poor and vulnerable PLHIV to increase enrolment.

**Lessons learned:** By strengthening the partnership and collaboration between PLHIV networks, LSACA and LASHMA- 3,400 PLHIV, OVC and members of key populations have been enrolled on health insurance in Lagos State using available government resources through the Basic Health Care Provision Fund and the State Health Equity Fund from September 2022 to December 2023.

**Conclusions/Next steps:** LHSS's interventions have improved representation, engagement, and participation of PLHIV networks and their members in financial protection schemes. This will help in reducing out-of-pocket expenditures for healthcare in low and middle-income settings like Nigeria and ensuring overall well-being of PLHIV.

## TUPEE592

### Digitalizing the adolescent living with HIV (ALHIV) transition process, Homabay County, Kenya

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**Background:** Adolescents living with HIV (ALHIV) transition into the adult clinic is an important step in the continuity of care. Documenting the transition progress is therefore key to improving the transition cascade.

Currently, clinics in Kenya provide transition services but cannot track transition progress. HIV care in Kenya is documented in electronic medical records (EMR). However, ALHIV transition tools comprise job aids, and no specific indicators for transition are included in EMR systems. To address the documentation gaps, we piloted an electronic tool, the "Adolescent Transition Tool (ATT)" at Homabay County Teaching and Referral Hospital (HBCTRH).

**Description:** We implemented a Continuous Quality Improvement (CQI) project at HBCTRH in 2022-2023. The lack of an adolescent transition module in the Electronic Medical Records (EMR) and inadequate health worker knowledge were identified as root causes for documentation gaps. We sensitized clinic staff adolescent champions on transition and developed a standard operating procedure for clinic use.

We also developed Adolescent Transition Tool (ATT) software that uses the local network and existing EMR computers. The tool can capture transition services offered. User rights are needed to access the tool. Staff was sensitized and all transition data were captured in real-time during clinic visits.

**Lessons learned:** HBCTRH hospital has 476 adolescents (10-19 years) and 257 young adults (20 -24 years) who are living with HIV. We transferred all the biodata for all the adolescents and young adults on care to the ATT tool. About 130 client-provider transition sessions have been documented by December 2023. Of the 130 clients' sessions captured in the ATT 93% are fully disclosed, 85% are sexually active, 40% are on a contraceptive and two are pregnant, 49% are enrolled in school and 95% are in support groups. Treatment literacy sessions and transition counseling were 92%.

Health providers reported that the tool is easy to use even though they face challenges during network downtimes.



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**Conclusions/Next steps:** Adolescent Transition Tool is a low-cost sustainable transition tool that can help capture transition data and help track performance. We recommend it be integrated into the EMR.

## TUPEE593

### Adapting agency emergency preparedness and response for people living with HIV (PLWH) Post-Hurricane Ida in New Orleans, LA (NOLA)

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**Background:** Natural disasters pose significant challenges to healthcare delivery and access. These disruptions are particularly impactful for people living with HIV (PLWH), for whom uninterrupted care and medication supply is crucial for overall health. Jurisdictional HIV public health and healthcare agencies play a vital role during such events, guiding clients to essential resources.

Through a quality improvement collaborative (QIC) focusing on retention led by the NOLA HIV office, we applied QI methods to assess and adapt HIV programs' responsiveness to emergency preparedness following Hurricane Ida in 2021 that included organizational and policy strategies. We describe experiences of healthcare facilities during Hurricane Ida and present QI adaptations addressing identified gaps.

**Methods:** Data on activities during and after Hurricane Ida were collected from twelve agencies participating in three QIC learning sessions from 2021-2023. Nine of twelve agencies engaged in participatory activities outlining disaster-preparedness systems, including process mapping and identifying areas for change. These nine agencies also shared emergency response activities and QI adaptations across sessions. Agency narratives and reports underwent coding and activities were categorized into thematic domains.

**Results:** In preparation for Hurricane Ida, some organizations completed emergency plans with clients, documenting emergency contacts, evacuation procedures, and health information. Eight of nine agencies improved existing disaster communication plans and adopted new policies for patient communication during and after disasters.

Agencies reported QI projects addressing medication supply and access in the weeks following Ida, and adapted to whether PLWH remained in or evacuated. Infrastructure challenges, pharmacy and insurance resistance, technology limitations, and staff capacity were reported

as barriers to disaster-related QI implementation and addressed through policy modifications by participating public health officials across state and city agencies.

**Conclusions:** Hurricanes and natural disasters present challenges to continuity of quality care for PLWH. Agencies serving PLWH play a vital role in ensuring uninterrupted care during such events.

Effective planning and communication between agencies and their clients or patients are integral to healthcare disaster management at all stages.

Recognizing emergency preparedness as a series of processes within a jurisdictional system that can benefit from integration with QIC efforts to better prepare jurisdictions and agencies for rapid responses in their systems.

## HIV and development synergies

## TUPEE594

### We Ask the Y (WAY): the impact of capacity-building in improving young people-led initiatives for the HIV response in Malaysia

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**Background:** Between 2017 and 2022, young key populations (YKP) in Malaysia have among the highest HIV prevalence (15.5%) in the Asia-Pacific region (UNAIDS, 2022). Only 10% of individuals aged 15 to 24 have comprehensive knowledge of HIV and sexual health, while fewer than half of YKP were reached by HIV prevention programs (Malaysia AIDS Monitoring Progress Report, 2023).

We Ask the Y (WAY) trained and challenged young people, especially young key populations in Malaysia, aged 18-30, using participatory approaches and implementation science to develop capacity and tackle root causes within the HIV cascade.

**Description:** From July to December 2023, we trained 30 participants; 53% (n=16) who identified as men who have sex with men, 13% (n=4) refugees, 3% (n=1) other LGBTQIA+ members, 20% (n=6) cisgender heterosexual individuals, and 10% (n=3) who preferred not to disclose. The training covered HIV epidemiology and prevention, sexual and reproductive health, sexual orientation, gender identity,



gender expression, sex characteristics (SOGIESC), stigma, tackling health inequities, and the Theory of Change. Towards the end of the training, participants pitched their HIV-related innovations in groups, competing for a USD1500 seed grant. Participants interested in local community-based organization projects were matched accordingly. HIV screening, linkage to care, and PrEP were offered throughout the training.

We evaluated acceptability, appropriateness, and feasibility using validated scales by Weiner et al. (2017), a 5-point Likert-type scale ranging from strongly disagree (1) to strongly agree (5).

**Lessons learned:** Baseline HIV-related knowledge increased from 77.8% to 84.4%. We improved the proportion of individuals who know their HIV status by 17.6% (n=6), all of which were negative. 23.3% (n=7) of participants were enrolled in an all-expense-paid PrEP service.

The seed grant recipient successfully completed their project and reported on project performance. 53.3% (n=16) showed interest in local community-based organization projects; we achieved a 100% match rate. Mean scores for acceptability, appropriateness, and feasibility exceeded 4.0 out of 5.0.

**Conclusions/Next steps:** Quality triumphs over quantity. Capacity-building training of young people in Malaysia, particularly YKP, has the potential to enhance the HIV response and warrants a larger national and regional scale-up to empower them to take leadership roles and negotiate effectively in decision-making spaces.

## TUPEE595

Outcomes from economic strengthening activities among AGYW (15-24 years) enrolled in the FACT Zimbabwe's USAID-funded DREAMS Program in Manicaland Province, Zimbabwe from 2022-2023

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**Background:** Persistent socio-economic vulnerabilities predispose adolescent girls and young women (AGYW) to acquire HIV, early pregnancy, early marriage, and gender-based violence (GBV) with AGYW 5 to 14 times more likely to be infected with HIV than their male peers in Sub-Saharan Africa (Pachena & Musekiwa, 2022).

Among the 47% of young people reported to be unemployed in Zimbabwe, 56% are females disproportionately affected by a lack of education and technical training (ILO, 2019). To address these disparities, Family AIDS Caring Trust (FACT) adopted the Siyakha work-readiness model

in Manicaland Province, Zimbabwe by layering onto the HIV prevention and sexual violence primary package curricula, linkages to clinical services (HTS, STI screening, family planning) and gender-based violence response.

**Description:** FACT Zimbabwe implemented the PEPFAR/USAID funded Support Maintain Advocate reduce Risk and Transform (SMART) Girls Determined, Resilient, Empowered, AIDS-free, Mentored, and Safe (DREAMS) program in Chipinge, Makoni and Mutare districts from COP21-COP22. During the two-year period of intervention, 1022 AGYW with limited- to- no formal education underwent comprehensive technical skills trainings, job-preparedness, social asset building, prevention of sexual abuse in the workplace, financial literacy, and entrepreneurship trainings.

All AGYW were supported with start-up kits and safety equipment relevant to their trade of choice; and 75% of the AGYW took up trades in the typically male dominated fields of auto-electrics, motor mechanics, computer maintenance building, welding, solar & electrical installations, plumbing, tiling, carpentry, and horticulture and 866/1022 (80%) accessed formal internships.

**Lessons learned:** An outcome survey conducted in COP22 on the COP21 cohort indicated that 82% of the AGYW were able to establish viable group and individual enterprises, average income increased from USD \$30.00 to \$67.87, ranging from \$15-\$200 per month.

A decrease in reliance on transactional sex, increased self-awareness and decision-making power in relationships were noted. Mentored vulnerable AGYW in Zimbabwe can break into male dominated fields of their choice in high potential growing sectors of the economy.

**Conclusions/Next steps:** FACT will further include neo-business opportunities like digital marketing and drone flying. FACT will further scale-up and integrate the Siyakha model with community apprenticeship to ensure young mothers can access the services within proximity of their homes.

## TUPEE596

Empowering communities through a multisectoral approach to strengthen reporting and responses to sexual and gender-based violence (SGBV) among adolescents and young people (AYP) in Migori County, Kenya

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**Background:** SGBV is pervasive in Migori County, manifesting in various forms, including rape, sexual exploitation and abuse, female genital mutilation, domestic violence, forced widow inheritance, and child marriage, and disproportionately affects females and AYP. SGBV is driv-



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en by practices that foster gender inequality and power imbalances, sociocultural norms that normalize violence, and weak reporting systems.

PATH, through the USAID/Nuru ya Mtoto project, adopted a community-driven, multi-sectoral approach to strengthen SGBV reporting and improve provision of post-violence care among AYP.

**Description:** PATH, in collaboration with the department of health, introduced the approach in Migori County in July 2018 to foster active community involvement to identify and link AYP at risk of SGBV with post-violence services and enhance community awareness of SGBV and harmful sociocultural practices. The approach comprised:

1. Mobilizing community members to report SGBV cases and support affected individuals and survivors access post-violence care services.
2. Holding awareness-raising activities through community events, local radio shows, and targeted school-based dialogue sessions with community leaders, parents, and other stakeholders (e.g., boda-boda rider leaders).
3. Convening county/sub-county/ward-level Gender Technical Working Groups (TWG), with members receiving training in SGBV response and charged with spearheading community campaigns to counter HIV, SGBV, and teenage pregnancies.
4. Organizing 340 ward advisory committee meetings to improve response and reporting at ward level.

**Lessons learned:** This approach led to a four-fold increase reported SGBV cases, from 102 in July 2018 to 427 in June 2023. There was an observed increase in court-referred cases from 19 (2018-2019) period to 31 (2020-2021), signaling enhanced commitment to providing legal support to SGBV survivors, and an increased conviction rate for SGBV cases from 68% (2018) to 86% (2023), attributed to the establishment of functional gender desks at police stations. (KHIS2)

**Conclusions/Next steps:** The use of a community-led, multisectoral approach led to improved reporting and responses to SGBV cases among AYP in Migori County.

While additional work is needed to establish support structures for violence survivors, such as rescue centers and establishing child protection units in police stations and children's courts, maintaining community awareness and involvement in identifying and responding to SGBV is essential to move towards zero tolerance for SGBV.

## Integration of HIV services with other health and support services

### TUPEE597

Feasibility and preliminary results from mobile phone text message screening for symptoms of anxiety and depression among rural adolescents: a pilot trial

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**Background:** The rise in mobile phone ownership (doubling in past 15 years to 75% in Uganda) has transformed communication especially for adolescents in low-resource settings. To capitalize on this opportunity we developed "Kirabo" (meaning "gift" in Luganda) a mobile phone-based automated text messaging platform to promote screening and linkage for HIV testing and mental health care for adolescents in rural Uganda.

Here we focus on the feasibility and preliminary results of the anxiety and depression text message screeners.

**Methods:** In week 3 of the 5-week HIV prevention and treatment intervention, adolescents (N=100, 15-19 years) recruited through 10 rural schools, were sent texts prompting them to reply to screeners that assessed depression and anxiety.

Before being routed to the full measures, adolescents texted responses to the first 2 questions of the Patient Health Questionnaire (PHQ-9) and the first 2 questions of the 7-item Generalized Anxiety Disorder Questionnaire

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(GAD-7) respectively. Responses ranged from "not at all" (0), to "nearly every day" (3). Adolescents scoring  $\geq 1$  on the first 2 questions of the PHQ-9 or GAD-7 were then routed to the full measures.

**Results:** Among 100 adolescents (58% female; 69% < 18 years old), 79 successfully responded at least once to Kirabo's automated screening system. The 79 adolescents interacted with 240 text messages (M: 3.0 texts per adolescent, SD=2.6). Then 66 adolescents were routed to the full PHQ-9 and 56 to the full GAD-7. Of the 46 adolescents who completed the PHQ-9, 16 (35%) screened positive for having symptoms consistent with major depression (i.e., 10 or above on PHQ-9) and 13 youth indicated they would like to speak with a counselor.

Of 38 adolescents who completed the GAD-7, 17 (45%) had symptoms consistent with mild anxiety (i.e., GAD-7 score of  $\geq 5$ ), with 13 youth indicating they would to speak with a counselor.

**Conclusions:** A majority of adolescents successfully texted with Kirabo and completed the anxiety and depression screeners. Our approach identified a potential demand for mental health services among Ugandan adolescents. Further research on Kirabo's validity and preliminary efficacy to assist in linking adolescents with HIV testing and PrEP/ART and mental health counseling are needed.

## TUPEE598

Knowledge, practice and barriers to cervical cancer screening among HIV-positive women in Moshi municipality, Kilimanjaro - Tanzania

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**Background:** Cervical cancer is the fourth most common cancer globally among women in incidence and mortality and one of the most common cancers affecting women in Tanzania. 8% of HIV-Positive women are disproportionately at a higher risk of developing the disease.

The aim of this study was to assess the knowledge, practices and barriers to cervical cancer screening among HIV- Positive women in Moshi Municipality, Kilimanjaro in northern Tanzania

**Methods:** A cross-sectional study was conducted in the Kilimanjaro region among 215 HIV-Positive women attending care and treatment centers (CTC) at Mawenzi regional hospital and KCMC hospital between 8 July and 21 July 2021. A questionnaire was used for data collection using face-to-face interviews. The study population were HIV Positive women aged 18 to 49.

Data were analyzed using SPSS version 20.0. Frequencies and percentages summarized categorical variables and numerical variables summarized using median and inter-quartile range (IQR).

**Results:** 64.1 % of the participants had a good level of knowledge on cervical cancer risk factors. 52.2% women had poor knowledge on the signs and symptoms of the cervical cancer, 69.3% had good level of knowledge on cervical cancer preventive methods.

Over half, 64% of HIV-Positive women in this study had ever screened for cervical cancer. And among these 29.9% had their cervical cancer screening in the past 12 months. HIV status, advice from health care providers and screening campaigns were the reasons for undergoing cervical cancer screening. 85.0% received information on cervical cancer from health professionals and 47.7% from media and 20.1% of them from family/relatives.

Among the barriers to cervical cancer screening, afraid for the bad results was 71.5%, afraid for the test procedure was 59.8%, lack of disease symptoms was 46.7%, no reason for the test was 24.3%, never heard screening was 22% and not prescribed by the doctor was 20.1% of which commonly mentioned by the participants.

**Conclusions:** HIV-positive women demonstrate moderate screening rates, influenced by healthcare advice and campaigns. Health professionals are the primary source of information. Barriers to screening of cervical cancer suggesting a need for focused education and addressing psychological concerns to improve screening rates.

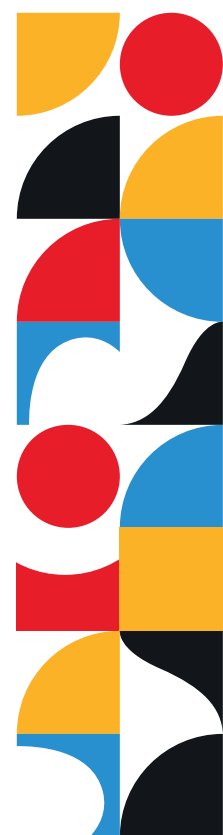
## TUPEE599

Maximising HIV testing uptake: findings from an integrated, youth-friendly, and community-based sexual and reproductive health service in Zimbabwe

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**Background:** Young people aged 15-24 years still account for over a quarter of new HIV infections globally. We aimed to understand the uptake of HIV testing and factors associated with not taking up HIV testing offered







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as part of community-based, youth-friendly, integrated HIV and sexual and reproductive health (SRH) services for young people in Zimbabwe.

**Methods:** The integrated service (contraception, condoms, menstrual hygiene products, sexually transmitted infections management) was implemented in three provinces in Zimbabwe (Harare, Bulawayo, and Mashonaland East) between 1 April 2019 and 31 March 2022.

A client was considered eligible for provider-delivered HIV testing if they were not known to be HIV positive. Uptake of HIV testing was longitudinally described including the pattern and yield of repeated visits.

Multivariable logistic regression stratified by province was used to assess factors associated with not taking up HIV testing despite being eligible.

**Results:** Overall, 35,446/36,991 (95.8%) of clients were ever eligible for HIV testing. Of these, 29,827/35,446 (84.1%) took up HIV testing, with the majority (27,339/29,827 [91.7%]) taking up testing at their first eligible visit and 2,488/29,827 (7.0%) only taking up HIV testing at a later visit.

The proportion of clients who took up HIV testing at their first visit increased over time. 5,619/35,446 (15.9%) never tested for HIV. HIV testing uptake was higher among those who took up SRH services.

Of the 29,827 clients who took up HIV testing, 4,494 (15.1%) had a repeat test. Clients in all provinces had half the odds of taking up HIV testing (aOR Harare: 2.06, 95% CI: 1.83 – 2.32; aOR Bulawayo: 1.92, 95% CI: 1.73 – 2.14; aOR Mashonaland East: 2.13, 95% CI: 1.72 – 2.63) if they had previously tested outside the integrated service.

**Conclusions:** Providing HIV testing services in a community-based, integrated SRH service is a feasible and attractive way to engage young people in HIV testing. Designing programmes which put young people at the centre and offer confidentiality, support, and a range of services will be central to this.

## TUPEE600

### Understanding multi-stakeholder perspectives on comprehensive chemsex services for young men who have sex with men in Thailand: qualitative findings from the CLYMAX study

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**Background:** The increasing visibility of chemsex among men who have sex with men (MSM) in Thailand underscores the urgent need for well-established and comprehensive chemsex services. The lack of knowledge regarding the essential components of comprehensive chemsex services for MSM in Thailand poses a substantial obstacle to the development such services.

We explored perspectives from various stakeholders on the necessary components of comprehensive chemsex services.

**Methods:** Semi-structured, in-depth interviews were conducted in-person with 60 key informants in March 2023: 40 MSM aged 16-35 years who use chemsex, 10 peers/family members, and 10 healthcare providers. Interviews were recorded and transcribed verbatim. A codebook was developed based on a priori themes of the interview guide and emergent themes from transcripts. Analyses were conducted using Dedoose software.

**Results:** We identified four components that should be incorporated into comprehensive chemsex services.

1. Promoting substance use literacy is the top priority. In particular, people who use chemsex value a reliable source of information on chemsex-related harms and mitigating strategies.
2. Mental health counseling from specialists, such as psychologists or psychiatrists, due to relationships between mental health and chemsex use.
3. Sexual health services, including routine sexually transmitted infections screening, and the provision of preventive measures such as PrEP and condoms.
4. Legal consultation and social/family support are crucial in the context of country's punitive laws and common abusive practices towards people who use substances.

Some MSM prefer onsite services for a more professional feel and effective communication, while others prefer online services due to experienced/anticipated stigma and discrimination when receiving in-person services or fears of street-side urine drug tests by the police which could



lead to harassment, bribery, and legal proceedings. Regardless, campaigns to normalize/decriminalize chemsex are critical for people to access healthcare services.

Other suggestions include establishing an emergency hotline, offering mailed tools for safe chemsex use, providing on-site chemsex merchandise, and involving former users in counseling.

**Conclusions:** Chemsex-specific literacy, mental health services, sexual health services, legal consultation, and social/family support were identified as key chemsex service components, and their inclusion in comprehensive chemsex services for MSM in Thailand should be further explored.

## TUPEE601

Integrating cervical cancer screening in state delivered HIV services for women living with HIV (WLHIV): a pilot initiative in Andhra Pradesh, India

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**Background:** Women living with HIV (WLHIV) are at a six-fold increased risk for cervical cancer which underscores the need for quality-assured screening for early diagnosis and treatment initiation to prevent avoidable morbidity and mortality.

We describe the feasibility and utility of providing cervical cancer screening for WLHIV in a resource-constrained setting in Andhra Pradesh, India.

**Methods:** We implemented a comprehensive cervical cancer screening and treatment referral program in four high-burden HIV districts. The target population was WLHIV, aged >25 years from five state-run antiretroviral treatment (ART) centres. Cervical screening was conducted by visual inspection with acetic acid (VIA). In preparation, we conducted facility readiness assessments that led to addressing the gaps and capacity building of the staff, and NGO/CBO team.

Further, we mobilized the WLHIV through several demand-generation initiatives, including outreach to enrol them for screening, referral, and linkages to treatment. In partnership with the Government and NGO/CBOs, we leveraged the government systems and structures, consistently engaged the community, and undertook regular staff competency assessments, monitoring and review. We collected data using a participant information tool through interviews, clinical examinations, and test results.

**Results:** We enrolled 852 WLHIV between Oct'22 and Sep'23, and 808 underwent VIA screening. The median age was 40 years (IQR:35-45); 66.5% were from rural ar-

reas, 64.5% were separated/divorced/widowed, and 46% were illiterate. All were on ART (Median 8 years; IQR:5-11). Only 22.4% ever heard of cervical cancer; of them, 11% perceived risk and 74% were aware of treatment. The screened (VIA) positivity was 6.8% (55/808). Positivity was relatively higher among those aged 25-40 years (9.9%), rural residents (7.8%), married (8.7%), and with lower (<USD60) income (13.9%). All positives (n=55) were accompanied and referred to higher facilities for confirmation and treatment. Among positives, 21.8% and 5.5% had pre-invasive and invasive carcinoma respectively. Around 99% and 96% were satisfied with counselling and overall service delivery respectively.

**Conclusions:** Integrating person-centric cervical screening in ART clinics through robust referral and linkages can improve the access and uptake of services, who otherwise, are less likely to access these services. Implementing this strategy through the public healthcare system will be sustainable, and feasible for scale-up.

## TUPEE602

Effectiveness of a theory-based guideline dissemination intervention on health worker adherence to hypertension screening for adolescents living with HIV in Ghana: a pragmatic cluster-randomized study

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**Background:** Due to a high prevalence of hypertension (29%) in adolescents living with HIV (ADLHIV) in Ghana, WHO's recommendation to integrate non-communicable disease care into HIV services was adopted. This was expanded to include checking the blood pressure (BP) of persons living with HIV 3 years and older at each clinical visit. This study aimed to assess the effectiveness of a theory of planned behaviour (TPB)-based guideline dissemination package in addressing the poor adherence to this recommendation for ADLHIV.



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**Methods:** A parallel, multicenter cluster-randomized study was conducted between September 2022 and July 2023. The clusters were 20 antiretroviral therapy (ART) sites in the Greater Accra Region of Ghana with the highest burden of adolescent HIV. They were assigned to the two study arms (intervention = 10, control = 10) by a computer-generated randomization list. The control group received the standard dissemination package comprising the distribution of guidelines to facilities, a classroom-based orientation on the updates and one supportive visit by the National AIDS/STI Control staff. In addition to this, the intervention group received a tested multicomponent TPB-based intervention (Table 1).

TPB Construct	Intervention component
Attitude	Orientation of ART staff on hypertension risk among ADLHIV in Ghana
Subjective norm	Monthly feedback and mentorship from a facility opinion leader
Perceived behavioural control	1. Orientation on BP measurement approaches 2. Provision of BP centile charts and pediatric-friendly sphygmomanometers

Table 1: Intervention Package.

The primary outcome was the rate of BP checks, expressed as the proportion of adolescents whose BPs were checked during clinical visits. Blinded investigators assessed this through a clinical records review before and six months after intervention implementation. Analyses were performed using Poisson regression with a random intercept for each cluster.

**Results:** The records of 454 (Intervention n=233, Control n=221) adolescents (56% female) were reviewed. Pre-intervention, there was no difference in the mean proportion of BPs checked during clinical visits (Intervention: 20.7% (95%CI:6.15-35.22); Control: 19.1% (95%CI:3.86-34.30),  $p=0.89$ ). Although both study arms observed a within-group increase in proportions screened, the intervention group had a higher mean proportion at follow-up (73.2% (95%CI:69.1-77.3) compared to the control group (36.3% (95%CI:25.6-47.1),  $p=0.0001$ ).

**Conclusions:** The intervention improved adherence to guidelines for hypertension screening among ADLHIV. Dissemination of such guidelines by Country Programmes should, therefore, be supported by context-specific evidence, continuous mentorship using available human resources and availability of relevant job aids.

**Trial Registration:** PACTR202205641023383

## TUPEE603

Practical lessons learnt in implementing Targeted Universal TB Testing (TUTT) by Anova health Institute Community HIV Testing Services in Johannesburg Health District

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**Background:** The department of health published the TB screening and testing standard operation procedure in June 2022 to guide quality TB screening and early linkage to care using Targeted Universal TB Testing (TUTT). Anova Health Institute employs a team of Community Health Care Workers (CHCWs) responsible for conducting HIV education and testing with individuals unaware of their HIV status. Part of TUTT entails testing for TB with Xpert ultra among newly diagnosed people living with HIV (PLHIV).

**Description:** From June to October 2023, 20 CHCWs were tasked to collect sputum from all newly diagnosed PLHIV for TB testing, irrespective of symptoms in Johannesburg, South Africa. The CHCWs' HIV testing questionnaire was changed to accommodate the TUTT strategy. The CHCWs were trained on the new approach and equipped with sputum containers and cooler boxes so they could collect client's sputum in the field.

**Lessons learned:** The CHCWs reached 9629 clients and collected sputum from 155 clients for TB testing. 100 (65%) were newly diagnosed with HIV while 53 were re-engaged in ART care, 2 (1%) were found to be TB contacts. 5 (3 226 per 100 000) tested positive for TB and 5 (100%) were initiated on treatment. 3 (60%) TB positive clients were symptomatic, 2 (40%) were asymptomatic.

Combining HIV and TB testing in community settings is a useful strategy for early diagnosis and treatment of TB cases.

**Conclusions/Next steps:** Combining HIV and TB testing in community settings is a useful strategy for early diagnosis and treatment of TB cases. All HTS activities must include TB testing in newly diagnosed HIV positive clients irrespective of symptoms. They must check and test all TB contacts. Sputum collection must be done onsite as clients referred are often lost.

## TUPEE604

### Assessment of FP-HIV Integration under the ART differentiated service delivery models oriented toward self-care in selected regions of Uganda: implications for FP-HIV integration

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**Background:** Self-care-oriented differentiated antiretroviral therapy (ART) service delivery models (SC-DSDMs) can provide a convenient platform for the integration of FP services into HIV care with minimal service interruptions. We explored participants' perspectives on integrating FP into three SC-DSDMs [i.e., fast-track drug refill, community drug distribution points and community client-led ART delivery (CCLAD)] to inform future adjustments in FP-HIV integration in Uganda.

**Methods:** A qualitative study was conducted in 18 health facilities in 17 purposely selected districts in four high HIV prevalence (6.2–8.1%) regions in Uganda. We conducted 80 in-depth interviews with ART clients and health providers [health facility staff, program managers and implementing partner representatives] between September and October 2022. Data were collected on the different forms of FP-HIV integration; client and providers' perspectives on integrating FP into three SC-DSDMs, and barriers to effective integration of FP into the SC-DSDMs. Data were analyzed using Atlas.ti following a thematic framework approach.

**Results:** We found two forms of FP-HIV integration:

- one-stop center (in which ART and FP services were provided at the same service delivery point) and;
- collaboration/referral.

Only three (3) health facilities offered ART and FP services through the one-stop center with the majority offering FP services through referral to the FP clinic, usually on the same health facility compound.

None of the health facilities provided FP services through the CCLAD model, which is organized to have one person retrieve ART refills for the other members. Both clients and providers agreed that the one-stop center would be more convenient and less time-consuming since referral to the FP clinic can result in increased patient waiting time and/or multiple clinic visits if the ART and FP clinics run on separate days. However, staff shortages, stock-outs of short-term FP supplies, shortage of space and lack of integrated registers dampened the enthusiasm for integrating FP into the SC-DSDMs.

**Conclusions:** Despite the potential benefits of integrating FP into the SC-DSDMs, only a handful of health facilities offered FP-HIV integrated services. These findings

call for policy guidance and technical support from the Ministry of Health in integrating FP into the SC-DSDMs in Uganda.

## TUPEE605

### Integration TB and HIV services as an effort to accelerate HIV screening and treatment in Tangerang City

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**Background:** Tuberculosis (TB) is the commonest opportunistic diseases and the main causes HIV-related deaths, with the incidence rate of 8 per 100,000 in Indonesia. In 2022, Tangerang City had 19 CST services, but public preference for integrated services is preferred.

The city's HIV Information System predicts a 28.9% (1.221) HIV screening rate in 2022, prompting The District Health Office (DHO) to accelerate CST services at healthcare facilities.

**Description:** Tangerang City currently has 47 integrated TB-HIV services. Those services are projected as 'one stop service' that provides HIV counseling, TB screening, TB-HIV treatment, provision of TB preventive therapy, TB contact investigation and notification of people living with HIV partners. Strengthening the capacity of health workers continues to be improved, including clinical mentoring and recording & reporting monitoring.

DHO encourages agreement among hospitals to provide TB-HIV integrated services, facilitate regular coordination meeting among TB and HIV program managers and laboratory team as well and also provide suffice logistics in healthcare facilities.

**Lessons learned:** Even though the integrated TB-HIV service is less than a year, the evaluation results show that people with TB who took HIV screening has increased significantly compared to last year.

The achievement of people with TB knowing their HIV status and enroll antiretroviral treatment increased three-fold.

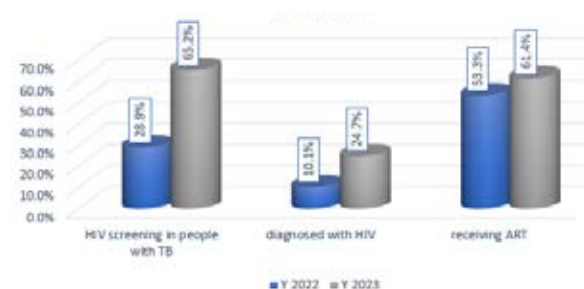


Figure. Integration of HIV and TB services results in Tangerang City, Indonesia.



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Year	Gender	HIV screening in people with TB	diagnosed with HIV	Retained in HIV care	receiving ART
2022	male	649	33	22	15
	female	572	12	10	9
	total	1221	45	32	24
2023	male	2018	107	81	67
	female	1402	25	17	14
	total	3420	132	98	81

**Conclusions/Next steps:** Health workers need to be strengthened in advocating for people with TB willing to HIV test. Clients on ART are targeted to reach 95%, the gap of 33.6% from LFU client, advanced diseases cases, and PLHIV clients who died must be minimized. DHO needs to expand CST services in hospitals based and increase efforts to improve other integrated TB-HIV services.

## TUPEE606

Quality improvement strategies to improve uptake of cervical cancer screening and preventive therapy among women living with HIV attending ART Clinics in Nasarawa State, Nigeria

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**Background:** Women living with HIV (WLHIV) are at a higher risk of developing cervical cancer. However, early detection and preventive therapy can help reduce unnecessary morbidity and mortality. This project used quality improvement (QI) strategies to improve the uptake of Cervical Cancer Screening and Preventive Therapy (CCSPT) among WLHIV attending ART clinics in Nasarawa State, Nigeria.

**Description:** Only 20% of eligible WLHIV in 11 AIDS Healthcare Foundation-supported clinics in Nasarawa State accessed CCSPT services in the 1<sup>st</sup> quarter of 2023 and to improve this, a six-month QI project was commissioned to increase access from 20% to 90% among eligible WLHIV attending supported ART clinics by the end of the 4<sup>th</sup> quarter of 2023.

Root-cause analysis was undertaken and change ideas were implemented using Driver diagram and 6 iterations of Plan-Do-Study-Act (PDSA) cycles. The see-and-treat approach using visual inspection with acetic acid and

Iugol's iodine and subsequent treatment of pre-invasive lesion with thermal ablation was adopted as a method to quickly screen and treat eligible clients.

**Lessons learned:** The project increased access to CCSPT from 20% to 92% with 227 clients out of the 247 eligible WLHIV getting screened.

The 1<sup>st</sup> PDSA cycle built the capacity of healthcare workers to conduct screening on the spot and this increased access from 20% to 33%.

The 2<sup>nd</sup> cycle educated clients via health education sessions and one-on-one counseling leading to increased access from 33% to 54%.

The 3<sup>rd</sup> cycle ensured no stockouts of commodities, and this led to an additional increase in access from 54% to 61%.

The 4<sup>th</sup> cycle implemented active tracking activities to ensure no missed opportunities during clinic visits leading to increased access from 61% to 80%.

The 5<sup>th</sup> cycle strengthened chart audits, weekly hurdles, documentation, and team meetings leading to increased access from 80% to 88%.

For the 6<sup>th</sup> cycle, indigent clients were supported with transport fares, leading to increased access from 88% to 92%.

The project identified and treated 10(4%) WLHIV with pre-invasive cervical lesion and referred 1 client suspected to have cancer.

**Conclusions/Next steps:** Quality improvement strategies that are implemented through established QI methods can help healthcare teams analyze gaps relating to access to cervical cancer screening and implement change ideas to address them.

## TUPEE607

Addressing the mental health needs of HIV program beneficiaries: outcomes of two distinct screening approaches in public and private clinics in Vietnam

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**Background:** The COVID-19 pandemic compounded mental health (MH) disorders among people at risk of and people living with HIV (PLHIV). Since June 2022, the Meeting Targets and Maintaining Epidemic Control (EpiC) project integrated MH screening with routine checkups at supported public HIV treatment facilities and key population (KP) led pre-exposure prophylaxis (PrEP) clinics in Vietnam. Clinics implemented either client-administered or counselor-led screening approaches. We sought to compare differences between these approaches in identifying individuals at risk.



**Description:** From June 2022 to March 2023, MH screening was provided for PLHIV and PrEP clients at 21 clinics via self-administered screening at one clinic, and counselor-led screening at the remaining 20. Substantial variation in screening outcomes across clinics was observed, with self-administered screening yielding the highest rates.

After a south-to-south exchange on self-administered screening for four clinics in April 2023, one public HIV and one KP-led PrEP clinic adopted the approach. Data were collected from EpiC's program dashboard and analyzed using Chi-square to demonstrate outcome differences between the periods before and after the exchange.

**Lessons learned:** Between June 2022 and April 2023, 4.7% of clients were identified at risk of depression or anxiety at the public clinic, and 3.7% at the KP-led clinic. From May through September 2023, screening yields increased to 93 (11.7%, p-value <0.01) in the public clinic and 32 (11.4%, p-value < 0.01) in the KP-led clinic after applying the client-administered approach.

Across the other 18 clinics where health staff facilitated screening, 127 of 9,171 clients were at risk of MH disorders during the same period, varying from 0% to 5.8%. During the exchange, providers noted the self-administered approach allowed clients sufficient time to reflect while completing the questionnaires, and that clients felt more comfortable without direct questioning. However, the process was more time-consuming as they had to clarify the forms for clients and then enter client data.

**Conclusions/Next steps:** Client self-administered screening may enhance identification of MH disorders among PLHIV and KP PrEP clients. While tailored, person-centric approaches are critical, sufficient provider training and time commitment are needed to ensure their effectiveness. Clinics should consider self-administered screening for MH disorders.

## TUPEE608

South Africa's 2023 updated clinical guidelines for HIV and TB expand TB diagnostic test eligibility among people with HIV by more than 600%, requiring additional investment in service delivery

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**Background:** South Africa is among the countries with the highest incidence of Tuberculosis (185 per 100,000) and a high burden of TB/HIV co-infection. In 2023, South Africa released updated national guidelines for both HIV and TB. These guidelines introduced routine TB diagnostic testing for people living with HIV (PLWH), regardless of whether or not they have TB symptoms.

The new guidelines require routine MTB/Rif Ultra (Xpert) for all clients starting ART, annually for clients continuing on ART alongside their annual viral load test, and for all

pregnant women with HIV. Additional TB investigations are required for symptomatic clients and those with CD4<200.

**Description:** We estimated the number of additional TB diagnostic tests that will be required for PLWH based on the new guidelines, using routine programme data on:

1. New initiations on ART,
2. Annual viral load tests done for those continuing on ART, and;
3. First antenatal visits in PLWH. The analysis includes data from five districts (City of Johannesburg, Sedibeng, City of Cape Town, Capricorn, Mopani) in three South African Provinces (Gauteng, Western Cape, Limpopo) supported by Anova Health Institute.

**Lessons learned:** Between October 2022 and September 2023, 85,362 clients initiated ART, 798,737 had VL testing done, and 32,675 pregnant women with HIV received antenatal care. According to the new guidelines, at least 916,774 PLWH would have been eligible for TB diagnostic testing.

During the period, 126,325 tests were done for clients with HIV. We estimate that in the five districts sampled, at least 790,449 additional TB diagnostic tests would be needed to adhere the new guidelines, an increase of 626%. The cost per Xpert is estimated at 33.50USD.

**Conclusions/Next steps:** Providing hundreds of thousands of additional TB diagnostic tests will likely increase case identification and save many lives.

However, additional testing will increase the samples collected in clinics, processed at laboratories, and will increase numbers on TB treatment.

Lab assays alone will require an additional investment of 26,480,04USD annually within sampled districts. Planning and budgeting processes at the National and Provincial Departments of Health should account for these changes, and additional investment should be made in collaboration with development partners and private sector.



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## TUPEE609

### Trends in HIV testing services and positivity rates among U.S. President's Emergency Plan for AIDS Relief (PEPFAR)-supported tuberculosis clinics in 19 African countries between 2019–2023

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**Background:** In 2022, tuberculosis (TB) accounted for 26% of all deaths among people living with HIV (PLHIV) globally. The President's Emergency Plan for AIDS Relief (PEPFAR) supports HIV testing services (HTS) for persons with TB at TB clinics.

**Methods:** We reviewed routinely collected PEPFAR data from U.S. Government fiscal years (FY) 2019–2023 in 19 countries where all relevant data was available.

We calculated annualized age- and sex-stratified metrics for HIV status, testing, and positivity rates among persons with TB in PEPFAR-supported TB clinics, and compared them with HIV positivity rates across 17 other testing modalities.

**Results:** Among 627,637 persons with TB in FY19, 93% had a known HIV status (including previously known and newly tested); this metric has plateaued at 94% since FY22. HIV co-infection among persons with TB decreased from 40% to 35% from FY19–23. During the reviewed period, a greater percentage of persons with TB were male (59%), while the TB/HIV co-infection rate was higher among females (40% versus 34% for males). Co-infection rates were higher among people ≥25 years old (33–50%) than among people <25 years old (13–21%).

Among people tested for HIV in TB clinics, 15% (of 411,445) tested positive in FY19 and 13% (of 486,633) in FY23. For those ≥15 years, HIV positivity was 16% in FY19 and 14% in FY23. HIV positivity was lower for those <15 (6% and 5% in FY19 and FY23, respectively). HTS in TB clinics was the second highest modality for HIV positivity in PEPFAR-supported programs in FY19–22 and surpassed index testing with the highest positivity amongst modalities in FY23. However, over 2.4 million more people were tested via index testing than at TB clinics (Table 1).

**Conclusions:** Among persons with TB, HTS positivity rates are high, and TB/HIV co-infection remains above 30%. Continued collaboration among HIV and TB programs, and integration of case finding efforts, may contribute to efficient diagnosis of HIV among persons with TB.

HTS Modality	FY 19	FY 20	FY 21	FY 22	FY 23
Index testing HIV testing volume	2,095,934	1,948,400	2,457,835	2,714,687	2,893,909
Index testing	16.2%	18%	16%	13.9%	11%
HIV positivity rate					
TB Clinic		369,890			
	411,445		396,678	451,234	487,310
HIV testing volume					
TB Clinic	14.5%	13.2%	13.2%	12.9%	12.9%
HIV positivity rate					

Table 1: HTS volume and positivity by index testing and TB clinic modality in 19 African Countries with PEPFAR-supported Programs, between Fiscal Year 2019–2023.

## TUPEE610

### Key considerations for mobile messages to support reproductive life planning among women living with HIV in Kenya

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**Background:** Meeting reproductive health (RH) needs for women living with HIV (WLWH) can improve health outcomes among women and children. Well designed, person centered interventions that provide counseling and support for reproductive life planning can improve informed decision-making and allow women to better achieve RH goals.

We assessed preferences for interactive text messaging RH content with stakeholders to guide intervention development for the Mobile WACH Empower randomized trial.

**Methods:** In October 2022, two workshops were conducted (one in Nairobi and one in Kisumu, Kenya) among three groups: WLWH, healthcare workers (HCWs), and policy makers.

Using semi-structured guides, facilitators led small group discussions stratified by group to solicit feedback on RH text messaging content approach and implementation considerations. Participants were asked to adapt, adopt, or reject messages and clarify rationale for decisions, and also provide guidance on individual message language, structure, and tone. Discussions were audio recorded and transcribed. Thematic analysis of discussion transcripts was used to optimize message content and delivery to fit clients and clinic needs.

**Results:** A total of 60 stakeholders participated, including 26 WLWH, 20 HCWs and 14 policy makers. All participants viewed RH text messages as an effective strategy to improve access to support and information, emphasizing

the value of message content focused on topics related to pregnancy prevention, pregnancy planning, and clarification of contraceptive methods. WLWH and HCWs preferred short personalized messages covering only a single topic that invited women to respond.

All groups expressed concern for potential inadvertent disclosure of HIV status. WLWH and HCWs advocated for protections for people who shared phones and using discrete messaging for those where phone privacy was a concern.

When considering post-trial sustainability, policy makers and HCWs expressed concerns about ensuring alignment of message content with changing guidelines, increasing access to contraception, navigating partner influence, and identifying personalization strategies without increasing provider workload.

**Conclusions:** There was a consensus among WLWH, HCWs and policy makers that text messaging content should be specific, simple and person-centered to reflect WLWH needs. Intervention implementation post-trial will need to consider how text messages integrate into busy clinics and incorporate expanded RH guidelines and diverse needs for contraception.

## TUPEE611

Integration of HIV services through maternal and child health care mobile brigades for people living with HIV in hard-to-reach communities in Caia District, Sofala Province, Mozambique

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**Background:** Over the last two decades, significant progress has been made towards achieving the 95-95-95 targets for ending the HIV epidemic, primarily through vertical (stand-alone) HIV programs in high-burden countries. Alongside compelling evidence advocating for the integration of HIV services into primary health care, this integration becomes even more critical as funding for the global HIV response declines. Mozambique has been utilizing mobile brigades (MB) since 1979 to deliver maternal and child health (MCH) care services to remote communities.

We describe the experiences and lessons learnt from integrating HIV services into MB efforts in the Caia district of Sofala province, Mozambique.

**Description:** Starting from March 2021, the USAID-funded Efficiencies for Clinical HIV Outcomes (ECHO) project began supporting the integration of HIV services in two communities within the Caia district. These communities, with an estimated population of 9,923 inhabitants and which already received regular MB visits, showed low

treatment retention rates among people living with HIV (PLHIV). Initially, HIV services catered to PLHIV on antiretroviral treatment (ART) displaying risk factors for non-adherence. These services included clinical consultations, psychosocial support, ART dispensing, and viral load (VL) sample collection.

One year later, HIV testing services were incorporated. The clinical staff team in a MB comprised an MCH nurse, psychologist preventive medicine, pharmacy, and laboratory officers. MB visited each community monthly, with a community focal point responsible for mobilizing the population and coordinating with referral health facility focal points to ensure timely ART delivery.

**Lessons learned:** From March 2021 to June 2022, 34 PLHIV received care and treatment services, with 100% of eligible individuals undergoing VL testing, and all (100%) achieving viral suppression.

Additionally, 162 received antenatal care services, 305 women received family planning services, 35 children were vaccinated, and 28 people were screened for tuberculosis. From March 2022 to June 2022, 1,040 people were tested for HIV, resulting in 29 HIV-positive cases, all of whom (100%) initiated ART. However, operationalizing MB posted logistical challenges due to a heavy reliance on implementing partner resources.

**Conclusions/Next steps:** Mobile brigades present an alternative care model that can be leveraged in hard-to-reach communities by mainstreamed HIV services within other health services.

## TUPEE612

Relationship between mental health and unmet need for contraception and method type among women living with HIV in Kenya

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**Background:** Contraception is foundational to prevent vertical HIV transmission for women living with HIV (WLWH), but use may be impacted by depression and anxiety. Both depression and anxiety are disproportionately higher among WLHIV than women without HIV.

**Methods:** We conducted a cross-sectional survey among 3300 Kenyan WLWH receiving routine HIV care and participating in Mobile WACH Empower, a cluster randomized trial evaluating a reproductive health counselling intervention at 10 HIV clinics.

Study staff administered surveys to 964 participants at time of analysis, evaluating self-reported depression (PHQ-2, PHQ-9), anxiety (GAD-7), stigma and social



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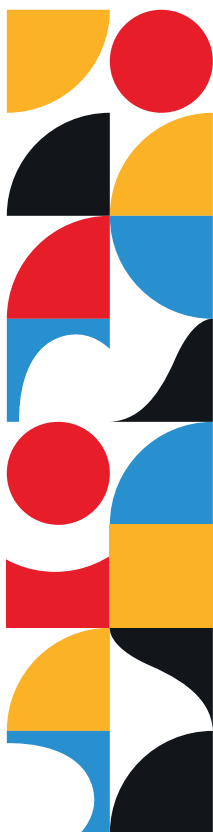
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support. Participants used a tablet to self-administer a survey on contraceptive use. Data for this analysis was collected at baseline. We utilized univariable and multivariable generalized linear models. Unmet need for contraception was defined as percentage of women who are sexually active and do not desire a pregnancy in the next two years, and are not using any modern method of contraception.

**Results:** Among 964 women eligible and enrolled by the time of this analysis, 10% screened positive (PHQ-9) for at least mild depression only, 14% for at least mild anxiety only (GAD-7), 17% for either depression or anxiety, and 7% screened positive for both.

Overall, 78% of women used a modern method of contraception and 10% had an unmet need for contraception. Prevalence of unmet need was 18% among women who screened positive for depression and 9% among women who did not.

Women with at least mild depression were twice as likely to have unmet need for contraception (prevalence ratio [PR] 1.96 [95% Confidence Interval [CI] 0.95-3.52]; adjusted PR for age, marital status, gravidity, time since HIV diagnosis and disclosure of HIV status 2.32 [95% CI 1.47-3.67]) compared to women without depression. The most commonly used methods of contraception were implants (37%) and injectables (33%). Over one-third (34%) of contraceptive users were using dual methods.

**Conclusions:** Screening WLHIV for depression or anxiety may help identify women who have unique challenges with contraceptive uptake and use, or have particular barriers to using LARC. Future studies should examine strategies for identification and linkage to care for WLHIV with depression or anxiety.

## TUPEE613

Lessons from implementing an evidence-informed, sport-based, community adolescent mental health intervention (MindSKILLZ for Self-Care), integrated for the well-being of adolescents affected by/ living with HIV, in Mombasa, Kenya

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**Background:** Orphans and vulnerable children (OVC) interventions within HIV programs aim to improve the health and social outcomes of children living with and affected by HIV. In 2022, 13.9M children ages 0-17 had lost parents due to AIDS globally, and 68,000 children ages

0-14 were living with HIV in Kenya. OVC are at high risk of poor mental health. Mental health affects other health aspects e.g. people with mental health challenges are 4-10x more at risk of acquiring HIV, and depression is 2-3x more common in people living with HIV. 50% of mental illnesses onset by age 14. The prevalence of depression is 21% among in-school, and 36% among out-of-school adolescents in Nairobi and Coast region, Kenya according to a recent study. Grassroot Soccer (GRS) and LVCT Health integrated mental health in an OVC program to address their mental well-being.

**Description:** GRS and LVCT partnered with AMURT to integrate mental health in a program targeting 1,800 OVC ages 10-14. The GRS 'MindSKILLZ' program utilizes a positive youth development approach focusing on strengths and life skills that promote good mental health. It's delivered by 'Coaches' (near-peer mentors) in a fun, safe, supportive culture during the psychosocial support forums. The MindSKILLZ evidence-based curriculum covers: mental-health basics, coping, emotional regulation, pressure and choices, substance-abuse effects, gender, violence prevention, self-care, goal-setting, and care-seeking. Coaches provide mental health first-aid and facilitate linkages for specialized services as needed. This is part of a bigger pilot reaching +4,050 adolescents 10-14 years in Mombasa and Nairobi.

**Lessons learned:** The OVC participants scored 44% and 65% pre-intervention on mental health literacy and emotional intelligence, with 87% and 96% in post respectively. In post-intervention interviews, participants self-reported reduced stigma, improved school performance, and managing stress and emotions.

Coaches reported being more self-aware, resilient, and improved care-seeking. Collaborations/partnerships are effective ways to address cross-cutting health outcomes.

**Conclusions/Next steps:** Integrating mental health in interventions for persons living with/affected by HIV contributes to improved mental health awareness, emotional well-being, care-seeking, stigma reduction, and improved school outcomes, and therefore should be scaled up.

The program is conducting further evaluation including the intervention's impact on depression, and will share results.

## TUPEE614

### Prevalence of human papillomavirus and associated factors among women with HIV at an urban hospital in central Uganda

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**Background:** Infection with high-risk human papillomavirus (hr-HPV) is a major risk factor for developing cervical cancer, the most common malignancy among women in Uganda with mortality rate of 19.9/100,000. The HPV test is recommended for screening, but data on prevalence of hr-HPV and its correlates for routinely-screened women living with HIV (WLHIV) in sub-Saharan Africa are limited. We aimed to determine prevalence, genotype distribution, and factors associated with hr-HPV among WLHIV receiving routine cervical cancer screening at an urban hospital in central Uganda.

**Methods:** At the antiretroviral therapy (ART) clinic, WLHIV are routinely screened for cervical cancer using mainly visual inspection with acetic acid (VIA) or HPV test. Data on behavioral and clinical characteristics, and screening test outcomes were entered into electronic medical records. We reviewed HPV screening program data of 458 WLHIV aged 25-49 receiving ART from Mengo Hospital during August 2022-May 2023.

Genotype testing for hr-HPV 16; 18 and 45 pooled (hr-HPV 18\_45); and other hr-HPV (aggregate for three groups: 31, 33, 35, 52, 58; 51, 59; and 39, 56, 66, 68) was performed using GeneXpert HPV DNA. Missing demographics were collected from clients via phone interview. We analyzed data using descriptive statistics and logistic regression for associated factors.

**Results:** Prevalence of hr-HPV was 27.5% (126/458; 95% CI 23.6-31.8). The predominant genotype was other hr-HPV only (74.6%; 94/126), followed by hr-HPV 16 only (8.7%; 11/126), both hr-HPV 16 and other hr-HPV (6.3%; 8/126).

As a woman's age of sexual debut increased, odds of hr-HPV decreased (adjusted odds ratio, aOR=0.91; 95% CI 0.83-1.00; p=0.044). Women aged over 45 years had lower odds of hr-HPV (aOR=0.53; 95% CI 0.31-0.90; p=0.020).

Women with presence of at least one symptom of sexually-transmitted Infections (STIs) were more likely to have hr-HPV (aOR=2.35; 95% CI 1.03-5.32; p=0.041).

**Conclusions:** Prevalence of hr-HPV among WLHIV was high compared to that reported for HIV negative women, suggesting that hr-HPV screening may be helpful as part of routine care for WLHIV, especially for women below the age of 45 years, women with younger age at sexual debut, and those with STI symptoms during clinic visits.

## TUPEE615

### The relationship between household economic shocks, mental health, and HIV among adolescent girls and young women in rural South Africa

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**Background:** Common mental health disorders (CMDs) and human immunodeficiency virus (HIV) are two of the largest contributors to the global burden of disease among adolescent girls and young women (AGYW). In South Africa, the high proportion of AGYW experiencing CMDs is suggested to be reflective of adversity in early life, particularly through household economic shocks. Yet, longitudinal evidence for the relationship between household economic shocks, CMDs, and HIV amongst AGYW is limited.

**Methods:** We used data from the HIV Prevention Trials Network (HPTN) 068 study in rural South Africa (2012-2019). AGYW, aged 14-20 at baseline, were followed annually for up to 6 years. Exposures included experience of any shock, type of shock (illness/death, agricultural, wealth), and number of shocks (0, 1, ≥2).

We used GEE log-binomial regression models to calculate risk ratios for the association between exposures and depressive symptoms (Center for Epidemiological Studies Depression-10 (CESD-10) > 16) and ordinal logistic regression models to calculate odds ratios for the association between exposures and stress-related biomarkers (C-reactive protein (CRP), cytomegalovirus (CMV), herpes simplex virus type-1 (HSV-1)), and HIV.

**Results:** Among 1892 AGYW, the baseline median age was 15 (IQR 14-17) and 27% had experienced any shock (illness/death: 16%, agricultural: 8%, wealth: 11%). At endline, 9% of the sample reported depressive symptoms, 25% had increased CRP levels, 27% were CMV positive, 22% were HSV-1 positive, and 14% were HIV positive.

Unadjusted analyses suggested a relationship between experiencing any shock (RR: 1.10, 95% CI: 1.00, 1.22), or a greater number of shocks (RR: 1.05, 95% CI: 1.00, 1.11), and depressive symptoms. In adjusted analyses, there was a positive relationship between experiencing any shock (OR: 1.21, 95% CI: 1.04, 1.34), a greater number of shocks (OR: 1.19, 95% CI: 1.03, 1.38), and wealth specific shocks (OR: 1.20, 95% CI: 1.03, 1.29), with increased CRP. We found no relationship between shocks and HIV acquisition.

**Conclusions:** In South Africa, AGYW who are experience economic adversity in early adolescence are potentially at an increased risk for depressive symptoms and elevated stress biomarker levels during the transition to adulthood, which may lead to other adverse health outcomes.



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## TUPEE616

The role of Community Health Workers on HIV and tuberculosis outcomes: a longitudinal analysis for six low- and middle-income countries (LMICs)

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**Background:** As part of Primary Health Care (PHC) strategies, the Community Health Workers (CHW) play an important role on the practices of care, surveillance, education, and health communication.

We aimed to evaluate the effect of the CHW on the HIV and Tuberculosis (TB) incidence and mortality over the last two decades.

**Methods:** We developed a conceptual framework linking CHW to HIV and TB incidence and mortality, accounted for well-described risk factors pathways, and populated it with data from Global Burden of Disease (GBD) and World Bank data.

We used multivariable regression analyses for panel data with fixed-effects Poisson models to estimate the effect of the CHW on the selected health outcomes over 2000-2019 period for six Low- and Middle-Income Countries (LMICs) with adequate data on CHW. We disaggregated the analysis for subpopulations of women and men of all ages.

**Results:** The increase of 1 CHW (per 1000 population) associated with reductions on the HIV incidence rate by 31.56% [Incidence Rate Ratio (IRR): 0.6844; 95% confidence interval (CI): 0.6774 - 0.6916] and 10.56% (IRR: 0.8944; CI: 0.8840-0.9049) for women and men, respectively, followed by reductions of 29.82% (IRR: 0.7018; CI: 0.6928-0.7109) and 35.3% (IRR: 0.6470; CI: 0.6379-0.6562) of HIV-related mortality rate, respectively.

Moreover, the increased rate of CHW associated with reductions of the TB incidence rate by 13.49% (IRR: 0.8651; CI: 0.8551-0.8752) and by 21.19% (IRR: 0.7881; CI: 0.7793-0.7969) for women and men, respectively, while associated with reductions of 33.87% (IRR: 0.6613; CI: 0.6404-0.6828) and 43.15% (IRR: 0.5685; CI: 0.5554-0.5820) on the TB-related mortality rate for women and men, respectively.

**Conclusions:** Our findings suggest that CHW should be part of any strategy of health policies fighting HIV, TB, among other communicable diseases. We highlight that CHW may qualify the access to health services, treat the inequalities in health, and improve the performance and efficiency of the healthcare system.

Thus, CHW should be considered a tool in the achievement of Sustainable Development Goals, which advocates the end of AIDS and Tuberculosis by 2030.

## Innovations in data collection, monitoring and evaluation

### TUPEE617

Charting the path: a proposed theory of action for enhancing early care for HIV-exposed infants in Malawi

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**Background:** Initiating and retaining HIV exposed infants (HEI) on antiretroviral therapy (ART) at the critical therapeutic point before 12 weeks of age remains a pressing public health concern in Malawi and other nations in Sub-Saharan Africa. The challenges in order of priority are long turnaround times (TAT) for DNA-PCR results, caregiver perspectives, and healthcare worker barriers.

Consequently, the age group of 0-4 years exhibits the highest mortality rate (5.6%) and dropout rate (54.8%) within the continuum of care. This paper proposes a theory of action, integrating multidimensional methods to reduce the TAT between testing and ART initiation.

**Description:** We conducted two quality improvement (QI) projects for two systems to address delays.

Testing: Guided by the Nolan Model of improvement, we used a quasi-experimental pre- and post-intervention assessment to measure the change in TAT for DNA-PCR tests at Mulanje District Hospital (July 2022 and March 2023). We ran three Plan-Do-Study-Analyse cycles of *Tagging of Care Mastercards to indicate that the results are back*.

Laboratory: Between November 2022 and June 2023 in Lilongwe, we piloted the integration of the individual workflows informing the Malawi National Laboratory Information Management System (NLIMS) workflows. We plotted the results of the two projects on separate run charts and assessed for trends, "too few" or "too many" runs and astronomical points. We then integrated the findings of these two projects.

**Lessons learned:** The integrated NLIMS featured offline capabilities, barcode standardisation and efficient pull orders from all "previously independent" workflows. Electronic result transmission to Electronic Medical Records improved the efficiency of transmitting test statuses online.

The difference in the average TAT (days) before and after the integration was 65 days (77-12 days), with "too many" runs on the run chart. Whilst the Tagging of the Care Mastercards was a change idea with the highest solution impact and lowest implementation effort, the



difference before and after the intervention was 11% (69% – 80%) within 12 weeks of age. In addition, “no runs” were observed.

**Conclusions/Next steps:** The integration of the NLIMS significantly reduced TAT and demonstrated a non-random variation and overall improvement compared to the tagging system alone. Future studies should explore healthcare worker and caregiver barriers.

## TUPEE618

Counting what counts in PrEP provision: assessing the feasibility and application of reporting improved indicators for PrEP monitoring and evaluation

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**Background:** The PEPFAR/USAID-funded MOSAIC Consortium proposed *two new indicators* to simplify data collection, improve program planning, measure rollout, and estimate the impact of pre-exposure prophylaxis (PrEP) programs. We attempted to extract the indicators from PrEP records in five countries to assess the feasibility of collecting them from existing data sources and demonstrate their utility.

**Description:** Existing facility-level PrEP data were extracted from 13 sites across Kenya, Lesotho, South Africa, Uganda, and Zimbabwe and databases in Lesotho and Uganda. Data collectors at sites were instructed to collect the proposed indicators PrEP Dispensed (product volume) and PrEP Visits and PEPFAR indicators PrEP\_NEW and PrEP\_CT with available sex, age, and population disaggregations. Data covered one year of oral PrEP service provision from 2021 to 2022.

**Lessons learned:** The national PrEP data collection systems in the five countries are largely fragmented and burdensome, making collection of the proposed indicators less straightforward than expected. PrEP Dispensed and PrEP\_NEW were available through facility records in all five countries. As expected, PrEP Dispensed was generally not associated with client characteristics. PrEP Vis-

its were available by visit type, population, and age/sex, except in South Africa, where they could not be extracted without accessing individual client files. In Uganda, both indicators were available in the national PrEP Tracker database, enabling estimation of national PrEP coverage and impact by population using impact factors and population size estimates from Uganda's PrEP-it target-setting exercise (Table).

Uganda Key or Priority Population	Days of Oral PrEP Dispensed April 2021 – March 2022 in Uganda	Person-Years of PrEP Dispensed (PYP)	Estimated Coverage among Potential PrEP Users	Estimated HIV Infections Averted
Adolescent girls and young women	1,738,346	4,763	2%	12
Female sex workers	9,315,091	25,521	21%	399
Men who have sex with men	913,006	2,501	6%	7
People who inject drugs	606,562	1,662	18%	6
Serodifferent couples	1,697,285	4,650	14%	367
Transgender people	88,465	242	4%	1
Other (incl. fisher folk, migrant workers, clients of sex workers, etc.)	6,959,567	19,067		55
Total	21,318,322	58,406		848

Table.

**Conclusions/Next steps:** By demonstrating how the proposed indicators provide valuable information on PrEP programs, this activity will support improvements to national and global PrEP strategic information.

Following a presentation of preliminary results, the Uganda Ministry of Health decided to add PrEP Dispensed and PrEP Visits as national indicators. Wider adoption of these indicators could reduce the reporting burden at facilities, improve program planning with meaningful data, and enable estimation of the coverage and impact of PrEP programs.

## TUPEE619

Lessons learned from the implementation of suggestion boxes in HIV clinical settings in Haiti to drive person-centered care

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**Background:** Soliciting feedback on the client experience in healthcare settings is essential to monitor quality and ensure person-centered care. However, in Haiti, methods for securing client feedback in HIV healthcare settings are limited and not standardized.



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**Description:** To help HIV clinical sites solicit feedback from clients, the USAID-supported RISE-Haiti SPOTLIGHT program supported 115 sites to implement suggestion boxes. The project developed a protocol providing guidelines on the collection, analysis, management, and follow-up of feedback given by clients.

A form was developed in Creole, utilizing emoticons for those who are illiterate, and was piloted in one clinic before dissemination. RISE-Haiti SPOTLIGHT disseminated the protocol, feedback forms, feedback tally sheet, instructional posters, and suggestion boxes.

An orientation was held for staff to familiarize them with the forms. The protocol calls for three staff members to review the feedback monthly. Project mentors assisted with the analysis and reviewed feedback to identify challenges and successes during site visits.

**Lessons learned:** Though implementation of the suggestion boxes varied by site based on staff availability to review feedback according to the protocol, many improvements were observed. Several sites noted complaints around long wait times, lack of professional courtesy in reception of clients, and environmental discomforts. One site addressed long wait times by training counselors to receive clients in the waiting rooms and moving staff meetings out of clinic hours.

Another clinic addressed long wait times by establishing a ticket service to see clients in order of arrival and additionally addressed a lack of professional courtesy by refresher training and performance improvement plans for staff.

After one month, the number of feedback forms expressing high client satisfaction increased in this facility. Staff in the clinics expressed satisfaction with the boxes.

**Conclusions/Next steps:** Suggestion boxes are a low-cost way to elicit client feedback, giving health facilities the opportunity to make changes with existing resources to deliver high impact on the client experience. As they are easily built and installed, this often-overlooked method of client engagement is an accessible way for clinics to ensure they are delivering person-centered care.

## TUPEE620

Developing a mimplied survey method for HIV, viral hepatitis and STI surveillance among key populations: the BBS-lite among sex workers and people who inject drugs in Uganda

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**Background:** In countries with high HIV burden, Bio-Behavioural Surveys (BBS) are recommended to be conducted every 3 years to provide critical data to complement routine programmatic data for HIV prevention programming. However, these are technically demanding, resource intensive, and often result in inadequate, and late data availability and use.

This study set out to validate the implementation of a simplified bio-behavioural survey method, the BBS-lite, developed by WHO and UNAIDS.

**Methods:** During February-April 2022, the BBS-lite survey was conducted in three districts (Mbale, Busia, and Toro) in Eastern Uganda. Recruitment and data collection was undertaken by 10 health facilities that provide free-of-cost HIV services.

Convenience samples of people who inject drugs (PWID) and female sex workers (FSW) accessing services at facilities and during community outreach were screened for eligibility and interviewed.

Healthcare staff and peer workers administered a survey questionnaire and collected sero-samples for HIV testing within routine testing services.

**Results:** Overall, 859(96%) of FSW and 417(94%) of PWID clients screened, consented to participate in the survey. The majority (74% FSW, 71% PWID) were recruited through outreach in the community.

Overall, 35% of FSW and 28% of PWID recruited were new to these HIV programs and had not previously accessed services. We noted that the data collection exercise did not add significantly to the programs' workload because this was done alongside routine activities, was well planned, and through screening they were able to target services appropriately.

The additional funding was used for community mobilization and facilitating services providers to conduct more outreach to improve service reach and delivery to the target population.

Using service providers known to clients as data collectors ensured participant trust and improved recruitment. The coupons helped in giving information about the services available and reached many new clients.



**Conclusions:** The BBS-lite survey was successfully employed by local health managers to understand the profiles and level of services uptake among PWID and FSW in close to real time. The BBS-lite provided a low-cost, and less resource intensive opportunity for programmers to understand the profiles and key gaps in service uptake by key population.

## TUPEE621

**Strengthening recording and reporting of continuity of treatment for people living with HIV on antiretroviral therapy through physical review of paper client records: Manicaland and Midlands provinces of Zimbabwe, 2023**

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**Background:** Zimbabwe Health Interventions (ZHI) is supporting the government of Zimbabwe to achieve and sustain HIV epidemic control. ZHI used the cohort adjustment method when reporting clients on antiretroviral therapy (ART) i.e., adding new initiations, transfers-in and return-to-care; and subtracting deaths, transfers out, treatment interruptions from number reported in previous month. This method does not verify the previously reported base figure and is therefore prone to errors. Routine data quality assessments (RDQA) conducted in June 2023 in selected sites revealed 16% overreporting of clients on ART in Midlands province, and this prompted the client comprehensive records review.

**Description:** We conducted a physical review of facility-held client records to verify numbers of clients on ART across all ZHI-supported facilities in Manicaland and Midlands provinces. Clients who visited the facility or sent a representative on or within 28 days of appointment day were considered active. Those who missed appointments were followed up for 90 days before declaring outcomes. Standard Operating Procedure (SOP) was used to guide data collection. All paper records of ART clients were reviewed with results recorded on tally sheets. Data were captured, merged and analyzed using Ms Excel. All inactive/lost clients were discounted from treatment continuity number. Assessment was covered by the Medical Research Council of Zimbabwe protocol (MRCZ/E/159).

**Lessons learned:** There was an overall 9.3% (20,569/221,050) reduction in the number of ART clients, 3.9% (4,301/108,938) in Manicaland and 14.5% (16,268/112,112) in Midlands.

About 52% (10,700/20,569) of losses occurred before project inception in October 2021. About 65% of clients lost were not in differentiated service delivery (DSD) models. Contribution of the 0–25 year age groups to ART clients decreased from 13.5% to 10.3%, and for 50 years and above increased from 23.0% to 31.7%. The age group with the highest number of ART clients remained the 40–44 years old (15.8%). The Ministry of Health and Child Care adopted this method.

**Conclusions/Next steps:** Physical review of facility-level client records is a useful Data Quality Assurance (DQA) strategy complementing the cohort adjustment method. We recommend physical review of client's records annually at high-volume sites, and bi-annually at lower-volume sites to accurately report clients on ART.

## TUPEE622

**Beyond the algorithm: decoding the influence of recruitment sources on participant engagement in online intervention studies**

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**Background:** Compared to studies with in-person components, online studies offer significant advantages: access to geographically hard-to-reach populations, cost-efficiency, and convenience. They are especially useful for engaging with sexual, gender, and racial minority communities in HIV research. However, online studies often face challenges with participant retention and engagement.

Our analysis investigates associations between recruitment sources and study engagement rates to uncover insights for optimizing recruitment and engagement strategies.

**Description:** Between July 2020 and September 2022, we enrolled 750 assigned male at birth (AMAB) participants across the United States for a 12-month randomized controlled online intervention trial to increase HIV testing and viral suppression among 15–29 year old sexual, gender, and racial minority individuals.

Participants were recruited through four channels: ads on dating apps (Grindr, Jack'd, SCRUFF), social media ads (Facebook, Instagram, Twitter), listservs from previous studies, and other methods (e.g., printed flyers, referrals, and in-person recruitment). We tracked study engagement through the completion of follow-up surveys at 3, 6, 9, and 12 months.

**Lessons learned:** Median age was 25 (SD=3.3), with 30.7% living with HIV and 11.2% identifying as a gender minority. 42.4% identified as Hispanic/Latino.



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We used multivariate logistic regression to examine the relationship between recruitment sources and high study engagement (completing  $\geq 3$  follow-up surveys). Compared to participants recruited from dating sites, those recruited through social media ads (AOR=2.757; 95% CI=1.381–5.503;  $p=0.004$ ) and study listservs (AOR=2.232; 95% CI=1.081–4.610;  $p=0.028$ ) had greater odds of high study engagement.

Notably, participants living with HIV (AOR=0.619; 95% CI=0.384–0.999;  $p=0.050$ ), aged 20–24 (AOR=0.537; 95% CI=0.334–0.863;  $p=0.010$ ), and identifying as a gender minority (AOR=0.313; 95% CI=0.175–0.559;  $p<0.001$ ) were less likely to demonstrate high engagement irrespective of recruitment source. Hispanic/Latino identity did not significantly impact engagement rates.

**Conclusions/Next steps:** Social media ads and study listservs are effective sources for recruiting highly engaged participants from this population, indicating their value in a comprehensive recruitment strategy.

Observed differences in engagement rates by demographic characteristics (i.e., age, HIV status, and gender identity) suggest the potential need for tailored engagement strategies and further exploration of other factors influencing online intervention retention and engagement.

## TUPEE623

[A machine learning approach to achieve anonymised HIV cascade of care record linkage across health services in Myanmar: the ACCESS-Myanmar project 2018–2023](#)

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**Background:** Myanmar’s HIV surveillance faces multiple challenges in monitoring people progress across the cascade of care. We describe the development and validation of a prototype record linkage process using a machine learning-based approach to anonymise and link client records in Myanmar.

**Methods:** ACCESS-Myanmar aims to implement and evaluate a pilot automated system to link individual’s HIV testing (at NGO - Première Urgence Internationale (PUI) - testing services) and treatment (at National AIDS

Program (NAP) treatment centres) data across a network of services in Southern Yangon using anonymous ‘hash’ codes constituted from client names and other identifying information. Variations in Myanmar naming conventions were systematically mapped to develop a standardised set of name alternatives and spellings.

Datasets annotated by human experts, derived from probabilistic and deterministic approaches, are considered as gold standards. An extensive training dataset was generated using a rule-based approach, identifying true/false linkages between NAP and PUI services (2018–2023).

These datasets facilitated machine learning for training and evaluating a random forest classifier to identify client linkages. The classifier was subsequently applied to identify linkages between PUI and NAP service episodes.

**Results:** The gold standard datasets included 223 links between PUI and NAP records, with 51% ( $n=120$ ) confirmed as true links by human experts. In the training dataset of 3018 links, 7.5% ( $n=227$ ) were identified as true links using rule-based methods. The random forest classifier, trained on the training dataset, achieved an accuracy of 0.95 (95% CI=0.91–0.97) on the gold standard datasets. Applying the classifier to 1068 PUI clients known to have HIV and could have been sent for treatment, we found 74% ( $n=787$ ) linkages to NAP treatment data.

Notably, 57% ( $n=450$ ) were not classified as referred to NAP. Our preliminary analysis utilised data from only a single NAP referral site, with more linkages likely with the pending inclusion of additional sites.

**Conclusions:** Our study demonstrates the high accuracy of a machine learning data linkage tool to anonymously link HIV diagnoses and treatment records between services, including uncovering unrecorded treatment referrals.

Our approach provides an automated, efficient, and sustainable tool for improving HIV cascade of care surveillance in low-resource settings.

## TUPEE624

### Enhancing same-day ART policy and implementation at a provincial level through a national contest: short-term and long-term results from the Thailand Test and Treat Contest

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**Background:** Thailand launched its same-day antiretroviral therapy (SDART) guidelines in 2021, with a series of training conducted by the Ministry of Public Health (MOPH). However, the translation of guidelines into practice varied substantially by province and by hospital. The Thailand Test and Treat Contest explored how competition and rewarding system could enhance SDART policy adoption and implementation at a provincial level.

**Methods:** Of 77 provinces in Thailand, 16 applied for the contest; 4 participating exclusively in Phase I (March-September 2022), 3 in Phase II (February-July 2023), and 9 engaging in both phases. HIV diagnosis and ART status were retrieved from the National AIDS Program database. Outcomes were categorized into short-term (single-phase participation) and long-term duration (participation in both phases). Data during the contest phase were compared with those 6 months prior. Statistical analyses evaluated differences of percentages of ART initiation within same-day, 1-7 days, and >7 days after HIV diagnosis.

**Results:** A Provincial Test and Treat Contest kick-off meeting was held across provinces where high-level officers from Provincial Health and Administrative Offices, hospitals, and civil society organizations were brought together to discuss provincial SDART implementation plan. Short-term analysis across 16 provinces found 4,837 individuals newly diagnosed with HIV and 4,615 started ART. Significant improvements in ART initiation rapidness were seen in the contest phase, compared to the pre-contest phase, with percentages of same-day, 1-7 days, and >7 days ART initiation being 14.9%, 25.2%, and 59.9% vs. 13.7%, 23.6%, and 62.7%,  $p=0.033$ . Long-term data from 9 provinces showed 6,730 new HIV diagnoses, with 6,511 ART

initiations. Percentages of same-day, 1-7 days, and >7 days ART initiation improved from 7.0%, 27.5%, and 65.5% pre-contest to 24.1%, 23.9%, and 52.0% during the contest ( $p<0.001$ ).

**Conclusions:** The Thailand Test and Treat Contest successfully boosted up provincial implementation of SDART policy. Actual improvement in ART initiation rapidness was demonstrated as results. The national competition and rewarding system may be useful in scaling up other evidence-based health interventions.

## TUPEE625

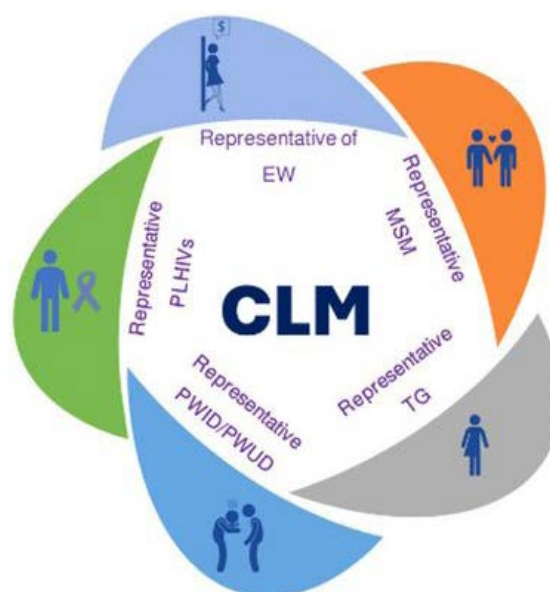
### Community-Led Monitoring (CLM) contributed improving HIV Response In the Cambodia

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#### Background:

Learned from the experiences and constrains on limited resources/capacity, tools, systematic, number of respondents from communities as face to face with recording on the paper remains challenging, CLM was initiated and implemented as the innovative on feedback gathering for the evidence based for advocacy which contributed improving HIV program.



**Description:** CLM is an online tool which led and implemented by the Forum of Networks of PLHIV and Most-At Risk Population at national and subnational level (FoNPAM/DFoNPAM) was established that serves as a community-friendly data collection that allows PLHIV/KP to meet and provide feedback systematically in seven priority provinces in Cambodia. Data is automatically analyzed into a dynamic dashboard (PowerBI) available for community to use to advocate for HIV and related service strengthening. CLM cover both HIV and related services.



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**Conclusions/Next steps:** Case management supported by DHIS2 tracker individual line lists demonstrated substantial improvements in HIV treatment continuity, viral load coverage, and viral load suppression. These findings emphasize the value of utilizing data-driven approaches in enhancing HIV care and provide valuable insights for future interventions and strategies aimed at improving client retention and viral load outcomes.

## TUPEE627

### Community-led monitoring approaches and data on PrEP: evidence from South Africa, Haiti, and Zimbabwe

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**Background:** Community-led monitoring (CLM) is a tool for increasing accountability of HIV service delivery stakeholders to health service users. CLM differs from traditional monitoring in that the data and indicators are informed by local priorities and data collection tools are designed and owned by communities.

Little work has been done to compare and contrast CLM indicators from different contexts. Indicators from three countries related to the Pre-exposure prophylaxis (PrEP) continuum demonstrate the different content areas of interest to CLM projects.

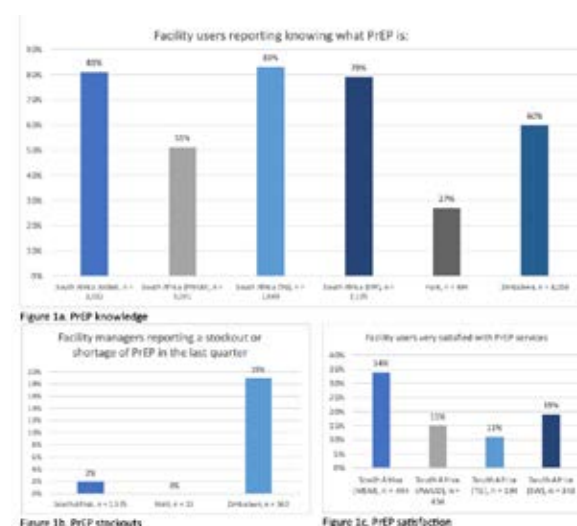
**Description:** Community-led monitoring projects in South Africa, Zimbabwe, and Haiti implemented cycles of data collection, analysis, and advocacy in public health facilities and communities from October 1, 2022 – September 30, 2023.

Projects approached monitoring of Pre-exposure prophylaxis (PrEP) in diverse ways including targeting different kinds of survey respondents, measuring different priority areas related to PrEP, and measuring similar priority areas in different ways (Table 1).

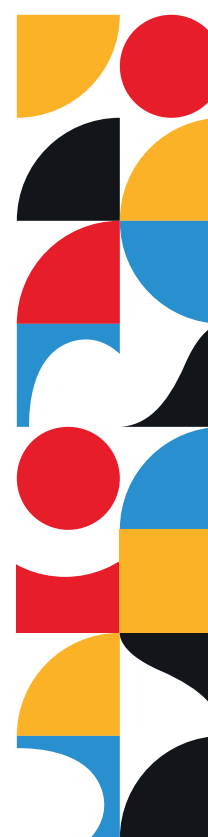
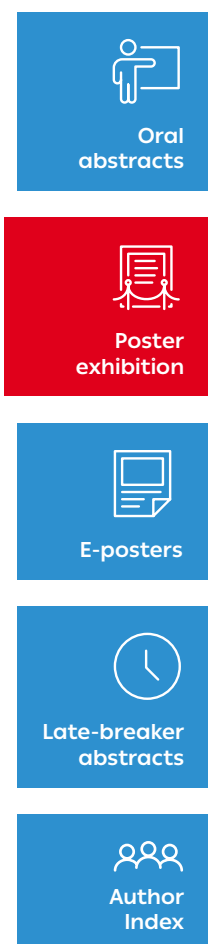
**Lessons learned:** All three CLM projects focus on PrEP awareness and uptake as key priorities, with just one focusing on elements of care that may impact retention, like overall satisfaction with PrEP services. Most CLM data are not directly comparable given different question

phrasings and respondent types. Where data indicators are comparable, contextual challenges become more apparent, for example more PrEP stockouts were reported in Zimbabwe as compared to other countries (Figure 1, a-c).

Category	Example Indicators: South Africa	Example indicators: Zimbabwe	Example indicators: Haiti
Awareness <ul style="list-style-type: none"> <li>Promotion</li> <li>Engagement</li> <li>Education</li> </ul>	<p>"Have you heard of pre-exposure prophylaxis?"</p> <p>"Does the facility prioritize offering PrEP to any of the following populations?"</p> <p>"Have you ever been offered PrEP at a public health facility?"</p>	<p>"Do you know what PrEP is?"</p> <p>"Which of the following prevention options have you been offered at the facility?"</p> <p>"Which service users are offered PrEP?"</p>	<p>"Have you ever heard of a medication called PrEP?"</p> <p>"What service users are offered PrEP?"</p>
Uptake <ul style="list-style-type: none"> <li>Initial clinical assessment</li> <li>Counseling</li> <li>Prescribing PrEP</li> </ul>	<p>"Is PrEP offered at the facility?"</p> <p>"Does the facility prioritise offering PrEP to any of the following populations?"</p> <p>"Facility staff reports of medicine shortage(s)?"</p>	<p>"What are the major barriers to putting service recipients on PrEP in this facility?"</p> <p>"In the last three months, have there been stockouts or shortages of any of the following?"</p> <p>"What services does the [clinic] support?"</p> <p>"What prevention services are offered at the facility?"</p>	<p>"Is PrEP offered at this facility?"</p> <p>"Why is PrEP not offered in this facility?"</p> <p>"In the last 2 months have there been stock-outs or shortages of any of the following?"</p>
Adherence and Retention <ul style="list-style-type: none"> <li>Follow-up labs</li> <li>Patient assessment</li> <li>Prescription refills</li> <li>Counseling</li> </ul>	<p>"How satisfied were you with PrEP services at this mobile clinic? If 1 is VERY UNSATISFIED and 5 is VERY SATISFIED."</p>	N/A	N/A



**Conclusions/Next steps:** As CLM evolves as an approach to accountability and improving person-centered HIV service delivery, stakeholders have pushed for comparable CLM data across contexts. These efforts fail to recognize that ownership of CLM survey tools lies with communities





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and that context specific indicator design is a strength of CLM. CLM projects contribute significant insights to gaps in PrEP services across the entirety of the continuum.

## TUPEE628

*The NIH OAR Data Hub: enhancing transparency and information dissemination of the NIH HIV research portfolio*

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**Background:** The importance of data transparency in science, particularly in the HIV research field, is reflected by its role in enabling evidence-based decisions in medicine and fostering trust among all members of the HIV research community. Through partner engagement activities, the NIH Office of AIDS Research (OAR) received feedback on the need for a comprehensive tool to explore NIH-funded HIV research, highlighting the importance of data sharing with the public and the need to improve avenues of information dissemination and transparency. In response to community feedback, OAR developed the *NIH OAR Data Hub: Showcasing the NIH HIV Research Portfolio* a publicly available resource to enable greater transparency.

**Description:** This resource consists of data visualization dashboards that summarize specific areas of the NIH HIV research portfolio. It aims to enhance understanding of the funded NIH HIV research landscape and priorities, enable users to identify ongoing projects relevant to their specific interests, make informed decisions regarding future applications, and find funding and networking opportunities. We have published five dashboards to date, mapping the constellation of NIH HIV research priorities and objectives to funded research.

**Lessons learned:** Preliminary feedback from *Data Hub* users indicates that the dashboards are a valuable and informative resource. Its development and launch highlight the importance of reference materials including clear navigation instructions, video tutorials and definitions for proper interpretation of the data displayed. Furthermore, the project emphasizes the crucial role of community input in creating accessible resources for disseminating HIV information to the public and promoting scientific understanding.

**Conclusions/Next steps:** OAR's successful deployment of the NIH OAR Data Hub provides the public with a comprehensive view of funded HIV research at NIH. The resource has been well received and will enable policymakers, researchers, and clinicians to stay informed about areas requiring attention, providing an avenue to conceive new projects that will cover areas in need. Ongoing efforts include gathering user feedback and soliciting input for

new dashboards, ensuring the Data Hub remains a dynamic and responsive tool in the ongoing pursuit of advancing HIV research and dissemination of information to diverse audiences.

## TUPEE629

*Reassessing the first 95: data system audit reveals realities of HIV diagnoses in Jakarta, Indonesia*

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**Background:** Jakarta's HIV cascade indicated that 74.2% of an estimated 85,927 people living with HIV (PLHIV) had learned their HIV status by December 2022. However, the transition to antiretroviral therapy (ART) was markedly lower at 47.6%, with a subsequent 70.2% of individuals achieving viral suppression.

Suboptimal second 95 performance prompted Jakarta's Provincial Health Office (PHO) and the USAID-funded *Meeting Targets and Maintaining Epidemic Control* (EpiC) project to conduct a detailed examination of the apparent incongruity between diagnosed individuals and those actively engaged in treatment.

**Description:** With the introduction of Indonesia's new electronic individual medical records system, SIHA 2.1, the Jakarta PHO and EpiC were able to carry out a retrospective analysis of client attrition.

Of 33,424 PLHIV that were not on ART, 9,996 PLHIV were untraceable, 6,397 persons had transferred out, 8,092 individuals had died, 484 PLHIV were confirmed on treatment, five persons had stopped treatment, 2,937 persons had interruption in treatment (IIT) for more than five years and were presumed untraceable, and 5,423 PLHIV had IIT for less than five years and were in the process of being traced.

This updated data revealed a more accurate picture of Jakarta's HIV cascade: Just 49.6% of PLHIV knew their HIV status, with 72.3% of these persons on ART and 69.1% achieving viral suppression, as of December 2022.

**Lessons learned:** Data system enhancements afford opportunities to audit historical progress and cast a new light on HIV cascade achievements, highlighting the critical nature of data accuracy for strategic planning and intervention prioritization.

**Conclusions/Next steps:** A retrospective analysis of first and second 95 performance goals has revealed substantial gaps in the number of current estimated PLHIV who know their status and have demonstrated improvements in second 95 performance.

Gaps in the third 95 have been closed following an intensive viral load acceleration strategy that helped 84.6% of PLHIV on ART achieve viral suppression by September 2023.

This strategic recalibration across Jakarta's HIV cascade underscores the importance of data integrity in optimizing HIV program outcomes and guiding future resource allocation, intervention prioritization, and policy enhancements.

## TUPEE631

### Innovative supply chain data analytics models driving HIV service delivery in Uganda

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**Background:** In Uganda, the availability of HIV commodities is essential to achieving UNAIDS targets. Despite the significant funding for health supply chain and program interventions, a comprehensive and reliable system is lacking to track commodity availability, utilization, and oversight of HIV services. Only 0.07% (70/1005) of health facilities (HFs) utilized an electronic logistics information management system to consistently synchronize stock and consumption data into the national health data warehouse. Alternative methodologies to effectively monitor the performance of the health supply chain and the implementation of HIV programs are needed.

**Methods:** With technical assistance from the USAID/Strengthening Supply Chain (SSCS) Activity, the Ministry of Health (MoH) developed a supply chain data analytics model that triangulates HIV program targets with consumption of HIV tests and medications.

For this analysis, SSCS reviewed routinely reported data to evaluate adoption of multi-month dispensing (utilization of TLD 90-day pack) and utilization of HIV/Syphilis Duo test kits for the triple elimination initiative.

From October 2022 to September 2023, we measured performance against set percentage target ratios of 80:20 for clients on TLD MMD 90-day pack compared to 30-day pack and 40:60 for utilization of HIV/Syphilis Duo test kits compared to Determine™ HIV-1/2 test kits for HIV screening.

Using the model, we triangulated target attainment and commodity consumption reported by 2379 HFs across all 136 districts and provided technical support to health facilities to achieve targets.

**Results:** The model provided data on target attainment vs health facility consumption, warehouse distribution, commodity availability, adherence to treatment guidelines, quantification assumptions, and commodity utilization by purpose. By September 2023, adoption of MMD TLD-90 to TLD-30 was sub-optimal (67:33) for 1883 ART accredited public HFs and 494 private sector HFs (70:30).

Utilization of HIV Syphilis Duo in comparison to Determine was also sub-optimal (13:87) in 488 testing private sector HFs and for 1067 public HFs (28:72) in September 2023.

**Conclusions:** Routine and traditional data sources can be triangulated and optimized to track commodity availability, utilization, and oversight of HIV intervention implementation as the country adopts more advanced electronic logistics information management systems to drive health service delivery.

## TUPEE632

### Community led monitoring; improving community role in data management of HIV programming in Nigeria

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**Background:** Two key enablers in PEPFAR 5\*3 strategies are anchored on community leadership and leading with data, thus; the need to strengthen the program integration capacity of community-led organizations (CSOs). Civil Society Organizations are paramount for maintaining the gains of the past four (4) decades of HIV intervention if we are to attain the UNAIDS objective by 2030. It is important to ensure CSOs understand the importance of quality data, and have expertise on it, to ensure quality deliverables, accurate data, and effective HIV programming. This study seeks to understand knowledge of data management by CSOs which is obtainable in HIV programming.

**Methods:** A random sampling of 40 CSOs across 10 states in the six (6) geo-political zones of Nigeria was used, drawn from AYPs, Key populations, faith-based organizations, Health Financing, etc. Questionnaires were administered to the team lead or a member of the senior management team. A simple measure of tendency was used for analysis.

**Results:** 17.5% of the organizations are female-led, 34% are KP, and 15% are into AYP programming. Only 37% have a structured M&E plan, 18% use the Electronic Medical Record System, and only 25% have an S.O.P. for data management. 15% have heard of the Patient Biometric System (PBS). About 3/5 of the CSOs do know the updated MER 2.6.1 at the time of this study, and only about 15% of organizations that use MER 2.6.1 understand at least 6 main indicators. 27% of total respondents do not have a routine DQA plan in their organizations. 37% of the organizations have an M&E officer with over 2 years' experience, with just over ¼ of these who are trained in monitoring and evaluation for HIV programming. Of the M&E officers, only 15% have expertise in at least two (2) statistical tools. Just 5% of the M&E officers have been involved in a research process, and just 3% of these have analyzed a database of more than 1000 respondents.



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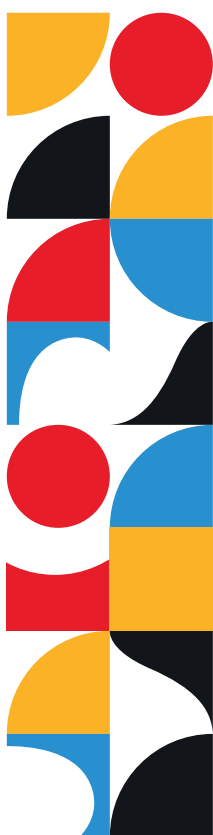
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**Conclusions:** To achieve PEPFAR 5\*3 strategy, CSOs in Nigeria must be fully invested in data systems building, understand data collection methods, and have improved capacity for data management for HIV programming.

## TUPEE633

### Data quality assurance (DQA) to increase program fidelity in Namibia for GrassRoot Soccer programming

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**Background:** Partners and Peace Corps Volunteers are rolling out GrassRoot Soccer (GRS) – an evidence-based curriculum rolled out over 12 sessions to shape lifelong health-seeking behaviors and mitigate factors that put adolescents at risk of HIV, violence, and other negative health outcomes. This is funded by the President's Emergency Plan for AIDS Relief (PEPFAR) targeting youth 9- 25 years old. The Peace Corps/Namibia staff developed tools, assessed partners, and developed an action plan to increase program implementation fidelity and quality. The aim is to use data to continuously improve quality of services rendered in communities.

**Description:** Peace Corps developed, tested and adapted a data quality assurance tool comprising 27 questions based on direct observation and review of data. Questions relate to whether there is a safe space for youth, whether facilitators are providing accurate information and collecting data accurately, whether there are necessary resources available, and whether facilitators are asking questions to spark discussion among the group.

The Peace Corps health and monitoring and evaluations teams visited six organizations from six regions in August to September 2023, spending five to seven hours with each to assess quality and develop the action plan.

**Lessons learned:** The tool effectively and efficiently captured strengths and weaknesses of program implementation. The findings can be used to strengthen programming and increase program fidelity.

**Conclusions/Next steps:** This Data Quality Assurance instrument is a powerful tool in rapidly identifying gaps and developing areas for improvement both for current partners as well as future training and partners. Peace Corps staff will strengthen its future training component on some of the weaker parts of the program, particularly when partners implement without a Volunteer. Staff will emphasize the importance of discussion and interaction to ensure behavior change among the beneficiaries.

## TUPEE634

### Using digital DQA approach to improve on quality of data in HIV reporting systems in USAID Fahari ya Jamii supported facilities in Nairobi and Kajiado counties, Kenya

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**Background:** USAID Fahari ya Jamii (FYJ), 'the pride' is a collaborative project between the University of Nairobi and the county governments of Nairobi and Kajiado in Kenya. Its goal is to provide county support for increased use of quality county-led health and social services. Poor quality HIV/TB data has hindered optimal service delivery and data-driven decision-making in HIV/TB program implementation.

We innovated and implemented an intervention geared at improving data quality through automated verification, integration of data sources, enhanced visualization, and promotion of skills development.

**Description:** From October 2022 to March 2023, we developed a customized open-source data quality assessment (DQA) platform using Python with a Postgres database for automated analysis and interactive visualization following a plan-do-study-act (PDSA) cycle methodology. The initial design workshops allowed users to plan ideal functionality. Prototypes were then piloted for user feedback to study real-world performance. Insights from pilots informed design adjustments and new feature development. This rapid iterative process enabled continuous enhancement and evolution to meet user needs.

**Lessons learned:** DQAs performed months after the introduction of digital DQA showed an improvement in the concordance rate from 91% to 95% (t=2.8389, p-value=0.01944). Data verification time was reduced by 40%. We introduced automated in-platform PDF reporting, streamlining, and expediting documentation.

Our DQA dashboard automatically generates summaries at facility-to-program levels, improving efficiency and accuracy. The Data quality improvement (DQI) plans can be tracked in real-time, and it's able to flag the overdue plans.

By continually incorporating insights from the users, we ensured the platform met on-the-ground needs, enhancing local relevance and impact.

**Conclusions/Next steps:** The platform has strengthened data accuracy from 91% to 95%, optimized the use of data for decision-making, and built local capacity unlocking insights from data. The collaborative, iterative design process matched the platform closely to user needs and workflows. We will enhance platform features based on user feedback, expand implementation, and develop a

transition plan for institutionalization and sustainability while continuing to leverage PDSA cycles for ongoing optimization.

## TUPEE635

### Improving the All Services indicator in the Children and Adolescent living with HIV (CALHIV) Audit Tool through effective regular reviews of the tool

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**Background:** By April 2023, MJAP LPHS EC had 89.3% (4488/5023) of the CALHIV in care accounted for in the audit tool with only 37% (1660/4488) CALHIV receiving All the services they were eligible for which is below the ministry of health target of 95%. Specifically, suboptimal performance was noted in the indicators of viral load coverage, appointment keeping and multi month dispensing (MMD). These all affected the performance of All services indicator thus indicating that the tool was used for reporting and not for planning purposes. The project thus developed strategies to improve the All services indicator in the CALHIV audit tool from 37% in April 2023 to 95% by Sept 2023 through weekly review of the CALHIV audit tool.

**Methods:** The capacity of facility teams was built through onsite mentorship on how to update and utilize the audit tool for micro planning. Clear deliverables were shared with the stakeholders involved in the updating and review of the tool. Weekly review of the audit tool was instituted with the site teams who provided accountability on the frequently missed services and continuously reviewed health facility processes to identify any inefficiencies in updating of the tool. The review facilitated the sharing of service gaps with partners such as those targeting orphans and vulnerable children for follow up.

Furthermore, resources required to support the facility teams with the updating and patient tracking were availed.

**Results:** A total of 10 weekly review meetings were held with the All services indicator significantly improving from 37% to 76% (3,589/4,746) in the same period. Comparison between the audit tool for April 2023 and June 2023 showed improvement in viral load coverage from 83% (3,388/4,067) to 89% (4,051/4,560); MMD uptake from 81% to 87% and appointment keeping from 85% to 97%.

**Conclusions:** Regular review of the audit tools facilitates stakeholder involvement, learning, encourages active participation to enhance holistic understanding of tasks and identification of areas of potential improvement. It also improves quality of services provided as evidenced by improvement in particular service indicators.

## TUPEE636

### Advancing data-driven interventions: implementation and impact of the Ghana Key Population Unique Identification System (GKPUIS) in HIV programming

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**Background:** To track and monitor Key Populations (KP) and the services provided to them, the Ghana AIDS Commission (GAC) developed the Ghana Key Population Unique Identification System (GKPUIS) to serve as the sole repository for KP data in Ghana. The GKPUIS is being used by KP implementing agencies across the country to collect and report data on KP clients. The GAC in partnership with partners worked to equip KP implementing partners with the requisite skills in using the GKPUIS application.

**Description:** The training involved 155 participants (101 males and 54 females) made up of project coordinators, field officers, peer educators and case managers from 14 KP implementing agencies in 13 out of the 16 regions of Ghana. The training occurred in June 2023 and focused on the 15 modules of the system with a special emphasis on registration, UIC generation, case management, data approvals and report generation.

**Lessons learned:** The GKPUIS provides an overall improvement in data management associated with KP programming providing real-time data on prevention and treatment information for KPs. The system-generated unique identity codes (UIC) helped to minimize double counting of KP clients.

The reports generation module provided summary statistics of KPs registered and service provision through the use of the custom indicators and power BI and aided the participants in making informed decisions about their interventions.

The analysis of the pre and post-test scores showed a significant enhancement in knowledge in using the GKPUIS (p-value <0.05), with pre-test mean at 48.5 (N=147) and post-test mean at 75.2 (N=123).

**Conclusions/Next steps:** The rollout of the GKPUIS represents a crucial step by the GAC towards more data-driven, targeted and responsive public health interventions in the context of HIV.

Ongoing support will be provided to the Project Teams of KP implementing agencies in capturing and reporting data from the system and will focus on ensuring that KPs who tested positive are linked to care and captured in the national DHIS2 eTracker system. GAC will support KP implementing partners to conduct step-down training at the various sites for other officers to use the system effectively.



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## TUPEE637

Transforming the delivering of children and adolescents HIV epidemic control interventions through artificial intelligence: the case of USAID ECAP II Zambia

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**Background:** Zambia is nearing the achievement of UN-AIDS 95-95-95 targets with the second and third 95 targets achieved. However, the first 95 continues to elude the achievement of epidemic control and accelerated efforts are needed to find sub populations that are still being missed such as children and adolescents and link them to preventive and care services.

**Description:** Between March 2021 and September 2023, Project Concern Zambia (PCZ) integrated into the USAID Empowered Children and Adolescents Program II (USAID ECAP II) an electronic Case Management System (eCMS) with robust datasets and actionable dashboards to enable automation of paper-based data collection tools. Flexible and practicum training approaches were used to train literally challenged case workers on point of care data entry using tables, reporting into the central server, and timely usage of case level data from the eCMS to provide and link VCA to tailored HIV, social, child protection, and education service.

**Lessons learned:** A total of 561 case workers successfully transitioned to the usage of the electronic system and they entered case level data of 9334 VCA and caregivers (70.4% VCA, medium age 10) into the android-based electronic solution.

The system enforced data usage at primary health care (PHC) level with over 500 VCA with HIV, co-morbidities and other socioeconomic vulnerabilities timely identified and linked to multisectoral services as part of the PHC-wide VCA workforce.

A total of 5802 of 7073 (82%) VCA Living with HIV were linked to viral load testing and of these, 96.0% (5512/5802) were virally suppressed; 3086 HIV exposed infants were identified and linked to prophylactic services and 4657 Adolescent Girls and Young Women at elevated risk of HIV acquisition were linked to high impact HIV prevention services.

**Conclusions/Next steps:** Integration of AI-led data systems into community HIV epidemic control programs provides timely and person-centered information needed to provide HIV and structural services tailored to the needs of children and adolescents living with HIV or at accelerated risk of HIV acquisition and necessary to end and sustain HIV epidemic control. Implementation Sci-

ence is needed to explore adaptable and user-friendly AI solutions for community programs targeting populations with high incidence of HIV.

## TUPEE638

Epidemiologically informed HIV pre-exposure prophylaxis targets for Uganda using PrEP-it and the UNAIDS Population Size Estimate tool

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**Background:** Uganda adopted oral pre-exposure prophylaxis (PrEP) in 2016. Over 550,000 clients had initiated PrEP by the end of December 2023. PrEP-it—the PrEP Implementation planning, monitoring, and evaluation Tool—helps countries set PrEP targets and estimate costs and commodity needs.

In 2023, Uganda used PrEP-it and the UNAIDS Population Size Estimate (PSE) tool to set national targets for oral PrEP, the dapivirine vaginal ring, and injectable long-acting cabotegravir.

**Description:** Since PrEP should be offered to people at substantial risk of acquiring HIV, PrEP-it users must enter the populations indicated for PrEP in their country and customize inputs for each population. The Uganda team had size estimates for the key populations and serodifferent couples but wanted to estimate the size of other populations at substantial risk of HIV within the populations of adolescent girls and young women (AGYW), pregnant and lactating people, and adult men. The PSE tool provides estimates of HIV incidence, prevalence, and subpopulation size by sex, age, behavioral category, and district.

The Uganda team used it to:

1. Identify districts where AGYW and general population adult women and men have elevated HIV incidence, and;
2. Estimate the size and relative risk of the indicated populations in the specified districts.

We also extracted 205,000 de-identified longitudinal records for clients who initiated PrEP from April 2021 through March 2022 from the national PrEP Tracker database and used a random sample of 1,000 of them in the PrEP-it continuation calculator to estimate continuation and reinitiation rates by population. We incorporated all of these parameters into Uganda's national PrEP-it file for target-setting.



**Lessons learned:** Uganda was the first country to leverage the PSE tool to customize their population inputs and impact factors for PrEP-it. The country team produced its first national PrEP targets for three PrEP products in December 2023, making good use of epidemiological and program data.

**Conclusions/Next steps:** Uganda will incorporate finalized PrEP targets into its upcoming Health Sector HIV/AIDS Strategic Plan 2025–2030. The PSE estimates for 30 countries in Sub-Saharan Africa will be incorporated into PrEP-it in 2024 to automate this process for future country exercises.

## TUPEE639

Application of geospatial information system tools for COVID-19 vaccination: what can we learn to strengthen broader immunization efforts?

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**Background:** Since January 2022, USAID has supported the South African National Department of Health to increase delivery of COVID-19 vaccinations through the Accelerating Development Against Pandemic Threats (ADAPT) Program.

We describe South Africa's approach, leveraging ADAPT support in 6 provinces, to apply geospatial information system (GIS) tools to drive micro-level planning and implementation of COVID-19 vaccination.

As South Africa re-commits to strengthening primary health care services, lessons learned from the COVID-19 vaccination response, including approaches and digital tools used, can inform broader immunization activities and disease prevention efforts.

**Description:** Dynamic GIS tools which integrated GIS, population, and COVID-19 vaccination data were developed in November 2022 and incorporated into the National Health Information Centre. Dashboards displayed vaccination coverage at micro-levels, informing weekly monitoring of vaccination coverage in settlements and wards. In ADAPT-supported provinces, printed maps, in combination with GIS dashboards, were used to conduct micro-level planning, population-segment targeting, and identification of locations ideal for vaccine outreach. Demand generation activities were prioritized, and vaccination teams were deployed based on gaps identified through geospatial datasets.

Additional GIS and social mobilization data were collected, in combination with COVID-19 vaccination information, which continued to feed back into the dynamic dashboards and drive vaccination programming.

**Lessons learned:** Overall, 937 individuals were trained to use the GIS platforms. Over 8.5 million COVID-19 vaccine doses were administered in ADAPT-supported provinces as of October 2023, with ADAPT directly administering nearly 1 million of those doses; almost 150,000 doses administered by ADAPT were among priority populations aged 50 years+ and more than 300,000 doses were administered in rural areas with low vaccination coverage.

**Conclusions/Next steps:** Micro-level planning, leveraging GIS, allowed South Africa to identify and support targeted demand and vaccination team deployment to areas with low vaccination coverage.

Digital tools, such as the GIS dashboards developed in response to COVID-19 described, can be leveraged to strengthen broader immunization and health service delivery efforts in the country.



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## Track F: Political science, laws, ethics, policies and human rights

### Political and legal factors affecting people living with, vulnerable to and affected by HIV

#### TUPEF640

Opacity in the name of transparency: lessons learned from the publication of public subsidies in the research and development of new medicines in France

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**Background:** In 2021, France effectively implemented transparency measures for public subsidies in the research and development of new medicines, setting a precedent in Europe.

This policy fostered hope for fairer negotiations between the State and the pharmaceutical industry and enhanced treatment accessibility.

However, regulatory provisions introduced by the Government compromised the framework of the measure crafted by civil society and parliamentarians.

**Description:** In 2020, our organizations advocated towards the Ministry of Health and parliamentarians to ensure the translation of the 2019 World Health Assembly resolution on improving the transparency of markets for health products in national legislation.

In the fall of the same year, an amendment was adopted in the 2021 Social Security Financing Bill stating that of the amount of public subsidies received for the research and development (R&D) of new medicines is public.

Our organizations urged the Ministry of health to publish an implementing decree that would secure exhaustive, readable and diachronic information on public R&D subsidies. However, our demands remained unanswered.

The published decree states that pharmaceutical companies should only declare direct public investments they have received during the previous year. The text does not provide for penalties, relying on companies' goodwill to disclose this information to price-setting authorities and the public.

**Lessons learned:** In 2021, out of 111 respondents, only 7 companies declared having received public subsidies totaling 3,082 million euros. In 2022, 2 out of 87 companies declared having received public subsidies amounting to 194 202€. In contrast, the Leem (the French Pharmaceutical Companies Association) published an estimate of 47 million euros of public subsidies received for R&D in France in 2017.

These figures are proof of significant under-reporting. They undermine French public R&D efforts, put the French government at a disadvantage in price negotiations for health products, and thus call for a firm political response.

**Conclusions/Next steps:** Efficient transparency measures of R&D funding must cover direct and indirect public subsidies, with explicit penalties in case of failure to meet the obligation to declare. Involving patient and health organizations at every legislative and regulatory stage is crucial for effective design and implementation by governments.

#### TUPEF641

Monitoring and addressing disruption of HIV treatment, prevention, and care services in coastal Kenya after anti-LGBTQI marches in early 2023

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**Background:** In 2023, key stakeholders supported by a global anti-rights movement, convoked protests, and incited violence towards members of the LGBTQI community and organisations.

GNP+ collaborated with HIV and AIDS People's Alliance of Kenya (HAPA-Kenya), a community-led organization from Coastal Kenya, to document the impact of the anti-LGBTQ attacks on treatment disruptions and access to HIV services among Key-Populations and PLHIV.

**Description:** HAPA Kenya runs a community-based health program reaching 4949 members of KPs in Mombasa (3022), Kwale (1212) and Taita Taveta (715) counties.

Anti-LGBTQI spokespeople, backed by a global anti-rights movement, organized massive protests and incited violence against organizations that offer services for the community.

During the 2-months clinics closures, HAPA assessed the impacts on services demand and to implement a business continuity plan to ensure the community could remain adherent to key HIV prevention and treatment services. Many of those measures were first adopted during COVID-19. In parallel, implemented an advocacy strategy to engage key stakeholders to challenge the negative narrative on LGBTQI community promoted by anti-LGBTQI champions.

**Lessons learned:** Critical services such as ARVs and PrEP distribution, remained stable thanks to DSD and care models developed during COVID-19. Nevertheless, there was a reduction in drop in laboratorial testing services at HAPA's facilities. Other significant changes showed by data is the increased demand for mental health and legal support, given increased human rights violations. The support of longtime allies and partners, such as the



National AIDS Control Council, the National AIDS Control Programme, and the Kenyan Red Cross Society, was key in HAPA Kenya's advocacy to change the narrative about their work and, hence, to ensure continuation of services after a 2-months closure.

**Conclusions/Next steps:** The data collected and the measures implemented by HAPA Kenya are a testimony to the role of community leadership in safeguarding the health outcomes achieved through HIV funding, besides highlighting the role of community-led organisations in keeping health systems resilient. Community-led organisations can only continue to engage stakeholders and challenge harmful narratives with access to flexible funding, and with support allyship from other civil society organisations.

## TUPEF642

The threat of Uganda's anti-homosexuality act to the health and life of LGBTIQ+ people living with HIV and the role of MenEngage Uganda in ensuring continued access to services

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**Background:** Uganda's recent enactment of the Anti-Homosexuality Act-AHA (2023) heightened the vulnerability of the LGBTIQ+ community members, particularly those living with HIV, requiring health workers legal service providers and others to report LGBTIQ+ members seeking services to police for appropriate action. This posed a significant threat to the health and well-being of LGBTIQ+ individuals, impeding their access to essential HIV-related services and putting them at increased risk of stigma, discrimination, and violence. MenEngage Uganda (MEU) key population service providers experienced increased office raids by security operatives, recorded 55 cases of physical attacks, eviction clients, and arbitrary arrests since March 2023. Prominent legal aid organizations and other service institutions issued official statements declaring closure of services to members of the LGBTIQ+ community as they awaited a constitutional court interpretation of some provisions in the ACT.

**Description:** MEU collaborated with the MenEngage Alliance to join the rest the world in putting external pressure on Ugandan leaders to ensure the rights and access to services for LGBTIQ+ people living with HIV are maintained. MEU, through a mapping exercise developed a USSD platform to key population clients to ensure discreet access to services like legal AID, drug refills (ART, PrEP, etc) and counseling services. With support from MenEngage Africa, designated international legal support and instituted an emergency fund locally to support LGBTIQ+ persons faced with attacks and or threats.

**Lessons learned:** 800 LGBTIQ+ community members have received HIV treatment and or prevention services through the USSD platform, 150 who reported attacks and threats were linked to legal aid.

Joint international advocacy by MenEngage and other likeminded partners and governments put pressure on the Ugandan president announced that health services should be open and accessible to all including LGBTI persons.

**Conclusions/Next steps:** This abstract highlights the urgent need to address the intersection of HIV and LGBTIQ+ rights in the context of discriminatory legislation. Overall, the intervention by MEU has supported the continuity of HIV/AIDS prevention services for a population criminalized by law leading to drug adherence, reduced new infections in the community and ensured safety of users by linking them to friendly service providers.

## TUPEF643

The who and how of HIV criminalization in the United States

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**Background:** HIV criminalization refers to laws that make otherwise legal conduct illegal because of a person's HIV status. Over half the US states have HIV criminal laws. Many of these laws were passed at the height of the AIDS crisis of the 1980s and 1990s, and have not been updated since.

Systematic study of HIV criminal enforcement has to date not been possible in the United States because of the decentralized nature of law enforcement and crime enforcement statistics. In consequence, even after decades of enforcement we still do not have a clear idea of who and how of HIV criminalization: How many people come into contact with the criminal system because of their HIV status? What groups are more likely to be arrested and prosecuted? What are the circumstances of arrest?

**Methods:** I rely on a series of state-level analyses of HIV-related criminal data to identify broad and state-specific patterns in the enforcement of HIV-criminal laws across the United States. The data come from state-level incident-based reporting systems, court records management systems, department of corrections records, and sex offender registries.

**Results:** Several patterns emerge:

1. Thousands of people have come into contact with the criminal legal system because of their HIV status. This is many orders of magnitude greater than most previous estimates of the number of people criminalized.
2. Black people, women, and sex workers are disproportionately affected. People at the intersection of these identities are much more likely to be criminalized.



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3. Enforcement is not correlated with risk; states criminalize people for conduct that cannot transmit HIV.
4. Women and men are criminalized for different behaviors; gender or race alone cannot account for the patterns of enforcement. For example, when states have sex worker-specific HIV criminal laws, women are more likely to be over-represented.

**Conclusions:** General knowledge about HIV criminal laws remains low, even among policy makers, and tends to reflect media bias in reporting. This study shows that enforcement continues today, that certain vulnerable populations are at increased risk of criminalization, and that enforcement might run counter to stated public health goals around HIV and other communicable illnesses.

## TUPEF644

Bringing scientists and decision-makers into dialogue: the example of an association's advocacy to enable HIV-positive people to join the army

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**Background:** In France, entry to the army and related corps is conditional on the SIGYCOP referential. This establishes a rating system to determine whether a person's state of health is compatible with their duties. People living with HIV (PLHIV) were excluded due to a mismatch between the reference system and the reality of therapeutic developments. AIDES, in partnership with HIV expert scientists and other organizations, demonstrated through a dual strategy of dialogue and litigation the need to adapt the regulatory and legislative framework to therapeutic realities, thus enabling PLHIV to join these corps since May 9, 2023.

**Description:** Three approaches have been deployed: dialogue and litigation with political decision-makers; collaboration between health and community associations and scientists who are experts in HIV; and dialogue between institutions and scientists.

The litigation strategy was initiated by the organizations, after several attempts at dialogue, via an appeal to the Council of State which AIDES joined in 2021. At the oral hearing in February 2022, a renowned HIV expert was invited to intervene.

At the same time, a working session with the Ministry of the Armed Forces was obtained, enabling the presentation of a proposal for a SIGYCOP grid, produced by the associated scientists, taking into account current treatments and the actual state of health of some PLHIV.

**Lessons learned:** On May 9, 2023, the government published the decree modifying the SIGYCOP grid for HIV. This text puts an end to discrimination by making it possible

for asymptomatic PLHIV, on treatment, with an undetectable viral load and a CD4 count > 500/mm<sup>3</sup>, according to treatment tolerance, to join the army.

**Conclusions/Next steps:** One of the roles of HIV associations is to link the needs of PLHIV (eradicating serophobia, equal access to employment), therapeutic realities (undetectable equals untransmittable) and the legal and regulatory framework.

The aim is to sustain this three-dimensional model, based on litigation, constructive dialogue, and the aggregation of know-how between "political outreach" expertise and scientific demonstrations. Adapting the law to people's actual state of health, rather than presumed helps to combat discrimination and contributes to changing representations of HIV and PLHIV.

## TUPEF645

The situation and needs of HIV testing services for patients under 18 years old among outreach workers and healthcare workers of health centers in Bandung City: a rapid assessment report

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**Background:** The research address the gap on HIV testing for youth under 18 in Indonesia. The study evaluates the impact of the Ministry of Health's regulation change, replacing parental consent with "parents or someone who accompanied."

The hypothesis is that this adjustment enhances accessibility for at-risk youth while maintaining confidentiality. The Executive Report on HIV AIDS in Q1 2022 highlights disparities in HIV and AIDS percentages among age groups, emphasizing the need for policy adaptation. Inti Muda West Java's rapid assessment focuses on healthcare providers, examining the evolving landscape of HIV testing accessibility post-regulation change.

**Methods:** Conducted in Bandung city, focuses on HIV program managers at puskesmas and outreach workers. It adopts a cross-sectional quantitative approach, utilizing a questionnaire through Google Form.

The study aims for a comprehensive snapshot of the current situation, particularly in response to regulatory changes regarding parental consent for HIV testing under 18. Data collection occurred through Google Form, ensuring flexibility for respondents. Enumerators assisted in questionnaire completion. Descriptive analysis using SPSS identifies mean & median.

**Results:** The assessment reveals limited access to HIV testing for clients under 18 in Bandung. Most health centers had few visits, with 58.33% of clients aged 17-18 accessing testing, identifying as key populations. Self-enrollment was common (78.33%), but consent from the test provider was still required (68.33%), sometimes leading to involuntary disclosure (35%). In outreach, 69.77% imple-



mented initial screening, with 62.79% requiring clients to be accompanied. Although 73.33% of HIV service managers knew the policy for under-18 testing, only 5.77% fully implemented it. Barriers included a lack of clear information, affecting 73.67% of respondents.

**Conclusions:** The rapid assessment highlights the lack of uniformity in implementing HIV testing services for clients under 18 at health centers. Despite healthcare workers' high knowledge levels, the absence of guidelines and unclear information on regulations pose significant barriers. The biased term "delivery person" in regulations requires clarification.

Addressing these issues is crucial for enhancing the quality of HIV services for clients under 18, emphasizing the importance of clear guidelines and improved implementation to strengthen HIV prevention and care strategies.

## TUPEF646

Advocacy effort to decriminalize the drug use in Bangladesh to create a supportive environment for drug users and harm reduction program and reduce the overcrowding in the prison

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**Background:** Bangladesh's prisons, overflowing with 70% drug users, stand as a stark contrast to their two decades of harm reduction efforts. Punitive Narcotics Control Act laws obstruct these programs, prompting sustained advocacy for drug decriminalization and policy reform.

**Description:** In 2020, a UNODC and Global Fund mission urged Bangladesh to embrace this. Save the Children, as the Global Fund HIV grant's Principal Recipient, partnered with government agencies (GOs) and NGOs like AIDS/STD Program, UNAIDS, and UNODC to spearhead this initiative. Breaking the Barrier: Roundtables discussions and seminars, including the first-ever formal discussion on decriminalization in Bangladesh, engaged law enforcement in a previously taboo topic.

Overcoming the 'zero-tolerance' stance and legal obstacles to needle/syringe distribution required meticulous groundwork and collaboration.

**Lessons learned:** Two consultants, one international and one national, drafted a 'National Framework for Decriminalization' (October-December 2023). Extensive consultations with diverse stakeholders, including the Ministry of Home Affairs, Department of Narcotics Control, police, UN agencies, and drug user networks, revealed crucial

insights. Key parties identified were the Department of Narcotics Control under the Ministry of Home Affairs and the Ministry of Law and Parliamentary Affairs.

The proposed framework prioritizes Government ownership of drug policy reform, Local research on related matters, Learning and capacity building on decriminalization, Legal revisions and alternative sentencing mechanisms, Scaling up drug treatment services and Rigorous monitoring and evaluation.

**Conclusions/Next steps:** Declaration of zero tolerance towards drug use came from the top-level of political leaders in Bangladesh. Thus, stakeholders should reach up to that level to get a sustainable development in the effort 'decriminalization of drug use'.

Continuous advocacy with policy makers by using global evidence and highlighting the contextual needs has no alternatives. LEA and policy makers should learn and orient on human rights and should realize how the rights of drug users are violated through the actions of LEA.

## TUPEF647

Monitoring the landscape of newer HIV medicines: multiple patenting and access challenges

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**Background:** The Make Medicines Affordable (MMA) Campaign, a consortium of community and civil society organizations from low- and middle-income countries (LMIC), uses different approaches to overcome patent barriers, including patent oppositions. Multiple patenting on the same HIV medicine is one of the evergreening strategies adopted by pharmaceutical companies; it allows them to extend monopolies on, and maintain high prices for lifesaving medicines by preventing market entry of more affordable generics. Patent landscape monitoring should include oversight of clinical trials for new HIV treatments, and new formulations of existing HIV medicines, to anticipate patent evergreening and identify approaches to prevent it.

The study aims to develop a patent landscape of selected antiretrovirals (ARV) and provide patenting trends.

**Methods:** Five ARVs compounds were selected (cabotegravir, dolutegravir, islatravir, lenacapavir, and rilpivirine) for building the patent landscape, considering patent applications filed through the Patent Cooperation Treaty (PCT) system. Patent landscapes for these ARVs were built from existing landscapes from publicly available databases, complemented by a search at the commercial CAS Scientific Patent Explorer database of publicly available filings until September 2023.



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**Results:** PCT patent applications were identified for each ARV as follows: 14 for cabotegravir, 12 for dolutegravir, 9 for islatravir, 6 for lenacapavir, and 19 for rilpivirine. Preliminary results indicate the following patenting trends: combination with other compounds, salts, polymorphs, prodrugs, process of synthesis, key-intermediates and different dosage forms, which all constitute minor modifications of old molecules that do not deserve patents.

Considering that some of the compounds have been studied and approved as long-acting formulations, several related patent applications have been identified: four for cabotegravir, four for islatravir, one for lenacapavir, and four for rilpivirine.

**Conclusions:** The findings have shown multiple patenting on key ARVs, including newer applications on dosage forms, such as long-acting formulations, which have the potential to either extend or establish a monopoly over the active pharmaceutical ingredients (API) and delay market entry of generics, if filled in the countries.

Approaches to address patent barriers, such as the use of public health-based TRIPS flexibilities, should be pursued, including patent oppositions, compulsory licences and a public health perspective for patent examination.

## TUPEF648

### Legal and policy implications of acculturation on HIV among immigrants

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**Background:** Immigrants undergo a dynamic process of acculturation, influenced by legal and policy frameworks that shape their experiences and interactions including their healthcare-seeking behaviors within host countries. Also, some of these host countries have implemented restrictive migration policies aimed at hindering people living with HIV from entering their countries.

This critical analysis delves into the intricate relationship between acculturation and HIV among immigrants, specifically examining how restrictive immigration policies and legal status contribute to disparities in healthcare access among immigrants.

**Methods:** We conducted a review of literature published between 2010 and 2023. We searched major databases such as PubMed, Google Scholar, and relevant grey literature sources using relevant keywords such as "migration policies," "HIV prevention," "care," "treatment," "asylum seekers," "refugees," "acculturation," "cultural adaptation," "perceived HIV risk", and related terms. Inclusion criteria encompassed peer-reviewed articles, cross-sectional or

longitudinal studies, and research that focused on migration policies, acculturation and HIV risk perception and exploring diverse cultural groups and populations.

**Results:** The analysis revealed that the a restrictive legal and policy environment significantly influences the acculturation trajectories of immigrants, impacting their access to healthcare, social services, and HIV-related information.

Findings indicate that immigrants facing precarious legal statuses, such as undocumented individuals, experience heightened vulnerability to HIV due to limited healthcare access, fear of deportation, and restricted engagement with preventive interventions.

Legal status was found to be a critical determinant, with individuals facing immigration-related challenges being more prone to engage in risky behaviors and less likely to undergo HIV testing.

**Conclusions:** The study underscores the critical role of legal and policy frameworks in shaping the acculturation experiences of immigrants and consequently affecting their vulnerability to HIV.

Addressing the legal barriers that hinder immigrants' access to healthcare and social support is paramount for effective HIV prevention and care.

Policies fostering inclusivity and removing punitive measures against immigrants living with HIV are essential to create an environment that promotes early detection, treatment, and prevention of HIV within immigrant communities.

This analysis provides actionable insights for policymakers, healthcare professionals, and advocacy groups to develop targeted interventions addressing the intersectionality of acculturation, legal status, and HIV risk among immigrants.

**TUPEF649**

## Descriptive profiles of knowledge, attitudes, and practices of pre-exposure prophylaxis (KAPREP) among key populations in Honduras

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**Background:** In Honduras, limited information on knowledge and practices regarding HIV and PrEP exists, especially within key populations (KP). Global Communities, Ministry of Health and National University of Honduras assessed knowledge, attitudes, and practices related to sexual activity, HIV, and PrEP among KP; the results were used for program design.

**Methods:** A descriptive survey was carried out from 2021-2022 in the 5 main cities of Honduras. A total of 557 individuals participated, including Garifuna, Sex Workers, Transgender, Men who have Sex with Men (MSM), Bisexuals, sero-discordant couples, and people in confined settings. Sociodemographic data, STD's and HIV's history and knowledge about PrEP were collected for each KP using questionnaires with different validated scales.[CED1] [LZ2] Descriptive and univariate analysis was used using JAMOV software, and approval was received from the CEIB ethics committee #030-2021.

**Results:** As a result, from the questionnaires, 4.8% of the participants had an STD, with Syphilis being the most prevalent. 79.8% of the participants had an HIV test within the past 5 months. 20.3% of the participants tested positive for HIV.

No participant mentioned being part of a follow-up service or currently using antiretroviral therapy, and none were aware of self-testing for HIV. However, after an explanation about self-testing, 11.3% knew someone who had used this method, with 16.1% of them being Transgender and 14.7% MSM. 24.1% of the participants had knowledge about PrEP, with Transgender individuals (30.4%) and MSM (33%) having higher awareness. 66% of the participants believe that PrEP is an HIV prevention strategy, but only 14.2% know people currently using PrEP or PEP.

**Conclusions:** Groups with the most information about PrEP are MSM and Transgender individuals. However, there is a low level of knowledge in some vulnerable populations, especially among sex workers.

For the sex worker group, a public policy focusing on information, support, and assistance is crucial. Our results show that knowledge about PrEP is considerable, but usage remains low, especially among key groups and sex workers. Therefore, a massive information campaign is imperative.

Additionally, we observed the positive impact of PrEP adoption in Honduras in the public service, particularly among key populations.

**Political drivers and policy contexts of HIV****TUPEF650**

## Analysing United States participation in South Africa's HIV/AIDS response

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**Background:** This abstract examines U.S. intervention in South Africa's HIV/AIDS crisis, through the lens of the President's Emergency Plan for AIDS Relief (PEPFAR), the largest bilateral global health program in world history.

The project provides a comprehensive analysis of the social, economic, and political factors that contributed to the HIV/AIDS epidemic in South Africa, the circumstances that prompted U.S. intervention, as well as the impact there of.

**Description:** The project draws on various primary source materials, including digital and physical archives, and interviews with key stakeholders, such as community activists, program architects and staff, South African clinician-activists, and UNAIDS staff.

Beginning with the rise of HIV/AIDS in South Africa in 1983, as well as early U.S. participation during the Clinton administration, the project explores the 2003 inception of PEPFAR by the Bush administration, alongside the impact of apartheid policy, AIDS denialism, and Western resistance on the spread of HIV in South Africa.

From there, the changing practices of the program are examined under the backdrop of changing presidential administrations and, as a result, changing PEPFAR leadership and policies towards MSM and PWUD.

**Lessons learned:** Building upon historical research analysing global health in the context of colonialism, this research finds that global health interventions must be interpreted in their political, social, economic, geographic, and historical contexts.

This project raises attention to the duality of global health programming as practiced by the U.S. via PEPFAR,



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complicated by exceptional programmatic successes amidst occasionally disempowering structural dynamics and wavering domestic agendas.

**Conclusions/Next steps:** Overall, this project contributes to the scholarship around the complex and dynamic practices of global health, particularly U.S. intervention in South Africa. Marked by altruistic intentions and fluctuating domestic policy, changing scientific knowledge and disease dynamics, under the backdrop of apartheid and post-apartheid dynamics, the project finds that U.S. intervention has played a crucial role in the South African HIV/AIDS response, especially considering early government inaction.

However, for maximum impact in the present day, PEP-FAR's continued role must be defined mutually, especially amidst the precarious political climate in the US.

## TUPEF651

Impact of the war in Ukraine on client access to HIV-related healthcare services: a qualitative study

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**Background:** The full-scale war launched by Russia against Ukraine in 2022 caused serious challenges for national HIV response. HIV antiretroviral therapy coverage declined from 83% to 77%. Access to HIV care is particularly challenged for people living with HIV (PLHIV) from Eastern and Southern regions at the war frontlines. This study documented wartime experiences of PLHIV in obtaining healthcare, as reported by clinicians from Donetsk region.

**Methods:** This exploratory qualitative case study employed in-depth interviews with healthcare workers (HCWs) from healthcare facilities offering HIV antiretroviral therapy (ART) and pre-exposure prophylaxis (PrEP) in Donetsk region.

A directed content analysis with inductive and deductive approach was conducted. Ten HCWs (6 [60%] doctors, 4 [40%] nurses; 9 [90%] female) were interviewed.

**Results:** HCWs described how the war increased motivation among PLHIV to protect their health. Yet, many clients desperately feared interruptions in healthcare access. Several described using private encrypted messaging to counsel clients who fled their homes, including where to get care and what medication regimen to request. They described hearing from clients who became refugees

outside of Ukraine about their fear of seeking HIV care as it may jeopardize their temporary residency as well as on how language barriers prevented healthcare access:

"We couldn't give out ART for longer time initially. PLHIV were crying and asking to give them medicine for six months, but we could only do two. People who fled abroad also didn't want to disclose their HIV status. They cried: 'What if they find out? They can kick us out, they won't give us a place to stay?'. We tried to send medicine with mail or their relatives picked it."

For clients who stayed in Donetsk, HCWs described acute concerns for clients like lack of public transportation between rural towns and clinics, lack of power, lack of safe water as well as a high burden of trauma, depression, and anxiety.

**Conclusions:** HCWs presented a picture of disruption in healthcare services for many PLHIV from Eastern Ukraine. They described PLHIV fears about losing access to HIV treatment layered onto the psychological trauma of displacement, loss of lives, homes, and livelihoods.

## TUPEF652

Empowering labour leaders to address HIV-related stigma and discriminatory practices in workplace setting in Thailand

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**Background:** Mandatory HIV testing, prior to job enrollment or as part of annual health check-up, in workplace setting remained pervasive in Thailand. This seriously limits job opportunities among people living with HIV and affects their overall quality of life. Thailand's policy against this practice has not been widely implemented as workplace was only 'asked for cooperation'. There was no punishment for non-implementers and a lack of systematic monitoring of policy implementation.

The Foundation for AIDS Rights (FAR) worked with labor organizations aiming at empowering labor leaders to address this discriminatory practice in their workplace through evidence-based advocacy.

**Description:** FAR, in partnership with Thai Trade Union Congress, Confederation of Thai Labour, and State Enterprises Workers' Relations Confederation, launched a survey to evaluate stigma and discriminatory practices in workplace setting. Findings were used by the partnership to develop a 'Stigma-free Workplace Curriculum'. Labour leaders were trained and participated in a workshop to develop a Stigma-free Workplace action plan.

**Lessons learned:** A total of 3,514 individuals, from 157 labor unions and 167 workplaces, participated in the survey. Among them, 46.6% agreed that people living with HIV



should not be allowed to work in any job positions which involve a direct contact with others and 45.1% agreed with mandatory HIV testing prior to job enrollment. 'Stigma-free Workplace Curriculum' were developed accordingly to survey findings and used to train 37 labour leaders. Stigma-free Workplace action plan was developed by these labour leaders to establish and expand the number of stigma-free labour union core members within each workplace through training, production of video clips, online magazine, poster, and workplace broadcasting. More than 9,000 employees were reached through these activities.

**Conclusions/Next steps:** Almost half of employees in Thailand agreed with mandatory HIV testing in workplace and that people living with HIV should be given limited opportunity on job hiring. Using workplace-wide strategies led by labour leaders are crucial parts of Stigma-free Workplace action plan.

In addition to improving knowledge and attitude, civil society's movement to propose anti-discrimination laws has been ongoing to establish legal consequences of all-form discriminative practices in workplace and other settings.

## TUPEF653

### Drug policy and HIV epidemic in Bangladesh: the untold repression and deprivation

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**Background:** Bangladesh, with a population of 163 million projected to rise to 230–250 million by 2050, confronts a significant public health crisis due to evolving drug use trends. The shift from traditional drugs like cannabis and opium to heroin and 'yaba' (methamphetamine) profoundly impacts the country's health landscape. Approximately 7 million people are estimated to use drugs, with 5 million among them using 'yaba'.

The strict 2018 Narcotics Control Act, mirroring the Philippines' drug war approach, has raised considerable human rights and public health concerns, especially affecting the estimated 33,067 people who inject drugs (PWUD) and intensifying their HIV risk.

**Description:** This comprehensive study looks into the shift in drug usage patterns and legislative responses in Bangladesh. It critically assesses the Narcotics Control Acts of 1990 and 2018, focusing on their public health implications. Notably, Sections 21, 23, and 26 of the 2018 Act empower law enforcement to search, seize injecting equipment, and arrest PWUD based on mere suspicion of current, past, or future drug use. This legal framework has significantly impacted the HIV prevalence among PWUD, which

stands at an alarming 5.1% in Dhaka and 4.1% nationwide – starkly contrasting the general population's HIV prevalence of less than 0.01%.

The study also examines the ramifications of the Rohingya refugee crisis, particularly the surge in drug trafficking activities following the arrival of over 900,000 refugees in 2017.

**Lessons learned:** Bangladesh's current drug policies inadvertently escalate HIV risks among PWUD. The punitive measures have not only led to heightened human rights abuses but also contributed to the proliferation of over 1,000 unregulated drug treatment centers, notorious for malpractices and exacerbating HIV transmission risks.

**Conclusions/Next steps:** The data advocate for a paradigm shift in Bangladesh's drug policy towards harm reduction and 'de facto' decriminalization.

Essential steps include collaborative efforts for capacity building of law enforcement and health professionals, alongside high-level advocacy with government bodies. Such reforms aim to improve PWUD's wellbeing and effectively manage the HIV epidemic in Bangladesh, ensuring alignment with global health goals.

## TUPEF654

### High prevalence of gender-based violence among female, male and transgender female sex workers in seven provinces in Thailand – a national cross sectional study

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**Background:** Sex workers (SW) are particularly vulnerable to different forms of gender-based violence (GBV) resulting in significant consequences in physical and mental health and impeding access to health, social and legal services. The issue of GBV is not included in the HIV response in Thailand (National Strategy to End AIDS, 2017–2030). As part of a national PrEP study among SW populations in Thailand, the prevalence and types of GBV reported by SW were studied.

**Methods:** A cross-sectional study, led by SWING Foundation and BIRD (Bangkok Interdisciplinary Research and Development), was implemented between April and December 2023.

This study explored PrEP uptake and associated factors using a quantitative questionnaire, which included GBV-related questions, administered face-to-face to respondents. A total of 1,511 SW was enrolled including Thai male sex workers (MSW), female sex workers (FSW) and transgender female sex workers (TGSW), aged ≥18 years old, HIV-negative, and engaged in sex work in the past



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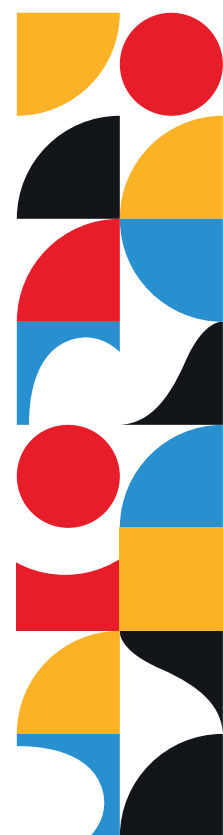
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three months. A descriptive analysis was conducted using univariate analysis. Pearson's chi-squared test was used to determine the relationship between two variables examined during this analysis.

**Results:** The total sample included 621 FSW (41%), 452 MSW (30%), and 438 TGSW (29%). The median age of SW was 32 years old. More than a third (35.8%) of SW reported experiencing any form of GBV in the past 12 months. The highest rates were found among TGSW (45.5%) and MSW (36%). Verbal violence was the most common form reported (22.7%) followed by intimidation (17.3%), physical (9.9%) and sexual (7.2%) violence. Clients were the most common perpetrator of GBV mentioned by SW (40%).

In univariate analysis, any reported GBV was significantly associated ( $p$ -value<0,05) with history of incarceration, drug use in the past 12 months, group sex in past 3 months, and HIV high-risk perception.

**Conclusions:** GBV needs to be integrated in the national HIV response, involving a multi-sectoral response ensuring safety in the workplace and the community for SW together with training of establishment staff, community-based outreach workers and law enforcement agencies. Linkages to health, social and legal services should be developed to respond to the needs of GBV survivors.

## TUPEF655

Advocacy with Law enforcement and Judiciary as a socio-legal enabler for MSM, TG/ Hijra community and other at-risk population

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**Background:** Even with progressive judgements and legislations in 2023, Law-enforcement authorities continue to remain uninformed about challenges such as social discrimination, blackmail, extortion, sexual harassment, rape and life-threatening violence faced by LGBTQ+, leading to an lack of faith in the legal redressal mechanisms. In 2022-2023, MSM and TG/ Hijra communities reported 102 situations requiring legal redressal (Source: The Humsafar Trust). This abstract reports on strategies used to mitigate these cases.

**Description:** The Humsafar Trust (HST), India's oldest LGBTQ+ organisation works on the forefront for community response for crisis management. While community capacity building on enhanced cyber-literacy, civils-rights awareness and safe-sex practices are a precautionary crisis management measure, HST also has a strong crisis management team equipped to handle emergency health and legal situations.

HST consciously invests resources in strategically tackling the gap of information and implementation of progressive laws and judgements by engaging in advocacy with law enforcement bodies, judiciary, and allied institutions.

In 2023, HST engaged 1,081 law enforcement individuals and 130 judiciary and quasi-judiciary personnel in HIV and LGBTQ+ focused dialogue using innovative advocacy tools.

**Lessons learned:** Crisis management measures play an important role in strengthening the outcomes of preventive advocacy measures taken. The Indian Law enforcement and judiciary allied institutions follow a traditionally hierarchical structure that limits the scope of junior level personnel in offering support beyond their capacities during crisis situations.

Thus, it becomes crucial to involve senior level authorities in a support seeking dialogue and strengthen relationship.

**Conclusions/Next steps:** The simultaneous management of crisis on the community as well as law enforcement end acts as a strong advocacy measure in limiting and managing identity-based discrimination and violence.

These advocacy efforts also normalise the socio-legal challenges faced by the at-risk population and positively affects their vulnerability to HIV exposure.

Administration of Post Exposure Prophylaxis (PEP) sexual-violence and HIV exposure has been a key highlight of our implementations.

It also highlights that an advocacy focused financing system plays a significant role in securing access to a stigma-free society and should be a priority for multi-lateral HIV-care financing.

## TUPEF656

Community response to the epidemic in Ukraine - priorities elaboration and ranking within the National Request of Ukraine to the Global Fund

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**Background:** Previous experience of our organization in the preparation of the Request to the GF showed that prisons are not a priority, especially within limited funding, and the penitentiary interventions are scattered across thematic groups. Being a community-based organization, FREE ZONE faced a situation where interventions proposed by national stakeholders within thematic groups were more aligned with state needs, rather than community ones. It results in interventions not meeting the expectations and vision of the communities.

**Description:** A separate subgroup was launched to prepare, review, and finalize interventions that relate exclusively to the penitentiary sector, becoming a unique professional environment for stakeholders interaction and the development of interventions within the penitentiary sector.

Together with the Secretariat of the National Council, we ensured the coordination of defining, unifying, and har-



monizing priorities for all communities and civil society. These priorities were intended to guide the Thematic Expert Group (TEG) in rating interventions and the National Council in making decisions regarding the GF Request. The collected and unified priorities reflect the vision of all communities and meet their urgent needs.

**Lessons learned:** The separate penitentiary subgroup became the basis for the interdepartmental Working Group on the Sustainability of Services in Penal Institutions of State Criminal-Executive Service of Ukraine under the Program Committee of the National TB and HIV/AIDS Council. The group facilitates the monitoring of compliance with and violations of prisoners' and ex-prisoners' rights regarding HIV prevention services and prisoners living with HIV in correctional facilities. Currently, all issues related to the penitentiary sector are considered within this group.

Active discussion of collected and unified priorities of communities and their dissemination among stakeholders influenced the preparation of the GF Request. Despite war and limited funding, all communities not only received funding but were included in the Request as pre-selected co-implementers.

**Conclusions/Next steps:** It is planned to propose a new format for Request preparation that considers penitentiary interventions within a separate subgroup. It is suggested to use a new evaluation criterion by TEG members, focusing on the alignment of interventions with the communities and civil society priorities. This approach ensures all community suggestions are evaluated and considered within the GF Request.

## TUPEF657

Grassroots mobilisation for policy change: a lifetime evaluation of the support. Don't punish campaign

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### Background:

Despite global progress in reducing HIV transmissions and mortality, people who use and inject drugs continue to face a disproportionate impact, with an HIV prevalence rate seven times higher than in the general population. This disparity results from punitive drug policies, including criminalisation and associated police violence, and limited harm reduction access.

Only 1% of people who inject drugs live in countries meeting UN-recommended harm reduction coverage. Since 2013, the Support. Don't Punish campaign has globally mobilised community-led organisations and their allies

to advocate for approaches that promote community well-being and human rights through harm reduction and drug policy reform.

**Description:** The core interventions of the campaign are the provision of financial, communications, and guidance resources to grassroots organisations for its Global Day of Action and follow-up projects. A lifetime (11 years) evaluation, supported by the Elton John AIDS Foundation, utilised Contribution Analysis to identify key outcomes and impacts. Data were collected via literature review, document review of over 1,800 records, interviews with 16 campaign leaders, survey to 200 local partners, social network analysis, and 4 case studies.

**Lessons learned:** Support. Don't Punish mobilised local organisations from over 300 cities in 110 countries, with a significant representation of community-led networks. Partners reported enhanced capacity and confidence, leveraging campaign resources to develop and strengthen strategic collaborative work plans. This empowerment facilitated their influence on and engagement with public opinion, media, and policymakers. Sustained involvement favoured influence in national policies and practices on harm reduction and alternatives to punitive approaches, as well as civil society participation, destigmatisation and, in some cases, reduced police violence. Decentralisation, collaboration, bottom-up organising, funding facilities, and global branding recognition were key success factors. Challenges include limited financial sustainability, Global North involvement, media access, and international coherence due to policy landscape differences.

**Conclusions/Next steps:** Support. Don't Punish significantly contributes to harm reduction and drug policy reform, mobilising globally with a grassroots-centred approach. Campaign evaluation lessons will inform recalibration and reinforcement strategies, sustaining aims, enhancing global/local network coordination, and supporting other community-driven campaigns for key/marginalised communities.

## TUPEF658

Turning opportunity into action: lessons learnt from the creation of Aotearoa New Zealand's National HIV Action Plan

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**Background:** In 2023, Aotearoa New Zealand (NZ) launched an ambitious National HIV Action Plan, committing to eliminating new local HIV transmissions by 2030, ending AIDS as a public health threat, and ensuring people living with HIV have healthy lives free from stigma and



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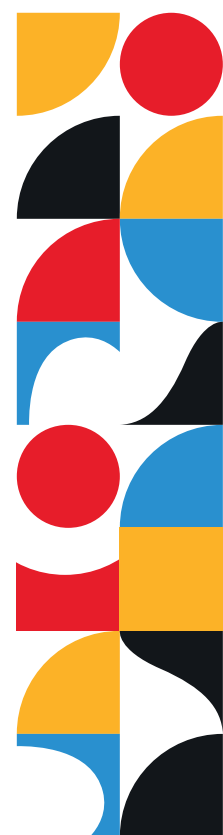
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discrimination. However, these ambitious goals and the resources attached have come after 14 years of operating in a policy vacuum with no central government strategy or funding increases.

**Description:** In the absence of government leadership, community-based organisations led the NZ HIV response. Ongoing advocacy to government for national guidance resulted in lacklustre attempts at plans, which were rejected by the sector for being outdated, not evidence-informed, and lacking community involvement.

Years of groundwork, advocacy, and persistence eventuated in the creation of the 2023 Plan, however, there are ongoing challenges. Here we address successes and missteps to inform other countries with the opportunity to influence national guidance.

**Lessons learned:** This Action Plan shows how critical community leadership is in securing government support, and how its absence will result in foreseeable implementation gaps.

As the largest NGO, Burnett Foundation Aotearoa had significant involvement in the Plan's development, however decisionmakers were quick to act without meaningfully engaging people living with HIV and peer support organisations.

People living with HIV mobilised to self-fund the Stigma Index, creating evidence to demonstrate significant levels of stigma and discrimination and that support for people living with HIV must be prioritised, which heavily informed the Plan

Luck and timing were key with an infectious disease doctor as the Minister of Health who prioritised this work on the policy agenda.

Although historic in its scope and funding commitment, the Plan lacks a clear path to reach elimination. Timing has been a constraint, alongside central coordination of funding and transparency on implementation, and therefore strong relationships between the HIV community organisations have been pivotal.

**Conclusions/Next steps:** NZ can be world leading in eliminating new transmissions. The Plan's existence is a testament to the success of community in cultivating positive, non-partisan relationships with government and maintaining the HIV epidemic as a public health priority. Continued advocacy and collaboration are necessary for success.

# Human rights and responses to HIV

## TUPEF659

### Unveiling pivotal human rights empowerment for people living with HIV/AIDS in Kibera, Africa's largest slum

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**Background:** Kibera, Africa's largest slum, grapples with extreme poverty and a staggering HIV/AIDS prevalence of 12%, linked primarily to high-risk behaviors like multiple partnerships amid complex socio-economic dynamics. Despite efforts, interventions face hindrances due to insecurity, compounding challenges for individuals with HIV/AIDS. Pervasive stigma, discrimination, and a culture of silence further obstruct access to treatment and support. Targeted interventions emphasizing human rights awareness offer hope in mitigating discrimination.

This research aims to analyze barriers hindering effective HIV/AIDS intervention implementation in Kibera, evaluating socio-economic impacts and societal dynamics. The study hypothesizes that educating individuals about their rights can combat stigma.

By highlighting these issues, this research underscores holistic approaches to address structural barriers, aiming to create a more supportive environment for those living with HIV/AIDS.

#### Methods:

Study Period and target groups	<p>The study was conducted over a period of 12 months in Kibera, Africa's largest slum, known for its extreme poverty and a high prevalence of HIV/AIDS (12%). Surveys, in-depth interviews, and participatory discussions formed the primary modes of data collection, aimed at assessing the awareness and comprehension of human rights among individuals affected by HIV/AIDS.</p> <p>The study population comprised women and men aged 15-35, given the prevalence of HIV/AIDS linked to multiple sexual partnerships within this demographic. Additionally, children aged 0-14 were included as part of the study population due to a significant number being born with HIV/AIDS, often due to the lack of awareness and testing among parents.</p>
Data Analysis	<p>Data analysis was conducted using two distinct methodologies. Quantitative data obtained from surveys underwent rigorous analysis utilizing the Statistical Package for Social Sciences (SPSS). This facilitated the statistical interpretation of quantitative findings. Qualitative data from in-depth interviews and participatory discussions were analyzed using Nudist 4, a software tailored for qualitative analysis. This approach ensured a robust and comprehensive interpretation of both qualitative and quantitative data, allowing for a multifaceted understanding of the awareness and understanding of human rights among the studied population in Kibera.</p>

## Results:

Women and Men Aged 15-24:	Children Aged 0-14:	Overall Summary:
Among the surveyed 5,842 households, 76% of individuals in the age range of 15-24 demonstrated a lack of awareness regarding their human rights. The primary reason cited for this limited understanding was the prevalent fear of discrimination and potential harm within their community, driving the hesitance to seek or comprehend their rights.	From the surveyed households and schools, totaling 7,200, children aged 0-14 were assessed. Specific data on this group's awareness of human rights wasn't directly highlighted in the provided information. However, the study indicated a concerning lack of awareness within this vulnerable age group, likely contributing to their increased vulnerability to acquiring HIV/AIDS, either at birth or during early childhood.	<p>1. The research uncovered a staggering lack of awareness among both adolescents and young adults aged 15-24 regarding their human rights.</p> <p>2. Fear of discrimination and harm significantly deterred these individuals from understanding and asserting their rights within the community.</p> <p>3. Though specific data on children aged 0-14 wasn't disaggregated, the study implied a similar trend of limited awareness among this vulnerable demographic.</p> <p>The findings underscored the critical need for targeted interventions and education initiatives aimed at fostering awareness of human rights, particularly among the younger age groups. Addressing this lack of awareness is essential to mitigate the vulnerability and marginalization experienced by these populations within Kibera, ultimately improving their access to necessary healthcare services and support systems.</p>

**Conclusions:** Empowering vulnerable communities in Kibera demands a multifaceted, rights-based approach that transcends conventional healthcare interventions. The findings from this study shed light on the critical necessity of fostering human rights awareness within populations affected by HIV/AIDS. Addressing this lack of awareness and understanding is foundational to alleviating the entrenched marginalization and vulnerability experienced by individuals within this community. It's imperative to pivot interventions toward rights-based approaches that not only prioritize healthcare but also focus on education, empowerment, and advocacy for justice. Governmental and non-governmental organizations must collaborate synergistically to create a comprehensive framework that supports gender equity and sensitizes individuals on sexual and reproductive health rights.

By equipping individuals with knowledge about their rights, particularly in the realm of healthcare and societal inclusion, interventions can significantly alter the landscape for vulnerable populations. Strengthening awareness programs and community-based initiatives

becomes instrumental in creating an environment where individuals feel empowered to assert their rights and demand equitable access to treatment and support services.

Advocating for justice remains pivotal. This involves not just legislative measures but also community-led initiatives that challenge discriminatory practices and promote inclusivity. Creating avenues for these communities to seek justice and receive fair treatment is essential in dismantling the pervasive stigma and discrimination they face daily.

## TUPEF660

### Transgender people's health realities and access challenges during wartime in Ukraine: results of a qualitative study

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**Background:** In Ukraine, approximately 9,963 [7,352-12,571] transgender people (TP) face heightened health needs due to the ongoing Russian war, despite collaborative efforts by community-based and non-governmental organizations (NGOs) to enhance healthcare access.

We sought the challenges faced by TP in accessing healthcare during the war against Ukraine, including barriers to services and required support, to optimize current and develop new interventions that meet the TP's needs.

**Methods:** In January 2023, we conducted 12 in-depth interviews with TP across seven cities of Ukraine. Sample size ensured diversity in gender identity, sexual orientation, age, gender transition, education, and employment. Thematic content analysis was employed to derive the results.

**Results:** Interviews included 5 transgender women, 4 transgender men, and 3 non-binary people, aged 19 to 52. Challenges identified included:

1. Wartime exacerbated difficulties in accessing gender-affirming hormones, leading to self-administration. Financial constraints hindered health examinations for monitoring hormone therapy.
2. Active war-related migration increased the scarcity of TP-friendly healthcare providers. Financial limitations and a lack of information about qualified practitioners contributed to the unavailability of gender-affirmation surgeries.
3. HIV concerns gave way to humanitarian needs; only a few sought HIV services. Economic constraints led some to sex work, with stable instances of violence. A few engaged in non-injectable drugs and chemsex.
4. Most reported mental health struggles during the war, exacerbated by financial limitations hindering



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therapy and prescribed medications access. Active involvement in NGOs' activities served as a coping mechanism.

5. While some improved family ties during the war, discontinuing interactions after coming out remained relevant. War-induced stress led participants to refrain from coming out, aiming to minimize health risks for elderly family members.

**Conclusions:** In 2023, Ukraine officially recognized TP as a key population, fostering legislative support. Acknowledging healthcare challenges during wartime is crucial for effective HIV programs.

The study's findings form a basis for focused interventions to enhance TP's well-being, emphasizing the need for:

1. Tailored hormonal therapy and gender-affirming surgeries;
2. Education programs targeting healthcare providers to create TP-friendly environments;
3. Comprehensive HIV programs addressing economic barriers and limited access to gender-affirmation services;
4. Prioritizing mental health support through accessible therapy and prescribed medications.

## TUPEF661

Prepared for action: lessons learned from the first year of the HIV Justice Academy

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**Background:** As of January 2024, 85 countries have HIV-specific criminal laws, and in the past five years alone, 26 additional countries have prosecuted people for HIV non-disclosure or exposure using other kinds of laws.

While the movement against these unjust and ineffective laws and prosecutions continues to grow, much remains to be done.

To support community advocates to counter these problematic criminal laws and prosecutions, the HIV Justice Academy was launched in October 2022 as a global learning and resource hub. Usage has been tracked through LearnDash and Google Analytics tracking systems.

**Description:** The online platform provides free and easy access to information for beginners through to experts, in three formats:

- Online Learning: a self-paced, six chapter online course on HIV criminalisation;
- Action Toolkits: practical and actionable guidance; and
- Resource Library: a vast archive of reports, research papers and guides.

Originally launched in English, throughout 2023 it was made more widely available with the addition of French, Spanish and Russian versions.

In 2023, the HIV Justice Academy was visited by over 2600 people from 110 countries. More than 500 learners enrolled in the course and the completion rate was 18.8% – above the average for online training.

**Lessons learned:** In their post-course surveys, graduates of the HIV Criminalisation Online Course told us they found it relevant, interesting and engaging. Specifically:

- The first-person testimonials provided nuanced and context-specific understanding of the multiple harmful impacts of HIV criminalisation.
- Scientific and legal aspects of HIV criminalisation were made accessible to all learning levels.
- We were able to reach a wide audience through the multi-language content.
- Social media and thematic listservs have been effective to promote the Academy and allow graduates to share their learnings.

**Conclusions/Next steps:** Ending HIV criminalisation requires strengthening grassroots legal literacy to support advocacy.

Online learning allows for information on the science of HIV and the implications of existing laws to be widely understood. Existing content will continue to be updated, and new materials will be developed to assist community advocates in their efforts to end HIV criminalisation.

## TUPEF662

Assessing discriminatory attitudes towards key populations among police officers: the development of a monitoring tool and new indicators for Global AIDS Monitoring

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**Background:** Key populations (KPs), including men who have sex with men (MSM), sex workers (SW), people who inject drugs (PWID), and transgender people (TGP) often face stigma and discrimination from the police that heighten their risk of HIV infection and impede access to HIV services. We sought to develop a new monitoring tool for national governments to assess:

1. Discriminatory attitudes and behaviors among police, and
2. Current training and policies that may influence these attitudes. We also validated four indicators that measure discriminatory attitudes towards MSM, SW, PWID, and TGP among police.

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**Methods:** The 88-item monitoring tool was developed based on literature review and finalized with input from an advisory group composed of community, academia, multi-laterals, and implementers. Cognitive interviews were completed at two urban police stations in the Western Cape Province, South Africa. The tool was refined and piloted at 25 police stations (7 urban, 9 peri-urban, 9 rural) between July-August 2022. Exploratory factor analysis was used to determine items for inclusion in the final tool and the four indicators.

The four indicators were calculated using 28-items from the tool. Reliability was assessed using Cronbach's alpha and construct validity established using logistic regression with Wald test. The post-pilot tool and indicators were finalized in consultation with the advisory group.

**Results:** Respondents who completed the refined tool (n = 171) were mostly male, between the ages of 35-44 years-old, held lower ranks, and had been in service for ≥11 years.

All indicators demonstrated good internal consistency ( $\alpha > 0.70$ ). Among police officers in our pilot, 26.3% reported discriminatory attitudes towards MSM, 40.9% towards SW, 42.1% towards PWID, and 27.5% towards TGP.

Other domains captured in the tool included: training, reporting mistreatment of KPs by co-workers, co-worker attitudes, and policing practices.

**Conclusions:** The new monitoring tool will enable countries to monitor progress towards the 2021 Political Declaration sub-target of "less than 10% of law enforcement officers report negative attitudes towards key populations by 2025".

Data generated based on the tool will support the design of interventions and policies to reduce and mitigate stigma and discrimination experienced by KPs in the justice setting.

## TUPEF663

Strategic cases and the role of non-governmental organisations (NGOs) in supporting migrants living with HIV in the Russian Federation (RF)

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**Background:** In the region of Eastern Europe and Central Asia (EECA), legal context and policy framework related to support to migrants has changed significantly in recent years. Migrants face persistent bureaucratic burden and additional financial costs to ensure their stay is legal and more or less safe from the pressure of the authorities. Negative HIV test is among the preconditions for legal residence for work or study in the country, while those who are tested positive are denied of the residence permission irrespectively of their social status and living circumstances, and have to leave the country voluntarily or under the forced deportation.

**Description:** A 2022 study in Tajikistan conducted by the Regional Expert Group on Migrants' Health (REG) found that every 4th HIV case in 2021 was diagnosed among Tajik citizens who were former labour migrants. With the decision of the national authorities on the restricted residence, migrants often have to stay illegally in Russia, facing further health risks. REG with the support of the Elton John AIDS Foundation is implementing a project "The migrant-sensitive HIV care in the Russian Federation". Under the project, professional lawyers provide legal support to migrants with HIV. In 2023, more than 40 PLWH from EECA had opportunities to appeal earlier residence restrictions by the Russian authorities on the grounds of availability of relatives who are Russian citizens, violations in issuing orders, deadlines and other illegal actions by decision-making and enforcement agencies. The Project lawyers are currently leading 6 strategic cases in courts.

**Lessons learned:** Professional lawyers help beneficiaries a lot in obtaining reliable and sufficient information related to their specific circumstances and in addressing the existing legal and bureaucratic barriers. In new conditions, courts' practices demonstrate the tendency to cancelling earlier malpractice decisions of the relevant authorities, while judges are more persistent in comprehensive consideration of the circumstances of each specific case. Through social networks and the REG Website community and professionals are being regularly informed on legislative changes, as well as personal stories.

**Conclusions/Next steps:** The Project and its outcomes help to consider the real scale of migration processes and levels of HIV among migrants in the EECA region.

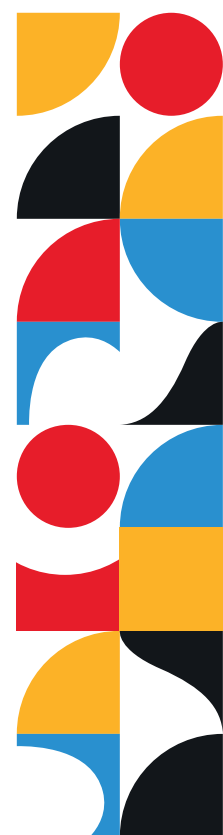
## TUPEF664

A pregnant pause: does the global focus on 'eliminating mother-to-child transmission' adhere to WHO Guidelines and rights of women living with HIV?

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**Background:** Women living with HIV have long called for sensitive, respectful language to uphold their Sexual and Reproductive Health and Rights (SRHR), in line with the World Health Organization's (WHO) 2017 SHRH Guideline. Language has long been known to shape how we





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feel, think, act and react. Medical language can affect women's use of maternity services and people's use of harm-reduction services and can even influence adherence to ARVs. Yet much language used in global policies and practice around care, treatment, and support of women living with HIV remains unchanged.

We therefore conducted participatory values and preferences research in relation to policy language in order to assess its impact.

**Methods:** A qualitative participatory review process with thematic analysis comprising:

1. Desk-top review of 40 global policy documents and journal articles;
2. Discussions with 13 women living with HIV from 4MNet's mentor mothers' international group.

The focus was on current language in documents, and respondents' views about how this affects their own, and others' perceptions of, their SRHR.

**Results:** Dehumanizing language and abbreviations are persistently used: for example, "dropouts", "defaulters" and "eMTCT"(elimination of mother-to-child transmission"). Respondents found these and similar terms to be disrespectful, disempowering and triggering.

Terms like 'eMTCT' (versus 'reducing vertical transmission') also undermine WHO's 2017 SRHR Guideline, which recommends language, policies and practices that prioritise women's lifelong SRHR. This language exists alongside continuing SRHR violations like coerced sterilisation, confidentiality breaches and obstetric violence.

Furthermore, global policies focus on 'eMTCT' at the expense of ensuring holistic woman-focused care, respect and support for women's SRHR.

**Conclusions:** There is already widespread evidence of rights violations of women living with HIV and throughout pregnancy and birth. Language reveals and shapes attitudes, policy and practice. Current terminology in global policy disrespects women living with HIV.

Replacing it with language aligned with women's own priorities is essential in delivering respectful maternal care and upholding women's SRHR, thus optimising outcomes for women and their babies. We recommend that 'eMTCT' be replaced with empowering language and policies and practices seeking to 'ensure the SRHR of women living with HIV(eSRHR)'.

## TUPEF665

Perpetrators in focus: how to respond to human rights violations in hard-dealing countries

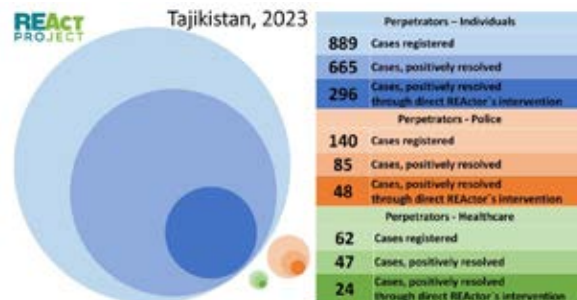
V. Kalyniuk<sup>1</sup>

<sup>1</sup>Alliance for Public Health, Kyiv, Ukraine

**Background:** In Central Asian countries, laws criminalizing HIV transmission, drug consumption, and sex work are still in effect, and in Uzbekistan, same-sex relationships are criminalized.

The repressive policies of these countries towards vulnerable groups result in numerous human rights violations, cases of discrimination, and violence.

**Description:** To effectively **document such cases and provide quality assistance and support to victims**, CBOs and NGOs use the **online tool REAct**. Despite the challenging political situation and the inability to quickly change it, REActors (peer consultants/paralegals) offer legal, psychological, and social services to community members. They also **work with perpetrators to prevent similar violations in the future**. For instance, in Tajikistan, in 2023, 78% of appeals were related to violence and discriminating attitudes toward people living with HIV in their settings, this testifies enormous level of stigma. However, through direct interventions to enlighten about HIV, 30% of cases are positively resolved and addressed. Important to note, that victims are more likely to disclose their issues to peer consultants, rather than to the police, as the police is the second biggest perpetrator, constantly violating human rights and abusing laws related to HIV and vulnerable groups.



**Lessons learned:** Despite the challenging political situation and the impossibility of active open advocacy, we have found a way to reduce the level of stigma and discrimination. In addition to services and support for victims, we also need to work with those who violate rights and discriminate, explaining to them that their actions are illegal and inhumane. In this way, we increase public awareness.

Such a strategy requires quality training for consultants in conducting awareness-raising discussions and also entails comprehensive measures for personal safety.

**Conclusions/Next steps:** We plan to continue the REAct project and deepen the focus both on supporting victims and on enlightening perpetrators to reduce the number of human rights violations and discrimination cases.

## TUPEF666

### Transgender HIV activism in Eastern Europe and Central Asia

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**Background:** Eastern Europe and Central Asia (EECA) is a region with the fastest growing HIV epidemic in the world. Transgender (trans) people are one of the key population groups susceptible to HIV, according to the UNAIDS. However, in 8 out of 12 EECA countries, they are not recognized as a key population group by the state.

**Methods:** Semi-structured interviews with 12 activists working on transgender HIV issues in EECA.

**Results:** The study identified four interconnected spheres of HIV-related trans activism in EECA: provision of services, advocacy, research, and working with doctors. To improve the quality of services, activists sensitized doctors and engaged in advocacy to make the state recognize trans people as a separate key group.

Such recognition would make HIV services more affordable (because of specifically allocated funding) and acceptable (because trans women would be recognized as women, not MSM).

Moreover, recognition as a separate group was used as a vehicle to drawing attention to trans-specific medical services (hormonal replacement therapy, consultations with endocrinologists, psychologists, and psychiatrists) and including them in HIV programs.

To underpin their advocacy, NGOs conducted research (mainly quantitative) that made their claims better founded. Trans population estimates were used to plan programs and write grant applications.

When asked about the reliability of these studies, the respondents listed the following issues that may affect representativeness: the lack of trust on behalf of trans people, lack of motivation to participate, and frequent changes of the place of residence.

Activists faced the following challenges in their work: the lack of interest on HIV issues among trans people, repression by the state and physical attacks, the lack of support by the civil society.

**Conclusions:** The study gave insight into the intersection of HIV and trans issues in the underexplored region of EECA through the eyes of activists. The importance of recognizing trans people as a separate key group by the state was the main finding.

## TUPEF667

### Results from the 2023 assessments of progress in in scaling up human rights interventions for HIV and tuberculosis in 20 'Breaking Down Barriers' countries

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**Background:** In 2017, the Global Fund launched *Breaking Down Barriers* (BDB), supporting 20 countries in scaling up programs and interventions to remove human rights-related barriers to access to HIV, tuberculosis and malaria services.

**Description:** In 2023, progress assessments were conducted in Benin, Botswana, Cameroon, Côte d'Ivoire, Democratic Republic of the Congo, Ghana, Honduras, Jamaica, Indonesia, Kenya, Kyrgyzstan, Mozambique, Nepal, Philippines, Senegal, Sierra Leone, South Africa, Tunisia, Uganda, and Ukraine.

Assessments involved reviews of country and program documents, key informant interviews with implementers, partners and beneficiaries, and in-country research visits.

Assessments focused on scope, scale, sustainability, integration, and quality of human rights programs within HIV, tuberculosis and malaria responses, and progress since baseline and mid-term assessments.

Emerging themes included strategies for working in challenging national environments, innovative approaches to cross-sector collaborations and recommendations for optimizing human rights interventions to drive impact.

**Lessons learned:** Progress assessments documented substantive progress in scale up of HIV, tuberculosis and human rights-based programs even in countries with challenging rights environments.

Prior to the Russian invasion, Ukraine demonstrated significant scale up of both HIV and TB-related human rights programs, and despite the challenging environment since the invasion, many continued to operate.

Mozambique recorded substantial increases in human rights program coverage in the context of HIV, with Uganda, Indonesia and Ukraine recording the large increases in the context of tuberculosis.

Ukraine, Uganda and Ghana highlighted ways in which implementing partners adapted to address challenges, such as conflict and punitive laws.

Numerous countries, including Senegal, Indonesia, Jamaica and the Democratic Republic of Congo, demonstrated cross-sector approaches that strategically integrated and facilitated progress in multiple program areas.



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**Conclusions/Next steps:** Meaningful scale-up of human rights programs and HIV and tuberculosis services and reducing barriers to access was possible across a range of national contexts and environments. Evidence generated by BDB assessments can inform efforts to optimize, integrate and adapt HIV/TB services in challenging settings.

## TUPEF668

One year into the Anti-Homosexuality Act in Uganda: lessons learned on sustaining HIV services delivery to the marginalized populations

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**Background:** The Parliament of Uganda passed the Anti-Homosexuality Act (AHA) with overwhelming majority on 21 March 2023, and the President signed it into law on 26 May. The AHA criminalizes consensual same-sex sexual conduct and the ill-defined "promotion of homosexuality" with sentences ranging from 10 years to the death penalty.

The hostile environment created by AHA has led to reduced access to Key Population (KP)--friendly services.

**Description:** The President's Emergency Plan for AIDS Relief (PEPFAR) supports over 1.3 million Ugandans on HIV treatment, and over 80 drop-in-centers (DIC) that provide HIV prevention and treatment services focusing on KP clients. We describe the impact of AHA on utilization of KP-friendly services in Uganda across three DICs throughout the cycle of AHA until now, and PEPFAR's efforts to sustain KP-friendly services.

**Lessons learned:** The AHA discourse increased in the Ugandan media starting January 2023. Weekly data shows a steady decrease in KP client visits to the 3 DICs, with the lowest when the AHA was in the Parliament, and associated increase in human rights abuses during this time. PEPFAR began adapting and scaling-up KP-friendly service delivery models in February 2023, including but not limited to:

- home delivery of anti-retroviral therapy (ART) and prevention products like condoms and Pre-exposure Prophylaxis (PrEP)
- scaling up multi-month dispensing (MMD) for eligible clients
- employing paralegal peers to offer legal support for KP clients.

These mitigation measures led to a resumption of KP clients accessing HIV services by April which continues to this day as shown in Figure 1.

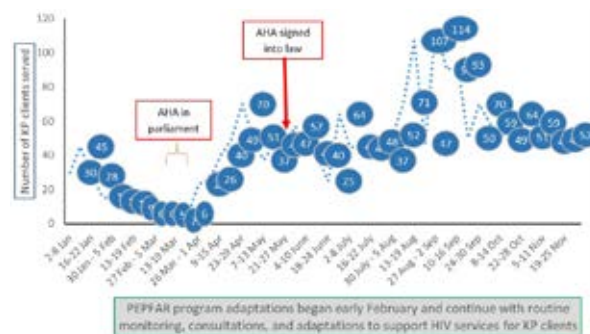


Figure 1. Cumulative service delivery visits at the 3 DICs.

**Conclusions/Next steps:** PEPFAR programs partnered with civil society organizations to quickly adapt and scale-up client-centric programs showing resilience and adaptability throughout the AHA.

While PEPFAR continues to provide life-saving HIV services, punitive laws like the AHA have potential to derail HIV epidemic control due to the criminalization of homosexual identity and behavior.

## TUPEF669

Breaking down human rights barriers: progress made through the Global Fund to Fight AIDS, Tuberculosis and Malaria initiative in West, Central and North Africa

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**Background:** Discrimination and stigmatization hamper access to prevention, care, and treatment. Since 2017, the Global Fund to Fight AIDS, Tuberculosis and Malaria (GF) has been supporting the expansion of programs aimed at removing human rights related barriers to the fight against the three diseases. The Breaking Down Barriers (BdB) Initiative has been deployed in 20 countries around the world. After an initial baseline study, a mid-term evaluation was carried out in 2020 and a progress assessment (PA) in 2023.

**Description:** A team of international and local researchers was set up by Drexel University. Each evaluation involved a literature review and interviews with implementing partners, beneficiaries and other technical and financial partners involved. The evaluation looked at the scale up of human rights programs, their quality, integration (within other prevention and care programs) and impact on access to services. Based on findings, recommendations were made for the GF 2024-2026 new funding cycle.

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**Lessons learned:** We propose to present progress and challenges identified in Benin, Ivory Coast, the Democratic Republic of Congo, Senegal, and Tunisia where progress assessments of the BaB initiative were conducted in French. PA in these countries have confirmed the importance of integrating human rights programs into other HIV related programs. Peer educators involved in HIV prevention, testing and linkage to care are key to stigma reduction and access to justice of key populations, especially in legal environments that are often punitive. Human rights programs are also interdependent and mutually reinforce one and another. In Ivory Coast, parallel programs coupled with interventions with police forces have reduced stigmatization within law enforcement.

Similarly, in Senegal, LILO ("Looking in Looking Out") sessions for healthcare professionals, together with dialogues with religious and community leaders, police, and administrative authorities have helped reduce stigma and protect HIV interventions for key populations.

**Conclusions/Next steps:** Despite complex social, cultural, and political contexts, progress was made in all countries. Good coordination, including with other technical and financial partners, is essential to scale up human rights programs.

Monitoring and evaluation must also be strengthened to improve our understanding of their impact on access to health and adjust programs where necessary.

majority of the districts in the country and all regions. The documentation and reporting are conducted on a quarterly basis, to provide an overview of reported cases of violence committed against sex workers and LGBTQI persons. The documented violation reports are always disseminated in form of hard and soft copies to key HIV and Human rights stakeholders.

**Lessons learned:** There has been a continuous increase in the number of cases reported involving actions that deliberately targeted sex worker and LGBTQI persons for negative treatment on the basis of their real or presumed sexual orientation and gender identity.

In October to December 2023, a total of 69 cases involving LGBTQ persons were reported across our networks while 83 cases involving sex workers also were reported. The highest number of cases registered were house evictions, community mob justice, poor attitudes by health care providers, increased community stigma.

**Conclusions/Next steps:** Criminalization of sex work and passing of Anti Homosexuality Act, 2023 has significantly affected the lives of sex workers and LGBTQI persons especially affecting access to HIV prevention services. UN-ESO shall continue to document and report the human rights cases and violations committed against sex workers and LGBTQI persons for evidenced advocacy.

There is need to establish and strengthen strategic partnerships and collaborations with human rights organizations, actors and advocates to promote human rights for all.

## TUPEF670

Documenting the effects of sex work criminalizing law and anti-homosexuality Act 2023 on access to HIV services and wellbeing of sex workers and LGBTIQ persons in Uganda

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**Background:** Uganda Network of sex worker-led organizations (UNESO) has continued to monitor the human rights situation and lived realities of sex workers and LGBTIQ persons in the wake of sex work being criminalized and penalized and the passing of the Anti-Homosexuality Act (AHA) 2023 in Uganda. UNESO documents and reports on cases and violations committed against sex workers and LGBTQI persons with an aim to inform evidenced advocacy to influence policy and social change, and to promote implementation of sex workers and LGBTQI persons appropriate and targeted HIV prevention interventions.

**Description:** UNESO as a national network that brings together sex worker -led organizations for sex workers collects and documents human rights violations and cases through its country wide network of sex worker -led organizations which are spread out enough to cover the

## TUPEF671

Mitigating healthcare discrimination against key populations in Bayelsa State: strategies for inclusivity and access

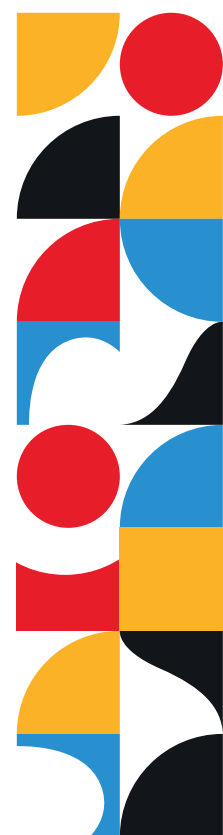
M.O. Ati<sup>1,2</sup>

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**Background:** This project aims to combat the pervasive issue of healthcare discrimination against key populations in Bayelsa State by developing and implementing sustainable, inclusive health policies and interventions. The primary objective is to promote equitable access to healthcare, fostering a non-discriminatory environment and ultimately reducing the incidence of HIV/AIDS among vulnerable groups.

**Methods:** The project utilized a systematic approach to site selection, dividing the state into eight local government areas (LGAs) to capture regional differences. Two healthcare facilities (one private and one public) were randomly chosen from each LGA, using lists provided by the Bayelsa State Ministry of Health. A mixed-methods approach was employed, incorporating qualitative and quantitative data collection. Stakeholder interviews, pol-





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icy analysis, and community engagement were integral components of the methodology. The project implemented an intervention that included sensitivity training for healthcare professionals, community-led advocacy initiatives, and the creation of 'safe spaces' within existing healthcare facilities.

**Results:** The 104-item survey for healthcare professionals covered demographics, practices related to informed consent, testing, disclosure, treatment, and care of Key Population Members living with HIV, as well as attitudes toward these aspects.

Positive shifts in attitudes were observed post-training, and the integration of 'safe spaces' led to a 40% increase in healthcare utilization, enhancing Client-provider interactions. Concerns identified included fear of contamination (81%) and a lack of materials (65%).

Notably, 9% of respondents admitted to refusing care for Persons living with HIV, while 66% observed others doing the same, and 27% witnessed verbal mistreatment. Additionally, 38% disclosed confidential information to clients' families.

**Conclusions:** The success of the intervention underscores the pivotal role of targeted education and policy reform in dismantling healthcare stigma. This evidence-based model addresses the HIV/AIDS response gap in Bayelsa State and offers a replicable template for similar challenges globally.

For the International AIDS Conference, this study provides impactful insights, advocating for the integration of discrimination-mitigation into public health approaches. Emphasizing sustained monitoring, future directions involve refining methodologies, disseminating best practices, and expanding 'safe spaces' to catalyze systemic healthcare changes, potentially influencing global HIV/AIDS strategies.

## TUPEF672

"The benefits do not reach us": analyzing the discrepancies between the policy and reality for transgender women (hijra) in Dhaka, Bangladesh

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**Background:** Transgender women (hijra), though acknowledged as a separate gender by the Government of Bangladesh, are unable to exercise their rights due to socio-structural challenges rooted in heteronormativity. This includes freely expressing their gender identity and sexual behavioral preferences. This calls for systematic policy analyses to understand whether their gendered rights are preserved against the backdrop of the gender declaration.

**Methods:** A mixed methods study was conducted, aiming to understand lived experiences, patterns, and determinants of sexual rights of hijra enrolled in HIV interventions in Dhaka, Bangladesh. Quantitative interviews were conducted with 296 hijra whereas qualitative data emerged from 20 in-depth interviews, five focus groups, and three life case histories. Descriptive statistics and thematic analysis were used for quantitative and qualitative data, respectively.

**Results:** Findings revealed they predominantly could not embody their gender identity. Qualitative evidence elucidated themes of exclusion, disguise, and ostracization from mainstream settings due to feminine mannerisms. This was substantiated by quantitative findings which revealed that 79.2%, (95% CI: 68.0-87.2) obfuscated their hijra identity, among whom 89.8% hid their identities even at home.

A high proportion of respondents were found to hide their sexual partner from society out of fear of stigmatization which was reported by 80.9%, (95% CI: 73.5-86.6) of participants.

The reasoning behind hiding their sexual partner can be understood as 82.2%, (95% CI: 74.5-88.0) of the participants reporting societal stigmatization and marginalization attributed to their sexual activity. Themes of duplicity were substantiated in qualitative findings, which revealed that hijra community members were forced to conceal their relationships and marry women to appease their families.

Additionally, 98.7% (95% CI: 96.5-99.5) reported discrimination based on gender identity, predominantly in public transport (91.8%) and malls (76.5%). The qualitative evidence also revealed that they disguised their identities and were refused services in shops and buses.

**Conclusions:** The policy analysis illuminated crucial insights about the discrepancies between the policy and grounded realities of hijra, in terms of freely expressing their gender identities and pursuing their desired sexual relationships.

These findings could ultimately guide stakeholders and hijra community to convene and ensure their gender and sexual rights are realized, practiced and upheld.



## TUPEF673

## Navigating barriers to harm reduction in Uganda: an inquiry among people who inject drugs, healthcare workers, law enforcement and judiciary

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Kampala, Uganda, <sup>6</sup>Human Rights Advocacy and

Promotion Forum (HRAPF), Kampala, Uganda

**Background:** Stigma, discrimination, punitive laws, and policies can increase HIV vulnerability and reduce access to services for people who inject drugs (PWIDs). Uganda introduced opioid agonist therapy in 2021 and adopted a harm reduction approach to mitigate adverse health behaviors with strategies like needle exchange programs and supervised injection sites. However, punitive laws could reverse progress.

We explored obstacles to implementing harm reduction strategies in Uganda. Guided by a human-rights-based approach, we focused on identifying ways in which laws, policies, and practices can infringe on human rights.

**Description:** We conducted a cross-sectional study in 15 districts across five regions of Uganda in January and February 2022. We conducted desk reviews of existing laws and policies, 56 key informant interviews, 16 focus group discussions, and two consultative workshops, engaging healthcare workers, PWID community members, legal professionals, and government officials from the police and judiciary.

**Lessons learned:** The general approach to drug control in Uganda is punitive rather than restorative, resulting in fear of PWIDs being arrested. This is codified in laws such as the Narcotic Drugs and Psychotropic Substances Control Act of 2016, which criminalizes drug use. The legal environment is exacerbated by enforcement approaches and other marginalizing treatment.

For example, PWIDs reported torture, physical assault, verbal abuse, denial of privacy, and humiliation by law enforcers. They reported negative attitudes from law enforcers manifesting as hostile attitudes, unjust treatment, and premature criminalization, often based on prejudice rather than legal facts.

Furthermore, PWIDs reported being denied the opportunity to legally register as associations under identities reflecting their unique challenges and needs, forcing them to operate under disguises, which consequently hampers their collective ability to advocate.

**Conclusions/Next steps:** The current punitive drug control approach in Uganda undermines harm reduction efforts for PWIDs. Shifting from punitive towards health-centered approaches (e.g., community-based treatment), amending restrictive laws, improving law enforcement practices, and facilitating legal recognition for PWID associations are some ways Uganda might address these challenges and enhance harm reduction strategies.

## TUPEF674

## Despite WHO's fast track strategy for middle-income nations, barriers to HIV treatment are still part of asylum seeker's claims

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**Background:** Australian Migration Act 1958 (Cth) provides that a "refugee" is any individual, due to a well-founded fear of persecution, is outside their country of nationality and unable or unwilling to return. Persecution must involve systematic and discriminatory conduct, and the requirement of "serious harm". Serious harm includes significant economic hardship that threatens the person's capacity to subsist and denial of access to basic services where the denial threatens the person's capacity to subsist. Denial of access to HIV medication and medical treatment for people living with HIV constitutes "serious harm" under Australian migration law.

**Description:** HIV/AIDS Legal Centre (HALC) over the years has been assisting asylum seekers in their pursuit of protection in Australia, including those from middle-income countries. Despite the World Health Organization's progress on Fast-Track or 90-90-90 targets,<sup>1</sup> asylum seekers from middle-income nations frequently articulate fears of serious harm associated with denial or limited access of medical treatment.

1. <https://iris.who.int/bitstream/handle/10665/351996/9789240041264-eng.pdf?sequence=1>

**Lessons learned:** Our case studies reveal a common pattern in middle-income nations regarding medication accessibility for people living with HIV (PLHIV). While it may initially appear that PLHIV have access to HIV treatments, upon closer examination of the deeply rooted cultural norms in these nations, challenges such as stigma, insufficient sexual education, and a lack of HIV awareness emerge, preventing both receipt of treatment and societal acceptance of PLHIV, impacting their ability to thrive. In many instances, these barriers to treatments contribute to asylum seekers meeting the criteria for refugee assessments.

**Conclusions/Next steps:** HIV-related stigma remains a significant obstacle in middle-income countries and impacts PLHIV from accessing adequate treatments, despite government assurances of freely available services. Until there is improvement in sexual and HIV education, it



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is anticipated that more PLHIV will seek protection due to the denial of medical treatments in their home countries. HALC continues to offer legal advice and representation, as well as legal education to the community and asylum seekers.

## TUPEF675

### Translating human rights concepts into the monitoring framework to inform HIV-programming and advocacy: a community-based approach from Ukraine

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**Background:** Removing human rights-related barriers is crucial to successful HIV response. HIV-related stigma and discrimination, denial of services prevent people living with HIV and key populations from seeking and uptaking of health services. To achieve a significant impact in the fight against HIV, human rights-related barriers must be identified, analysed and redressed.

With the aim of monitoring and addressing human rights violations of key populations, ICF "Alliance for Public Health" in 2019 launched the REAct (*Rights-Evidence-Action*) system.

**Description:** REAct is an on-line community-based human rights monitoring and response programme. System allows to document cases of human rights-related barriers that key populations experience in accessing HIV and other health-related services, as well as to respond to cases identified.

System has been implemented in Ukraine by 101 community-based organizations in 19 regions out of 24. About 10,000 cases of human rights violations among key vulnerable to HIV and TB populations were registered in total. REAct programme using a person-centred approach allows to describe socio-demographic profiles of human rights violations of key populations, as well as to identify patterns and trends in terms of the types, frequency, and causes of human rights violations.

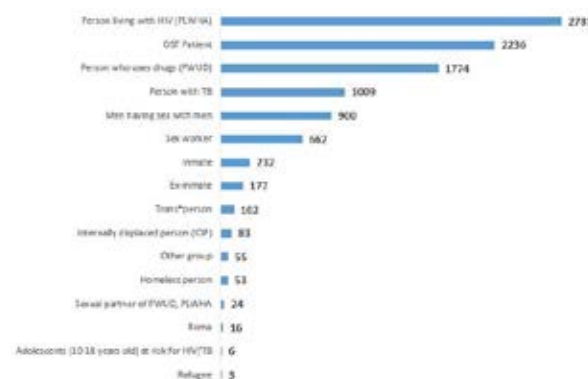


Figure. REAct cases registered by key populations (Ukraine, since 2019).

**Lessons learned:** Implementation of human rights monitoring ensure gathering adequate, sound and real-time data for further analysis, program and advocacy actions. Data documented shapes accessibility and provision design of health and legal services, inform inclusion of rights-holders from key populations in the human rights perspective, as well as facilitate agenda for decision-makers with the aim to drive an individual and system levels rights-based changes.

**Conclusions/Next steps:** Human rights frameworks are essential in filling human rights-related data gaps and informing policy and HIV-programming related to human rights. In seeking redress for human rights violations, monitoring support measurement of the progress (or its lack) in the protection, promotion and fulfillment of human rights among key populations.

## TUPEF676

### United for change: collaborative efforts for gender equity and human rights in the national HIV response in Nigeria

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**Background:** The global emergence of the HIV/AIDS pandemic has led to a widespread violation of human rights and fundamental freedoms (UN, 2001s). About 243 million women/girls aged 15-49years, experienced sexual or physical violence globally (UN Women, 2019). The Gender Assessment of the national HIV response in Nigeria (2013, 2022) indicate intrinsic relationship between gender-based violence and other human rights violations and HIV. Human rights violations contribute to the spread of HIV infection and exacerbates its severity on social and economic well-being of individuals.

Gender equity and human rights remain critical pillars in the battle against HIV and informed the collaborative initiative for interventions to address gender and human rights (GHR) barriers impacting key and vulnerable populations in the national HIV response in Nigeria with the support of Global Funds grant circle 6.

**Description:** The Global Fund seven strategies for addressing human rights was used to develop the GHR interventions in the HIV response under the leadership of the National Agency for the Control of AIDS (NACA).

The multi-sectoral partnership included government Ministries Department and Agency at national and sub-national levels including human rights commission, HIV and TB implementing partners, network of people living with HIV, and TB, key populations in their typology (MSM, SW, PWID and Transgender people), and other civil

society groups. Using Community-Led-Monitoring (CLM) framework for feedback mechanism, quantitative and qualitative data was collected from 52,470 community members in selected States on identified key gender and human rights priorities.

**Lessons learned:** Between July 2022 and September 2023, the HIV Gender and Human Rights State Response mechanism using the community rights advocates successfully resolved 72.5%, 282 of the 389 documented cases of gender and human rights violations by employing Alternative Dispute Resolution (ADR). 74 cases (19%) are pending resolution and in litigation while 38 cases (9%) cases were withdrawn by complainants.

**Conclusions/Next steps:** United for change, collaborative endeavors have proven instrumental in advancing gender equity and human rights in the Nigeria's HIV response. The CLM qualitative strategy also revealed deep and detailed perspectives of the gender equity and human rights of HIV. Comprehensive efforts continued to sustain and scale-up the intervention across the country.

## TUPEF677

Strengthening Mozambique sex workers movement capacity to integrate and sustain centered human rights approach to address GBV

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**Background:** The HIV prevalence, although data shows a slight decrease (13.5% to 12.4%) in general population, for sex workers are increasing where the contribution to HIV epidemic is 30%. Stigma and discrimination, social violence and physical violence are main forms of VBG perpetrated by clients and law enforcement increasing their vulnerability to HIV. To address GBV, Pathfinder is strengthening the sex workers rights movement.

**Description:** Pathfinder is strengthening the sex workers' movement called the National Platform for Sex Workers' Rights( NSWRP) created in 2017 and bringing together 22 sex workers' organizations, aiming to advocate for their human rights , access to health services free of stigma. Capacity building comprises an integrated approach:

- Mapping the needs of organizations using the OCAT (organizational capacity assessment tool) adjusted for key population organizations;
- Jointly drawing up work plans according to joint weaknesses with the definition of specific benchmarks;
- Quarterly meetings to assess the progress of work plans and monitor targets.

**Lessons learned:** A total of 4,814 cases (19% transgender women, 42% FSW and 10% MSM) of GBV were reported, of which 28% represent young sex workers (<24 years). Of the reported cases of GBV, there were 921 cases of stigma and discrimination, 576 of bullying and intimidation and 749 cases of physical violence.

Strengthen the skills and competencies of SW led to implement violence prevention approaches, increase reporting of GBV cases and strengthen public policy programming for protection and HIV needs. As result of strengthening NSRP, Police is conducting joint planning and supervision activities with Platform both provincial and national level with sex workers to monitor and manage cases of violence perpetrated either by clients or law enforcement.

The data is discussed in a quarterly basis between Police and NSRP representatives, and actions plans are developed and monitored together.

**Conclusions/Next steps:** The data demonstrates the relevance of strengthening sex worker-led organizations so that they can implement an integrated GBV and HIV prevention actions. As a next step, Pathfinder will work collaboratively with the Platform to register as a SW consortium, and link NSWRP board to technical working group for HIV prevention at national and provincial level.

## TUPEF678

Low engagement of key populations in HIV health services in Tanzania. Analysis of community, legal and policy factors

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**Background:** Key populations (KP) are defined by the World Health Organization (WHO) as both vulnerable populations and populations at higher risk of acquiring HIV infection. KP often face legal and social challenges that increase their vulnerability to HIV. These experiences include criminalization, higher levels of stigma and discrimination which negatively affect access to HIV services. This study aims to understand legal, community and policy factors affecting engagement of KP in HIV health interventions.

**Methods:** Qualitative research design involving a desk review and stakeholder's engagement. Desk review of national and zonal dialogues minutes, legal literacy meetings reports, national HIV response guidelines and policies was done. We reviewed program data from NACP on how KP access health services and then conducted three stakeholders' engagement meetings with 78 participants from 11 regions. Factors affecting access to health services by KP were documented. Data were organized using socio-ecological model (SEM).

**Results:** Program data showed only 49% of the estimated KP accessed health services. In the stakeholders' meetings, a total of 78 participants were involved. Barriers to



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accessing health services at the interpersonal level include lack of social support and association with high-risk networks linked with risk behaviours. At the community, stigma and discrimination in different settings including health facilities, limited engagement of influential leaders in advocacy and addressing discrimination and violence were noted. In health facilities, lack of trained staff to provide KP friendly services coupled with limited HIV services beyond working hours affected utilization of health services.

At structural level, despite improvements in laws and policies, still various laws negated engagement of KP such criminalizing drug use, same sex relationship and sex work. Harassment and unwarranted arrests from law enforcement further marginalize KP and makes access to health intervention harder.

**Conclusions:** Engagement of key population into HIV health interventions was limited at multiple levels. The study recommends building capacity on KP friendly services for communities, law enforcement and health care providers, further engagement of communities including religious leaders on KP issues and implementing differentiated service delivery models for KP.

## TUPEF679

Empowering communities, enhancing care: the role of comprehensive harm reduction in the HIV/HCV response

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**Background:** People who use drugs and related populations are disproportionately affected by HIV/HCV, while their right to health and freedom from discrimination are often not guaranteed. Furthermore, their access to integrated HIV/HCV prevention, treatment and care services remains limited. As health risks are frequently associated with high-risk drug use, harm reduction services are an essential element of the policy response.

The BOOST project aims to support and strengthen community-based organisations, enhancing their capacity to deliver communicable disease services as integral components of comprehensive harm reduction strategies.

**Methods:** The BOOST Multi-Modular Survey (MMS) aimed to gather information about infectious disease services within European community-based harm reduction settings. Distributed across major European harm reduction networks, it yielded 65 complete responses. The MMS was complemented by focus group discussions (FGDs) with people with living experience in four European cities.

**Results:** Survey findings show that various health interventions are offered on-site or via referral, with stigma-related reluctance being the primary barrier (62%) to reach out to potential clients, followed by funding constraints,

limited capacity, and accessibility issues. At the level of inter-service collaboration, stigma and limited accessibility of specialist services pose challenges to continuity of care. The results of FDGs highlight the greater involvement of peers, scaling up rapid testing in harm reduction services, increasing availability of testing in non-medical settings and lowering the treatment threshold as essential factors for more accessible care.

**Conclusions:** The data underscores stigma and service accessibility as the principal obstacles hindering access to vital HIV and HCV services for people who use drugs, hindering the continuity of care. The findings emphasise the need for comprehensive policies addressing discrimination, promoting inclusivity, and supporting community-based and community-led services.

The significance of this study and the BOOST project lies in its potential to inform targeted policies and actions aiming to improve the accessibility of care for people who use drugs. Integrated testing, treatment and care as part of a comprehensive harm reduction approach and locating it in community-based settings will enhance service delivery, ensure continuity, and prioritise key populations' human rights and well-being.

## TUPEF680

The power of GIPA/MIPA: the game-changing framework for advocacy in Aotearoa New Zealand

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**Background:** 2024 marked 30 years of the Paris Declaration on the Meaningful Involvement of People living with HIV (MIPA). In 2019, people living with HIV mobilised to implement the Stigma Index in NZ, which has since been used as an advocacy tool to recentre conversations in the HIV response on the wellbeing of people living with HIV. The legacy of this ground-breaking work in NZ includes the subsequent embedding of the MIPA principles throughout the national HIV response, including in the writing of the first HIV Action Plan published by the government in 20 years.

**Description:** The NZ Stigma Index reports were launched in 2020. It was a collective effort by HIV-sector and community-based organisations of people living with HIV and allies. The reports highlighted stigma and discrimination in relation to healthcare settings, disclosure, internalised stigma, and compounded stigma. Data on quality of life was also collected.

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**Lessons learned:** Community research conducted by and for people living with HIV is a powerful tool for advocacy. It mobilises people living with HIV, it is empowering and creates evidence to advocate for systemic change. MIPA principles were adopted by the NZ Ministry of Health in its HIV Action Plan along with most of the 39 Stigma Index Report recommendations.

However, the work required to ensure the diversity of people living with HIV is captured through MIPA processes, takes significant time and resources. Continued advocacy was needed to ensure peer support organisations were included in the development of the Action Plan.

This remains a challenge given continuing insufficient funding and time allocated to MIPA processes and projects, specific to the health and wellbeing of people living with HIV.

**Conclusions/Next steps:** NZ is on track to end local transmission of HIV by 2030, but work must continue to advocate for greater and meaningful involvement of people with HIV and AIDS in the response, to ensure people living with HIV can live healthy lives free of stigma and discrimination.

Creative collaboration, unity, and shared resources among community organisations is foundational to the continued progress of MIPA, and securing resources for projects focusing on empowering people living with HIV.

## Ethics and HIV

### TUPEF681

Potential opportunities in data-related workflow processes to minimize bias within Electronic Health Records data: a qualitative study

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**Background:** Electronic health records (EHR) data has been widely used in public health research including HIV-related studies.

However, it is also limited by potential bias due to incomplete and inaccurate information, lack of generalizability, and lack of representativeness.

This study explores how improved workflow processes within HIV clinics and data scientists may minimize opportunities for bias within EHR.

**Methods:** Using a constructivist grounded theory approach, we conducted in-depth individual interviews with 15 participants (5 health care practitioners within an HIV clinic, 5 persons with HIV (PWH), and 5 data scientists in

charge of data integration) purposively recruited in South Carolina between August 4th-18th 2023. Interviews took 45 to 60 minutes with a semi-structured interview guide and were transcribed verbatim.

Analysis was conducted as outlined by Charmaz (2006), whereby transcripts were first initially coded. These initial codes were then focus, axial, and theoretically coded. The analytical matrix of study findings was sufficiently discussed to obtain consensus.

**Results:** To reduce bias in the EHR, the data entry forms should capture critical patient self-reported social determinants of health (SDOH) information like gender identity, sexual orientation, preferred language, disability status, and access to transportation, etc.,.

During the data collection, healthcare providers should create a supportive healthcare environment by developing strong patient rapport, proactively asking patients about their SDOH information, and accurately documenting in EHR what patients shared during their appointments.

Patients should access their EHR to check and verify that all identity specific data (i.e., gender, race, sexual orientation) are correctly stated.

During data management and cleaning, data scientists should inspect datasets for completeness and accuracy prior to model development, and educate users about the limitations of the EHR datasets.

**Conclusions:** To our knowledge this is the first study to examine how workflow processes are structured to minimize bias within EHR for PWH.

Future research should examine how healthcare systems can be incentivized to create and implement EHR bias reduction strategies across all workflows.

### TUPEF683

Empowering sex workers: Jasmine online platform for reporting and preventing violence

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**Background:** Since the adoption of the law criminalizing clients of sex workers and Covid, Médecins du Monde has noted an increase in the number of sex workers working through the internet.

We estimate that more than a third of sex workers have already been exposed to rape. This rate of exposure to sexual violence by a stranger is 15 times higher than in the general population.

As a result of sexual violence, exposure to HIV is increased by 25%, yet only 1/3 of sex workers seek care following an assault.

Consequently, combating violence against sex workers is clearly part of the response to the epidemic.

**Description:** The first answer in the fight against violence against sex workers is prevention.







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The sex workers most exposed to violence are those new to the business, yet they have no access to informal systems for sharing information on aggressors.

We have developed a website available in 10 languages, providing:

A platform for reporting incidents of violence, enabling sex workers to identify the telephone numbers of potential aggressors.

- Information on global health.
- An interactive, geo-localized map listing structures providing access to care and rights following violence.
- A multilingual interview guide to help identify health needs following a sexual assault.
- The site was developed in close collaboration with the sex workers' community to ensure its acceptability.
- Each report of violence is followed up with a referring to a support organization to ensure better access to health care.

**Lessons learned:** It is essential to work closely with sex workers communities on this type of tool, in particular by integrating sex workers into the project team.

We diversified communication and outreach methods aimed at sex workers. A communication strategy using social networks has been developed.

**Conclusions/Next steps:** Adopted by communities of sex workers, the alert system is seen as an indispensable prevention tool.

In order to guarantee its effectiveness in preventing violence, as well as its anchorage within the sex workers' community, we plan to transfer the program to a new community-led organization created and supported by Médecins du Monde.

## TUPEF684

### Adolescent perspectives on enrolling in two HIV clinical research vignettes during pregnancy

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**Background:** Pregnant adolescents face greater challenges related to HIV compared to pregnant adults, including higher risk of HIV acquisition and maternal/fetal morbidity and mortality. However, pregnant adolescents are often excluded from clinical HIV research participation, resulting in less evidence to inform safe and effective treatment/prevention strategies.

We sought to understand the views of adolescents on potential enrollment in HIV prevention/treatment research in order to develop ethical guidance that can help expand the responsible inclusion of pregnant adolescents in clinical research.

**Methods:** Eighty in-depth interviews were conducted with ever pregnant adolescents (40 living with HIV, 40 at-risk) recruited from local clinics in Botswana and Malawi.

Questions in the semi-structured interview guide explored decision-making around enrollment during pregnancy using two vignettes depicting hypothetical HIV studies:

1. Testing a new medication to prevent/treat HIV that has not yet been studied in pregnancy, and;
2. A randomized control trial (RCT) comparing a daily pill vs. a new injectable that has not yet been studied in pregnancy.

Interviews were transcribed, translated to English, and coded in NVivo, and emergent themes were identified.

**Results:** Most adolescents reported willingness to join at least one of the two vignette studies. The most common reasons for willingness to join were potential benefit of treating and/or preventing HIV in themselves and the fetus and helping women or people who can become pregnant in the future.

Some participants also noted interest in joining an HIV prevention study to prevent potential HIV acquisition from unfaithful partnerships. However, some participants



were reluctant to join the RCT, citing uncertainty of randomization because of wanting to decide for themselves which medication they will take during pregnancy.

**Conclusions:** While adolescents highlighted concerns of randomization and medication safety during pregnancy, their ability to assess study risks and benefits and their high willingness to join at least one vignette study suggests that current HIV research, which largely excludes pregnant adolescents, may be misaligned with the views, interests, and capacities of potential participants. These findings underscore the need for ethical guidance to support adolescent inclusion in HIV research during pregnancy.

## Policy development, implementation and analysis

### TUPEF685

#### Community-led monitoring in prisons of CEECAC region

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**Background:** The purpose of the study was to assess the existing policies and practices of community-led monitoring (CLM) in prisons of CEECAC region. The results of the study became the basis for the CEECAC Road map on CLM of access to HIV, TB, HCV services without discrimination. The study included desk research and 16 in-depth interviews with community representatives and civil society activists from 8 countries of the region.

**Description:** CLM policies and practices in prisons differ much from country to country based on country context and the level of cooperation with penitentiary authorities and prison administrations.

There are important differences between CLM approaches in the penitentiary and civil sector attributed to limited opportunities for direct engagement with the incarcerated population, restricted access to the Internet and digital communication devices, security threats, confidentiality of data, limited access to prisons, possibilities to use received data for advocacy.

**Lessons learned:** While CLM is supposed to be fully community-driven, in the situation with prison settings it is necessary to use **existing government monitoring mechanisms** with the involvement of community representatives to conduct CLM in prisons. Such mechanisms include public oversight commissions/groups (POC), national preventive mechanisms (NPM), Ombudsperson's office and other independent national mechanisms. CLM may serve as a tool to inform POCs and NPMs about spe-

cific instances of right to health violations and can bolster their ability to identify indicators of inadequate health-care within prisons, particularly for specific vulnerable groups. Best CLM practices include Ukraine with a special digital tool developed by a CBO and accepted for official use by prisoners by the penitentiary authorities, Moldova with regular CLM conducted through service provision projects by NGO and active participation of community representatives in the work of NPM.

**Conclusions/Next steps:** Based on the result of the study we have proposed a **logical matrix for CLM implementation** that can be adapted on the ground based on the CLM objectives, particular country contexts, capacity of organizations, conducting CLM and other relevant factors, as well as suggested **data institutionalization mechanisms** based on specific country examples of CLM practices in the domain of ensuring the right to health in prisons.

### TUPEF686

#### Generating data to enhance ethics deliberations and policies regarding HIV molecular surveillance

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Study of Ethics and Stakeholder Attitudes towards Molecular Epidemiology (SESAME) Study Team

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**Background:** Molecular HIV surveillance (MHS) uses antiretroviral resistance testing (ARVRT) data to help identify and respond to emerging HIV transmission clusters. However, MHS raises ethical concerns around consent, privacy, stigma and potential HIV criminalization leading to some calls for a moratorium on its use. MHS policy recommendations have recently begun to emerge, including a US Presidential Advisory Council on HIV/AIDS (PACHA) resolution. As such guidance is developed, it is important for it to be informed by empirical data reflecting a broad range of stakeholders.

**Methods:** We conducted a mixed methods study regarding MHS risks and benefits with multiple stakeholders: (1) Developing an educational whiteboard video regarding MHS with town hall input (n=4); (2) In-depth interviews (IDIs) with people living with HIV and those at increased risk (n=24); (3) National surveys and survey experiments with (MSM) men who have sex with men (n=2524, n=3851); and (4) Open-ended survey questions to assess the needs of researchers and public health practitioners (n=57) related to MHS.

**Results:** IDIs identified support for MHS, but perspectives about MHS were conflated with concerns about HIV public health surveillance more generally. A survey with MSM (n=2524) revealed that the level of discomfort with MHS



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decreased as awareness increased. A survey experiment with MSM (n=3851) found that most are willing to undergo ARVTR when MHS uses are disclosed by a clinician, however, discovery of MHS use after testing decreased ARVTR willingness. In the needs assessment with professionals, ethical concerns were identified as a major challenge of using MHS by nearly one in five researchers (19.5%) and public health practitioners (19.8%).

All the suggestions for addressing these ethical concerns focused on eliminating HIV criminalization laws. Moreover, 20% of public health practitioners identified a lack of community support as a major challenge in MHS.

**Conclusions:** Overall, our findings provide evidence supporting many of the actions called for in the 2022 PACHA resolution such as community engagement, collecting evidence concerning MHS use, addressing HIV criminalization laws, and encouraging clinicians to disclose MHS uses of ARVTR results to those tested. Nevertheless, these data must be supplemented by those from other stakeholders.

## TUPEF687

**Empowering youth: a multi-component approach to strengthening SRHR for HIV prevention and resilient health systems in Uganda**

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**Background:** This abstract highlights the "Get Up Speak Out" (GUSO) initiative, a transformative project addressing the significant challenges faced by Ugandan youth, aged 10-24, in accessing Sexual and Reproductive Health and Rights (SRHR) services. Implemented in Mayuge, Jinja, Iganga, and Bugiri districts, GUSO responded to the limited autonomy of young people in Uganda, where over half the population is below 18 years old.

Through a multi-component approach, the program aimed to empower young people, particularly girls and young women, fostering a positive societal environment for their sexual and reproductive health.

**Description:** The GUSO program, spanning from 2016 to 2020, aimed to enhance SRHR through strengthened alliances, empowered youth, increased SRHR information utilization, and improved the socio-cultural and legal environment.

Implemented in collaboration with the SRHR Alliance in Uganda and GUSO consortium partners, the program engaged in diverse activities, including capacity-building, mentorships, media campaigns, and innovative responses to the challenges posed by the COVID-19 pandemic, such as webinars and online meetings. The project addressed critical issues like child protection and child labor, contributing to a positive impact on youth empowerment and SRHR outcomes.

**Lessons learned:** Through robust monitoring and evaluation, the GUSO program showcased significant accomplishments. Over 269 young individuals received SRHR information, and around 60 duty bearers experienced strengthened capacities. The program effectively collaborated with Members of Parliament, advocating for supportive SRH Youth-Friendly Services environments.

Notably, the partnership with the Mayuge District COVID-19 task force enabled continued SRHR work during the pandemic, highlighting the adaptability of the initiative.

Key lessons learned underscored the potency of peer-to-peer approaches in reaching young people with SRHR information and the pivotal role of youth participation in decision-making bodies, exemplified by Community Health Advocates in the district task force.

**Conclusions/Next steps:** GUSO's findings have vital implications for HIV prevention and care. By addressing SRHR barriers for young individuals, the program strengthens health systems. Successful COVID-19 innovations, like webinars, emphasize the importance of virtual approaches. Looking forward, sustained efforts are needed to integrate SRHR into HIV programs, emphasizing youth empowerment for enduring progress in HIV prevention and public health.

## TUPEF688

**Harmonizing a global vision with local action: safeguarding clients in HIV programming in Vietnam**

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**Background:** Participants of HIV programming may experience increased vulnerability to sexual exploitation and abuse (SEA), and other harms. In July 2022, FHI 360 launched new global safeguarding standards and toolkits. The USAID-funded and FHI 360-implemented EpiC Vietnam project, which supports HIV service provision, sought to align the global guidance with local project needs.

**Description:** In October 2022, EpiC Vietnam assessed the project's vulnerability to SEA, risks that increase the likelihood of SEA/other harm, compliance with safeguarding actions, and implementing partners' adherence to safeguarding standards using four self-assessment checklists. Identified risks included data collection for minors, service provision for key populations, contextual challenges, gender imbalances, and supplier- and media-related risks. By tailoring a headquarters tool, Vietnam then formulated anti-trafficking compliance and action plans to address identified risks and harmonize global policies with local practices. EpiC integrated safeguarding topics into project trainings, adjusted consent forms, reviewed relevant local requirements, improved supplier monitoring,

disseminated accessible reporting channels, and organized awareness-raising activities. A follow-up evaluation in September 2023, using the same four tools, underscored EpiC's commitment to robust safeguarding and accountability measures.

**Lessons learned:** Consistently high SEA vulnerability ratings reflect the project's work with vulnerable populations and highlight the importance of internal measures to mitigate risk.

To communicate the global standards effectively and ensure compliance, alignment with Vietnamese policies and reflection on potential adjustments to global policies were critical. With FHI 360 authorization, EpiC adapted age and consent requirements to align with Vietnamese law and strategy to promote HIV testing among younger populations.

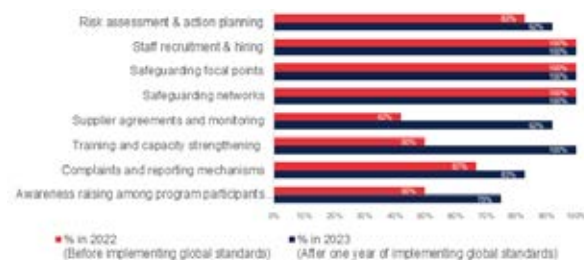


Figure. EpiC Vietnam compliance with safeguarding domain standards (self-assessment).

**Conclusions/Next steps:** Implementation of global safeguarding policies for HIV program participants requires harmonization with local contexts.

Despite these efforts, EpiC Vietnam still recognizes discrepancies between global and local standards, and challenges aligning them.

Continuous efforts are needed to tailor the project's future safeguarding efforts, ensure effective risk mitigation, and measuring the compliance.

## TUPEF689

Breaking coordination-planning-and-programming barriers and silos: the primacy and impact of organizational change in Malawi's HIV development partner group

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**Background:** UNAIDS and U.S. Department of State jointly led Malawi's HIV/AIDS Donor group (HADG) with bilateral and multilateral donors to contribute toward reaching HIV epidemic control. However, an organizational shift was needed. HADG leaders incorporated new organizations and coordination hubs integrating HIV prevention,

diagnosis, treatment, viral load suppression, resource tracking, human rights, climate change and pandemic response mandates.

**Description:** In lieu of the Paris Declaration on Aid Effectiveness (2005) and Lusaka Agenda on the Future of Global Health Initiatives (2023), a broader constituency-based forum for leaders supporting Malawi's national HIV and AIDS strategy was instituted. As a multi-stakeholder working group chaired by rotating agencies in close collaboration with Government of Malawi, members meet monthly. This reconstituted 2022 HIV and Development Partners (HADEP) now benefits from more effective engagement across national ministries, departments, and agencies (MDAs). MDAs co-convene local stakeholders and implementers to limit duplication and better target investments to reach people living with HIV and adolescent subpopulations.

**Lessons learned:** Intensive outreach and a growth of 50% in active HADEP membership, facilitated improved monitoring and decision-making inputs at central and district level. HADEP worked to engage diverse organizations (21) and MDAs (five); achieve consensus on shared priorities (4 per year) through an annual Master Workplan; and drive monthly tracking of progress against missed milestones. This organizational model enhanced the quality of

- Data-informed funding prioritization within the President's Emergency Plan for AIDS Relief, UNAIDS Technical Support Mechanism, and Global Fund Grant Cycle processes;
- HIV service coordination from recent use of stakeholder inventory and activity reporting tools,
- Resource allocation considerations, and
- Harmonization of technical support.

**Conclusions/Next steps:** HADEP presents a practical example of how to unite external funders and local stakeholders, who often have competing interests, under a common framework of cooperation.

This approach involves creating a transparent environment where areas of overlap and duplication in activities, investments, and infrastructures are openly identified and addressed.

This kind of initiative highlights how collaboration among multiple donors and implementing partners is crucial for integrating HIV into mainstream health initiatives and laying the groundwork to advance long-term sustainability of HIV programs.



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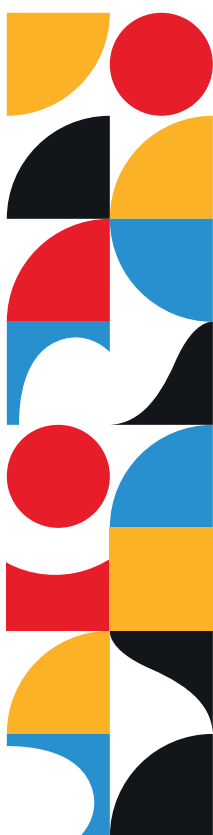
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## TUPEF690

Navigating pathways towards Thailand's Universal Health Coverage on transgender health: the importance of catalytic funding, concerted community-led efforts, and political advocacy

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**Background:** The Tangerine Clinic as the first transgender-led health clinic in Thailand has proven that the integration of gender-affirming care into sexual health services increased access to HIV services among transgender populations. However, despite HIV testing, treatment, and pre-exposure prophylaxis being covered under Thailand's Universal Health Coverage (UHC), gender-affirming care is not included.

We describe community-driven efforts to advocate for the inclusion of gender-affirming care under UHC by using data to inform policy change discussions.

**Description:** Established in 2015, Tangerine Clinic provides gender-affirming care and HIV services to transgender population where data were collected as part of a prospective cohort study, and positive outcomes were published in the Lancet HIV, JIAS, and Transgender Health. The Tangerine Clinic partnered with Chulalongkorn University in establishing the Center of Excellence in Transgender Health and developed the Thai Handbook of Transgender Healthcare Services as a tool to guide the development and expansion of transgender-competent care service models in Thailand and the region.

In 2020, Tangerine Clinic and a sex worker-led SWING Foundation proposed the inclusion of gender-affirming care under Thailand's UHC using these community-collected data. The proposal was selected and proceeded to a two-year effective coverage study being conducted in 2023. Together with persistent advocacy from rights-based civil society organizations and the Foundation of Transgender Alliance for Human Rights to all political parties for transgender-inclusive policies, following the General Election in 2023, the government announced to support gender-affirming care as their priority and anticipated to include it as part of UHC within 2024, in parallel with the effective coverage study.

**Lessons learned:** International funding was vital for the entire policy change process, including the establishment of a transgender-led health service model, data collec-

tion, feasibility demonstration, and evidence-based advocacy for sustained and scalable programs. Concerted stakeholder efforts were crucial for amplifying the needs and requiring changes. Engaging with political bodies was important as they played a decision-making role.

**Conclusions/Next steps:** Community-driven, evidence-informed policy change processes can enhance health equity towards an ending HIV goal. Countries receiving international funding must use them in a catalytic way from demonstrating feasibility of innovative models to advocate for sustainability/domestic financing.

## TUPEF691

Perspectives from Thailand's National Stakeholders on implementation of key population-led hepatitis C virus test and treat: a qualitative pre-implementation study

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**Background:** Due to high Hepatitis C virus (HCV) prevalence and low linkage to treatment with direct acting antivirals (DAAs) among key populations in Thailand, we plan on implementing HCV test and treat services in two community-led clinics in Bangkok. HCV testing and DAA treatment will be conducted and delivered by key population lay providers experienced in providing HIV and related health services. We explored perspectives from national HCV stakeholders to inform implementation strategies.

**Methods:** From September-November 2023, we conducted in-depth interviews with national HCV stakeholders from the Ministry of Public Health's Department of Disease Control (DDC), National Health Security Office (NHSO), Bangkok Metropolitan Administration (BMA), and the Thai Association for the Study of the Liver (THASL). Semi-structured interviews were audio recorded, transcribed and analyzed using selected thematic analysis guided by the Consolidated Framework for Implementation Research. Data were coded in Dedoose program.

**Results:** All (n=10) stakeholders agreed that implementing key population-led HCV test and treat at community-led clinics was feasible. All noted key facilitators within the construct Culture in the domain Inner Setting: the subconstructs human equality-centeredness and recipient-centeredness (proven track records of community-led clinics of providing stigma-free HIV and sexual health services and of identifying and recruiting members of key populations). Identified barriers were: 1. Outer Setting domain, construct Policies and laws (legal challenges



in keeping DAA stocks in community-led clinics), 2. Inner Setting Domain, construct Structural Characteristics, sub-construct Work Infrastructure (lack of standard operating procedures - SOPs), and 3. Individuals domain, Characteristics subdomain (capability of lay providers to conduct physical examinations).

**Conclusions:** Thailand's national HCV stakeholders showed support and confidence in implementing key population-led HCV test and treat at two community-led clinics. Community-led clinics can play instrumental roles in providing stigma-free health services beyond HIV and have the capacity to integrate HCV as part of comprehensive service package. Identified barriers will inform the design of multi-level implementation strategies, including capacity-building interventions and certification for lay providers, SOP-development, arranging teleconsultations with physicians, and advocating for policy changes related to DAA stock, to support successful implementation of the key population-led HCV test and treat service.

## TUPEF692

### Enhancing workplace inclusion to mitigate HIV risks among vulnerable transgender communities in India

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**Background:** The Trans-communities in India faces multifaceted challenges, including societal stigma, educational exclusion, discrimination which exacerbates vulnerability to HIV/AIDS. These challenges add to workplace exclusion and other employment opportunities which further marginalizes the community and vulnerability to HIV. The legal recognition of Transgender identity by the Apex court in 2014 and The Transgender Persons Act 2019 has led to a wave of workplace inclusion by employers. Diversity and Inclusion is still at a very nascent stage in India but is paving an alternative employment opportunity for Trans-communities.

**Description:** The Humsafar Trust, LGBTQ+ community-based organization (CBO) leads an initiative named SAKSHAM (Empowered) - Communities Leading inclusion, with a dual faced approach which engages with employers and marginalized communities for workplace inclusion by bridging the gap between the two. Community engagement involves, Upskilling, resume building, and workplace readiness programs in collaboration with employers. Employers' engagement involves, a multidimensional approach using community lead sensitization Sessions, Policy review and drafting and community mobilization for targeted hiring. Workplace inclusion for transgender person not only provide an equal opportunity but also serves as an alternative from sex work thus reducing the risk of HIV and violence.

The step towards having Inclusive policies at workplace like including Gender neutrality, Transition care in employee Health benefits, leave for transition, Mental care support and other employee benefits provide a comprehensive approach towards minimizing the risk for HIV and strengthening inclusion.

**Lessons learned:** A continued engagement with employers and negotiating for "Skills over Qualification" is the need of the hour. Workplace inclusion happens with a readiness at both the ends of the chain. Employers need to Collaborate with the CBO for effective Trans Hiring. CBOs need to work with the potential recruiter to enhance their understanding of HIV related scientific and sensitive information which will be beneficial for all their employees, transgender persons included.

**Conclusions/Next steps:** SAKSHAM will serve as a peer learning model for other Community based organization to facilitate Workplace inclusion in their region. Having more community driven initiatives will lead to inclusion of Transpersons in workplace and mitigate the HIV/AIDS risk for vulnerable Trans-communities.

## TUPEF693

### Challenges in the sustainability of the national HIV/AIDS program in Brazil: a critical analysis of the economic impact of dolutegravir and patent barriers

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**Background:** The challenge of sustainability in the supply of dolutegravir (DTG) in Brazil is aggravated by its high price, significantly compromising the antiretroviral (ARV) public budget in 2023. Being the most used medicine for HIV treatment in Brazil, the patent barrier prevents the acquisition of generics, price reduction through competition and compromises vital health resources.

This study aims to understand the cost structure of DTG production and to indicate the price this ARV could be offered in developing country markets.

**Methods:** National price and their respective suppliers were obtained from a Ministry of Health document in November 2023, utilizing the Access to Information Law (reflecting 2023 prices).

Additionally, the lowest international price was derived from a publication by The Global Fund in April 2023. Direct manufacturing costs and factory prices for DTG 50 mg were calculated based on cost structure data, considering direct costs (equipment, salaries, materials), the IFA price at US\$ 400.00/kg, profits and general expenses at 50%. The production cost was compared with the price charged in Brazil in the acquisition of DTG by the Ministry of Health through the strategic alliance between Fiocruz-ViiV/GSK in 2023.



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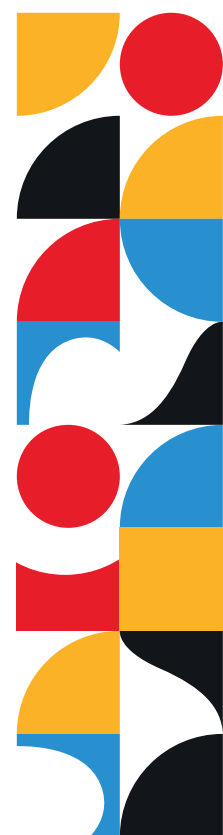
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**Results:** From comparisons with the international price, it was found that the Brazilian government pays an excessive price for dolutegravir, despite having a significant demand.

A DTG tablet unit could be produced for R\$ 0.68, however, the Brazilian Ministry of Health paid R\$ 4.40 per tablet in 2023. Considering the volume of 200 thousand tablets acquired, it compromised 51% of the entire ARV budget of 2023.

**Conclusions:** The commercialization of DTG in Brazil is covered by a granted patent, which constitutes a barrier to the entry of generic competitors. The difference between the production cost and the price charged in Brazil shows that the price is not directly related to the cost of production and it reflects the price-setting power of the pharmaceutical industry in monopoly situations.

The high price paid by the Brazilian government compromises the public budget, threatens the sustainability of the national HIV program and highlights the negative impact of patents on national public policy and access to essential medicines.

## TUPEF694

### Navigating the HIV response along communities of PLHIV and key populations in MENA: the experiences of Love Alliance MENA

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**Background:** There have been persistent challenges to prevent and treat HIV in the Middle East and North Africa (MENA) region since the implementation of the first HIV programmes. Major issues include absence of clear strategies to prevent HIV transmission, inadequate resources and staffing in treatment facilities, and, most importantly, the neglect of key populations' needs in HIV policies.

**Description:** GNP+ conducted research among communities of PLHIV and key populations, besides key stakeholders, to acquire deeper insights into HIV policies in MENA, and potential entry points for dialogues with governments for expanding and improving access to HIV prevention, treatment, care in the region.

**Lessons learned:** While expecting current countries and societies in the MENA region to advance human rights for key populations may be unrealistic, there are potential avenues through which PLHIV, including KPs, could have an improved quality of life in these countries.

One crucial step is for MENA governments to invest in researching the realities faced by PLHIV to guide the development and implementation of efficient HIV programmes.

Currently, HIV is considered a non-priority issue, resulting in limited government investigation into the matter and sustaining a growth in new HIV infection rates.

Global health governance organisations also must reconsider the exclusion of MENA as a non-priority region for investments in the HIV response, especially with 30% annual increase in new infections for the past decades. The lack of space at key advocacy platforms is hindering communities' possibilities to voice its needs and establish crucial collaborative advocacy efforts.

**Conclusions/Next steps:** Community and expert recommendations for re-introducing HIV as a priority issue include:

- Strengthening communities capacity to engage in constructive dialogues with key stakeholders, and in the design and implementation of HIV programs supporting their empowerment and advocacy skills.
- Enhance the capacity of CSOs and health facilities to deliver quality and integrated HIV services for sex workers, LGBTQI, and PWUD, using innovative approaches such as online outreach and self-testing.
- Facilitate exchange of knowledge on best practices and lessons learned among KPs from MENA through increasing funds for community-led organisations and encouraging global platforms working on HIV to include MENA advocates in their strategies and working plans.

## The role of politics, human rights and law in pandemic preparedness

### TUPEF695

#### Fading identities in the COVID 19 era; improving access to gender affirming care and HIV services for transgender women and men in Malawi

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**Background:** The COVID-19 pandemic exacerbated healthcare challenges for transgender people, especially access to essential services like gender-affirming care and its link to HIV services in Malawi.

Pandemic-related lockdowns, restricted travel, and limited imports of non-essential drugs and medications (including gender-affirming medications) between 2020/21 had a negative impact on transgender people who were dependent on hormonal use.

The cessation of routine doses had serious physical and mental health consequences, discouraging many people from seeking HIV services and care.



**Description:** Recognizing these difficulties, a collaborative effort between two medical practitioners and a local transgender group addressed the crisis by providing hormone access to 25 transgender women and 20 transgender men.

This initiative ensured an uninterrupted supply of routine doses and distributed essential HIV services such as self-test kits, condoms, and lubricants thanks to a global COVID-19 Emergency Response grant from Outright Action International.

This intervention not only restored access to essential healthcare but also highlighted the importance of understanding the interactions between hormone treatments and HIV medications in order to avoid the discontinuation of ART or PrEP.

**Lessons learned:** This trailblazing initiative, led by medical professionals, not only provided critical healthcare but also dispelled myths that prevented transgender people on hormones from accessing HIV services.

The study emphasized the critical role of hormonal treatments in enabling transgender people to access HIV services, as well as the critical need for inclusive healthcare policies that address the marginalized based on gender identity.

**Conclusions/Next steps:** To ensure that this marginalized group is not excluded from care, transgender considerations should be incorporated into future pandemic planning and emergency response frameworks.

To support equity and ensure broadened gender-responsive pandemic plans for the Ministry of Health, urgent advocacy and gender affirmation therapy integration into HIV programming is required.

## TUPEF696

### Navigating COVID-19 vaccination challenges among people living with HIV in Uganda

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**Background:** In Sub-Saharan Africa, despite people living with HIV (PLWH) being a priority group for COVID-19 vaccination, there is a deficit of data on vaccine acceptability. This study conducted in Uganda addresses this gap, aiming to describe the acceptability of COVID-19 vaccines and identify associated factors among PLWH.

**Methods:** A cross-sectional study was undertaken at six accredited ART clinics in Kampala, involving 767 PLWH aged ≥18. Participants were recruited purposefully, and vaccine acceptability, defined as willingness to accept any available COVID-19 vaccine, was gauged through interviewer-administered questionnaires. The study also assessed vaccination status, complacency towards COVID-19, vaccine confidence, and perceived vaccine convenience. Modified Poisson regression with robust standard errors analyzed factors influencing vaccine acceptability.

**Results:** Of the enrolled participants, 63% were women, and they exhibited a higher vaccination rate (73% vs. 63% in men). Among the unvaccinated, 72.7% expressed willingness to accept vaccination, indicating notable acceptability.

Factors positively associated with vaccine acceptability included increased vaccine confidence (adjusted prevalence ratio [aPR] 1.44; 95% CI: 1.08-1.90) and the perception that obtaining a vaccine would be easy (aPR 1.57; 95% CI: 1.26-1.96).

**Conclusions:** The study reveals high vaccine acceptance among PLWH in Uganda, particularly among women. Ensuring widespread vaccine confidence and easy accessibility should be prioritized in vaccination programs targeting PLWH to effectively address the intersection of COVID-19 and HIV vulnerabilities.

## TUPEF697

### Disease X preparedness and response: the contribution of the HIV response

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<sup>3</sup>Georgetown University, Center for Global Health Policy & Politics, Washington, United States

**Background:** HIV and SARS-CoV-2 are novel viruses that caused pandemics, with 36 and 7 million deaths, respectively. Disease X is a hypothetical pathogen that could cause a future pandemic.

This study examined how the lessons learned from the HIV response can inform Disease X preparedness.

**Description:** We conducted a published and grey literature review on the HIV and SARS-CoV-2 response, focused on societal and programmatic enablers and identified key elements mobilised by civil society, governments, and global actors that could be pivotal in Disease X response.

#### Lessons learned:

- Global public financing: HIV funding mechanisms enabled redistribution of resources to LMIC's HIV responses. The lack of ready financing undermined the SARS-CoV-2 response. Disease X needs rapid funding mechanisms for response, not just preparedness.
- Community engagement: In HIV responses, funded community-led/based organisations provide adequate services and accountability and participate in decisions.
- Health technology/production: HIV and SARS-CoV-2 grew due to unequal countermeasure access. HIV technology transfer diversified production, whereas transfer was too limited in SARS-CoV-2. Disease X preparedness should already build on the HIV model.



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- Leveraging Infrastructure: Laboratory, surveillance, and community systems for HIV have been adaptable for addressing pandemics like SARS-CoV-2, showing the importance of contingency planning and differentiated service delivery.
- Human rights: To build trust and reach the marginalised, a rights-based approach, including reducing stigma, is necessary for pandemic responses.
- Surveillance and data utilisation: Disease monitoring involving communities, identifying hotspots, and understanding the demographics of inequalities distinguished effective response.
- Policy and legislative frameworks: Inclusive policies and interventions were determinants in the HIV response, especially those addressing discrimination and free access to services. Disease X response must ensure that access to prevention and treatment is genuinely inclusive.
- Intersecting inequalities: Vulnerability to HIV and SARS-CoV-2 intersects with inequalities such as race, gender, ethnicity, or socioeconomic status, exacerbating the impact of the pandemic.

**Conclusions/Next steps:** Many lessons from HIV were not taken up in COVID-19 and must be in future pandemics. Addressing inequality, using a global public goods approach, and mobilising communities was decisive. Policies and programmes for Disease X should focus on the disease and improving at-risk people's social and economic conditions.

## TUPEF698

Consequences of large anti-drug drive in Bangladesh, and program and advocacy measures to limit the disaster among the people who inject drugs (PWID) and harm reduction program

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**Background:** The harm reduction program for PWID has initiated in Bangladesh in 1998. NSP, which is an integral part of the program has been faced an enormous challenge from 2018 to 2020 due to launching a large anti-drug drive by the Law Enforcement Agencies (LEA). Lack of contact with Peer Outreach Workers (POW) due to evictions led to increase the unsafe injecting and syringe disposal, posing a serious public health threat for both PWID and the broader community. This period highlighted the fragility of harm reduction efforts and the need for adaptable strategies to navigate challenging circumstances.

**Description:** Based on the findings from various research, conducted between 2018-19 a series of interventions were launched in 13 districts with 35 Drop-In Centers (DICs) for PWID. By implementing innovative strategies like SOP/guideline development, training of staff at different levels, organizing community campaigns, installing drop boxes for needle syringe disposal in absence of POW, the program tackled safe disposal issues. In addition, Task Forces has been formed by Network of People Who Use Drugs (NPUD) to conduct advocacy with local units of LEA to reduce the harassment.

**Lessons learned:** Building upon the initial findings, 150 drop boxes were strategically placed in catchment areas surrounding the DICs. To maximize program effectiveness, six rounds of comprehensive orientation sessions were conducted for program staff.

Additionally, two rounds of orientation sessions were organized for LEA to foster collaboration and understanding regarding the importance of harm reduction interventions and 140 community-based safe disposal campaigns were implemented.

As a result, collection of used needle and syringes surpassed 80% at the end of 2020, which was only 40% prior 2020. Knowledge on safe disposal among the staff increased from 40% to 90%. Hepatitis C among the PWID was found 33.2% in the year 2020, which was similar with earlier rounds.

**Conclusions/Next steps:** Advocacy with LEA to remove punitive laws is highly important to avoid sudden drive towards the PWID. Otherwise, increase of the prevalence of HIV and Hepatitis C is inevitable. Advocacy also is required to introduce Safe Injecting Sites (SIS) in Bangladesh taking lessons from best practice models to ensure optimum safe injecting and disposal.

## TUPEF699

Strengthening pandemic preparedness and response through CDC's technical assistance for Global Fund COVID-19 Response Mechanism grants

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**Background:** To combat the COVID-19 pandemic, the US Government increased its funding to the Global Fund to Fight AIDS, Tuberculosis, and Malaria (GFATM) to support countries in responding to COVID-19 and mitigating the pandemic's impact on HIV, tuberculosis, and malaria (HTM) programs.

To support GFATM principal recipients (PRs) and host country governments, the US Centers for Disease Control and Prevention (CDC) received \$50 million from the US Department of State to provide technical assistance (TA) in strengthening country responses to COVID-19.



**Description:** CDC's approach to TA focused on two primary objectives: supporting GFATM's COVID-19 response mechanism (C19RM) grants at the country level and seconding staff to the GFATM Secretariat.

On-site technical experts were deployed by ten CDC implementing partners in 34 countries, supporting governments with national COVID-19 responses, pandemic preparedness and response (PPR) capacity, and HTM program continuity. CDC personnel across multiple divisions provided strategic support to improve PPR globally by leveraging the agency's surveillance, laboratory diagnostics, and emergency management expertise.

CDC teams at the global and country levels routinely met with PRs, host country governments, and TA providers to ensure that the CDC-supported TA was adaptive, reflecting the pandemic's evolving priorities.

**Lessons learned:** CDC's role in the C19RM initiative underscores the importance of providing technical expertise to recipients of health emergency funds. Integrating CDC's technical knowledge at the global level (at the GFATM secretariat) and in-country presence enhanced health responses and systems resilience that mitigated the effects of the COVID-19 pandemic. The initiative demonstrated the value of collaborative and expert-led TA to support governments in global health emergencies. Successful outcomes were improved disease surveillance, enhanced public health emergency management, and continuity of critical health services.

**Conclusions/Next steps:** The findings highlight the need for ongoing investment in technical support for PPR and health systems resilience. The CDC's targeted provision of TA met a critical need for GFATM C19RM recipients. This is an important lesson for future activities funded by GFATM and other donors. Providing TA tailored explicitly to each country's needs maximizes the impact of GFATM's investments in improving health outcomes during the pandemic and beyond.

## Politics and geopolitics

### TUPEF700

Providing humanitarian assistance to key populations and PLHIV in Ukraine

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**Background:** After the Russian full-scale invasion of Ukraine, over 6.2 million Ukrainians have become refugees, an additional 5.1 million have been internally displaced, and millions live in areas affected by military operations. These include key populations (KP) and PLHIV with their specific needs that have been exacerbated with the start

of the war. In 2022-2023, the Elton John AIDS Foundation (the Foundation) supported five community-based humanitarian assistance and HIV service projects to meet the needs of KPs and PLHIV in Ukraine.

**Description:** Project activities included:

1. HIV testing, linkage, ART delivery, and transportation of blood samples to repair the disrupted links between remote rural sites and the regional center;
2. Small cash transfers to members of KP communities to cover their transportation, food, accommodation and medicine expenses in transit to safer sites;
3. Direct humanitarian assistance in the form of food, hygiene supplies, warm clothing, blankets, power banks, lanterns and other basic items;
4. Winterization of shelters for KPs; and,
5. Developing the capacity of civil society organizations (CSOs) and initiative groups to enable their access to humanitarian assistance resources.

**Lessons learned:** Over 68,000 people from KPs and PLHIV directly benefitted from humanitarian assistance. Eighty CSOs received technical assistance on applying for, managing and reporting on humanitarian aid for KPs and PLHIV.

Forty-five shelters benefitted from winterization audits and repairs to power generators, batteries, bedding and other equipment and furnishing.

Factors of success included:

1. Community groups on the ground understanding immediate most urgent needs of their members;
2. Trusted CSO networks available to quickly move resources to the people in need;
3. Dedication of CSO staff to their communities and beneficiaries.

In addition to the chaos of the war, the challenges were:

1. Stigma and discrimination towards members of KPs in providing shelter and other humanitarian services;
2. Lack of knowledge and experience in KP and HIV service CSOs accessing humanitarian assistance resources;
3. The balance between due diligence and the urgency of needs.

**Conclusions/Next steps:** Under the ongoing full-scale invasion of Ukraine, humanitarian needs remain high. International humanitarian agencies should recognize and meet the needs of KPs and PLHIV alongside with other vulnerable groups.



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## TUPEF702

Evidence-informed advocacy for sustainable change - how communities came together to change global policies

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**Background:** The collapse of the Venezuelan economy amid instability and widespread human rights violations resulted in a complex humanitarian crisis that put the health system in ruins, reversing progress against HIV and other diseases. ICASO's efforts to raise awareness about this helped to mobilize international support.

The collaboration included supporting community-led monitoring of AIDS and other related services and evidence-informed advocacy to address the unique challenges faced by PLHIV. Advocates approached the Global Fund in 2016 requesting assistance to Venezuela.

The Global Fund expressed concern about the situation but only provided support in 2018 when the Board adopted a policy of providing exceptional funding to countries in crisis that did not meet the eligibility criteria. For five years, the Global Fund supported Venezuela's TB, HIV, and malaria interventions, including monitoring led by people living with HIV.

**Description:** The multi-prong, multi-level, evidence-based advocacy resulted in, among others, a decision by the Global Fund Board in November 2022 to make Venezuela eligible for the VIH component as Venezuela was temporarily unclassified by the World Bank. The advocacy approach was grounded in robust evidence collected and analyzed by communities, combining epidemiological data, human rights perspectives, and real-life narratives of PLHIV.

The evidence not only shed light on the prevalence of HIV but also highlighted the intersections of health disparities, human rights violations, economic challenges, and political instability that exacerbate HIV.

**Lessons learned:** Helping communities develop their capacities relating to evidence generation and analysis in their local contexts is a valuable strategy for enabling communities to shape health infrastructure, policy decision-making, and partnerships more effectively.

Evidence-informed advocacy effectively drives policy changes, mobilizes resources, and fosters a supportive environment for PLHIV in Venezuela.

**Conclusions/Next steps:** By aligning advocacy efforts with the Global Fund's mission, stakeholders contribute to a comprehensive response that addresses the multi-faceted challenges faced by PLHIV in the context of Venezuela's complex socio-political landscape.

## WEPEA001

High resistance to second generation non-nucleoside reverse transcriptase inhibitors among HIV-1 treatment naïve individuals with multi-class drug resistance in Botswana

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**Background:** Understanding the dynamics of transmitted HIV drug resistance is paramount as pre-existing resistance could impede the efficacy of future antiretroviral therapy (ART). We therefore evaluated if treatment naïve individuals with multi-class drug resistance (MDR) are susceptible to second-generation non-nucleoside reverse transcriptase inhibitors (NNRTIs).

The study aimed to explore the viability of doravirine (DOR), etravirine (ETR) and rilpivirine (RPV) as alternative therapy for treatment naïve individuals with MDR.

**Methods:** This was a retrospective study utilising 1280 HIV-1C proviral *pol* sequences of treatment-naïve individuals who were enrolled on a randomised trial in 30 communities in Botswana. We analysed for major HIV drug resistance mutations (DRMs) according to the Stanford HIV drug-resistance database. Participants harbouring resistance to 2 or more ARV classes (MDR), with at-least NNRTI, were further evaluated for resistance to DOR, ETR, and RPV. The Stanford "DRM penalty scores" were utilised to predict resistance levels.

**Results:** Within the 1280 individuals, 143 (11.2%; 95% CI: 9.5-13) had resistance to at-least one ARV class, with 45/143 (31.5%) resistant to NNRTIs. Among the 45, 27 (60%) had resistant to one drug class and 18 (40%) had multi-class drug resistance. Of the 18, 14 (77.8%; 95% CI: 37.9-68.3) had resistance to all three ARVs, DOR, ETR and RPV. Majority of participants had high level RPV (85.7%) and DOR (45.8%) resistance.

The predominant mutations were G190E (50%), associated with intermediate-ETR-resistance, and high-DOR- and RPV-resistance, and K101E (21.4%) associated with low-level-DOR and ETR-resistance, and intermediate-RPV-resistance (Table 1). Individuals failing second-generation NNRTIs had high prevalence of resistance to nucleoside

reverse transcriptase inhibitors (13/18; 92.9%) and protease inhibitors (7/18; 50%). No integrase strand transfer inhibitor resistance was observed within these individuals.

	DOR (n=14)	ETR (n=14)	RPV (n=14)
<b>Overall (%)</b>	<b>77.8</b>	<b>77.8</b>	<b>77.8</b>
Low Level	29.2	33.3	0
Intermediate	25.0	38.1	14.3
High Level	45.8	28.6	85.7
<b>Specific Mutations</b>			
L100I	8.3 <sup>a</sup>	9.5 <sup>b</sup>	9.5 <sup>c</sup>
K101E	29.2 <sup>a</sup>	33.3 <sup>a</sup>	33.3 <sup>b</sup>
V106M	16.7 <sup>b</sup>	-	-
Y181C	-	14.3 <sup>b</sup>	14.3 <sup>b</sup>
G190E	33.3 <sup>c</sup>	38.1 <sup>b</sup>	38.1 <sup>c</sup>
H221Y	-	-	9.5 <sup>a</sup>
F227L	4.2 <sup>c</sup>	-	-

<sup>a</sup> Mutation associated with low level resistance

<sup>b</sup> Mutation associated with intermediate resistance

<sup>c</sup> Mutation associated with high level resistance

- Mutation associated with susceptibility

Table 1. Prevalence of DOR, ETR and RPV resistance.

**Conclusions:** We report a high proportion of resistance to second generation NNRTIs among treatment-naïve individuals in Botswana. Therefore, we strongly suggest genotypic testing prior to ART use among treatment naïve individuals.

## WEPEA002

HIV-2 drug resistance and viral load in HIV-2-infected adults in Burkina Faso, West Africa

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**Background:** In Burkina Faso, there are few data on HIV-2 viral load and HIV-2 antiretroviral resistance genotyping for better management of HIV-2-infected individuals.

This study aimed to evaluate HIV-2 viral load and HIV-2 antiretroviral resistance in adult patients infected with HIV-2 in Burkina Faso, West Africa.

**Methods:** This cross-sectional study was conducted from February 2017 to March 2019. The study included HIV-infected adult patients receiving antiretroviral treatment and followed up at care centers in Ouagadougou, Burkina Faso. Whole blood samples were collected, and plasma HIV-2 viral loads were determined using in-house assays from plasma on the ABI PRISM 7500 thermal cycler (Applied Biosystems, USA). For HIV-2 antiretroviral resistance testing, nucleic acids were extracted from plasma. HIV-2 reverse transcriptase and protease genes were amplified, sequenced, and analyzed for antiretroviral resistance mutations and HIV-2 group.



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Genotypes were assessed for evidence of antiretroviral resistance using the HIV2EU web tool and the Stanford HIVdb program for HIV-2.

**Results:** A total of 126 adult HIV-2-infected patients were included. The mean age was  $58.99 \pm 8.66$  years. Women were the most represented (63.5%). Most patients (55.5%) had an undetectable viral load, and only 15.9% had a high viral load (over 1000 copies/mL). Both groups A and B were detected in this study, the majority being group A (15.1%). HIV-2 subtype CRF01\_AB was detected in 3 patients (3.75%). Only seven patients had antiretroviral resistance mutations. RT mutations were (K65R, Q151M, M184V) and PR mutations were (V47A, I84V, I82F, I50V).

**Conclusions:** This study revealed recent data on the status of HIV-2 viral load and genotypic resistance in Burkina Faso. Although few HIV-2 patients on ARV therapy have developed resistance, it is essential to set up a system for monitoring HIV-2 resistance to antiretrovirals.

## WEPEA003

Tenofovir and doravirine are potential reverse-transcriptase analogs for combination with the new reverse-transcriptase translocation inhibitor (Islatravir) among treatment-experienced patients in Cameroon: designing future treatment strategies for low- and middle-income countries

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**Background:** Islatravir is a new antiretroviral that inhibits HIV-1 reverse transcriptase through multiple mechanisms. M184V mutation have been shown to reduce the in-vitro antiviral activity of islatravir. Thus, long-term exposure to nucleoside(NRTI) and non-nucleoside(NNRTI) reverse transcriptase inhibitors could reduce the susceptibility of islatravir.

Our objective was to evaluate the predictive efficacy of islatravir and potentially active antiretrovirals for combination therapy among patients failing ART in Cameroon.

**Methods:** Using the CIRCB Antiviral Resistance database in Cameroon, 1716 sequences were analysed from patients failing first-line ART(2NNRTI+NRTI, n=1016) and second-line(2NNRTI+PI/r, n=710). HIV-1 sequences were analyzed using Seqscape.v.2.6 and drug-resistance mutations (DRMs) were interpreted using Stanford HIVdb.v9. Patterns

of pairwise interactions were analysed between M184V and other NRTI and NNRTI DRMs. Fisher's exact test was performed to assess difference in the co-occurrence of the mutated residues with variables related to the independent assumption.

**Results:** Median(IQR) age of the study-population was 41 [29-57] years; 61.2% female; with a broad diversity of HIV-1 non-B: CRF02\_AG (53.3%), A1 (18.2%), D (5.7%), 22 other viral clades (22.8%). The overall prevalence of resistance to NRTI and NNRTI was 52.4% and 31.8% respectively. The most frequent NRTI DRMs were M184V (52.4%), M41L (17.3%) and T215F (12%). For NNRTI, the most frequent DRMs were K103N (31.8%), Y181C (16.7%) and G190A (12.3%).

After adjustment, NRTI-DRMs involved in positive correlations with M184V on first-line ART was L210W ( $\phi=0.12$ ,  $p=0.0001$ ); on second-line ART M41L ( $\phi=0.31$ ,  $p<0.0001$ ), D67N ( $\phi=0.29$ ,  $p<0.0001$ ), K70R ( $\phi=0.26$ ,  $p<0.0001$ ) and L210W ( $\phi=0.22$ ,  $p<0.0001$ ). For NNRTI-DRMs, M184V positively correlated with V106A ( $\phi=0.11$ ,  $p=0.029$ ), E138Q ( $\phi=0.27$ ,  $p=0.0008$ ) and G190A ( $\phi=0.13$ ,  $p=0.001$ ) for first-line ART patients; K103N ( $\phi=0.22$ ,  $p<0.0001$ ) and G190A ( $\phi=0.18$ ,  $p<0.0001$ ) for second-line ART patients. Following these covariations, potentially active antiretrovirals to combine with islatravir were TDF (partial efficacy) and Doravirine (fully active).

**Conclusions:** Overall, high rate of resistance to nucleos(t)ide and non-nucleoside reverse-transcriptase inhibitors has been observed in people failing first- and second-line ART in Cameroon.

According to our data, Islatravir can serve as an additional therapeutic weapon, particularly if combined with TDF and/or Doravirine (better if with an integrase inhibitor), in rescuing regimens after first- or second-line ART failure in LMICs sharing similar programmatic challenges like Cameroon

## WEPEA004

LEF-1/RBEIII cluster duplication stabilizes HIV-1 transcriptional silence

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**Background:** We recently reported the emergence of several LTR variant strains of HIV-1 in India, containing a significant impact on viral transcription and latency properties. For example, RBEIII motif duplication requires an activation threshold 4-10 folds higher for efficient latency reversal. While the effect of duplication of the NF- $\kappa$ B (predominantly transcription-enhancing) and RBEIII (R, predominantly transcription-suppressing) motifs has been extensively characterized in our laboratory, the im-

pact of the LEF-1 (L)/RBEIII cluster co-duplication on HIV-1 transcription has not been examined, which is the primary aim of the present work.

**Methods:** We examined the latency profiles of a panel of sub-genomic reporter viruses using Jurkat and primary CD4 T-cells under variable activation conditions by flow cytometry.

Further, latent reservoir stability was evaluated in a cohort of 10 subjects in the early or chronic phase of the infection, using U-TILDA and deep sequencing of proviral DNA and cell-associated RNA. Site-directed inactivation of the LEF-1 motif and pharmacological interventions using LiCl were performed to examine LEF-1-mediated Wnt-signaling. Integration site analysis is performed using Integration Site Loop Amplification (ISLA) assay.

**Results:** Variant viral strains containing the LEF-1/RBEIII motif co-duplication (LRLR-LTR strains) established latency at a rate significantly faster than the canonical virus and showed significant resistance to latency reversal in primary CD4 cells and Jurkat cells.

Furthermore, LEF motif inactivation caused significantly enhanced transcriptional activity. Pharmacological intervention of the LEF-1-mediated signaling annulled activator-induced viral gene expression. Latent reservoir stability is being evaluated in enriched CD4 T-cells using the Integration Site Loop Amplification (ISLA) assay and deep sequencing.

Additionally, EMSA and CUT&RUN are used to assess the transcription factor occupancy at the LEF-1 motif.

**Conclusions:** In summary, LEF-1/RBEIII motif co-duplication substantially impacted the latency of HIV-1C, requiring an approximately 16-fold higher activation threshold level for latency reversal. The unique high-magnitude resistance to latency reversal appears to be HIV-1C-specific, as demonstrated for the first time.

Our data allude to a negative influence of the LEF-1-mediated signaling on HIV-1C transcription, which contributes to establishing stabler latent reservoirs. Our work is relevant to viral evolution, reservoir dynamics, and cure research.

## HIV pathogenesis

### WEPEA005

#### In silico genomic recombination, analysis reveals HIV-1/HIV-2 mosaic genomes in circulation

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**Background:** Recombination is a shared feature among retroviruses, which occurs when reverse transcriptase enzyme transfers between the two RNA templates in these pseudo-diploid virions. Recombination events result in a progeny of viruses carrying genomic fragments from two genetically distinct parental strains. Currently, more than 118 HIV-1 inter-subtype recombinants have been documented but there is no record of inter-type (HIV-1 and HIV-2) recombinants. We hypothesized that interaction between HIV-1 and HIV-2 in dually infected individuals could result in inter-type recombinants.

**Methods:** To test this hypothesis, we developed a bioinformatic pipeline to analyze HIV near-full length genomes (NFLGs) for evidence of recombination. NFLGs were downloaded from the Los Alamos HIV-DB and visualized in UGENE. We wrote R-scripts for multiple sequence analysis in R. The resultant multiple sequence alignment was used as input file in RDP4 for full exploratory scanning to detect recombinant sequences. Identified recombinant sequences were confirmed by evolutionary analysis.

**Results:** In total, 504 NFLGs from 6 west African countries were included in this study. RDP4 detected 19 potential HIV1/HIV2 recombinants out of which 6 sequences passed all the seven statistical tests built in RDP4. Three of the 6 sequences were further confirmed as recombinants by phylogenetic analysis. Recombination hotspots were found to be located between nucleotide position 4502 and 6754, spanning from integrase to Env genomic regions. The affected genes code for integrase, protease, vif, vpr, tat, Rev, vpx/vpu, and Env. The largest genomic fragment transferred from a minor to a major parent was 1566 nucleotides long. We identified three putative HIV-1/HIV-2 mosaic sequences. Recombination hotspots were dense in the region between 4502 and 6754 nucleotide positions affecting 8 genes.

**Conclusions:** The affected genes including integrase and Env are important drug and/or vaccine targets. Thus, recombination between HIV-1 and HIV-2 might confer drug resistance and/or immunological escape. Moreover, Env is an important player in cell invasion and recombination in this gene would interfere with viral transmission, hence the slow disease progression in coinfections.



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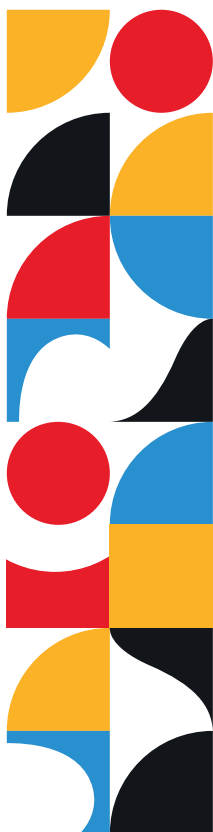
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## WEPEA006

### Inflammation and immune activation in lactating women living with HIV and taking antiretroviral therapy in the postpartum period: effects of gut microbiota imbalance and gut dysfunction

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**Background:** Despite success of antiretroviral therapy in controlling HIV viremia, chronic low-level viremia and gut microbiota dysbiosis remain challenges contributing to gut inflammation, immune activation and systemic inflammation. We investigated associations between the gut microbiota, microbial translocation, gut and systemic inflammation in lactating women living with HIV in Harare Zimbabwe.

**Methods:** Women living with and without HIV were enrolled at 6 weeks and followed up at 24 weeks postpartum. We used 16S rRNA sequencing to profile the gut microbiome. MesoScale V-Plex and ELISA assays were used to quantify plasma inflammatory, microbial translocation, monocyte activation and gut inflammation biomarkers. These included lipopolysaccharide-binding protein (LBP), soluble cluster of differentiation 14 (sCD14) and fecal calprotectin. Markers of HIV disease progression were also assessed.

**Results:** 77 lactating women were recruited of whom 35% were living with HIV. Alpha diversity indices did not differ by HIV status at 6 and 24 weeks postpartum. However, beta diversity differed significantly by HIV status ( $p < 0.001$ ). In women living with HIV, abundance of genera *Collinsella* and *Slackia* was higher whereas *Clostridium sensu stricto\_1* was lower.

We observed positive correlations between abundance of Actinobacteriota phylum ( $q = 0.018$ ) and genus *Actinomyces* ( $q = 0.032$ ) with LBP and fecal calprotectin respectively. Fecal calprotectin levels were similar by HIV status. In women living with HIV at 6 weeks postpartum, fecal calprotectin was elevated [158.1  $\mu\text{g/g}$  (75.3–230.2)] in those with CD4+ T-lymphocyte counts  $< 350$  cells/ $\mu\text{L}$  compared to those with  $\geq 350$  cells/ $\mu\text{L}$  [21.1  $\mu\text{g/g}$  (0–58.4)],  $p = 0.032$ . Higher plasma sCD14 levels were observed in women living with HIV at both time points,  $p < 0.001$ . Plasma LBP levels were similar by HIV status, but higher in women living with HIV who had elevated fecal calprotectin. Fecal calprotectin, LBP and sCD14 correlated positively with systemic inflammatory biomarkers.

**Conclusions:** Lactating women living with HIV had increased microbial translocation associated with gut inflammation. ART-mediated viral suppression possibly

preserves immune function with reduction in effects of HIV on the gut microbiota. Correlation of gut inflammation, microbial abundance and translocation with systemic inflammation may suggest a synergistic effect on health. Gut microbiota modification through probiotics could potentially control chronic inflammation in people living with HIV.

## WEPEA007

### Gut microbiome composition changes rapidly during primary HIV infection, but timing-of-ART initiation during this period has minimal long-term impact

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**Background:** The gastrointestinal (GI) tract is a major site of HIV replication, and gut microbes are intimately linked to immune function. We characterized the dynamic changes in GI microbiota that occur in primary HIV infection and as antiretroviral therapy (ART) is initiated.

**Methods:** The Sabes study (conducted from 2013–2017) followed cisgender MSM and transgender women in Peru for 2 years with monthly HIV testing; participants with acute and early HIV were rapidly enrolled and randomized to begin ART immediately or 6 months later.

We calculated Estimated Date of Detectable Infection (EDDI) using a published algorithm and collected stool samples throughout 4 years. 16S rRNA amplicon sequencing was performed on 841 samples from 164 Sabes participants, plus 17 controls without HIV and 30 with untreated chronic HIV. Analysis used PERMANOVA and linear mixed effect models to determine:

1. Effect of time since HIV acquisition (EDDI to enrollment:  $\leq 30$ , 31–60, or  $> 60$  days) on gut microbial composition ( $N = 49$ ) and
2. Impact of timing of ART initiation on gut microbiota.

**Results:** GI microbial diversity at enrollment was related to time since EDDI. Fecal phylogenetic diversity (Faith) was lower in samples closer to EDDI (Figure 1A).

Community composition (Weighted UniFrac) of samples shortly after acquisition (closer to EDDI) resembled HIV-negative samples, while samples farther from EDDI were closer to untreated chronic HIV (Figure 1B).

Fecal microbiota became less like HIV-negative samples and more like untreated chronic HIV samples within 60 days of HIV acquisition.

Over the course of the 4-year study, trajectories of overall gut microbiota composition did not significantly differ in those who had started ART immediately vs. deferred ART for 6 months.

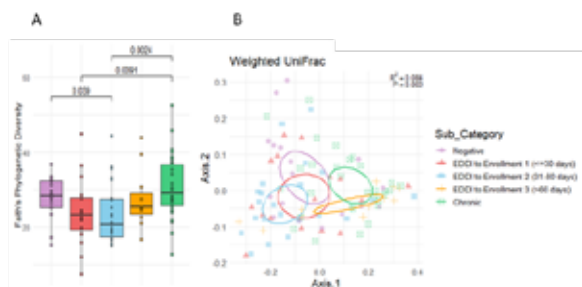


Figure 1. Comparison of microbial diversity metrics across EDDI-to-enrollment groups vs HIV negative and HIV chronic untreated groups.

**Conclusions:** In this Peruvian population, changes in gut microbiota composition were primarily related to the duration of HIV primary infection prior to ART initiation, with little long-term impact of timing of ART initiation.

## Host immune responses

### WEPEA008

#### Metabolic defects of exhausted CD8<sup>+</sup> T cells in people living with HIV

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**Background:** CD8<sup>+</sup> T cell exhaustion often occurs due to human immunodeficiency virus (HIV) persistence and is coupled to cellular metabolic alteration. Deciphering the metabolic landscapes at the transcriptomic level can provide insights to uncover potential intervention targets in chronic HIV-mediated cellular exhaustion.

This study aimed to investigate the differential metabolic gene expression and metabolic defects in the exhausted CD8<sup>+</sup> T cells derived from the people living with HIV (PLWH).

**Methods:** A total of 62 PLWH were recruited from the University of Malaya Medical Centre, Malaysia between September and December 2019. The cohort was divided into two groups:

- Aviremic antiretroviral therapy-treated (viral load <20 copies/ml) and;
- Viremic treatment-failure or treatment-naïve (viral load >20 copies/ml) groups.

From the peripheral blood mononuclear cells, naïve (CCR7<sup>+</sup> CD45RA<sup>+</sup>), effector (PD1<sup>+</sup> CD107a<sup>+</sup> and PD1<sup>+</sup>CD107a<sup>+</sup>), and exhausted (PD1<sup>+</sup> CD107a<sup>-</sup>) T cell subsets were isolated. Following RNA extraction from each subset, differen-

tial expressions of metabolic genes were analysed using NanoString Human Metabolic Pathways panel and Gene Ontology (GO) term enrichment analysis.

Key indicators of mitochondrial function including mitochondrial mass (MM), mitochondrial membrane potential (MMP) and reactive oxygen species (ROS) production were further analyzed. Targeted plasma metabolites involved in glucose and ROS scavenging metabolism were also measured in PLWH.

**Results:** Our results demonstrated higher levels of exhausted CD8<sup>+</sup> T cells with metabolic derangement in the viremic PLWH. Effector cells exhibited upregulated gene sets (log<sub>2</sub> fold change > 1) including T cell signalling, nucleotide, amino acid, fatty acid and mitochondrial metabolism relative to quiescent cells; intriguingly, down-regulation of these pathways (log<sub>2</sub> fold change < -1) were detected in the exhausted cells.

Increased *superoxide dismutase 2 (SOD2)* in the exhausted cells indicated high ROS level, correlated with high MM and low MMP. Besides, altered plasma metabolites including cysteine and tryptophan were also observed in viremic PLWH.

**Conclusions:** The transcriptomic and metabolite profiles of exhausted CD8<sup>+</sup> T cell in the viremic PLWH suggest that the alterations of mitochondria, ROS, cysteine and tryptophan level could jointly contribute to CD8<sup>+</sup> T cell exhaustion. Therefore, interventions to reverse these metabolic changes could be considered to restore metabolic fitness and CD8<sup>+</sup> T cell function.

### WEPEA009

#### Plasma proteomics analysis of Chinese HIV-1 infected individuals focusing on the immune and inflammatory factors afford insight into the viral control mechanism

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**Background:** Long-term non-progressors (LTNPs) with HIV infection can naturally control viral replication for up to a decade without antiretroviral therapy (ART), but the underlying mechanisms of this phenomenon remain elusive.

**Methods:** To investigate the relevant immune and inflammatory factors associated with this natural control mechanism, plasma samples were collected from 16 LTNPs, 14 untreated viral progressors (VPs), 17 successfully ART-treated patients (TPs), and 16 healthy controls (HCs). The OLINK immune response panel and inflammation



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panel were employed to detect key proteins, and the plasma neutralizing activity against a global panel of pseudoviruses was assessed using TZM-bl cells.

**Results:** Our findings showed that IL10, CXCL1, IL18, CXCL6, and CCL25 are crucial factors in the immune activity balance network of LTNP, with IL10 and CXCL1 identified as key nodes.

Additionally, TNFRSF9 showed positive correlations with neutralization breadth and Geometry Median Titer (GMT). The robust homeostatic regulation of the immune system in LTNP suppresses viral replication and avoids excessive inflammation.

Furthermore, we identified that the combination of IL17C, IL18, DDX58, and NF2 contributes to the discrimination between LTNP and VPs, while CXCL9 and CXCL10 may serve as auxiliary diagnostic indicators for the success of ART treatment.

**Conclusions:** In summary, this study identified a set of biomarkers in HIV-infected individuals at different infection states, each playing a role in immune balance regulation, plasma neutralization capacity, and antiviral treatment outcomes.

These findings provide important clues for further exploration of the mechanisms underlying HIV immune regulation.

## WEPEA010

### Characterization of HIV-specific follicular memory CD8 T cells: insights into transcriptional dynamics and functional attributes during acute and chronic infection

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**Background:** T helper cells in lymph node follicles are major reservoirs of HIV replication and continue to express viral gene products during treatment with ART. Follicular memory CD8 T cells expressing the homing receptor CXCR5 (mTf) can access these sites and contribute to the clearance of HIV. This study aimed to characterize HIV-specific mTf in people living with HIV (PLWH).

**Methods:** PLWH were recruited from Germany and Tanzania (total  $n = 30$ ). HIV-specific and HIV-nonspecific memory CD8 T cells were identified in peripheral blood samples using peptide-HLA tetramers and sorted via flow cytometry. Low-input RNA sequencing and differential gene expression analyses were performed on sorted cell subsets stratified by the expression of CXCR5.

**Results:** Only a small fraction of circulating memory CD8 T cells expressed CXCR5 (median: 1.67% in the tanzanian cohort, 1.45% in the german cohort). In acute infection, HIV-specific mTf underexpressed genes associated with the TCR complex relative to HIV-specific memory CD8 T cells lacking expression of CXCR5, and in chronic infection, HIV-specific mTf underexpressed genes associated with effector functionality, activation, and exhaustion and overexpressed genes encoding various chemokines and TLRs relative to HIV-specific memory CD8 T cells lacking expression of CXCR5. These transcriptional profiles were observed in both cohorts and were unaffected by ART.


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The frequencies of HIV-specific mTfC were significantly higher in aviremic versus viremic PLWH ( $p = 0.04$ ). HIV-specific mTfC also expressed genes encoding innate antiviral factors and exhibited an enriched elite controller gene signature in aviremic PLWH. In addition, HIV-specific mTfC overexpressed genes associated with a type I interferon response relative to HIV-specific memory CD8 T cells lacking expression of CXCR5, even after prolonged treatment with ART.

**Conclusions:** These results provide insights into the transcriptional characteristics of HIV-specific mTfC at different stages of infection, highlighting functional pathways associated with immune control of viral replication in the absence or presence of ART.

## WEPEA011

Differences in immune markers in youth with recent HIV acquisition, youth living with HIV on treatment, at risk youth, and healthy controls

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**Background:** Studies in adults suggest early initiation of antiretrovirals (ART) mitigate chronic immune dysregulation. Less data is available for youths. We hypothesize that immune marker profiles are distinct between youths with newly diagnosed HIV, virologically suppressed youth living with HIV, at-risk youth, and healthy controls.

**Methods:** We assessed 49 immune markers (41 pro-inflammatory, 8 anti-inflammatory) by Luminex in 231 youths aged 13-24: 103 with newly-diagnosed (NDY) HIV (36 acutely and 67 non-acutely acquired based on Fiebig staging) pre-ART, 8-12 (12M) and 18-24 (24M) months post-ART initiation; 34 youths on longstanding ART > 24 months (CY) with virologic suppression (VS), 59 high-risk uninfected youths (HRY), 35 healthy controls (HC). Immune profiles were compared between patient groups and in NDY pre/post-ART.

**Results:** Participants were mainly young men-who-have-sex-with-men of Black or Hispanic background (median age: 20 years), enrolled in ATN studies between 7/2017 to 12/2020. All groups except HC had high STI prevalence (63%). Among 49 immune markers, 7 were elevated in all groups except HC. No difference was found between groups for 4 markers (IL4, IL1a, MCP3, TNFb).

Compared to HC, 9, 12, 19, 17, and 7 pro-inflammatory markers were elevated in HRY, NDY pre-ART, NDY 12M, NDY 24M, and CY respectively. No significant differences in immune markers were found between NDY at 12M and 24M. Compared to NDY pre-ART, NDY at 12M and 24M showed decreases in 7 pro-inflammatory markers. Compared to NDY at 12M and 24M, CY had decreases in 10 pro-inflammatory markers.



Figure. Comparison of immune markers (pro and anti-inflammatory) across 6 different groups along the spectrum of HIV risk and infection.

**Conclusions:** HRY had significant immune activation resembling and sometimes exceeding that of youths with HIV, potentially from concurrent STIs which may "prime" HIV-acquisition. Despite significant decline in immune activation markers post-ART, NDY with VS had more immune activation at 24 months than CY with VS. Longer term follow-up is needed to evaluate immune activation changes in NDY.

## WEPEA012

Impacts of VMMC adaptations in HIV prevention among 15-29 age group in Kisumu, Kenya

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**Background:** Adapting Voluntary Medical Male Circumcision (VMMC) is a timely and most effective intervention in HIV prevention among the 15-29 age group in Kenya due to their vulnerability to HIV transmission. This study seeks to emulsify the impacts of integrating VMMC with peer induced initiatives and time frame of conducting VMMC procedures by assessing the uptake of adapted VMMC strategies and its effectiveness in preventing HIV transmission among individuals aged 15-29.

**Methods:** The study was conducted in Chulaimbo County Hospital and Marera Community Unit between November to December 2023 holidays. By random sampling, 80



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VMMC clients aged 15-29years and 10 Service providers were recruited into the study. Consent was obtained both from the participants and parents of the participants less than eighteen years of age and only from participants, for those who were eighteen years and above before capturing data through Focused group discussions, structured questionnaire and in-depth interviews. Excel sheet was used to analyze data.

**Results:** There is a direct proportionality pointing to a positive correlation between VMMC uptake and a reduction in HIV incidence rates within the target population. Deduced from the study, is increase in VMMC uptake among the 15-29 age group. Qualitative insights pointed out positive peer influence and long holidays/recess sessions to have catapulted and spurred the uptake of VMMC services. Socio-cultural factors presented itself as major barrier in accessing VMMC services thus downscaling VMMC as HIV prevention strategy among the 15-29 age group.

Variable Age	15-20 years	21-29 years
VMMC Uptake rates	74%	36%
HIV Incidence rates	42%	12%

**Conclusions:** Substantially as predicted by the results, adapted VMMC interventions have positively impacted HIV prevention among the 15-29 age group in Kenya. Projecting into future programs and policies, emphasizing the need for context-specific approaches will enhance efficacy through fostering partnerships between health-care providers and community leaders.

## WEPEA013

Role of extracellular HIV-1 Tat protein and anti-Tat antibodies in HIV pathogenesis and disease progression

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**Background:** The transactivator of viral transcription Tat is one of the first HIV-1 proteins to be produced upon infection, as it is strictly required for HIV gene expression, replication and spreading. Tat is also incorporated in viral particles. Most of Tat produced during acute infection exits infected cells and binds the extracellular matrix (ECM) via heparan sulfate proteoglycans (HSPG) (Ensoli, Nature 1990 and 1994; Chang, AIDS 1997), thus accumulating in tissues, where it enhances target cells recruitment, activation, and infection (Ensoli, 2021). Indeed, when Tat is immobilized, mimicking ECM-bound Tat,

it enhances virus infectivity by capturing viral particles (Tat-assisted infection) (Nappi, Gene Med 2009). Further, by binding Env spikes, Tat forms a virus entry complex promoting integrin-mediated infection of dendritic cells (DCs), and efficient virus transmission to T cells (Monini, PLoS ONE 2012).

Of note, the minority of people living with HIV-1 (PLWH) who develop anti-Tat antibodies (20-30%) experiences containment of viral load, maintenance of CD4 T-cell counts, and low progression to disease as compared to anti-Tat seronegative PLWH (Rezza, J Infect Dis 2005; Bellino, Retrovirology 2014; Tripiciano, EBioMedicine 2021).

**Funding:** Project INV-037179 Vaxxit-BMGF : Evaluations of Tat and Tat-Env as targets for HIV interventions.

**Methods:** To address the role of extracellular Tat and anti-Tat immunity in HIV-1 infection, novel *in vitro* HIV neutralization assays were set up.

**Results:** Our data indicate that anti-Tat antibodies block HIV infection by neutralizing native extracellular Tat released by infected cells or present on viral particles ("Conventional" model of infection). Further, anti-Tat antibodies neutralize HIV infection in the Tat-assisted infection model. Finally, we show that recombinant soluble Tat added to the virus inoculum shields HIV from Env-neutralizing antibodies enhancing HIV infectivity, while anti-Tat antibodies restore HIV neutralization (Cafaro et al, and Francavilla et al, in preparation).

**Conclusions:** These results indicate that Tat plays a pivotal role in virus acquisition, spreading, and persistence. The induction of anti-Tat immune responses represents a pathogenetic intervention to intensify antiretroviral therapy (ART) and to attack the ART-resistant virus reservoir as well as an excellent candidate for novel preventative vaccines, alone or in conjunction with Env.

## WEPEA014

Platelet origin TGFβ and PGE2 are associated with functional deficits of monocyte derived dendritic cells in people living with HIV

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**Background:** Upon activation, platelets secrete immunomodulatory molecules including CD40L, TGFβ, β2-microglobulin (β2M), and PGE2. People living with HIV (PLWH), exhibit increased platelet activation and platelet-monocyte complexes (PMCs). Differentiation of PMCs to dendrit-

ic cells (MoDCs) *in vitro* resulted in deficiencies in antigen uptake, expression of immunostimulatory molecules and proliferation of CD4<sup>+</sup> and CD8<sup>+</sup> T cells.

This study aims to quantify the levels of immunomodulatory molecules secreted by activated platelets from PLWH as compared to people living without HIV (PLWOH) and to investigate if clinically approved anti-platelet drugs (APD) can be employed to improve the immunogenicity of MoDCs.

**Methods:** Platelets isolated from PLWH (n=10) and age, sex matched PLWOH (n=6) were treated with APD (clopidogrel or aspirin) followed by activation using collagen. Cell supernatants were used to measure CD40L, TGFβ, β2M, and PGE2 by ELISAs.

Alternatively, platelets were mixed with autologous monocytes and differentiated into type 1 mature DCs and pulsed with VSV-g-pseudo-typed, replication deficient HIV isolate. DCs were used for RT-PCR assays or to stimulate CFSE labelled autologous CD4<sup>+</sup> or CD8<sup>+</sup> T cells. Results were analyzed using one-way ANOVAs, and Tukey's post-test or Welch t tests.

**Results:** Activated platelets secreted significantly higher levels of CD40L (p=0.0035) and TGFβ (p=0.0086). APD treatment resulted in levels similar to not-activated platelets. Clopidogrel but not aspirin treatment resulted in increased PGE2 secretion (p=0.003).

Further, platelets from PLWH secreted higher levels of immune-suppressor molecules such as TGFβ (p=0.0273) and PGE2 (p=0.0403) but not β2M or CD40L. DCs treated with activated platelets and clopidogrel treated platelets showed increased RNA expression of IL-10 (p=0.0401) and S100A9 genes (p=0.0353). Lastly, APDs rescued the quantitative deficit in CD4<sup>+</sup> (p=0.005) and CD8<sup>+</sup> (p=0.0257) T cell proliferation induced by activated platelets irrespective of the HIV status.

**Conclusions:** TGFβ and PGE2 secreted by platelets might be responsible for inducing functional defects in MoDC derived from PMCs especially in PLWH by inducing expression of genes related to myeloid derived suppressor cells. Since monocytes serve as the predominant source of MoDCs for immunotherapies and *in vivo* MoDCs during infections/inflammation, an in depth understanding of immune modulation by platelets can be used to improve such therapies and endogenous anti-viral immunity.

## WEPEA015

### New molecular mechanisms associated with profound alteration in Th17 cell functions and biology in people with HIV under ART and in elite controllers

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**Background:** Despite successful antiretroviral therapy (ART), frequencies and immune function of memory CCR6<sup>+</sup> Th17-polarized T-cell are not fully restored.

Furthermore, these cells contribute to HIV persistence under ART. However, the molecular mechanisms underlying these alterations remain elusive.

**Methods:** A total of 65 participants enrolled in the study, including successfully ART-treated (ST, n=23), HIV elite controllers (EC, n=18) and HIV- controls (n=24). Illumina mRNA sequencing was performed in FACS-sorted memory CCR6<sup>+</sup> CD4<sup>+</sup> T-cells from leukapheresis.

Differential gene expression (DEG) validation was done by RT-PCR, flow cytometry analysis, and/or *in vitro* functional assays. Total and integrated HIV-DNA were quantified using ultra-sensitive RT-PCR.

**Results:** Frequencies of T-cells with a Th17 phenotype (based on CCR6/CCR4/CXCR3, CD26/CD161) reduced in ST and EC compared to HIV-, along with their impaired Th17 *in vitro* cytokine secretion (IL-17A/F, IL-22, IFN-γ).

Memory CCR6<sup>+</sup> T-cells from ST and EC *versus* HIV- expressed higher levels of activation (CD38/HLA-DR) and senescence/exhaustion (PD-1/CD57) markers but lower levels of proliferation marker Ki-67.

These alterations coincided with an increased transcriptional expression of NR1D1/REV-ERBa (repressor of Th17 functions), and a decreased expression of Semaphorin 4D (inducer of Th17 differentiation), in Memory CCR6<sup>+</sup> T-cells from STs and ECs *versus* HIV-, confirming impairment in their differentiation, stability, proliferation, and functions.

Downregulation of HIV restriction factors (SERINC3, KLF3, and RNF125) and HIV inhibitors (tetraspanins: CD37, CD81, and CD82), along with increased expression of MRE11 (positive regulator of HIV acquisition) in Memory CCR6<sup>+</sup> T-cells from STs and ECs suggest higher susceptibility/permissiveness to HIV acquisition.

Memory CCR6<sup>+</sup> T-cells from STs and ECs had lower TFAP4 expression and increased expression of EED *vs.* HIV-, which is associated with HIV persistence, as confirmed by total and integrated HIV-DNA in these cells.



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Markers of DNA damage/modification were elevated in STs and ECs vs. HIV-, including H2AX, PARP, and DNA methylases DNMT1/DNMT3A.

**Conclusions:** This study reveals novel molecular mechanisms associated with profound Th17 functional and biological alterations regardless of viral suppression, including deficient Th17 polarization, increased HIV permissiveness and persistence, and impaired Th17 survival.

New therapeutic strategies specifically targeting these mechanisms may restore Th17 functions in view of promoting immunological remission at mucosal level in people with HIV.

## WEPEA016

Characterization of natural killer cells in early-life HIV and antiretroviral therapy exposed children at 5 years of age

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**Background:** Children of women living with HIV, regardless of HIV status, present with higher morbidity compared to HIV-unexposed (HUU) peers. Early-life HIV or/and antiretroviral therapy (ART) exposure has been associated with natural killer (NK) cell dysfunction within the first year of life. However, there is paucity of data on immunological consequences of early-life HIV/ART exposure on NK cells in children post weaning with minimal maternal contribution.

We investigated the association of early-life exposure to maternal HIV and ART with NK cell subsets in children aged ~five years of age.

**Methods:** Multi-parametric flow cytometry was used to assess the phenotype of peripheral blood-derived NK cells in age matched breastfed children exposed to but not living with (HEU) children compared to HUU controls. The HEU children were classified as long (HEULT) and mid-term (HEUMT) according to duration of *in utero* ART exposure. An exploratory group of children living with HIV (HEI) was also included. CD56<sup>bright</sup> and CD56<sup>dim</sup> NK cell subsets were assessed and correlated to documented sick clinic visits/hospitalisations from birth to 5 years.

In addition, expression of inhibitory markers, cell differentiation markers and intracellular perforin/granzyme B was also assessed.

**Results:** 139 children (43-HEULT, 38-HEUMT, 52-HUU and 6-HEI) with median age of 5 years were enrolled and 48.2% were female. Proportions of total NK cells, CD56<sup>bright</sup> and CD56<sup>dim</sup> subsets and expression of NKG2A, KIR3DL1/

KIR2DL2/L3 and CD57 surface markers were similar between HEU, HUU and HEI groups. In the HEU group, HEULT had higher CD56<sup>bright</sup> ( $p < 0.001$ ) and lower CD56<sup>dim</sup> NK cell proportions ( $p < 0.0001$ ) than HEUMT children. Markers of cytolytic potential (intracellular granzyme B and perforin) and proportions of perforin+ granzyme B+ NK cells were significantly lower in HEI compared to HUU children ( $p < 0.01$ ) whereas no differences were noted between HUU and HEU children. CD56<sup>dim</sup> NK cell counts negatively correlated with recurrent respiratory conditions and total sick clinic visits in HUU and HEUMT groups ( $\rho = -0.38$ ;  $p = 0.005$  and  $-0.4$ ;  $p = 0.011$  respectively).

**Conclusions:** Despite exposure to HIV/ART, HEU children presented with an NK phenotype and cytolytic potential similar to HUU children at 5 years of age. Further, NK cell cytolytic potential is altered in children living with HIV despite taking ART.

## WEPEA017

Plasticity of longitudinal antibody immune responses during antiretroviral treatment-naïve periods in HIV-1 CRF02\_AG infection

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**Background:** Understanding subtype diversity is crucial for vaccine development, which need to elicit immune responses capable of targeting various subtypes. An effective vaccine against HIV will likely require the elicitation of a combination of functional antibody immune responses of which neutralizing antibodies (nAbs) are a critical component. So far, nAb studies have focused on individuals infected with subtypes A, B and C.

Here we evaluated longitudinal antibody immune responses and envelope binding patterns during antiretroviral treatment (ART)-naïve period in individuals infected with HIV-1 CRF02\_AG, the most prevalent subtype in West-Central Africa (>50%).

**Methods:** Archived samples longitudinally collected over 2 to 8 years' period from ART-naïve HIV-1 CRF02\_AG infected individuals were used for antibody neutralization assays (TZM-bl assay). The specificity of the plasma neutralization was determined following mapping of antibody responses (ELISA and neutralization fingerprinting).

**Results:** Antibody immune responses were very diverse in breadth (0 to 7) as well as in potency (0 to 620). All study participants showed a relatively constant neutralizing patterns which remained durable for the entire study period. One participant (NYU128) stood out with broad and potent nAb responses against pseudovirus tested ( $300.3 \leq \text{BP score} \leq 620.9$ ) with no significant increase over time. But significant longitudinal changes in antibody binding responses and affinity were observed with gradual increase


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in binding to V1V2sc. throughout the study period. Phylogenetic analyses of *Env* and *Pol* sequences of NYU128 suggested the presence of dual infection with HIV-1 CRF02\_AG (genetic distance up to 7.5%). *Env* sequence analyses revealed no evident selection pressure at major broadly nAbs epitopes, but substantial variation in the immunodominant V1V2 epitope region and presence of VRC01 and PGT151-like antibodies.

**Conclusions:** Our findings reveal the plasticity of antibody immune response in ART-naïve individuals and provided additional insight into *Env* binding patterns in HIV-1 CRF02\_AG infected individuals in the context of the underlying *Env* epitope landscape of the infecting viruses. These findings may prove valuable for the development of regional vaccines, especially in West-central Africa where CRF02\_AG prevails.

## Understanding and targeting persistent HIV reservoirs

### WEPEA018

Host metabolites modulate romidepsin's efficacy in reactivating latent HIV

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**Background:** Dysregulated host metabolic processes influence several cellular functions central to HIV persistence. However, the impact of these processes on the effectiveness of HIV cure strategies remains unknown. Our recent studies have shown that byproducts of glutaminolysis, including  $\alpha$ -ketoglutarate ( $\alpha$ -KG), can inhibit HIV transcription.

This suggests that glutaminolysis may impact the success of curative strategies aimed at modulating HIV transcription, such as the shock-and-kill.

**Methods:** We examined the impact of  $\alpha$ -KG on the ability of romidepsin to reactivate HIV using: 1) J-Lat (flow cytometry) and ACH-2 (p24 ELISA) HIV latency models; and 2) PBMCs isolated from six people living with HIV (PLWH) on antiretroviral therapy (ART), assessed for cell-associated HIV RNA and DNA using qPCR.

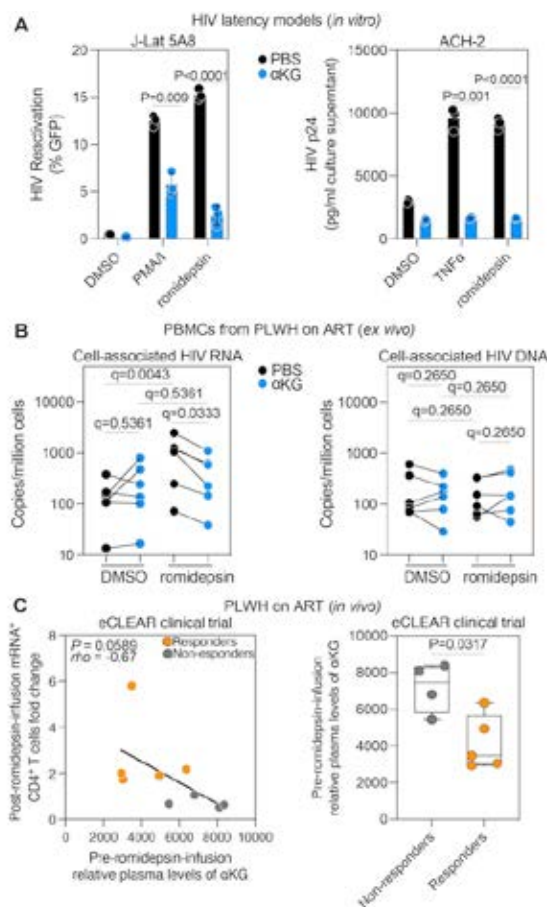
Additionally, we analyzed the pre-infusion plasma levels of  $\alpha$ -KG by LC/MS in nine PLWH who underwent romidepsin infusion as part of the eCLEAR study, correlating them with 2 hours post-infusion induction of CD4<sup>+</sup> T cells expressing HIV mRNA (RNAflow).

Finally, the effects of  $\alpha$ -KG on histone post-translational modifications were examined in JLat cells using an epiproteomic panel.

**Results:**  $\alpha$ -KG significantly inhibited the ability of romidepsin to reactivate HIV in the J-Lat and ACH-2 models ( $P \leq 0.0009$ ; Fig.1A).

Using primary PBMC from PLWH on ART,  $\alpha$ -KG also inhibited romidepsin-mediated induction of cell-associated HIV RNA ( $q=0.033$ ) without impacting HIV DNA levels (Fig.1B).

The pre-infusion levels of  $\alpha$ -KG negatively correlated with romidepsin's efficacy in inducing CD4<sup>+</sup> T cells expressing HIV mRNA *in vivo* ( $P=0.0589$ ; Fig.1C-left), with PLWH who responded to romidepsin exhibiting lower pre-infusion levels of  $\alpha$ -KG than non-responders ( $P=0.032$ ; Fig.1C-right). Lastly,  $\alpha$ -KG induced several histone modifications known to inhibit HIV transcription, such as H3K27me3 ( $P=0.019$ ).



**Conclusions:** Host metabolites, particularly  $\alpha$ -KG, might impose unrecognized epigenetic forces affecting the efficacy of HIV curative strategies aimed at modulating HIV transcription. Investigating approaches to manipulate these metabolic pathways could enhance the efficiency of these strategies.



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## WEPEA019

### GS-8588, a novel envelope-targeting bispecific T-cell engager for HIV cure

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**Background:** Persistence of latent viral reservoirs remains a major barrier to an HIV cure. A therapeutic agent that can recognize the HIV envelope protein (Env) expressed on latently infected cells after provirus activation, and effectively engage the immune system to eliminate these cells, can potentially play a role in achieving a functional cure.

Here, we describe the preclinical characterization of GS-8588, a bispecific T-cell engager that employs an engineered CD4 domain 1 variant for broad Env targeting and a humanized anti-CD3 arm for T-cell recruitment.

**Methods:** GS-8588 was evaluated in vitro for its potency in mediating killing of primary CD4+ T cells infected with a panel of 32 HIV-1 clinical isolates. Off-target killing of major histocompatibility complex class II-expressing B cells was assessed in the same assay. T-cell activation and cytokine secretion were monitored ex vivo in GS-8588-treated peripheral blood mononuclear cell (PBMC) samples derived from people living with HIV.

Pharmacokinetics of GS-8588 were measured in nonhuman primates (NHPs) at a single 1 mg/kg intravenous dose. Safety and tolerability of GS-8588 were evaluated in an NHP study at 5 weekly doses up to 100 mg/kg/week.

**Results:** GS-8588 mediated potent killing of primary CD4+ T cells infected with 29 of the 32 clinical isolates tested (median EC50, 0.12 µg/mL). For the 3 remaining isolates, GS-8588-mediated killing was observed in alternative killing assays using activated PBMCs.

Off-target killing of B cells was not detected. GS-8588 mediated low-level T-cell activation (geometric mean EC10 for CD69+ T cells, ≥ 10.3 µg/mL) and cytokine secretion (mean maximum signals, ≤ 52 pg/mL for IFN-γ, TNF-α, IL-6, IL-2, IL-4, and IL-10) ex vivo. GS-8588 exhibits IgG-like pharmacokinetics in NHPs with a predicted half-life of 12 days in humans. No adverse events were observed in the NHP toxicology study.

**Conclusions:** The preclinical activity, pharmacokinetics, and safety profile support clinical investigation of GS-8588 as a therapeutic candidate for the elimination of latent HIV-infected cells, and potentially as part of an HIV cure regimen.

## WEPEA020

### The impact of amino acid & micronutrient supplementation on gut HIV reservoir in the AMAZE trial

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**Background:** Gut-associated-lymphoid-tissue (GALT) is a key site of HIV persistence, while HIV-associated gut dysbiosis and epithelial barrier damage are drivers of chronic immune activation. Nutritional supplements which enhance gut flora & integrity have been investigated to reduce T-cell activation in people with HIV(PHW).

We examine the impact of amino acids (AA) or micronutrients (MM) on gut HIV DNA & immune markers in PWH from the AMAZE trial, a factorial RCT designed to investigate if AA and/or MM impacts gut barrier dysfunction in Zambian adults with environmental enteropathy.

**Methods:** AMAZE participants were randomised to placebo, AA only, MM only or AA plus MM. Duodenum biopsies were taken at baseline & five months post-intervention. The Mechanistic Target of Rapamycin Complex 1 (mTORC1) activity on T cells was assessed using flow cytometry by phosphor-4E-binding protein 1 (p4E-BP1) expression. Plasma soluble CD14, C-reactive protein (CRP) & serum endotoxin levels were measured using ELISA. Gut barrier leak was measured using confocal laser endomicroscopy. Total HIV DNA in GALT was quantified using a single-copy-assay targeting integrase.

**Results:** Twenty-six PWH were included, median age was 41(IQR 35-47), 22/26 were female. In those (n=16) who received 'any intervention' (AA, MM, or both), we observed a significant reduction in gut HIV DNA (p=0.03) between pre-intervention (median=14.1, 95%CI 7.1,18.9 copies/106 cells) & post-intervention (median=6, 95%CI 3.7,14.7 copies/106 cells). No difference in HIV DNA was observed (p=0.9) in PHW who received placebo (n=4). Median (95%CI) CD4 mTORC1 activity was lower pre 'any intervention' [MFI 529 (394,624)] compared to post 'any intervention' [MFI 218 (153,383)], p=0.003. Median (95%CI) CD8 mTORC1 activity was also lower [MFI 490 (374,571)] compared to post 'any intervention' [MFI 280 (158,478)], (p=0.02). Baseline HIV DNA correlated with CD4+ mTORC1 activity (R<sup>2</sup>=0.9, p=0.003). No difference in markers, gut barrier leak (p=0.52), endotoxin levels (p=0.3) or CRP (0.4) was observed.

**Conclusions:** This exploratory analysis suggests an impact of AA & MM supplementation on GALT in PWH with an observed reduction in mTORC activation on T-cells in HIV reservoir in PWH treated with AA, MM or both. These findings support further investigation of mTORC modulators in PWH to alter immune dysfunction & HIV DNA in GALT.

## WEPEA021

### Exploring the Hypoxia-CD73-Adenosine (HCA) axis in HIV persistence: a novel route for cure strategies

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**Background:** The progress towards finding a cure for HIV has been impeded by the persistence of long-lived, latently-infected cells, which are hidden from the immune system and prevail despite effective antiretroviral therapy (ART). We have previously unveiled an increased surface expression on latent cells of CD73 – a hypoxia-regulated, adenosine-producing ectoenzyme.

We thus introduced the Hypoxia-CD73-Adenosine (HCA) model of HIV persistence, proposing that HIV perseveres in oxygen-deprived regions, such as lymphoid tissues, by exploiting CD73-dependent adenosine signaling. We now explore this novel latency concept to harness it for the development of better cure strategies.

**Methods:** We characterized the transcriptome of human CD73-expressing CD4 T cells, which represent a relatively small subset of circulating CD4+ T cells. The BD Rhapsody system was then deployed for single-cell transcriptomic profiling of lymphocytes under hypoxic (HOX) and normoxic (NOX) conditions. HIV latency reversal under HOX and the influence of HCA factors on HIV transcription were examined in a cell line model of latency using pharmacological inhibition and CRISPR interference.

Finally, we measured HIV reservoir size and HCA factors in blood from people living with HIV (PLWH) to assess their predictive and diagnostic potential *in vivo*.

**Results:** CD73+ CD4 T cells exhibit distinct gene expression profiles compared to CD73- cells, including key immunoregulatory pathways and genes involved in cell activity and homeostasis. Knockdown of CD73 or inhibition of adenosine signaling facilitated latency reversal, while hypoxic conditions repressed HIV transcription.

Phenotyping of immune cells from PLWH revealed altered surface expression of HCA factors compared to HIV negative participants. Correlation analyses uncovered an association between HIV reservoir size and expression of HCA factors.

**Conclusions:** We report transcriptional features of CD73+ CD4 T cells that favor viral quiescence, immune evasion, and cell survival. The effect on HIV transcription and latency reversal upon manipulation of the HCA cascade and the altered expression of HCA factors in blood of

PLWH despite ART suggests an involvement of the HCA axis in long-term HIV persistence. Thus, similar to solid tumor cells, latent HIV reservoirs may hijack the HCA axis as a persistence mechanism. These findings advocate for further exploration of HCA-focused anticancer therapeutics as host-directed HIV-cure approaches.

## WEPEA022

### GITR expression on CD4+ T-cells from people living with HIV (PLWH) and its role on viral reactivation: a possible target for new latency reversal agents

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**Background:** Latently infected CD4+ T cells (CD4TCs) represent the main barrier to achieving an HIV cure. Thus, the development of more effective latency reversal agents is crucial. Glucocorticoid-Induced TNF Receptor (GITR), a costimulatory molecule, plays a role in cellular proliferation and effector function. However, little is known about GITR in the context of HIV infection and there are no reports on its impact on viral reactivation.

This study aimed to assess GITR expression on peripheral CD4TCs and investigate the effects of a novel GITR agonist on HIV transcription from latently infected CD4TCs.

**Methods:** To characterize the immune-phenotype of GITR-expressing CD4TCs, peripheral blood mononuclear cells from 11 PLWH off-ART were stimulated with HIV-peptide pools. Then, surface expression of GITR and memory markers (CD45RO/CCR7) were measured by flow cytometry. Regulatory CD4TCs (Tregs) were defined by the expression of CD25/FOXP3.

Additionally, correlation with viral load (VL) and CD4TC count was evaluated by non-parametric statistics. To assess the GITR-mediated effect on latency reversion, purified CD4TCs from 3 on-ART PLWH were treated for 16h with a novel Fc-Flag-TNC-GITRL agonist and unspliced HIV transcripts were quantified by qRT-PCR.

**Results:** In both conventional-CD4TCs (Tconv) and Tregs, GITR-expression was significantly enriched within central memory (CM) and effector memory (EM) phenotypes, compared to naïve and terminal effector subpopulations ( $p < 0.0001$ ).



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Moreover, the majority of GTR-expressing Tconv and Tregs displayed an EM phenotype (median=92.32% and 80.55%, respectively). Interestingly, a positive correlation between GTR+ Tconv<sub>CM</sub> and CD4 count was found ( $r=0.448$ ,  $p=0.048$ ).

Within Tregs (bulk, CM and EM), GTR expression negatively correlated with VL ( $r=-0.683$ ,  $p=0.002$ ;  $r=-0.604$ ,  $p=0.008$  and  $r=-0.647$ ,  $p=0.004$ , respectively). Notably, costimulation with GTR agonist led to a mean fold increase of 3.02 of HIV unspliced RNA/10<sup>6</sup> cellular equivalents.

**Conclusions:** Our results showed that GTR expression in both Tconv and Tregs correlated with CD4 count and VL, suggesting a role of this molecule in the control of infection. Interestingly, we observed a significant enrichment of GTR expression in the CM phenotype, a major subset contributing to the HIV reservoir.

Our findings suggest that costimulation through GTR pathway enhances viral transcription, positioning GTR as an interesting target for the development of novel latency reversal agents.

## WEPEA023

Investigation of the sociodemographic, clinical, and immunogenetic factors influencing HIV reservoir size and total proviral load during ART

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**Background:** Understanding the factors that influence HIV persistence is critical to the development of curative strategies. We investigated sociodemographic, clinical, and immunogenetic correlates of HIV reservoir size and total proviral load during antiretroviral therapy (ART).

**Methods:** In this cross-sectional analysis, we studied 105 adults with HIV receiving ART in British Columbia, Canada. HIV reservoir size (defined as genomically intact proviruses/million CD4<sup>+</sup> T-cells) and total proviral load (total HIV DNA/million CD4<sup>+</sup> T-cells, including intact and defective genomes) were measured using the Intact Proviral DNA Assay, where primers/probes were adapted to within-host HIV polymorphism where required. HLA class I types were characterized by sequence-based typing.

**Results:** Most (90%) participants were male and the median age was 51 (interquartile range [IQR] 38-59) years. Participants had a median recent CD4<sup>+</sup> T-cell count of 740 (IQR 508-953) cells/mm<sup>3</sup>, and a median nadir CD4<sup>+</sup> T-cell count of 260 (IQR 110-480) cells/mm<sup>3</sup>. They had been receiving ART for a median 8.7 (IQR 4.4-13.2) years, and 65% were receiving an integrase inhibitor (INSTI)-based regimen at time of sampling. The predominant HIV subtype was B (92%).

The median reservoir size was 79 (IQR 31-194) genome-intact HIV copies/million CD4<sup>+</sup> T-cells. The median total proviral load was 984 (IQR 509-2143) total HIV copies/million CD4<sup>+</sup> T-cells.

These measures correlated strongly (Spearman  $\rho=0.72$ ,  $p<0.0001$ ). HLA-B\*07:02 carriage was associated with both larger reservoirs and larger total proviral load, while HLA-A\*02:01 was associated with larger total proviral load (all  $p<0.02$ ,  $q<0.18$ ).

In univariable analyses, lower nadir and recent CD4<sup>+</sup> T-cell counts, and receiving a non-INSTI-based regimen were associated with larger reservoirs ( $p<0.03$ ), but no variables were significant after multivariable correction.

Older age, lower nadir CD4<sup>+</sup> T-cell count, longer time on ART, and receiving a non-INSTI-based regimen were associated with higher total proviral load (all  $p<0.002$ ), but only older age and lower nadir CD4<sup>+</sup> T-cell count remained significant in multivariable analysis (both  $p<0.05$ ).

**Conclusions:** Older age and lower nadir CD4<sup>+</sup> T-cell count were key correlates of higher total proviral loads during ART, confirming the importance of early ART initiation in limiting total proviral DNA load. The mechanisms underlying HLA associations with reservoir size require further investigation.

## WEPEA024

CD30+/CD4+ T cells from blood and lymph nodes have unique phenotypes that may facilitate HIV-1 persistence

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**Background:** We previously demonstrated that HIV-1 transcripts are preferentially expressed in CD4<sup>+</sup> T cells expressing CD30, a TNF receptor superfamily tumor marker associated with cell survival and proliferation. We hypothesize that HIV upregulates CD30 to facilitate infected cell survival and evade immune-mediated clearance.

We performed high-dimensional CD4<sup>+</sup> T cell immunophenotyping and gene expression analyses in people with HIV (PWH) on suppressive ART.

**Methods:** We performed CyTOF immunophenotyping to characterize blood CD4<sup>+</sup> T cells (n=6), and RNAseq analysis on highly purified CD4<sup>+</sup> T cells from blood (n=9) and lymph nodes (n=5) from people with HIV (PWH) and uninfected controls (n=2) sorted by surface CD30 expression. Differential gene expression and ontologic analyses were performed.

**Results:** CytOF analysis revealed that compared to CD30<sup>-</sup>/CD4<sup>+</sup> T cells, CD30<sup>+</sup>/CD4<sup>+</sup> T cells had significantly higher expression of central memory, follicular helper, and regulatory markers and lower expression of markers of effector and transitional memory. CD30<sup>+</sup>/CD4<sup>+</sup> T cells also expressed higher markers of T cell activation and exhaustion/immune checkpoint and tissue homing (OX40, CD38, CD25, ICOS, HLA-DR, TIGIT, CTLA4, PD-1, CD62L, CCR7, CXCR5, CXCR4, CCR5; all P<0.05).

Gene expression in CD30<sup>+</sup>/CD4<sup>+</sup> T cells was dramatically different compared to CD30<sup>-</sup>/CD4<sup>+</sup> T cells from the same participants and compared to CD4<sup>+</sup> T cells from people without HIV.

Genes related to immune responses, cell cycling and survival ontologies were significantly upregulated in the CD30<sup>+</sup> subset. A similar transcriptional pattern was observed between CD30<sup>+</sup> and CD30<sup>-</sup> lymph node-derived T cells.

Genes related to innate and adaptive immune responses were upregulated in CD30<sup>+</sup> cells from lymph nodes compared to CD30<sup>+</sup> cells from peripheral blood. HIV-1 transcripts were identified by RNAseq in CD4<sup>+</sup> cells from one participant but only in CD30<sup>+</sup> cells.

**Conclusions:** CD30<sup>+</sup>/CD4<sup>+</sup> T cells have a central memory, regulatory, and follicular phenotype that have gene expression ontologies consistent with cell survival. These data suggest that either HIV infection leads to an upregulation of pathways consistent with infected host-cell survival, or that cells which express these proliferation and survival pathways are more likely to harbor transcriptionally active HIV after years of ART. Efforts to directly target CD30 in the clinic are in development.

## Novel treatment and prevention strategies, vaccines and immunotherapies

### WEPEA025

#### HIV therapeutic vaccination based on archived HIV-1 proviral epitopes and HLA class I allele matching in two Brazilian cities

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**Background:** Despite the success of antiretroviral therapy, the life-long use of antiretroviral treatment requires a high financial investment, results in an increase of antiretroviral resistance and may have side effects. Thus, novel treatment strategies are emerging based on therapeutic vaccination of people living with HIV (PLHIV), where viral replication will be controlled at undetectable levels by the host's immune system after antiretroviral treatment discontinuation. This ability to control HIV infection has been correlated with certain human leukocyte antigen (HLA) alleles.

In this context, the present study longitudinally evaluated the HIV-1 proviral epitopes inferred from near full-length genome (NFLG) sequences with high affinity to the most frequent HLA-A, -B and -C alleles of PLHIV from two Brazilian cities, Rio de Janeiro (RJ) and Rio Grande (RS).

**Methods:** Overall, 86 PLHIV (RJ = 46; RS = 40) were recruited and had their peripheral whole blood collected. HIV-1 proviral NFLG were amplified by nested PCR and ultradeep-sequenced in an Illumina MiSeq platform. Results were analyzed in Geneious package and T-cell epitopes were predicted using the MHC-I Binding Prediction Tool.

**Results:** All samples included in the first timepoint have been sequenced and 96.5% (83/86) had the NFLG determined. Six epitopes with high affinity to the most frequent HLA alleles and to the specific alleles from each individual were selected among viral sequences from RJ (RTLNAWVKV-Gag, HQKEPPFLW-Pol, KHQKEPPFL-Pol, TQDFWEVQL-Pol, VLDVGDAYF-Pol and VNTPLVLK-Pol) and three from RS (KHQKEPPFL-Pol, TQDFWEVQL-Pol and VLDVGDAYF-Pol). Twenty RJ individuals had a second timepoint collected after two years of follow-up and the six selected HIV proviral epitopes remained in the peripheral blood compartment of 19 (95%) samples.

**Conclusions:** Altogether, a set of HIV epitopes were selected in two conserved regions of HIV proteins. Three Pol epitopes were present in both cities, despite the differences in HLA frequencies and viral sequences between cities.



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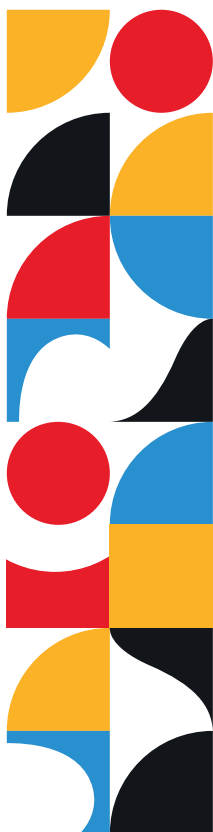
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These epitopes showed high affinity to the most frequent HLA class I alleles, were highly conserved among circulating viruses and highly stable across time in the samples analyzed. Therefore, these are promising immunogen candidates for the development of therapeutic vaccines to counteract HIV-1 infection and disease progression in those regions of Brazil.

## WEPEA026

Eliciting bnAbs against the global panel HIV-1 pseudoviruses by mimicking an elite natural neutralizer

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**Background:** Human immunodeficiency virus type-1 (HIV-1) causes over one million new infections annually, yet HIV-1 vaccine inducing a protective level of broadly neutralizing antibody (bnAb) remains elusive. Due to challenging bnAbs-secreting B cell maturation, vaccinations mimicking the natural bnAb development is a promising approach. However, strategies to optimize the vaccination procedure remain to be investigated.

Here, we test the hypothesis that sequential vaccinations using stable envelopes (Envs) optimized from an HIV-1 elite neutralizer may model the natural infection for inducing bnAbs against the global panel HIV-1 pseudoviruses.

**Methods:** An elite neutralizer was identified from a Chinese cohort exhibiting increasingly potent polyclonal HIV-1 bnAb response during the natural course of infection. Four phylogenetically and chronologically related Env genes from the neutralizer were optimized and constructed as both DNA and live replication-competent recombinant modified vaccinia strain Tian Tan (rMVT) vaccines. The rMVT vaccines were generated by homologous recombination to replace Envs into vaccinia HA extracellular domain, validated by genome PCR. rMVT antigenicity was tested by immunofluorescence assay on infected Vero cells. Vaccine immunogenicity was then evaluated in BALB/C mice and NZW rabbits based on serum endpoint titers against Envs and ID<sub>50</sub> titers against HIV-1 pseudoviruses by ELISA and ghost cell neutralization assay, respectively.

**Results:** Stable Env expressed by rMVT was confirmed after six rounds of clonal purifications. Env expression of MVT was detected by a panel of bnAbs targeting

CD4bs, V3, quaternary V2, and MPER epitopes. Sequential immunizations using vaccines delivering the four Envs resulted in modestly broad neutralization in mice and rabbits against heterologous pseudoviruses. The most potent rabbit serum displayed an ID<sub>50</sub> titer greater than 80 against 45% global panel HIV-1 pseudoviruses as of 2-week post the third immunization. Increased endpoint titers against the third Env and heterologous neutralization breadth from 2- to 9-week post second immunization were observed, indicating plausible evolution of bnAbs-secreting B cell maturation.

**Conclusions:** Our results demonstrated the construction of vaccine candidates expressing stable Envs derived from an elite neutralizer. The preliminary results of these vaccines showed their potential of mimicking the natural course of bnAb induction, contributing to the strategies of preventive HIV-1 vaccine design.

## WEPEA027

Pre-clinical profiles of HIV-1 capsid inhibitors VH4004280 (VH-280) and VH4011499 (VH-499)

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**Background:** The HIV-1 capsid protein (CA) fulfills multiple roles in the replication cycle and represents a high-quality target for HIV-1 inhibition. Here, we report on the pre-clinical profile of two capsid inhibitors (CAIs) currently in clinical development (VH-280 and VH-499).

**Methods:** Antiviral activity was evaluated in MT-2 cells infected with replication-competent reporter viruses. CAI/CA binding affinity was determined by surface plasmon resonance. Late-stage antiviral activity was measured using VSV-G pseudotyped virus. 2-LTR circles and proviral DNA were measured by quantitative PCR analyses. Resistance selection was carried out in MT-2 cells infected with NL<sub>4-3</sub> and treated with escalating doses of the CAI.

**Results:** VH-280 and VH-499 bind to the mature capsid hexamer and exhibit a mean dissociation constant of 60 and 190 pM, respectively. VH-280 and VH-499 demonstrated EC<sub>50</sub>s of 93 and 23 pM, respectively, against NL<sub>4-3</sub> virus. Both CAIs inhibited replication of chimeric viruses engineered with CA sequences from at least 47 clinical isolates with mean EC<sub>50</sub>s of 320 and 57 pM, respectively. The CC<sub>50</sub>s of the CAIs are >20 μM, yielding high therapeutic indices.

Mode of action studies demonstrated that VH-280 and VH-499 inhibited both early and late stages of the HIV-1 life cycle, with inhibition of the early stages ~9- to 14-fold

greater than that observed for the late stage of inhibition. Time of addition studies exemplified that VH-280 and VH-499 inhibition occurs between reverse transcription and integration.

Further, quantification of 2-LTR circles and proviral DNA in HIV-1-infected cells showed that VH-280 and VH-499 can inhibit both nuclear import and integration. CA resistance-associated mutations selected by other CAs (L56I, M66I, Q67H, N74D, A105E, T107N, and Q67H/N74D) also reduce susceptibility to VH-280 and VH-499.

Additionally, VH-280 and VH-499 selected resistant viruses at similar positions, including Q67H, A105E, T107A/D/N, and double or triple substitutions containing those residues. VH-280 and VH-499 were co-crystallized with CA hexamer and displayed binding contacts similar to PF74 and lenacapavir.

Finally, both CAs exhibited DMPK profiles suitable for clinical development.

**Conclusions:** The pre-clinical virology profiles and other favorable drug-like properties of VH-280 and VH-499 support progression of these two CAs into clinical development.

## WEPEA028

### Preclinical assessments of a cabotegravir prodrug predicting human dosing durations of >6 months

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**Background:** Long-acting ARVs for treatment and prophylaxis are now commercially available providing up to Q2M dose intervals. ViiV is developing prodrug formulations of CAB to provide a significant extension to the CAB dose interval ( $\geq$  every six months) – a parenterally administered ultra-long acting (ULA) 2DR combination treatment with other ViiV LAI candidates, and an ultra-long duration PrEP regimen.

An INSTI-based LAI treatment administered at least every six months brings a significant upgrade to the dosing frequency combined with the potential to improve treatment adherence and satisfaction by reducing the need for frequent clinic visits, with fewer injections per year, decreasing the psychological impact in PLHIV while offering even greater discretion.

**Methods:** ViiV has two novel drug formulations of the CAB prodrug (CP) and are developing them with an intent to optimize drug loading, simplify drug product manufacturing, and ensure physical stability of drug product. Both drug products were administered in preclinical studies in

male rats (n=3 SC, at 75 mg/kg) and monkeys (cynomolgus macaques) (n=3 at each dose level SC, at 40 and 75 mg/kg). The pharmacokinetics of CP and CAB as well as general tolerability in both species was monitored for  $\geq 1$  year.

**Results:** Both formulations delivered similar, long duration CAB PK in the rat and monkey. Their apparent half-lives were estimated as being >200 days compared to up to 23 and 32 days observed after CAB SC administration to rat and monkey, respectively. Prodrug levels were generally >100x lower than CAB levels in both species.

ViiV's data characterizing CAB, combined with these pre-clinical data, suggested a predicted terminal half-life of >200 days in humans with the potential for >6-month dose administrations. Only minor ISR-related observations were noted.

**Conclusions:** The preclinical PK assessments of the CAB prodrugs support their ongoing development and transition into the clinic. A FTiH study would determine the human PK, safety and dose predictions.

These emerging CAB prodrug data, combined with existing CAB safety and efficacy data, can facilitate efficient development of a long-acting regimen with a >6-month dosing interval for HIV treatment and PrEP.



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## WEPEA029

First-in-human evaluation of the safety, pharmacokinetics, and neutralization activity of PGDM1400-LS, a V2 glycan-specific HIV-1 broadly neutralizing antibody, infused intravenously or subcutaneously in people without HIV-1 (HVTN140/HPTN101 Part A)

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**Background:** HIV-1 Envelope (Env) specific broadly neutralizing antibodies (bnAbs) administered intravenously (IV) or subcutaneously (SC) are a promising prevention modality. The Antibody Mediated Prevention (AMP) trials demonstrated that bnAbs can prevent acquisition of neutralization sensitive HIV-1 viruses. Development of combination bnAb cocktails targeting multiple Env sites and engineered to increase half-life in vivo are key targets for product development.

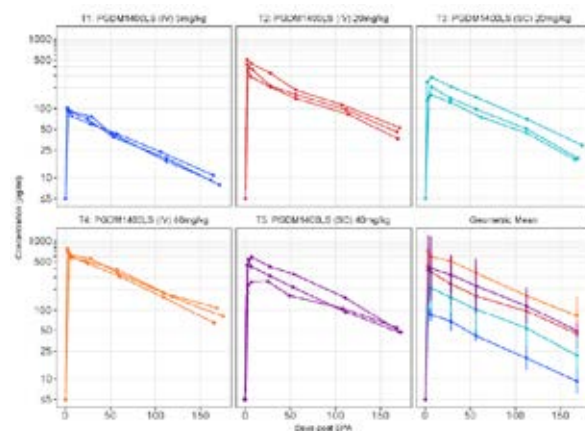
PGDM1400-LS is a bnAb targeting the Env V2 glycan centered on N160, with lysine and serine substitutions (LS) to improve serum and tissue half-life and is under consideration for use in future efficacy trials.

**Methods:** HVTN 140/HPTN 101 Part A (open-label, dose escalation, first-in-human) enrolled 15 people without HIV-1 in the USA across 5 groups (November 2021-March 2022), receiving a single dose of PGDM1400-LS IV (5, 20, or 40 mg/kg) or SC (20 or 40 mg/kg). Serum PGDM1400-LS concentrations at 7 timepoints (Day 0-Day 168 post-administration) were assessed via a validated anti-idiotypic binding assay and analyzed via non-compartmental pharmacokinetic analysis. Serum neutralization activity (ID80) was assessed by a validated TZM-bl assay with sensitive

Env-pseudotyped viruses and a tier 2 neutralization magnitude-breadth panel isolated from AMP participants with incident HIV-1.

**Results:** Overall, 10/15 (67%) of participants identified as female sex-at-birth, 14/15 (93%) non-Hispanic and 11/15 (73%) White, median age of 27 years (range: 24-47). PGDM1400-LS was safe and well-tolerated, with mild-moderate solicited local and systemic symptoms.

Pharmacokinetic analyses indicated dose proportionality by route, with peak concentrations observed immediately post-infusion (IV, range: 95.7-727.4 micrograms/mL) or on study Day 6 (SC, range: 205.6-547.1 micrograms/mL). Median elimination half-life was 55 days (range: 48-59 days), representing a 2-3 fold increase vs. wild-type PGDM1400. Estimated SC bioavailability was 50-60%. ID80 neutralization titers exhibited agreement with predicted ID80, indicating maintenance of neutralization activity in vivo.



Serum PGDM1400LS concentrations by treatment group and target day. Colors represent treatment groups as indicated, with dots representing individual participant mAb concentrations. Vertical lines indicate standard error of the mean. SPA = study product administration

**Conclusions:** Intravenously-administered PGDM1400-LS exhibits favorable pharmacokinetics in vivo and is a promising candidate for future efficacy trials.

## WEPEA030

Intracellular uptake of antiretrovirals in human peripheral blood mononuclear cells (PBMCs): quantitation and application in HIV and COVID-19-related clinical studies

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**Background:** PBMCs may serve as reservoirs for HIV-1 or COVID-19 infection. These viruses can establish latent infections within these cells, which makes it challenging to eradicate them completely. Nucleoside/nucleotide analogs for the treatment of HIV-1 or COVID-19 are often prodrugs that require intracellular activation through sequential metabolism to pharmacologically active intracellular metabolites for antiviral activities.

Understanding triphosphates levels in PBMCs is essential for steering the development of new antiretrovirals (ARVs) that can effectively reach and inhibit viral replication within these reservoirs and thereby improve the overall effectiveness of the treatment.

**Methods:** Using TFV-DP, FTC-TP and GS-443902 as representative examples, this presentation addresses 5 aspects of validated procedures for well-developed and reliable bioanalytical methods for determination of their intracellular concentrations:

1. A well-developed and carefully observed cell sample collection and processing procedure.
2. Well established procedures for PBMC lysis, analyte extraction, and sample cleaning.
3. Use of a surrogate (cell lysate) matrix for standards and QCs, followed by an ion exchange LC-MS/MS method.
4. Establishment of a validated cell counting method that counts all the collected cells that contain DNA, but not cells without DNA.
5. Establishment of an incurred sample stability window.

**Results:** For the validated triphosphate quantitation methods, the calibration ranges (fmol/10<sup>6</sup> cells) for TFV-DP, FTC-TP and GS-443902 are 4.47 - 2236, 41.1 - 20566, and 94 - 34529. Incurred sample stabilities established were 742, 742, and 182 days at -70°C. The methods were successfully applied both for the determination of TFV-DP and FTC-TP from people who could benefit from HIV-1 PrEP following oral administration of TRUVADA, DESCovy and BIKTARVY, as well as for the determination of GS-443902 from patients receiving RDV or ODV treatment after COVID-19 infection.

Although the efficacious PBMC threshold TFV-DP levels has been seen previously at ~16 fmol/million cells, the accurate assessment of TFV-DP levels in clinical study participants enabled determination of improved correlations between efficacy and corresponding active intracellular drug levels.

**Conclusions:** Accurate, precise, and reproducible quantitation of ARVs in PBMCs and its correlation with plasma pharmacokinetics, drug effect, dose determination and adherence monitoring can help optimize HIV/COVID-19 treatment, thus preventing drug resistance and improving patient outcomes.

## WEPEA031

### Nonclinical profile of GS-4182, a once-weekly oral prodrug of the HIV-1 capsid inhibitor lenacapavir in clinical development

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**Background:** Lenacapavir (LEN) is a first-in-class capsid inhibitor approved as a twice-yearly injectable therapy for adults with multidrug-resistant HIV-1 infection. While LEN tablets support oral lead-in and bridging therapy in the clinic, LEN's solubility profile indicates some limitations in its oral absorption and tablet drug load that may present challenges for long-acting oral administration. Here we describe the nonclinical profile of GS-4182, a novel solubilizing oral prodrug of LEN designed to reduce tablet size and pill burden when combined with a partner agent in a once-weekly oral treatment regimen.

**Methods:** Standard in vitro methods were used to characterize GS-4182 solubility, cell permeability and metabolic stability. Anti-HIV-1 activity was evaluated in MT-4 cells. Cytotoxicity was assessed in human cell lines and primary cells. Plasma pharmacokinetic parameters for GS-4182, LEN and Met-A (a metabolite formed from the prodrug moiety of GS-4182) were assessed in rat, dog and monkey following oral administration. GS-4182 and Met-A were evaluated in safety pharmacology and toxicology studies.

**Results:** GS-4182 readily converted to LEN in nonclinical and human gastrointestinal S9 fractions and showed low permeability across Caco2 cell monolayers and ≥100-fold improved solubility relative to LEN in simulated intestinal fluids. Upon oral administration in nonclinical species, GS-4182 underwent extensive pre-systemic conversion to LEN, resulting in substantially improved bioavailability relative to oral administration of LEN only.

These pharmacokinetic data were supportive of an efficacious once-weekly human oral dose. GS-4182 showed little-to-no systemic exposure following its oral administration in nonclinical species, but the Met-A that was formed in the gastrointestinal tract was readily absorbed and was observed in plasma. While unlikely to accumulate in humans due to its short terminal half-life, Met-A



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showed no antiviral activity and low cytotoxicity in vitro. When evaluated in safety pharmacology and toxicology studies, GS-4182 and Met-A were nongenotoxic, showed low potential for off-target effects, and the in vivo no-observed-adverse-effect-levels were established at the highest doses tested in rat and dog.

**Conclusions:** LEN prodrug GS-4182 exhibits a favorable nonclinical profile that supports its continued clinical development as a component of an optimized once-weekly oral regimen for the treatment of HIV-1 infection.

## WEPEA032

Boosting of VSV-vector-induced HIV Env responses by delivery of recombinant Env protein via an Osmotic Pump elicits immune responses superior to conventional intramuscular protein administration in non-human primates

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**Background:** Vector-mediated antigen delivery and/or the modality of protein delivery is believed to impact follicular helper T cell (Tfh) recruitment to draining lymph nodes, germinal center formation and eventually the quality and sustainability of binding and neutralizing antibody responses.

**Methods:** Four groups of 10 cynomolgus monkeys were primed (W0, W4) with a VSV-GP vector (i.m.) expressing a first generation membrane-tethered clade C 96ZM651 gp140 (VSV-gp140) and boosted at W12 and W24 with a state-of-the-art prefusion stabilized ConC Env trimer (ConCv5KIKO) either via the i.m. route (group 1, G1) or via an osmotic pump (OP) that was transplanted into the deltoid to release the ConCv5KIKO trimer protein subcutaneously over a period of 2 weeks (G2). For comparison, animals receiving a booster immunization with ConCv5KIKO trimer via the i.m. route and the OP were co-ad-

mistered with VSV-gp140 at the same time points (G3, and G4, respectively). VSV- and HIV-Env-specific T cell and antibody responses were monitored at regular intervals up to 34 weeks.

**Results:** Whereas VSV-vector-specific T cell responses were overall low (G1, G2) to moderate (G3, G4), animals vaccinated four times with VSV-gp140 started to produce substantial levels of VSV-GP-specific neutralizing antibodies after the third VSV immunization. HIV-specific T cell responses were detectable only after the second booster immunization in G1 and G3 (i.m. ConCv5-KIKO), whereas an accelerated development of T cell responses already after the first boost was observed in G2 and G4 (OP). ConCv5KIKO booster immunization via the OP yielded significantly higher titers of ConCv5-KIKO-specific binding and neutralizing (primarily tier 1) antibody responses in G2 and G4 as compared to G1 and G3 (i.m.) ( $p < 0.0001$ ).

This was most pronounced after the second boost and came along with a higher percentage of CXCR5<sup>+</sup>/PD1<sup>+</sup> Tfh cells among CD4<sup>+</sup> T cells in the draining lymph node ( $p = 0.0075$ ).

**Conclusions:** Co-administration of VSV-gp140 as part of the booster immunizations had no impact on the immunological outcome. ConCv5-KIKO Env trimer booster immunizations via the osmotic pump were clearly superior to i.m. protein delivery with regard to binding and neutralizing Abs, correlating with improved Tfh-recruitment to draining lymph nodes and probably more efficient germinal center formation.

## HIV-associated viruses, co-infections and co-morbidities

### WEPEA033

Abundance of *akkermansia muciniphila* is associated with non-alcoholic fatty liver disease among people living with HIV

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**Background:** The rising global prevalence of metabolic diseases in people living with human immunodeficiency virus (PLWHIV) underscores the imperative to investigate associations with gut microbiota. To bridge this gap, we conducted an observational prospective cohort study to


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explore the correlation between intestinal *Akkermansia muciniphila* (AKK) abundance and metabolic diseases specifically overweight, non-alcoholic fatty liver disease (NAFLD), and hyperlipidemia in PLWHIV.

**Methods:** Participants (n=103) were enrolled in a 1:1 ratio for the NAFLD and non-NAFLD groups based on baseline controlled attenuation parameters (CAP) for liver steatosis. Baseline data were meticulously collected, and stool samples were obtained for AKK quantification using the RT-qPCR method. Subsequent analyses included Pearson correlation and logistic regression methods.

**Results:** Metagenomic sequencing identified AKK as a significantly reduced intestinal species in PLWHIV with NAFLD. Kegg analysis revealed genes mainly annotated in metabolism-related pathways. Of the enrolled PLWHIV, 52 were in the NAFLD group and 51 in the non-NAFLD group. AKK abundance in PLWHIV with NAFLD and overweight was notably lower than in the non-NAFLD group ( $P=0.049$ ) and the non-overweight group ( $P=0.033$ ), respectively. Negative correlations were identified between AKK abundance and CAP value ( $r=-0.241$ ,  $P=0.014$ ) and body mass index (BMI) ( $r=-0.263$ ,  $P=0.001$ ). AKK emerged as an independent factor for baseline NAFLD (OR=0.684,  $P=0.039$ ) and overweight (OR=0.722,  $P=0.034$ ). Subgroup analysis within the NAFLD group revealed lower AKK abundance in the obese-NAFLD group compared to the non-NAFLD group ( $P=0.0233$ ). Importantly, AKK abundance independently predicted obese-NAFLD (OR=0.582,  $P=0.015$ ). Additionally, AKK demonstrated predictive capabilities for NAFLD after 48 weeks of antiretroviral therapy (ART) (AUROC=0.687,  $P=0.033$ ) and remained an independent factor for NAFLD at week 48 (OR=0.635,  $P=0.041$ ).

**Conclusions:** Abundance of AKK was characteristically declined in PLWHIV with NAFLD and it was associated with overweight and NAFLD specifically obese-NAFLD among PLWHIV and further it can predict NAFLD after 48 week's HAART.

CAB (5.0 mg/kg; 93 litters). Doses were optimized to yield clinically relevant plasma levels. INSTIs were given with emtricitabine/tenofovir (E/T; 33.3/50 mg/kg) daily by oral gavage from plug detection to E15.5. Maternal outcomes and fetal anomalies were assessed. Differences between treatment groups were assessed using Kruskal-Wallis with Dunn's test.

**Results:** The DTG+E/T group had the highest resorption rate (9.7%), followed by RAL+E/T (8.4%), BIC+E/T (6.9%), control (6.3%), and CAB+E/T (5.3%). Viability was lowest in DTG+E/T and highest in CAB+E/T. Litter average fetal weight was significantly lower in DTG+E/T (0.34g), BIC+E/T (0.34g), and CAB+E/T (0.33g), but not RAL+E/T (0.37g), compared to control (0.38g). DTG+E/T and CAB+E/T had lower litter average placenta weights, and BIC+E/T and CAB+E/T had lower fetal-to-placenta weight ratios versus control. Compared to control, lower percent increase in maternal weight (normalized to litter size) was observed in RAL+E/T, BIC+E/T, and CAB+E/T groups.

Rates of brain and spinal cord defects were similar between INSTI groups and significantly higher versus control (DTG+E/T 0.42%, RAL+E/T 0.69%, BIC+E/T 0.88%, CAB+E/T 0.45%, control 0%). Compared to controls, open NTDs were significantly higher in DTG+E/T and RAL+E/T groups, not in BIC+E/T and CAB+E/T. CAB+E/T had higher rates of growth-restricted fetuses (5.29%) and craniofacial anomalies (1.51%) versus control (1.6%, 0%). Vascular/bleeding defects were higher in all INSTI groups (DTG+E/T 19.1%, RAL+E/T 22.4%, BIC+E/T 39.2%, CAB+E/T 27.3%, control 14.7%), especially in BIC group.

**Conclusions:** Fetal outcomes for BIC and CAB are similar to DTG and RAL. Rates of open NTDs for BIC and CAB were similar to control. BIC was associated with higher rates of vascular/bleeding defects and CAB with greater growth restriction compared to DTG and RAL. Further human studies are needed to comprehend the clinical relevance of these findings.

## WEPEA034

Maternal and fetal outcomes in mice treated with INSTIs including bictegravir and cabotegravir

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**Background:** Concerns surrounding the initial neural tube defect signal with dolutegravir (DTG) raised concerns about other integrase strand transfer inhibitors (INSTIs). This study investigates fetal outcomes in mice exposed to the INSTIs Bictegravir (BIC), cabotegravir (CAB), raltegravir (RAL), and DTG.

**Methods:** Mated female C57BL/6 mice were assigned to either water (control; 116 litters), DTG (2.5 mg/kg; 151 litters), RAL (66.67 mg/kg; 113 litters), BIC (4.17 mg/kg; 79 litters), or







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## WEPEA035

### High-risk human papillomavirus persistence and incidence among women living with HIV in the African Cohort Study

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**Background:** Women living with HIV (WLWH) have increased risk of high-risk (HR) human papillomavirus (HPV) infection and developing cervical cancer (CC) as compared to women without HIV. Many African countries aim to start HPV molecular screening as recommended by the World Health Organization.

However, the optimal interval to re-screen HR-HPV negative and positive WLWH is unclear and could be influenced by the HPV type. We evaluated HR-HPV persistence and incidence in previously HR-HPV positive and negative WLWH in four African countries.

**Methods:** Participants were enrolled into the African Cohort Study (AFRICOS) from 12 clinics in Tanzania, Kenya, Uganda, and Nigeria. From 2015 onwards, adult WLWH

within AFRICOS were offered HR-HPV testing annually, where cervical cytobrush specimens from women were genotyped for 14 HR-HPV types using the multiplex See-gene Anyplex real-time PCR.

**Results:** From 2015 to 2022, 383 WLWH underwent serial screening for HR-HPV. Their median age was 43.2 years (interquartile range 36.3-49.1 years) and 370 (96.6%) of them were on ART. A positive first HPV test was observed in 247 participants (64.5%), of whom 167 (67.6%) had persistent HPV one year later.

We also observed a 29%-61% type-specific HPV persistence with HPV45 being the most persistent (61.5% (8 of 13) persistent infections), followed by HPV52, HPV33, HPV16 and HPV35 (55.8% (24/43), 54.5% (18/33), 51.4% (37/72) and 51.1% (23/45) respectively). HPV18 infections were persistent in 33.3% (10/30) of cases. The frequency of persistent HR-HPV in WLWH with CD4 T-cells of <200, 200-500 or >500 cell/mm<sup>3</sup> at their first HPV test was 80.9%, 72.2% and 61.5% respectively (p=0.095). Among 136 participants with a negative first HPV test, 37 (27.2%) had incident HR-HPV infections one year later, of whom 12 (32.4%) had HPV16/18/45 and 8 (21.6%) had HPV35.

**Conclusions:** HR-HPV type-specific short-term persistence and incidence is high even in ART-treated WLWH with high CD4 T-cell counts from four African countries. These preliminary data support yearly HPV re-screening of WLWH.

## WEPEA036

### Targeted metabolomics reveals energy metabolism alterations across various mitochondrial haplogroups in people with HIV

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**Background:** Mitochondria generate energy for cells in most eukaryotes, contain their own genome, known as mitochondrial DNA (mtDNA). The combinations of mtDNA polymorphisms define mitochondrial haplogroups. People with HIV (PWH) are susceptible to premature aging and aging-related noncommunicable chronic diseases (NCDs). Despite altered mitochondrial energy metabolism is a significant characteristic of the aging process, whether and how the mitochondrial haplogroups impact on the energy metabolism among PWH remain to be addressed.

**Methods:** A total of 666 PWH were recruited from the Comparative HIV and Aging Research in Taizhou (CHART) cohort, Eastern China. MtDNA was extracted from whole

peripheral blood, sequenced for the entire mtDNA genome (16,569 bp) in comparison with the Revised Cambridge Reference Sequence (rCRS), and classified as mitochondrial haplogroups by HaploGrep (2.4.0) based on the mtDNA tree Build 17. Plasma were subject to targeted energy metabolomics analysis, with differential metabolites screened using linner model, fold change, and Orthogonal Partial Least Squares Discriminant Analysis. Pathway analysis was conducted using MetaboAnalyst 6.0.

**Results:** Among the participants, 73.2% were male, the median age was 44 years (IQR: 35-53), and the average time on ART was 5.9 ( $\pm 2.3$ ) years. The relatively common mitochondrial haplogroups were D4 (15%), M7 (10.5%), B4 (11.3%), F1 (9.6%), A (7.8%) and N9 (5.6%) (Figure 1a). Haplogroup A was significantly associated with down-regulation of DL-Glyceric-Acid and D(+)-Glucose but up-regulation of Pyruvic acid in the glycolysis metabolic pathway. Haplogroup F1 was manifested with upregulation of D-Glucose-6-phosphate, D-Fructose-6-phosphate, Phosphoenolpyruvic acid, Lactate, as well as L-Alanine and Alpha-Ketoglutaric Acid, suggesting active glycometabolism including glycolysis and tricarboxylic acid (TCA) cycle. Haplogroup N9 was associated with purine metabolism as signified by upregulation of glycerol-3-phosphate and downregulation of AMP, IMP and guanosine-diphosphate.

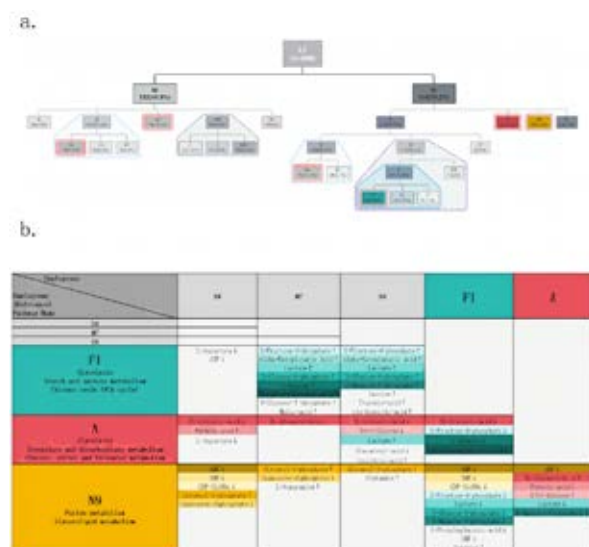


Figure 1. Mitochondrial haplogroups and associated energy metabolism alterations among people with HIV. (a) Distribution of mitochondrial haplogroups. (b) Selected mitochondrial haplogroups with significant alterations of energy metabolism and metabolic pathways.

**Conclusions:** PWH with certain mitochondrial haplogroups are more predisposed to energy metabolism alterations, and are potentially key targets of precision prevention for aging-related NCDs.

## WEPEA037

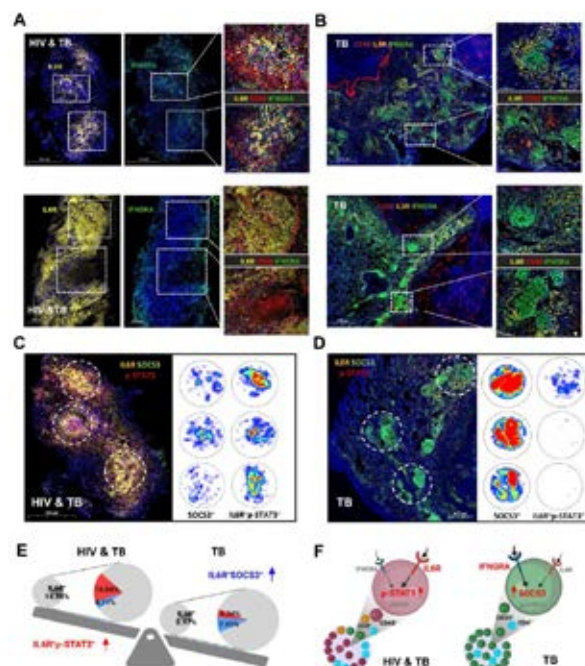
### Deciphering lung granulomas in HIV & TB: unveiling macrophages aggregation with IL6R/STAT3 activation

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**Background:** Tuberculosis (TB) remains a leading cause of mortality among people living with human immunodeficiency virus (PLWH). Although lung granulomas are a distinctive feature of TB, the intricate pathological dynamics and precise mechanisms of HIV & TB lung inflammation during HIV & TB remain not fully understood.

**Methods:** Spatial immune staining and Visium sequencing were performed on TB and HIV & TB lung specimens, revealing the intricacies of inflammatory aggregates. This involved analyzing immune cellular composition, architecture, and alterations in inflammatory and pathogenic regulation mechanisms. Subsequently, RNA-seq was utilized to validate the selection of HIV & TB inflammation-associated immune cells and cell-specific genes in peripheral blood. FACS analyses were further employed to confirm the identity of these cell subsets and their functions.



**Results:** Through comprehensive multiplex immunostaining on TB and HIV & TB lung specimens, distinct histopathological markers were identified. A notable observation was the pronounced expression of IL-6R and p-STAT3 in CD68+ macrophages within HIV & TB lung granulomas, highlighting their pivotal role in disease progression. Conversely, the diminished SOCS3 expression in these macrophages accentuated the intensified inflammatory milieu. TB granulomas, on the other hand, exhibited



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a contrasting pattern: reduced transcription factor expression in CD68+IL6R+ cells, juxtaposed with heightened SOCS3 levels, delineating a unique regulatory landscape distinct from people living with HIV & TB. Spatial transcriptome profiling further revealed the pathogenic roles of CD68+ macrophages and the activation of the IL6-STAT3 pathway within HIV & TB granulomas, accompanied by diminished SOCS3 expression in lung inflammation.

Additionally, meticulous analysis of peripheral blood samples, utilizing RNA-seq on FACS-sorted monocyte subsets, unveiled specific IL6/STAT3 activation trajectories paired with attenuated SOCS3 expression, prominently observable in the CD16+CD14+ cells of HIV & TB.

**Conclusions:** These insights hold promise for refining diagnostic approaches and designing targeted therapeutic strategies for individuals facing the dual challenges of HIV & TB.

## SARS-CoV-2 virology, pathogenesis, host immune responses, vaccines and immunotherapies

### WEPEA038

Dynamic SARS-CoV-2-specific B and T-cell responses following immunization with an inactivated COVID-19 vaccine booster in people living with HIV

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**Background:** Little is known about the dynamic SARS-CoV-2-specific B-cell and T-cell responses after the booster vaccination of inactivated COVID-19 vaccines in people living with HIV (PLWH).

**Methods:** Fifty PLWH and thirty healthy controls (HCs) were enrolled to assess B-cell and T-cell responses at the day before the booster dose (T<sub>1</sub>), one month (T<sub>2</sub>), three months (T<sub>3</sub>), and 12 months (T<sub>4</sub>) after the booster dose. Immunophenotyping, enzyme-linked immunospot (ELISPOT), and cytokines were used to assess vaccine responses at four timepoints in this study.

**Results:** The results have showed that SARS-CoV-2-specific B-cell and T-cell responses in both PLWH and HCs after receiving a third booster dose of inactivated SARS-CoV-2 vaccine were effectively induced and reached a peak at T<sub>3</sub>, declined at T<sub>4</sub> but still stronger than T<sub>1</sub>. However, the peaked frequencies of Spike-specific circulating B cells, memory B cells and SARS-CoV-2-specific CD4 and CD8 T cells in PLWH were lower than that of HCs.

In PLWH and HCs, the extent of CD4 and CD8 T cell activation and exhaustion was significantly increased after T<sub>0</sub>, and the magnitude of SARS-CoV-2-specific CD8 T-cell responses in PLWH was negatively associated with the extent of CD8 T-cell activation and exhaustion.

In addition, PLWH exhibited higher levels of IL-4 and IL-5 on T<sub>2</sub> and T<sub>3</sub>, which were found to have positive relationships with the strengthen of T cells response shown by ELISpot on T<sub>2</sub>.

**Conclusions:** These data define the nature of the SARS-CoV-2 vaccine-induced immune landscape in PLWH and provide insights into B and T-cell immunogenicity of a booster vaccination.

Our findings that the poor SARS-CoV-2 specific B and T-cell responses induced in PLWH have implications for clinical decision-making and public health policy for PLWH.

### WEPEA039

RSV fitness is increased by concomitant SARS-CoV-2 infection following a multi-level remodeling of cellular homeostasis

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**Background:** Concurrent infections with two or more pathogens with an analogous tropism, such as Respiratory Syncytial Virus (RSV) and SARS-CoV-2, may antagonize or facilitate each other, modulating disease outcomes. Clinically, a severe phenotype has been reported in children with RSV/SARS-CoV-2 co-infections. However, experimental models to study the cellular, molecular, and immunological dynamics of co-infections are extremely limited. Herein, we propose an in vitro co-infection model to assess how RSV/SARS-CoV-2 alters cellular homeostasis.

**Methods:** A549-hACE2-expressing cells were either infected with RSV and SARS-CoV-2 alone or co-infected with both viruses (Figure 1).

Viral replication was assessed at 72 hours post-infection (hpi) using RT-qPCR, Droplet Digital PCR (ddPCR), immune-fluorescence (IF), and transmission electron microscopy (TEM) analyses. Anti-viral, receptor, and autophagy



gene expression (RT-qPCR) was evaluated and confirmed by secretome analyses (Multiplex Cytokine ELISA) and intracellular protein production (Western Blot).

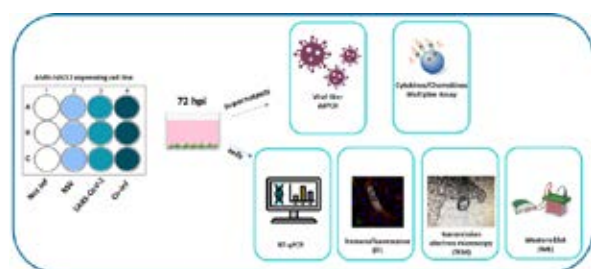


Figure 1. Synoptic representation of the study design.

**Results:** RSV/SARS-CoV-2 co-infection was characterized by a significant increase in the replication rate of RSV compared to single infection ( $p<0.01$ ). Co-infection significantly increased ICAM1 expression, one of the RSV host receptors, compared to uninfected control ( $p<0.0001$ ) and to RSV single-infection ( $p<0.01$ ), and induced a significant upregulation in pro-inflammatory genes expression, which was confirmed by secretome analysis.

Substantial morphological changes were observed in co-infected A549-hACE2 cells, as an increase in the number and length of cellular conduits was detected.

Finally, following co-infection, cells displayed a significant increase in LC3B gene expression ( $p<0.05$ ), and LC3BII/LC3BI ratio, further confirmed by IF and TEM analysis, suggestive of an alteration of the autophagy pathway.

**Conclusions:** The RSV/SARS-CoV-2 co-infection model displays a unique and specific viral and molecular fingerprint. These findings shed light on the molecular reasons justifying the augmented clinical severity of RSV/SARS-CoV-2 co-infection.

This in vitro co-infection model may represent an attractive cost-effective approach to mimic both viral dynamics and host cellular responses, providing readily measurable targets predictive of co-infection progression.

## WEPEA040

### Medical mistrust and vaccine hesitancy mediate the relationship between poverty and SARS-CoV-2 non-vaccination: findings from the MACS/WIHS Combined Cohort Study

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**Background:** SARS-CoV-2 vaccines are effective against severe COVID-19 disease; however, SARS-CoV-2 vaccine uptake has lagged in the U.S. Non-receipt of SARS-CoV-2 vaccination has been associated with socioeconomic position and attitudes including medical mistrust and generalized vaccine hesitancy.

To understand relationships between these factors among people living with HIV (PWH) or vulnerable to HIV, we assessed associations between poverty, medical mistrust, vaccine-hesitant attitudes, and SARS-CoV-2 vaccination among participants in a longstanding, mixed-serostatus cohort study (MWCCS) in 13 U.S. sites.

**Methods:** Interviewer-assisted questionnaires assessed SARS-CoV-2 vaccination, medical mistrust, and generalized vaccine-hesitant attitudes from March 2021–September 2022 ( $n=3948$ ). Poverty was denoted by annual income below the 2021 U.S. Federal Poverty Level. Covariates included age, race/ethnicity, gender, HIV status, site, and co-morbidity burden.

We conducted multivariable logistic regressions to assess effects of these co-factors on SARS-CoV-2 vaccination and constructed a structural equation model to determine whether medical mistrust and vaccine-hesitant attitudes serially mediated the relationship between poverty and SARS-CoV-2 non-vaccination.

**Results:** The mean age was 56.7 (range: 28–97); 55.3% were Black, 52.6% cisgender female, 62.6% PWH, and 26.1% in poverty. 10.1% ( $n=400$ ) of participants reported never receiving SARS-CoV-2 vaccinations.

Participants in poverty ( $aOR=1.94$ ; 95% CI: 1.28, 2.95), aged  $<50$  ( $aOR=2.82$ ; 95% CI: 1.81, 4.41), living without HIV ( $aOR=1.56$ ; 95% CI: 1.03, 2.38), and conveying highly vaccine-hesitant attitudes ( $aOR=7.40$ ; 95% CI: 4.91, 11.17) had higher odds of non-vaccination than their counterparts.



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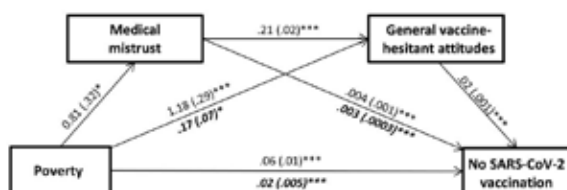


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Medical mistrust and vaccine-hesitant attitudes mediated the relationship between poverty and SARS-CoV-2 non-vaccination (indirect effect:  $\beta=0.02\pm0.005$ ;  $p<0.001$ ), accounting for 36.4% of that effect. No significant differences in these relationships by gender or race/ethnicity were detected.



*Figure 1. Relationship between poverty status and SARS-CoV-2 vaccination non-uptake, mediated by medical mistrust and vaccine-hesitant attitudes, MWCCS (N=3948), 2021 - 2022.*

**Conclusions:** Poverty was a key predictor of SARS-CoV-2 non-vaccination in this cohort. Findings indicate a profound need for renewed vaccine promotion efforts tailored to combat medical mistrust and vaccine-hesitant attitudes in impoverished communities in the U.S., particularly those affected by HIV.

## Course of HIV disease

## WEPEB041

High burden and mortality of advanced HIV disease (AHD) among PLHIV- urgent need to prioritize care

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**Background:** Despite the universal access to Antiretroviral treatment (ART) and implementation of the "test and treat" policy, PLHIV still present with advanced HIV disease (AHD). AHD remains a leading cause of mortality in PLHIV in low-middle income countries. Identifying PLHIV with AHD with highest risk of mortality will help prioritizing care for this vulnerable group.

**Methods:** The burden of AHD and 6-month death/loss to follow-up (LFU) were analysed among ART-naïve PLHIV aged ≥15 years newly enrolled in an ART center (ARTC) at a tertiary-care institution in New Delhi, India, between April 2020-March 2023.

Additional 12, 36 and 24 month follow up analysis of eligible PLHIV was also done. Baseline socio-demographic and clinical characteristics of AHD was evaluated and predictors of death among those with AHD were analyzed using multivariate logistic regression.

**Results:** During this period, 917 PLHIV were newly registered in care at the ARTC. Of these, 29.6% (272/917), had AHD. The mean age of PLHIV with AHD was 35.9 ± 10.1 years, 81.6% were men, 46% were married and 21% were injecting drug users. The mean CD4 count was 128.1 ± 92.2 cells/mm<sup>3</sup> and 43.3% had CD4 < 100 cells/mm<sup>3</sup>. More than a third (37.5%) of PLHIV with AHD had active TB disease, 58.8% had an opportunistic infection and 9.5% were hospitalised with serious illness. 72% PLHIV with AHD had same day ART initiation and 90% had ART initiation by 18 days. At 6 months, 36 /250 had died- a mortality of 14.4%, 22/272 (8%) were lost to follow up. There were 3 additional deaths by 12 months and 1 more each at 24 and 36 months. Lower baseline CD4 counts (89.19 vs 136.34 cells/mm<sup>3</sup>, p=0.001) and lower body weight (43.85 vs 51.15 kg, p=0.002) were significantly predictive of mortality.

**Conclusions:** Nearly a third of PLHIV still present with AHD. AHD is associated with high mortality especially within the first 6 months despite initiating ART. PLHIV with lower CD4 counts (especially CD4 <100 cells/mm<sup>3</sup>), those requiring hospitalization and with undernutrition are at highest risk for mortality. These PLHIV must be prioritized to receive urgent, early interventions to save lives.

## WEPEB042

Standardizing routine mortality review among children living with HIV on antiretroviral therapy in Tanzania

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**Background:** In Eastern and Southern Africa, children comprised about 5% of people living with HIV, but almost 14% of all deaths due to AIDS in 2022. The Elizabeth Glaser Pediatric AIDS Foundation through the USAID Afya Yangu Northern project established routine pediatric mortality reviews to determine the underlying causes of deaths among children receiving antiretroviral therapy (ART) in Tanzania.

**Methods:** Pediatric death audit forms were introduced in the project-supported health facilities to learn lessons from each child death to guide quality improvement.

A retrospective chart review of the care and treatment cards and pediatric death audit forms was conducted on all deaths that occurred among children aged 0-14 years at 472 care and treatment clinics in the five supported regions between October 2022 - September 2023.

Descriptive analysis was done on client demographics and included age at death, place of death, duration on ART, and underlying causes of death recorded.

**Results:** A total of 5,999 children were receiving ART services by September 2023. Between October 2022 and September 2023, 76 (1.2%) pediatric deaths were recorded with 40 (53%) of the deaths in children under five years of age.

Eight (11%) children died within the first two weeks after ART initiation, whereas 41 (54%) of children died after being on ART for more than six months.

The majority of deaths (71%) occurred within the health facility. The main underlying causes of death recorded were malnutrition in 38 children (50%) and tuberculosis in 20 children (26%). See figure for other diagnoses.

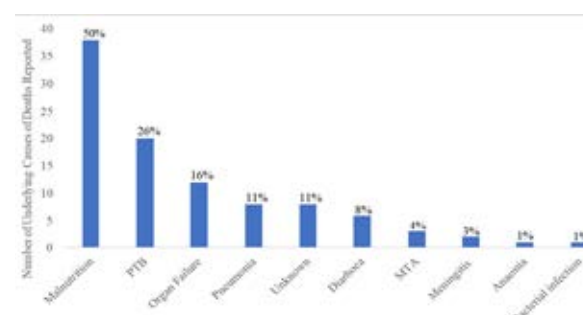


Figure: Number and proportion of underlying causes of death recorded among 76 children on ART who died between October 2022 - September 2023.



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**Conclusions:** Routine mortality reviews create better understanding of the major treatment challenges. Pediatric HIV programs should consider integrating nutritional intervention packages and strengthening tuberculosis monitoring to improve outcomes in children on ART.

## WEPEB043

Differences in mortality in hospitalized advanced HIV disease between treatment-naïve and treatment-discontinuing individuals: a comparative retrospective study from Mexico City

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**Background:** Advanced HIV disease remains a public health problem in the Latin American region and represents a major cause of morbidity and mortality in people living with HIV (PWH). It has been reported that COVID-19 pandemic and fragmented health systems, like ours, have jeopardized the HIV continuum of care, leading to a major frequency of hospitalization.

It is unknown whether mortality and unfavorable outcomes differ between those with AIDS-defining events who are treatment-naïve versus those with advanced disease due to abandonment of antiretroviral treatment.

We aim to compare differences in mortality in PWH between treatment-naïve (TN) and treatment-abandoned (TA) hospitalized individuals.

**Methods:** All adults hospitalized for complications related to advanced HIV disease (<200 CD4 cell/mm<sup>3</sup> and/or with an AIDS-defining event) were included and divided into TN and TA between January 2015 and December 2022 in a tertiary center in Mexico City. Demographic, clinical, and laboratory data were collected. The outcomes were days of hospitalization, 30-day and one year mortality after admission.

**Results:** A total of 1,371 hospitalizations occurred in 755 PWH during the study period, of which 470 events were related to advanced HIV disease in 310 individuals. Of these, 213 (69%) were TN at the time of admission, while 97 (31%) were TA. No differences were found in male sex (88 % vs 84%,  $p=0.46$ ), median age (36y vs 37y,  $p=0.63$ ), mean days of hospitalization (15 vs 14,  $p=0.81$ ), median CD4 (39cells/mL vs 48cells/mL,  $p=0.35$ ), years of education (14y vs 12y,  $p=0.072$ ), and individuals with comorbidities (28% vs 36%,  $p=0.17$ ). TN were significantly more likely to have acquired HIV by sexual transmission ( $p=0.006$ ). Mortality at one year was significantly higher in those with TA (24% vs 8%) ( $p=0.011$ ). A tendency towards more mortality at 30 days was found in TA (12% vs 5.5%,  $p=0.062$ ).

**Conclusions:** Frequency of TA HIV clients is inadmissibly high and is associated with worse clinical outcomes when compared to TN HIV clients. Biological, social, and/or unknown factors may contribute to the difference in mortality observed.

Future research should focus on understanding the reasons for these findings and designing public health strategies to avoid disruption of the continuum of care.

## WEPEB044

Treatment interruption and mortality among persons living with HIV (PLHIV) initiating antiretroviral treatment in Jamaica

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**Background:** Of an estimated 32,000 PLHIV in Jamaica, 21,342 initiated antiretroviral therapy (ART) by 2020; however, only 12,032 were retained on ART.

**Methods:** We examined treatment interruption and mortality through June 2022 among PLHIV initiating ART from 2018-2020 using national clinic data in Jamaica. Kaplan-Meier, Cox proportional hazards, and logistic regression analyses identified factors associated with treatment interruption (defined as no clinic contact for  $\geq 90$  days after last scheduled appointment) and mortality.

**Results:** Among 4,784 PLHIV initiating ART during 2018-2020, 54% were female, median age was 37 years and 27% had CD4 count <350. By June 2022, 73% were retained on ART. Attrition was due to treatment interruption (11%), death (10%), and migration/transfer (5%). Retention was higher among women compared to men (76.2% vs. 71.4%,  $p<0.001$ ). In multivariable analysis, treatment interruptions were less likely for clients aged 50 years and older ( $aOR:0.52$  [0.35-0.77] vs. 16-24), rural residents ( $aOR:0.75$  [0.59-0.95] vs. urban), and first CD4 count <200 cells/mm<sup>3</sup> ( $aOR:0.44$  [0.32-0.62]) or 201-349 ( $aOR:0.70$  [0.50-0.96]) vs. those with first CD4 count  $\geq 350$ . Mortality rates were higher for males vs. females ( $p<0.001$ ), persons aged 50 years and above ( $p<0.001$ ) vs. younger, and clients with CD4 count  $\leq 200$  at ART initiation ( $p<0.001$ ) (Figure 1). In Cox proportional hazards analysis, CD4 count of <200 at ART initiation ( $aHR:1.67$  [1.27, 2.20]) was the only significant predictor for higher mortality, while ART regimen change from NNRTI-based regimens to PIs was associated with lower mortality ( $aHR:0.29$  [0.29, 0.71]).

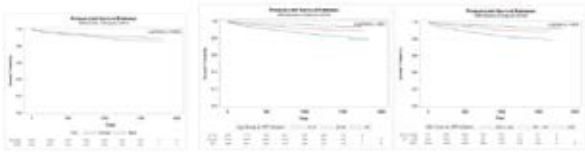


Figure 1. Kaplan-Meier survival curves for mortality, Jamaica.

**Conclusions:** Our analysis of national data in Jamaica found one-fourth of PLHIV initiating ART were not retained after 18 months.

Close monitoring of males, older clients, and persons initiating ART with low CD4 counts may avert mortality, as well as timely review and switch for persons failing NNRTIs or other ineffective regimens.

## WEPEB045

Sequencing of provirus integration sites reveals a reduced reservoir size and heterogeneous clonal types in individuals initiating ART during acute HIV infection

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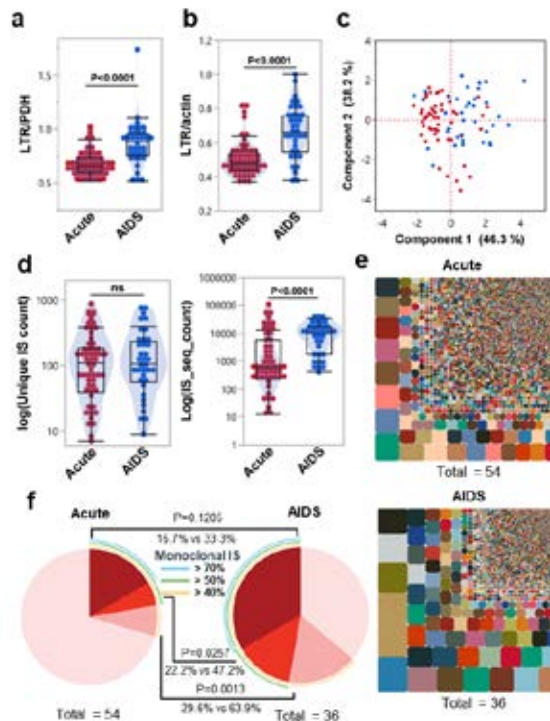
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**Background:** Despite evidence favoring early ART initiation during acute HIV infection, the optimal treatment timing remains uncertain. Studies suggest benefits like reduced infected cells and limited latent pool size. However, a lack of clinical evidence hinders direct comparison of provirus integration site (IS) counts between those initiating ART in acute HIV and AIDS stages.

**Methods:** In this study, we use LAM-PCR and Next Generation Sequencing to longitudinally examine proviral integration sites, comparing clonal counts between those starting ART during acute HIV infection and AIDS stages. This allows for a detailed analysis of integrated HIV provirus over time.

**Results:** In individuals living with HIV, the initiation of ART treatment during the acute phase results in lower reservoir levels compared to those starting treatment during the AIDS phase (Fig1a-c). Upon calculating unique IS counts, our findings indicate that although the total IS counts are higher in individuals starting ART during AIDS stages compared to those initiating ART during the acute phase, the counts of unique IS remain similar between the two groups (Fig1d).

Notably, individuals initiating treatment at different stages of ART display distinct clonal distribution patterns of unique IS. Those in the acute phase exhibit greater heterogeneity, while individuals in the AIDS stage tend to demonstrate more homogeneity. Additionally, patients initiating treatment during the AIDS stage show a higher prevalence of single-clonal distribution (Fig1e-f)



**Conclusions:** Overall, we introduce a clinical method to assess provirus size in human peripheral blood. Our findings offer evidence that individuals living with HIV who initiate ART treatment during the acute phase have lower reservoir levels compared to those starting treatment during the AIDS phase.

Furthermore, we identify a widespread existence of monoclonal distribution of IS in AIDS patients after ART treatment, which could pose barriers to effective treatment for AIDS.



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### WEPEB046

Need for increased HIV testing prior to and during pre-exposure prophylaxis with cabotegravir long-acting injections in routine clinical care in the United States

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**Background:** Cabotegravir long-acting (CAB LA) is approved as pre-exposure prophylaxis (PrEP) for prevention of HIV. As per the label and CDC guidelines, HIV-1 testing should be performed prior to starting CAB LA PrEP and every two months (prior to each injection). We describe the frequency of HIV testing prior to CAB LA PrEP injections in routine clinical practice in the US.

**Methods:** Individuals without HIV, ≥12 years old who received ≥1 CAB LA injection between 21DEC2021 and 31MAR2023 in the OPERA cohort were followed through 30JUN2023. Administration of HIV testing (antigen/antibody [Ag/Ab] and/or RNA test) ≤1 week before/at each injection was assessed. A sensitivity analysis using a 4-week window before/at injection was conducted.

**Results:** Of 560 CAB LA PrEP users, median age was 31 years (IQR: 25, 38); 13% were women, 32% were Black, and 29% were Hispanic. Within ≤1 week before/at the first injection, 352 (63%) had any HIV test done (268 Ab/Ag test only, 14 RNA test only, 70 both tests). The 498 individuals with ≥2 CAB LA injections received a median of 3 follow-up injections (IQR: 2, 4; max: 8).

The median proportion of injections with any HIV test within ≤1 week before/at injection was 80% (IQR: 40%, 100%), with 50% having a test before each injection; 44% had an Ag/Ab test and 9% had an RNA test before each injection (Figure). Using a 4-week window, a median of 100% of injections had a test (IQR: 50%, 100%).

**Conclusions:** During routine clinical care in the US, HIV testing among CAB LA PrEP users does not conform to the label or CDC guidelines. Providers and users of CAB LA PrEP should be educated on the need for HIV testing prior to

all injections, as timely HIV diagnosis and switch to a full antiretroviral therapy regimen reduces the potential for development of resistance.

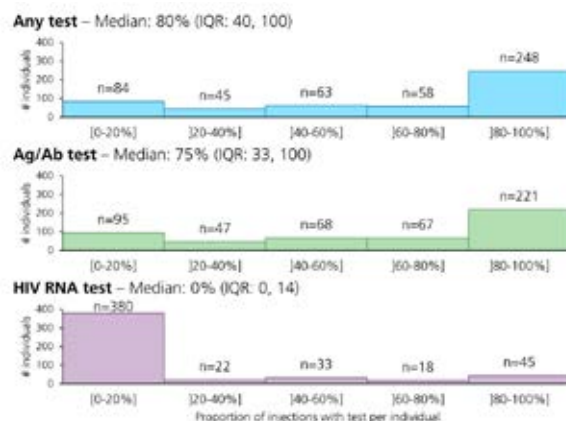


Figure. Presence of HIV testing within 1 week before/at follow-up CAB LA PrEP injections, among individuals with ≥2 injections (N = 498).

Ab, antibody; Ag, antigen; CAB, cabotegravir; IQR, interquartile range; LA, long acting; N, number; PrEP, pre-exposure prophylaxis; RNA, ribonucleic acid.

### WEPEB047

A novel qPCR method to count CD4+ T helper cells using dried blood

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**Background:** The CD4+ T cell quantification in people living with HIV (PLWH) is important to identify those suffering from advanced disease (<200 CD4 cells/μl) at antiretroviral therapy initiation and during monitoring. Flow cytometric quantification requires fresh blood which is challenging especially in resource-limited settings. Here, epigenetic quantification of CD4+ T cells from dried blood spots is demonstrated to overcome this obstacle.

**Methods:** An epigenetic qPCR assay was established co-amplifying a CD4+ T cells specific demethylated region, the GAPDH locus for the quantification of leukocytes as well as an internal control for the absolute quantification. Genomic DNA from blood is bisulfite converted and subsequently purified before analysis.

CD4 counts were determined in liquid blood samples as well as matched DBS samples of 41 PLWH and compared to flow cytometry data. Furthermore, liquid blood and DBS samples of 159 people with diverse immunological conditions were analysed in parallel. For each analysis, 40 μl whole blood or one 6mm punch was used. The real-time PCR was performed using different qPCR platforms.

**Results:** For both substrates, a significant Spearman's correlation factor of  $>0.9$  was determined when comparing flow cytometric and epigenetic CD4+ T cell data. A substrate-specific correction equation was defined to compensate the bias between both technologies. Applying the correction, a bias  $<6\%$  to flow cytometry (Bland-Altman analysis) was achieved using liquid or DBS samples.

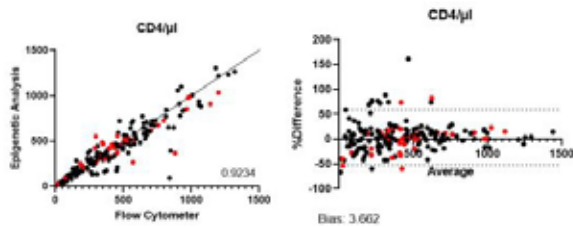


Figure 1. Exemplary presentation of the Spearman's correlation and Bland-Altman analysis comparing epigenetic results of DBS cards with flow cytometric data. Data points in red representing the HIV patients.

The established correction was independently tested on an immunodeficiency cohort. All samples with  $<200$  CD4 cells/ $\mu$ l as determined by flow cytometry were correctly identified using the LightCycler480II.

**Conclusions:** Accurate quantification of CD4+ T helper cells out of a dried blood spot was shown using the epigenetic qPCR assay. Thus, the determination and monitoring of the CD4+ T cell count in PLWH could be significantly simplified by using DBS cards especially when combined with viral load testing on DBS.

## WEPEB048

Prevalence of gonococcal and chlamydial infections among clients receiving sexually transmitted infection testing at the Thai Red Cross AIDS Research Centre Anonymous Clinic, Bangkok

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**Background:** Sexually transmitted infections (STIs) such as gonorrhea, chlamydia, and syphilis, pose a significant public health concern. Nucleic acid amplification tests (NAATs) can simultaneously detect  $>1$  STI at the same time, and new multiplex platforms help to meet increased demands for rapid, accurate, and cost-effective testing.

This study aimed to determine the prevalence of STIs by site with the Alinity m STI assay, and assess agreement of results between 2-testing platforms.

**Methods:** Clients attending the Thai Red Cross AIDS Research Centre for STIs screening during May to December 2020 and April 2021 were included. Cervical, rectal, oropharyngeal, urine, and pooled samples, were tested for *Chlamydia trachomatis* (CT) and *Neisseria gonorrhoeae* (NG) using NAATs; NG, CT and *Mycoplasma genitalium* (MG) were tested using the Alinity m STI assay.

**Results:** 300 samples were tested from 41 females, 206 males, and 53 transgender women (median age 31 years); 109 (36%) were people living with HIV (PLH). The overall prevalence of both CT and NG was 21%.

Discordant results from the Abbott RealTime CT/NG and the Alinity m STI assay occurred in 12/300 (4%) samples: 3 were positive for CT by Abbott RealTime CT/NG and negative by Alinity m ( $p=0.08$ ); 6 NG samples were positive by Abbott RealTime CT/NG and negative by Alinity m, and 3 were positive by Alinity m and negative by Abbott RealTime CT/NG ( $p=0.32$ ).

In 15 cervical, 40 anal, 45 oropharyngeal, 100 urine and 100 pooled samples, the Alinity m detection rates for CT were 13.3%, 32.5%, 8.9%, 7% and 31%, and for NG were 13.3%, 55%, 17.8%, 5%, and 19% respectively. Eight percent of samples tested positive for MG. PLH were more likely to test positive for GN (risk difference = 19.7 (95%CI 9.9 to 29.5%);  $P<0.001$ ) but not CT (risk difference = 1.9 (95%CI -7.4 to 11.2%);  $P=0.7$ ).

**Conclusions:** The Alinity multiplex and NAAT tests for CT and NG showed high rates of agreement. CT and NG prevalence ranged from 5 to 55% in different anatomical sites, and PLH were more likely to have positive NG but not CT results. Comprehensive screening for STIs remains crucial for effective prevention and control.



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## WEPEB049

### Impact of quality improvement approach to improve uptake of early infant diagnosis services by young mothers living with HIV

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**Background:** Early infant diagnosis (EID) of HIV is a strategy which identifies HIV Exposed Infants (HEI) and assists them to access timely testing and referral to treatment services using DNA/PCR testing. According to Spectrum 2021 HIV estimates for Zimbabwe, only 74.8% of children living with HIV know their HIV status and programmatic data for October 2021 reported an EID coverage of 76% among children less than 2 months old.

However, HIV positive pediatric case investigations show elevated vertical transmission among young mothers (YMs) living with HIV (YMLHIV). Zvandiri established the Young Mentor Mother (YMM) programme, a peer-led innovation being implemented in 17 districts and supporting 2,003 young mothers across Zimbabwe through the ZimPAAC consortium.

Under this programme, Zvandiri was tracking EID coverage for HEI in Lupane and Sanyati. At the beginning of October 2021, the EID sample collection rate among enrolled infants was 39% (52/132), 33% (17/52) received results, 1% (3/52) seroconversions rate.

**Methods:** EID is done at birth, 6 weeks, 9 months and at 18 months or 3 months post cessation of breastfeeding, whichever comes last. A quality improvement (QI) project was implemented in Lupane and Sanyati districts from March-September 2022 after the districts had reported low performance on the indicator. Based on a fishbone analysis performed by Lupane and Sanyati districts, peer counselling, information sharing, including lived experiences for eMTCT, importance of adherence to EID testing services, close collaboration of HCWs and YMMs for follow up and community testing were implemented to address EID coverage.

**Results:** 174 YMLHIV (7% aged 15-19; 93% aged 20-24) and 126 HEI with ages ranging from birth to 21 months, with a median age of 10 months, were enrolled and received support from 11 YMMs. At the end of September 2022, Sanyati and Lupane district had improved EID coverage

from 14% to 51% and 41% to 90% respectively. By 2023, EID coverage was 76% (52/64), 100% (52/52) received results, 0% seroconversions rate.

**Conclusions:** Peer counselling can enhance EID coverage. Multi-component interventions should be done to improve EID services quality management and bridge service gaps, aimed on promoting an HIV-free generation.

## WEPEB050

### Real-time adherence patterns in persons starting oral antiretrovirals support baseline management of depression, methamphetamine use, homelessness and real-time adherence interventions

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**Background:** Early identification of persons starting oral antiretroviral (ARV) treatment who need personalized support is limited.

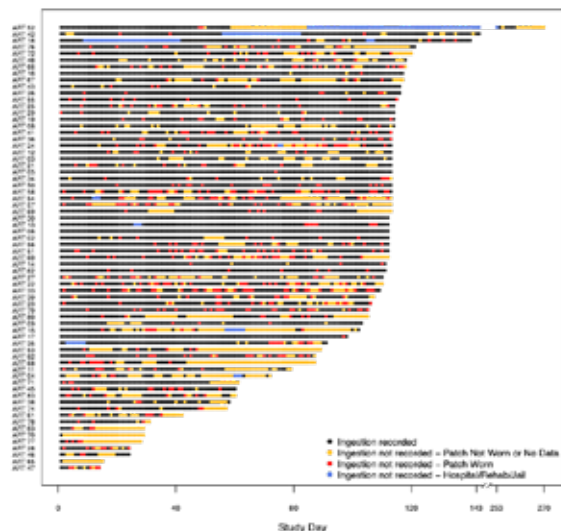
We captured real-time daily adherence in persons starting ARVs, analyzing dosing patterns and their associations with detailed baseline characteristics.

**Methods:** The real-time adherence behavior pattern was captured using FDA-approved digital-health-feedback system (DHFS) with ingestible-sensor-enabled ARVs in persons starting oral ARVs for 16 weeks.

Baseline demographics, urine toxicology and self-report questionnaires were obtained. Kaplan-Meier Estimate evaluated persistence on study. Dot-plot captured individual patterns of daily medication taking; Spearman's rho and permutation tests analyzed dose taking patterns. Mixed-effects logistic regression, with multiple imputation, modeled characteristics associated with treatment adherence.

**Results:** Sixty-eight participants, 83.8% male, average age 38.8 years, 64.7% White, 23.5% Black race, 36.8% Hispanic ethnicity, were followed for 112 days median (14 -270) generating 6634 observation days. Persistence on study (surrogate for retention in care) for 16 weeks was 48.5%, with methamphetamine use (HR=2.48; CI<sub>95</sub> 1.21, 5.07; p=0.015), depression PHQ-8 (HR=1.08; CI<sub>95</sub> 1.01, 1.15; p=0.020) and greater life chaos (HR=1.12; CI<sub>95</sub> 1.05, 1.21; p=0.002) predictors of early dropout. Figure 1 shows dot-plot of individual participant daily medication taking patterns (legend insert provides color code).

Missed doses occurred on consecutive days, mean 1.36 days, p<0.001. The likelihood of daily confirmed doses was higher in the absence of baseline depression, methamphetamine use and homelessness (see Table 1).



	Single-predictor model		Multi-predictor model with backward model selection, $p < 0.15$	
	Odds ratio ( $CI_{95\%}$ )	P-value	Odds ratio ( $CI_{95\%}$ )	P-value
Time on study, per 1 week	0.896 (0.884, 0.908)	< 0.001	0.896 (0.884, 0.908)	< 0.001
Housing: Unhoused (ref) Vs Stable	3.613 (1.680, 7.770)	0.001	2.107 (1.089, 4.077)	0.027
English Basic (ref) vs Advanced	2.901 (1.378, 6.107)	0.005	1.884 (1.030, 3.448)	0.040
Medical insurance No (ref) vs Yes	3.407 (1.398, 8.302)	0.007	2.355 (1.158, 4.790)	0.018
UTOX Methamphetamine Pos (ref) vs Neg	4.926 (2.349, 10.33)	< 0.001	2.041 (1.039, 4.009)	0.038
Questionnaires: PHQ-8, per 1 score	0.873 (0.811, 0.939)	< 0.001	0.913 (0.856, 0.973)	0.005
Life chaos, per 1 score	0.846 (0.791, 0.906)	< 0.001	---	---

**Table 1: Factors associated with daily confirmed doses, longitudinal mixed-effects logistic regression. Subject-specific odds ratios (ORs) and 95% confidence intervals ( $CI_{95\%}$ ) reported. Results with  $p < 0.04$  are in bold. PHQ-8=Patient Health Questionnaire (8-items).**

**Conclusions:** Real-time adherence patterns in persons starting oral ARV treatment verified missed doses occurred on consecutive days supporting real-time adherence interventions, and confirmed baseline methamphetamine use, depression and homelessness impact adherence early in treatment.

## WEPEB051

Six months outcomes for people living with HIV on Dolutegravir-based regimens with high viral loads: lessons from AIDS healthcare foundation Eswatini

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**Background:** Dolutegravir-containing regimens are the most widely used antiretroviral therapy (ART) in Eswatini and are effective at achieving viral load (VL) suppression.

The World Health Organisation (WHO) advises that all clients with a high VL (HVL) should receive stepped-up adherence counselling (SUAC) for three months and a repeat VL test to minimise selection resistance and viral transmission. AIDS Healthcare Foundation (AHF) provides HIV services to 32,000 clients at six health facilities in Eswatini. We describe the outcomes of clients on a DTG-containing regimen six months after the initial high VL and three months of SUAC.

**Methods:** A retrospective cohort analysis was done for records of clients with HVL ( $\geq 1000$  c/ml) reported between July 2022 and July 2023 from six health facilities. Individual client records and six-month cohort reports were used. The sociodemographic and clinical data of clients were extracted from the client management information system (CMIS), and descriptive analysis was used.

**Results:** Of 581 clients, 406 (68.9%) were females; the median age was 34 years (interquartile range 28-41), and 352 (60.5%) were 20 – 39 years. Ninety-one percent ( $n=531$ ) had at least one SUAC session. The median time between the VL result and the first SUAC was 33 days, and 75% ( $n=434$ ) had a repeat VL at six months.

For those with repeat VL results, 321 (74%) were virologically undetectable, 66 (15.2%) had low-level viraemia ( $VL \geq 50, < 1000$ ), and 45 (10.4%) had persistent HVL. The median time to the first adherence session was 54 days for clients who received  $> 3$  months of ART prescriptions.

Only one pregnant client was switched to a second-line regimen after a second HVL. Loss to follow-up within the cohort was 10.2% ( $n=59$ ).

**Conclusions:** Most clients achieved virologic suppression within six months following SUAC. However, a notable proportion showed low-level viremia or persistent HVL, signifying a need for continued adherence counselling.

The loss to follow-up of 10.2% underscores the importance of improved retention strategies to address other barriers to ART, particularly in clients with evidence of adherence challenges.

Remote counselling should be considered for clients with  $\geq 3$  months of prescriptions who are usually reluctant to return for SUAC.

## WEPEB052

Alinity m MPXV - a new qualitative realtime PCR for MPOX virus

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**Background:** Timely testing of monkeypox (MPOX) virus is important for client care, contact tracing, and decreasing transmission. The new Alinity m MPXV Research Use Only (RUO) assay developed for direct qualitative detection of MPXV DNA in clinical specimens was evaluated by



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comparison with a MPOX/Ortho-pox Virus in-house assay (LDT) established with start of the global outbreak in summer 2022.

**Methods:** Residual archived swab samples tested with the LDT in 2022 were selected (100 negatives, 300 positives) and were diluted 1:10 to obtain sufficient material for parallel testing of specimens with the Alinity m MPXV RUO test (Abbott Molecular) and the LDT (extraction: Nimbus, See-gene, primers/probes: TibMolbiol; PCR: Cfx96, Bio-Rad) to estimate the correlation between both tests.

Assay linearity was assessed with a dilutional series of cell-culture supernatant (INSTAND e.V., Germany) quantified by digital PCR, with concentrations ranging from 500,000 to 160copies/mL and tested at 10 replicates each. Detection limits of both tests (95% hit-rates) were determined by Probit analysis.

**Results:** All samples initially negative for MPOX were confirmed as negative with both tests. 95.3% (286/300) of the diluted positive samples were reported positive with both tests. Samples that were not positively confirmed had Ct values of >37 cycles upon initial testing of undiluted material. The correlation between results was very high ( $R^2$  0.96). The mean difference in Ct-values determined by Bland-Altman analysis was 0.54 cycles, with the lower Ct-values for the Alinity m MPXV RUO assay. The dilution series demonstrated linearity for both assays. Probit analyses showed 95% hit-rates of 293 and 446 copies/mL for the Alinity and LDT, respectively.

**Conclusions:** In our comparative analysis, the Alinity m MPXV RUO assay showed very high specificity and sensitivity with a lower detection limit of 293copies/mL at a 95% hit rate.

Continuous random access and stat capabilities of the Alinity m system allowed for improving turn-around-time in comparison to the batch-based in-house assay.

## Co-infections (including opportunistic infections)

### WEPEB053

#### High burden of human papilloma virus infection and persistence in people living with HIV

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**Background:** In people living with HIV (PLH), coinfection with human papilloma virus (HPV) is a major source for comorbidity and mortality due to HPV-associated tumors. Despite highly efficient antiretroviral therapy (ART), HIV infection still increases the risk for HPV persistence, the cumulative lifetime risk of HPV disease progression and thus incidence of HPV-associated cervical, anal and oropharyngeal cancer (Perez-Gonzalez et al., 2022).

**Methods:** This study analyses the association of HIV-induced dysfunctional immune response and HPV persistence in an observational, prospective, longitudinal study (follow-up visits after 3, 6 and 12 months) conducted at the LMU university hospital and Prinzmed practice in Munich. Anal and oral HPV status regarding 28 high- (HR) and low-risk (LR) subtypes were evaluated. Concomitantly, HPV-specific T cell responses targeting five HR-HPV types were monitored by ELISpot assays using freshly isolated peripheral blood mononuclear cells.

**Results:** 75 male and 3 female individuals (63 people living with and 15 without HIV) with a median age of 54 (IQR 43-61) have been recruited. All PLH were on ART (viral load < 50cp/ml) with stable CD4 counts (median 603 (IQR 504-773)). At baseline, HPV was anally and/or orally detectable in 90% and 35% of participants, respectively. While single infections dominated in the oral cavity (90%), most anal infections consisted of multiple HPV subtypes (73%). 42% of anal and 5% of oral infections persisted at least up to one year. Only 31 out of 105 (30%; all timepoints merged) individuals with acute HPV16, 18, 35, 45 or 58 infection showed a corresponding interferon-gamma T cell response against the infecting subtype. Overall, HPV-specific T cell responses were detectable in 70% by interferon-gamma ELISpot.

**Conclusions:** HPV infections are highly prevalent within the study population at baseline and anal infections frequently persist up to the one year. Only a small propor-

tion of infected individuals showed an interferon-gamma response against the infecting subtype. Additional analysis of immune cell effector populations in peripheral blood and anal tissue by FACS and RNA-seq experiments will further characterize (dys)functionality of the immune system and provide insight how immune impairment associates with HPV persistence in PLH.

## WEPEB054

People living with HIV (PLWH): who is hospitalized in modern antiretroviral therapy (ART) era?

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**Background:** Modern ART has extended survival and reduced hospitalization of PLWH. A better knowledge of the profile of hospitalized PLWH in the context of aging with increasing comorbidities would be helpful to improve management of this population.

**Methods:** We assessed the profile of all PLWH hospitalized over one year in our Infectious Diseases Unit (IDU) clinic. Data were extracted from the hospital computerized database after written informed consent.

**Results:** Among 5,242 followed up in our clinic, 151 PLWH were hospitalized between 1st July 2022 and 30st June 2023, with a total of 203 hospitalizations, representing 15.6% of all hospitalizations in our IDU clinic. 89 were male, 47 female and 15 transgender females. Median age was 51 yrs [40, 60] and median CD4 cell count 320/mm<sup>3</sup> [110, 620] at time of hospitalization.

Plasma HIV RNA was < 50 cps/mL in 93 PLWH. Median duration of HIV infection was 15.4 yrs [4.6, 23.2] and median delay since first ART initiation 13.3 yrs [6.2, 21.3] in treated PLWH.

30 PLWH were hospitalized for HIV stage B or C event (39 hospitalizations), 45 PLWH for non tuberculous bacterial infections, including low respiratory tract infection in 18 and urinary tract infection in 8 (total = 47 hospitalizations), 27 PLWH for viral infections, including 7 mpox and 6 COVID19 and 10 PLWH for neoplastic disease not related to HIV status (11 hospitalizations). 10 PLWH were hospitalized for immuno-virological failure (2 PLWHIV-2 with multi-resistant virus and 8 PLWH with poor adherence to ART) and 9 PLWH to explore weight loss.

Hospitalizations for non-communicable diseases were rare: vascular event in 2, chronic liver disease in 3, cognitive impairment in 3 and neurologic or psychiatric disorders in 8 PLWH.

Ten PLWH died during the study period, including 4 with cancer and 2 with an AIDS defining event. In 11 PLWH, HIV infection was diagnosed at time of hospitalization.

**Conclusions:** In modern ART era, hospitalizations of PLWH remain driven by infectious diseases: 47% due to community infections, and 20% due to opportunistic infections in late presenters or lost to follow-up PLWH. High frequency of community infections underline the value of vaccine coverage in PLWH.

## WEPEB055

Length of hospital stay, in-hospital mortality, and factors associated with mortality among people living with HIV and cryptococcal meningitis receiving liposomal amphotericin B in real world setting

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**Background:** Cryptococcal meningitis (CM) remains the second most common and lethal opportunistic infection among People Living with HIV (PLWHIV) in sub-Saharan Africa. Currently, PLWHIV are managed on single high-dose liposomal amphotericin B and flucytosine. However, there is no sufficient data on whether the new treatment regimen has an effect on reducing in-hospital mortality and length of hospital stay in the real-world setting.

We aimed to investigate the proportion of in-hospital mortality, length of hospital stay (LOS), and factors associated with mortality among PLWHIV with associated CM receiving liposomal amphotericin B-flucytosine regimen.

**Methods:** This was a cross-sectional study that reviewed medical records of PLWHIV admitted between December 2022 and May 2023 at 11 tertiary hospitals in Uganda. Medical records of 173 PLWHIV and CM were captured using the Kobo Collect app.

Univariate descriptive statistics were used to summarize the background characteristics. Modified Poisson regression was used to ascertain factors associated with mortality at bivariable and multivariable levels.

Associations were presented through adjusted prevalence ratios with their 95% confidence intervals. Data were analyzed using STATA v15.

**Results:** Of the 173 medical records reviewed, majority (58.4%) were males with a median age of 38 years (IQR= 30, 48) and over half (55.5%) were married. Forty percent of PLWHIV and CM had altered mental status (GCS<15) on admission. Overall, in-hospital mortality for liposomal amphotericin B was 35.8% (compared to 42% of amphotericin B deoxycholate) and this significantly varied by health facility (range 7.1-100%). The median LOS was 7 days (IQR = 3, 12).



AIDS 2024



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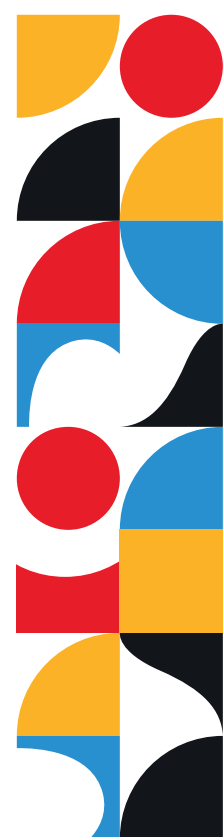
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Factors associated with mortality were male sex [adjusted prevalence ratio (APR); 1.87, 95%CI (1.21-2.87)], p-value=0.005, admission with a convulsion [APR, 1.86, 95%CI (1.21-2.86), p-value=0.005], altered mental status [APR; 1.66, 95%CI (1.07-2.57), p-value=0.023], and presence of a comorbid condition [APR, 2.26 95%CI (1.44-3.53), p-value=0.006]. Therapeutic lumbar punctures were significantly associated with reduced mortality [APR; 0.47, 95%CI (0.29-0.73), p-value=0.001].

**Conclusions:** Liposomal amphotericin B regimen has lower mortality than deoxycholate in the real-world setting. PLWHIV on average spend more than a week in hospital. Male sex, admission with a convulsion, altered mental status, and comorbid conditions were independently associated with mortality. Therapeutic LPs significantly reduced in-hospital mortality.

## WEPEB056

### Geographical characterization of baseline antibody responses against mpox E8L protein

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**Background:** The West African Clade II mpox virus outbreak in 2022 led to a global public health emergency and expanded the mpox virus geographical footprint. A robust immunological test for use in both endemic and non-endemic mpox regions is needed. Understanding geographical orthopoxvirus cross-reactivity is essential for differentiating background in African, Asian and North

American samples to determine cutoff values for a multiplex electrochemiluminescence-based ELISA targeting 5 mpox and 5 analogous vaccinia antigens (Meso ScaleDiscovery [MSD] orthopoxvirus assay).

**Methods:** IRB approved samples from participants in Nigeria, Uganda, Kenya, Tanzania, Thailand, and the US, who were at very low risk of acquiring mpox, as well as, commercially available mpox PCR positive samples, were analyzed using the pre-commercially released V-PLEX Orthopoxvirus Panel 1 (IgG) kits obtained from MSD. Sample type, specificity, cutoff thresholds and background were characterized. Kruskal-Wallis test was applied using GraphPad8.

**Results:** Mpox-specific antibodies (Ab) were induced against 3/5 mpox antigens. No significant IgG Ab binding differences were observed between serum and plasma (EDTA and ACD). No significant differences between background binding Abs from negative African samples (Nigeria, Kenya, Tanzania, and Uganda) were observed; thus, a single negative threshold cutoff for African studies was established (1770 AU/mL). In contrast, negative samples from Thailand, showed lower range of Ab cross reactivity and a lower cutoff was identified of 386 AU/mL (p<0.001). Positive samples from the US and South America collected 1-2 months post-symptoms yielded high mpox E8L Ab levels, while samples collected 5-10 days post symptoms showed lower levels but maintained high Ab detection sensitivity (>95%).

**Conclusions:** These data informed threshold cutoffs for implementing the multiplex quantitative MSD mpox serological platform and are critical for ensuring accurate assessment of humoral responses across geographically diverse populations, allowing for the generation of robust prevalence data.

## WEPEB057

### Untreated HIV remains a key driver of the HIV-associated TB epidemic in high burden settings

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**Background:** TB remains a leading cause of morbidity and mortality in people with HIV (PWH). ART is the single most important intervention to avert mortality in these individuals. Late presentation with HIV and disengagement from HIV care are potential contributors to the on-

going HIV-associated TB epidemic in hyper endemic settings. This study aimed to evaluate engagement in health care services among PWH presenting with tuberculosis.

**Methods:** We included individuals (>15 years), newly diagnosed with TB, accessing care in approximately 25 public health care facilities in Durban, KwaZulu-Natal between December 2021 and March 2023, as part of pre-screening for a clinical study (NCT04734652).

We collected de-identified information, including demographics, HIV status, ART status, TB diagnosis and laboratory results from hospital/clinic records, electronic and paper-based HIV and TB registers.

Data was captured into Redcap (Version 13.3.1) and analysed using R (Version 4.3.1). Ethical approval was obtained from the University of KwaZulu Biomedical Research Ethics Committee (BREC/00001300/2020) and the National Health Research Ethics Council (NHREC) [DOH-27-012021-6789]. Statistical significance was assessed at the alpha level of 0.05.

**Results:** We identified 272 PWH presenting with TB to these healthcare facilities; 59.0% (160/272) were male and 39.7% (108/272) were ART naïve. Of the ART experienced patients, 30.5% (83/272) reported current ART use and 29.7% (81/272) reported previous ART use and were currently disengaged from HIV care, with 41.8% (28/67) and 32.3% (20/62) presenting with CD4 counts  $\leq 100$  cells/ $\mu$ l respectively.

A total of 69.5% (189/272) of PWH who presented at clinics with TB were not currently on ART. The median viral load of people currently on ART was 595230 copies/ml and median CD4 was 134 cell/ $\mu$ l. A higher proportion of males presented as ART naïve although individuals who previously disengaged from care were predominantly female.

**Conclusions:** Among newly diagnosed TB individuals with HIV, approximately two-thirds had advanced immunosuppression and were not on suppressive ART. Symptomatic TB resulted in engagement or re-engagement into care for 69.4% of PWH. Achieving and sustaining the UNAIDS 95-95-95 targets are essential for TB control in hyperendemic settings.

## WEPEB058

### Prescription practices and willingness to prescribe among medical practitioners caring for people living with HIV: a nationwide survey in Madagascar

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**Background:** The objective of this study was to assess the prescription practices and the willingness to prescribe isoniazid prophylaxis therapy (IPT) among physicians caring people living with HIV (PLHIV).

**Methods:** We conducted a cross-sectional survey among all physicians listed as caring for PLHIV. Physicians from centers where IPT is already implemented (pilot sites) were surveyed regarding their prescription practices, while those working in centers where IPT is not implemented were surveyed regarding their willingness to prescribe.

**Results:** Of the 162 physicians listed as caring for PLHIV in Madagascar, 97 (60%) responded to the survey. They were working all over Madagascar. There were 19 (19.6%) specialists and 78 (80.4%) general practitioners. They practiced in university hospital (34%), regional hospitals (16.5%), district hospitals (27.8%) and primary health care centers (21.7%).

Among surveyed physicians, 58.8% were working in pilot sites. Among them, 31.6% stated that IPT is available in their ward, 35.1% reported its availability in another ward, and 33.3% stated that IPT is available in a different hospital.

Among those working in pilot site, only 38.6% have already prescribed IPT. Main reasons for non-prescription were fear of inducing antituberculosis drug resistance (34.3%), omission (28.6%), lack of knowledge about TPI (20%), and fear of adverse reactions (5.7%).

Among physicians working in center where IPT is not already implemented, 57.5% knew IPT, 42.5% knew IPT indications and only 37.5% were ready to prescribe IPT.

Among the latter, main reasons for unwillingness to prescribe IPT were the lack of knowledge (88%) and the fears of inducing antituberculosis drug resistance (12%). In pilot sites, specialists were prescribing more IPT compared to general practitioners (70.6% vs 25%,  $p=0.002$ ).

The same was observed for physicians practicing in university hospitals compared to other centers (65.5% vs 10.7%,  $p<0.001$ ). There were more prescriptions of when it was available on site than when it was available elsewhere (94.4% vs 12.8%,  $p<0.001$ ).



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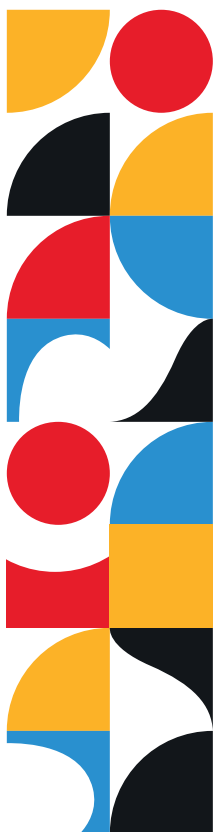
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**Conclusions:** The proportion of physicians prescribing IPT and willing to prescribe IPT remains low. Updating physicians' knowledge, providing them with appropriate tuberculosis diagnostic tools, and ensuring that IPT is directly available on site would strongly contribute to increasing prescription of IPT.

## WEPEB059

**Efficacy of integrase inhibitors or efavirenz-based regimens for antiretroviral treatment of people with HIV and tuberculosis in Brazil: insight from programmatic data**

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**Background:** The efficacy of integrase strand transfer inhibitors (INSTIs)- based regimens to treat people living with HIV (PLWH) and tuberculosis (TB) have been evaluated in few clinical trials. Data from national programs are key to provide data from larger cohorts in real life settings. The objective of the present study was to evaluate virologic efficacy of dolutegravir, raltegravir and efavirenz-based regimens within the Brazilian national HIV/TB program.

**Methods:** Retrospective cohort study including all adult Brazilian PLWH who started ART between 01/01/2016 and 30/06/2022, while also receiving TB treatment. We excluded participants without HIV viral load (HIV-VL) available. Probabilistic record linkage methodology was applied to national databases of the Brazilian Ministry of Health: Information System of Notification Diseases (HIV/AIDS and tuberculosis), Control of Laboratory Tests (CD4+ T cell counts and HIV-VL), Logistic Control System of Medicines (ART dispensations) and Mortality Information System. We defined 4 categories of ART-regimens: 2NRTI+dolutegravir, 2NRTI+raltegravir, 2NRTI+efavirenz, and other ART combinations. Virologic success was defined as HIV-VL < 50 copies/mL 1 year after ART initiation (window 9-18 months).

**Results:** Over the 7 year period of the study, 19,663 PLWH treated for tuberculosis started concomitant ART ; 5,666/19,663 (28.8%) had no VL measures available and 13,997/19,663 (61.2%) participants were included in the present analysis. Median age was 36 (IQR: 29-45) years and 21.7% were females. At ART initiation, median CD4+ T-cell count and HIV-VL were 125 (IQR: 48-278) cells/mm<sup>3</sup> and

5.1 (IQR 4.2-5.7) log<sub>10</sub> copies/mL, respectively. 6,531/13,997 (46.7%) participants started dolutegravir, 2,439/13,997 (17.4%) raltegravir, 4,694/13,997 (33.5%) efavirenz and 333/13,997 (2.4%) other ART regimens. One year after ART initiation, 8,206/13,997 (58.6%) participants achieved virologic suppression overall: 3,923/6,531 (60.1%) on dolutegravir, 1,417/2,439 (58.1%) on raltegravir, 2,697/4,694 (57.5%) on efavirenz-based regimens. One-year post-ART introduction, 1116/13,997 (8%) persons had died, with similar proportions in the 3 ART groups.

**Conclusions:** In this analysis from the Brazilian national HIV/TB program, virologic suppression in PLWH concomitantly treated for tuberculosis were lower than expected, similar between INSTI-based or efavirenz-based regimens. For a significant proportion of PWH, virologic monitoring was not available which emphasizes the need to improve HIV-VL monitoring and retention in care for persons with advanced disease.

## WEPEB060

**Management of syphilis in people living with HIV: the importance of time to serological response and immunological status**

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**Background:** There are controversial data about syphilis in people living with HIV (PLWH), in special about time to serological response, serofast status, and the factors associated.

**Methods:** Cohort of PLWH in follow up in a tertiary hospital. Univariate analysis was done to determine factors associated with syphilis presentation and serological outcomes. Survival curve analysis and multivariate Cox regression analysis were used.

**Results:** A total of 334 episodes of syphilis (1-8) were diagnosed in 176 PLWH between 2016-2022. In the first episode, mean age was 47 yrs (19-80), 95% were MSM, and nadir CD4+ count was 303 cells/mc (nadir CD4/CD8 ratio 0.42). At the time of syphilis diagnosis (47% had latent early stage -13% primary, 17% secondary), median RPR was 1/32 (IQR, 4-64). Fever (2%), systemic symptoms (2%) or headache (2%) were rare, and only 4 (2%) had ocular/ otosyphilis or CNS focal symptoms. Of note, a non-significant fall in CD4+ count and CD4/CD8 ratio during syphilis episode was observed.

Moreover, RPR level at diagnosis was inversely correlated with CD4+count (r=-0.162; p=0.03). The rate of response at 12 months was 82% (144), associated with higher RPR at di-



agnosis ( $p<0.001$ ) and nadir CD4/CD8 ratio ( $p=0.06$ ). During the 1<sup>st</sup> year, the rate of initial response was 67% (118) in a median time of 5.6 months (IQR, 3.8-7 months), associated with higher RPR ( $p<0.001$ ), and higher nadir CD4+ count ( $p=0.03$ ). Of those without initial response, an additional 44% (26) responded in a median of 10.7 months (8.8-12 months) since diagnosis, again associated with higher RPR at diagnosis ( $p<0.01$ ), higher nadir CD8+, and nadir CD4/CD8 ratio ( $p=0.02$ ).

The persistence of serofast status was observed in 39% of cases with lower RPR titers ( $p=0.02$ ) and higher nadir CD4/CD8 ratio ( $p=0.02$ ). In the 2<sup>nd</sup> episode (86 cases), there were no differences in RPR, rate of initial response (64%), response at 12 months (81%), time to initial response (5.4 months), and persistence of serofast (43%).

**Conclusions:** Our data demonstrate the importance of considering initial RPR level and immune status after a syphilis diagnosis, a fact that could modify the evolution and management of syphilis in PLWH.

## WEPEB061

Serologic evidence of cytomegalovirus reinfection during pregnancy and congenital transmission among women living with HIV in Quebec

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**Background:** Maternal HIV infection increases the risk of congenital CMV infection (cCMV) >4-fold compared to the general population, even with effective ART during pregnancy. The proportion of these cCMV cases that are due to reactivation of chronic CMV infection versus maternal reinfection with a new CMV strain during pregnancy is unknown.

**Methods:** Samples were drawn from a prospective cohort (1999-2020) of pregnant women living with HIV (WLWH) who were CMV seropositive (IgG>6.0 AU/mL), and their newborns exposed to but not living with HIV. Serologic testing of maternal plasma from the first (T1) and third (T3) trimesters for CMV was performed using the Architect chemiluminescent microparticle immunoassay and a strain-specific ELISA that distinguishes between antibody responses directed against 4 different CMV epitopes (located in glycoproteins B and H of two laboratory strains

(AD169 and Towne)). Reinfection was defined as acquisition of an antibody response to a new epitope between T1 and T3. cCMV was confirmed via qPCR on infant serum, plasma, or urine within 21 days of life.

**Results:** Among 411 pregnancies with available samples at T1 (mean gestational age GA=11.5 weeks) and T3 (mean GA=35 weeks), six (1.63%) of 369 newborns were positive for cCMV. A greater IgG titer increase from T1 to T3 was observed in cCMV cases (mean difference=607 AU/mL) compared to those without cCMV (mean difference=121 AU/mL;  $p<0.01$ ). Of 299 pregnancies with strain-specific ELISA results, 14 reinfections (4.7%) were detected, two of which were associated with cCMV. Compared to cases without reinfection, those with reinfection had lower T3 IgG titers (mean difference=130 AU/mL;  $p=0.896$ ).

**Conclusions:** Our results suggest that a majority of cCMV cases among children born to WLWH occurred due to reactivation of latent maternal CMV infection. However, because strain-specific ELISA does not capture responses to all circulating CMV variants, the rate of reinfection was possibly underestimated. More sensitive methods for detecting CMV reinfection are needed to inform strategies to prevent cCMV among children of WLWH.

## WEPEB062

Food insecurity at tuberculosis treatment initiation is associated with clinical outcomes in rural Haiti: a prospective cohort study

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**Background:** Tuberculosis is a leading cause of death worldwide, and food insecurity is known to negatively influence health outcomes through nutritional, behavioral, mental health, and inflammatory pathways. Few studies interrogate the relationship between food insecurity and tuberculosis outcomes, particularly independent of nutrition.

**Methods:** We conducted a prospective cohort study of adults initiating first-line treatment for clinically suspected or microbiologically confirmed drug-sensitive tuberculosis at St. Boniface Hospital, a rural referral center in Southern Haiti. We administered a baseline questionnaire, collected baseline and outcome clinical data, and analyzed laboratory samples. We used logistic regression





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models to estimate the relationship between household food insecurity (measured using the Household Hunger Scale) and treatment failure or death. We controlled for loss to follow-up using inverse probability of censoring weighting and confounding using inverse probability of treatment weighting.

**Results:** We enrolled 257 participants between May 2020 and March 2023. Participants had a median age of 35 (IQR 25-45), 94 (37%) were female, and 40 (16%) were living with HIV. There were 105 (41%) participants with no hunger in the household, 104 (40%) with moderate hunger in the household, and 48 (19%) with severe hunger in the household at baseline.

Over 80% of participants had a favorable treatment outcome – either cure (56%) or treatment success (25%). 33 participants (13%) were lost to follow-up. Eleven participants (4%) died and 6 (3%) had treatment failure.

After adjusting for loss to follow-up and confounding (including baseline body mass index), food insecurity was significantly associated with treatment failure or death (odds ratio 5.78, 95% CI 1.20 to 27.8,  $p=0.03$ ).

**Conclusions:** Household food insecurity at tuberculosis treatment initiation was significantly associated with death or treatment failure after adjusting for loss to follow-up and measured confounding including nutritional status. In addition to the known importance of under-nutrition, our findings indicate that food insecurity is independently important for tuberculosis treatment outcomes in Haiti. Interventions to address food insecurity may be important for all people with food insecurity and tuberculosis regardless of body mass index.

administered subcutaneously (at 0, 1, and 6 months). Among primary responders ( $n=164$ , 59%), we analyzed the durability of anti-HBV seroprotection by assessing antibody titers at least twice after the vaccination. Participants with decreasing anti-HBs titers  $<10$  mIU/mL were defined as earlier loss of anti-HBV seroprotection. Cox proportional hazards analysis was performed to identify predictors of earlier loss of HBV seroprotection.

**Results:** 152 participants were included in the analysis. The median age was 39 (IQR: 35-46) years and 144 (95%) were men. The median body mass index (BMI) was 22.9 (20.7-26.1) and 55 (36%) were overweight (BMI $>25$ ). The median CD4 cell count was 479 (352-651) / $\mu$ L, and 98 (64%) were receiving antiretroviral therapy at the entry of this program. During 616.3 participant-years of follow-up, 113 (74%) showed a loss of anti-HBV seroprotection. The median time to loss of anti-HBV seroprotection was 3.5 and 10.2 years for participants with an anti-HBs titer of 10-100, and  $>100$  mIU/mL at first vaccination, respectively. Cox-proportional hazards analysis showed overweight (BMI $>25$ ) and low anti-HBs antibody titer (anti-HBs titer  $<100$  mIU/mL) after vaccination were independently associated with early loss of anti-HBs seroprotection, adjusting for age, CD4 and HIV viral suppression [adjusted hazard ratio (aHR) 1.882, 95% confidence interval (CI) 1.261-2.810;  $p=0.002$ , aHR 3.979, 95%CI 2.517-6.290;  $p<0.001$ , respectively].

**Conclusions:** The response to HBV vaccination in Japanese PLWH was weak, both in terms of initial response and long-term durability of seroprotection. Further research is warranted to implement better HBV vaccination strategies for PLWH.

## WEPEB063

Overweight and low anti-HBs antibody titers are associated with earlier loss of anti-HBV seroprotection after HBV vaccination in Japanese people living with HIV

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**Background:** Hepatitis B virus (HBV) co-infection is one of the most common co-infections among people living with HIV (PLWH). Although vaccination against HBV is recommended for all PLWH without immunity to HBV infection, HBV vaccination response and duration of seroprotection are suboptimal in PLWH. The earlier loss of anti-HBs antibody has been reported but the associated factors are unknown.

**Methods:** We performed a retrospective analysis of the hepatitis B virus vaccination program among PLWH in our hospital ( $n=277$ ). Three doses of hepatitis B vaccine (Biimugen<sup>®</sup>, containing 10 $\mu$ g of hepatitis B surface antigen) were

## WEPEB064

Hepatitis B viral rebound in people living with HIV under antiretroviral therapy active on HIV/HBV and associated factors

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**Background:** The reasons for HBVDNA rebound during HBV active ART are unclear. Our study aims to investigate factors associated with HBV-rebound in people living with HIV (PLWH) with chronic HBV (CHB) under at least 6 months of stable ART active on both viruses.

**Methods:** PLWH with CHB in years 2007-2023 under emtricitabine (FTC)+ tenofovir alafenamide TAF, 3TC/FTC+ tenofovir disoproxil fumarate (TDF) or 3TC alone were included. Characteristics at the first HBV-rebound, after reaching HBVDNA negative test, or at the last HBVDNA, in persistently HBVDNA negative, reported as median (inter-quartile range, IQR) or frequency (%), were compared by


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Mann-Whitney and Chi-Square/Fisher's tests. HBV resistance pattern was assessed by direct sequencing. Odds ratio of HBV-rebound, adjusted for nadir CD4, ALT levels and ART active on both viruses, was estimated by multi-variable logistic regression.

**Results:** Older age, higher values for liver enzymes, total bilirubin, HCV-RNA ( $\geq 15$  IU/mL vs.  $<15$  IU/mL) and use of ART active on both viruses were related to HBV-rebound,  $P$  invariably  $<0.05$ . [SD1] Adequate adherence was reported by physicians; however, forgiveness was not excluded. By multivariate analysis, PLWH on 3TC/FTC had a higher probability of HBV-rebound [aOR=4.88 (95%CI=1.28, 20.10),  $P=0.02$ ] while, PLWH on FTC+TAF had lower probability of HBV-rebound [aOR=0.05 (95%CI=0.002, 0.27),  $P=0.005$ ], compared to those on 3TC/FTC+TDF. 3TC resistance was observed in 6/8 available sequences (5 PLWH were on 3TC, 1 on TDF).

Characteristics of PLWH with Chronic HBV on ART active on both viruses according to HBV rebound or not

	Overall (n=137)	PLWH no HBV rebound (n=58)	PLWH HBV rebound (n=79)	P value
Age (years)	45.2 (8.0, 65.5)	46.2 (8.0, 65.5)	44.9 (8.0, 65.5)	0.981
Sex: male/female (%)	141 (82.2) / 127 (8)	129 (83.8) / 68 (35)	21 (8.0) / 41 (6)	0.110
Risk factors for HIV (%)				0.380
Other	29 (19.0)	27 (21.1)	2 (8.0)	
MSM	73 (47.7)	61 (47.7)	12 (48.0)	
ISU	24 (15.7)	19 (14.8)	5 (20.0)	
Homosexual	37 (17.6)	31 (16.4)	6 (24.0)	
Years of ART	15.5 (8.15, 22.5)	16.2 (8.30, 23.1)	13.9 (7.18, 19.6)	0.084
HCV RNA (%)				1.080
Negative	111 (79.3)	86 (79.2)	18 (86.0)	
Positive	29 (20.7)	23 (20.8)	4 (20.0)	
HIV RNA (%)				0.640
Negative	79 (83.2)	72 (83.7)	7 (7.8)	
Positive	16 (16.8)	14 (16.3)	2 (22.2)	
ALT, U/L	27.0 (20.4, 42.0)	25.0 (18.35, 33.0)	48.0 (33.0, 85.0)	$<0.001$
AST, U/L	26.5 (20.35, 33.0)	25.0 (20.35, 33.0)	32.0 (26.55, 40.0)	0.001
Total bilirubin, mg/dL	0.48 (0.35, 1.05)	0.45 (0.34, 0.88)	0.71 (0.47, 2.07)	0.011
CD4 cells count, cells/mm <sup>3</sup>	670 (488.0, 832)	675 (502.0, 836)	648 (480.7, 772)	0.608
CD8 cells count, cells/mm <sup>3</sup>	670 (488.0, 832)	675 (502.0, 836)	648 (480.7, 772)	0.706
Nadir CD4 cells count, cells/mm <sup>3</sup>	240 (133.3, 363)	260 (136.7, 376)	188 (95.2, 280)	0.088
HIV RNA <10 copies/mL (%)	140 (81.5)	118 (86.6)	24 (30.0)	0.005
HIV RNA $\geq 10$ copies/mL (%)	13 (8.5)	12 (8.36)	1 (1.33)	
HCV RNA, copies/mL	103 (86.284)	102 (86.218)	2127 (2127.2127)	0.109
HCV RNA <15 IU/mL (%)	62 (89.5)	57 (85.0)	5 (6.0)	0.004
HCV RNA $\geq 15$ IU/mL (%)	7 (10.5)	3 (4.0)	4 (4.4)	
Use of 3TC or FTC and TAF or TDF				$<0.001$
3TC (%)	16 (10.5)	9 (7.0)	7 (8.0)	
FTC+TAF (%)	82 (84.2)	82 (84.1)	1 (6.0)	
3TC/FTC+TDF (%)	54 (35.3)	37 (28.0)	17 (20.0)	
Years of follow-up	6.58 (2.57, 10.2)	7.61 (3.03, 10.9)	2.48 (1.06, 4.04)	$<0.001$

Abbreviations: ART=antiretroviral therapy; MSM=men who have sex with men; ISU=injecting drug users; HCV RNA=antibody against hepatitis C; HIV RNA=antibody against hepatitis C; ALT=alanine aminotransferase; AST=aspartate aminotransferase; 3TC=zidovudine; FTC=tenofovir; TAF=tenofovir alafenamide; TDF=tenofovir disoproxil fumarate.

**Conclusions:** The finding of less frequent occurrence of HBV-rebound in PLWH on TAF based ART vs. 3TC alone is related to genetic barrier, while respect to TDF based ART, may reflect a higher level and persistence of TAF within hepatocyte, suggesting a better performance respect to TDF in cases with no full adherence to double acting ART.

## WEPEB065

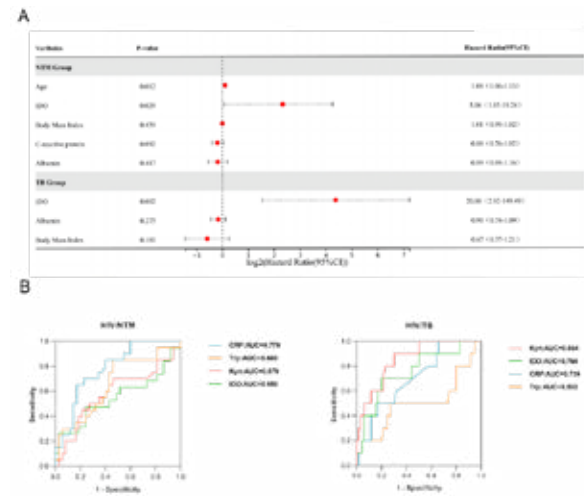
### Indoleamine 2,3-dioxygenase activity predicts prognosis of non-tuberculous mycobacteria diseases in people living with HIV

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**Background:** Elevated indoleamine 2,3-dioxygenase (IDO) activity is a recognized prognostic marker for tuberculosis (TB) among people living with HIV (PLWH). However, its role in non-tuberculous mycobacterial (NTM) diseases remains unknown. This study aimed to evaluate IDO activity in PLWH with active TB and NTM diseases, and its association with mortality.

**Methods:** Clinical data of PLWH with active TB and NTM diseases between March 2018 and December 2020 in Shanghai, China, were collected. These participants were followed-up to 180 days from admission. IDO activity was estimated using the serum kynurenine-to-tryptophan (Kyn/Trp) ratio in plasma samples obtained upon admission. Kaplan-Meier curve and Cox regression were used to analyze the survival and its predictors.



**Figure 1 (A)** Multivariate Cox regression for HIV/NTM and HIV/TB group on 60-day mortality. **(B)** Receiver operator curve analysis of serum concentrations of Kyn, Trp, CRP and IDO activity for predicting mortality in PLWH with NTM and TB.

**Results:** A total of 137 participants were included. In 57 participants with NTM diseases, 94.7% were male with mean age  $42.2 \pm 13.9$  years. The mean CD4+T cell count was  $71.4 \pm 157.6$  cells/ $\mu$ L. Of the 80 TB participants, 93.8% were male with mean age  $43.7 \pm 13.9$  years. The mean CD4+T cell count was  $54.8 \pm 60.2$  cells/ $\mu$ L. Within 180 days from admission, 35.1% NTM participants deceased whereas 12.5% TB participants deceased.

Comparing the two groups, the NTM group had significantly lower levels of IDO activity ( $p=0.041$ ) together with higher Trp ( $P<0.001$ ) levels of than TB group. IDO activity can predict 60-day survival in participants with NTM diseases (Figure 1A). Among TB patients, IDO activity was also





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a significant predictor of 60-day mortality (Figure 1A). The receiver operator curve analysis was shown in Figure 1B. High-IDO-activity group ( $>2.21\text{ nM}/\mu\text{M}$ ;  $>2.25\text{ nM}/\mu\text{M}$ ) showed significantly worse survival than the low-IDO-activity groups in both NTM diseases and TB patients.

**Conclusions:** IDO activity demonstrated better predictive value in TB than NTM participants, it still serves a viable prognostic marker in PLWH with NTM diseases. These findings provide evidence for the correlation between tryptophan catabolism and the prognosis of NTM disease, which warrants further investigation.

## WEPEB066

**A pilot-study to demonstrate the enhancement of the HCV care continuum in the general population using point-of-care tests and collaboration between Primary Care System and a referral center in Brazil**

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**Background:** People with an HCV antibody rapid test (HCV-RT) encounter multiple obstacles in accessing HCV care. We aimed to examine the HCV cascade-of-care within a pilot demonstration study implemented in Rio de Janeiro, Brazil.

**Methods:** Implemented at the Basic Health Unit (CF-Felipe Cardoso) in Rio de Janeiro, Brazil (<https://ensaio-sclinicos.gov.br/rg/RBR-4qmypqq>), the project aimed to improve the HCV care continuum. Health-facility users aged 18-79 years were invited to undergo HCV-RT after providing informed consent between 04-Jul-2022 to 16-Jan-2024. Those declining testing were excluded. Participants completed questionnaires and HCV-RT (SD Bioline®). Individuals with positive HCV-RT were scheduled for point-of-care (POC) HCV-RNA (GeneXpert®) at a referral center (INI/FIOCRUZ). Individuals with positive HCV-RT and undetectable HCV-RNA were classified as spontaneous clearance/false-positive or achieving sustained virological response (SVR) if previously treated. Those with active HCV infection (positive HCV-RT with detectable HCV-RNA) were proposed a pan-genotypic regimen (SOF/VEL 400/100 mg qd for 12 weeks). Prevalence and risk factors for HCV infection was assessed. The HCV cascade-of-care and the turnaround times from HCV-RT at the Primary Care System to initiation of HCV treatment at the referral center were evaluated.

**Results:** A total of 5,348 individuals [76% female sex-at-birth, median age=50 (IQR,35-61)] were included. The prevalence of positive HCV-RT was 0.95% (95%CI,0.73-1.25) [n=51/5,348]. Factors associated [OR (95%CI)] with positive HCV-RT included: male sex, [2.45 (1.40-4.28)], age (years) [1.06 (1.04-1.08)]; HIV infection [9.93 (3.43-28.73)] and history of blood-transfusion [2.26 (1.28-4.00)]. Among those with positive HCV-RT, 88% (n=45/51) underwent HCV-RNA testing, with a median (IQR) delay of 6 (3-9) days between HCV-RT and HCV-RNA. Of these, 60% (n=27/45) had detectable HCV-RNA. Of those with undetectable HCV-RNA, 39% (n=7/18) were SVR. The prevalence of active HCV infection was 0.50% (95%CI 0.35-0.74) (n=27/5,348). Among those with detectable HCV-RNA (n=27), 93% (n=25) initiated HCV treatment within a median time of 11 (IQR, 7-16) days after the HCV-RNA result. SVR was 100% in who have finished the study follow-up to the date of this analysis (n=10).

**Conclusions:** A majority of individuals with HCV infection were rapidly linked to care through the utilization of POC tests and collaborative efforts between the Primary Care System and a referral center.

## WEPEB067

**CMV IgG titer as a marker of CMV reactivation and immune dysregulation among children living with HIV**

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**Background:** While higher CMV IgG titers have been associated with immune activation, HIV viremia and worse clinical outcomes among adults living with HIV, pediatric data are more limited. The objective of this study was to determine the association between CMV IgG titer and HIV viral load (VL), CMV VL, and lymphocyte subsets in children living with HIV (CLWH).

**Methods:** Sub-study of the Early Pediatric Initiation Canada Child Cure Cohort Study (EPIC4) using both prospectively and retrospectively collected data from children with perinatal HIV-1 infection. CLWH were followed every 3-6 months from 2014 to 2018, with HIV-1 and CMV VL assessed at each visit. CMV IgG titers were determined at baseline using the Architect chemiluminescent micropar-

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ticle immunoassay, and the associations between CMV IgG titer and immunological outcomes or CMV viremia were assessed through multivariable linear regression.

**Results:** Median age of CLWH enrolled in EPIC4 ( $n = 225$ ) was 13.9 years (IQR = 9.3-17.0). The majority of participants (98.9%) were treated with combination antiretroviral therapy (cART); 81% of participants had suppressed HIV VL, 85.3% ( $n = 192$ ) were CMV seropositive at baseline and among them 17.7% were viremic for CMV at least once during follow-up. Among CMV seropositive CLWH, median anti-CMV IgG titer at baseline was 164.5 AU/ml (IQR = 101.8-232.8; range = 7.8-1727.5). Higher CMV IgG titers were significantly associated with higher baseline CD8% ( $p < 0.001$ ), lower CD4% ( $p < 0.001$ ), lower absolute CD4 count ( $p = 0.009$ ), lower CD4/CD8 ratio ( $p < 0.001$ ), and occurrence of detectable CMV viremia ( $p < 0.001$ ), but not with detectable HIV-1 viremia during follow-up ( $p = 0.12$ ). With the exception of baseline CD4 count, all associations remained statistically significant after adjustment for age, age at cART initiation, instances of cART interruption, and instances of detectable HIV VL during follow-up.

**Conclusions:** In this cohort of CMV seropositive CLWH, the magnitude of the anti-CMV humoral response was associated with CMV reactivation and immunological parameters, suggesting that quantitative CMV antibody assessment may be used as a surrogate marker of CMV activity and CMV-induced immune dysregulation among CLWH. Additional studies are needed about the potential clinical implications of these findings and associations between higher anti-CMV titers CLWH.

## WEPEB068

Utility of CRP for TB risk stratification in people with new diagnosis of HIV and symptoms concerning for pulmonary TB

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**Background:** The WHO recommends same-day ART for people with non-meningitic TB symptoms at HIV diagnosis concurrent with evaluation for TB. For pre-ART TB screening, the WHO conditionally recommends C-reactive protein (CRP) with cutoff 5 mg/L. We assessed CRP for risk-stratification of people with new diagnosis of HIV and positive TB symptom screen.

**Methods:** 500 people with new diagnosis of HIV and positive symptom screen for TB (cough, fever, night sweats, or weight loss) participated in a randomized trial at GHEKIO (PLoS Med 2023;20:e1004246). Sera were processed within 4 hours and biobanked at -80°C. CRP was measured retrospectively in 498 baseline sera using a CRP

Quantikine ELISA (R&D Systems). We calculated sensitivity, specificity, positive and negative predictive values, and positive and negative likelihood ratios of different CRP thresholds ( $\geq 1.0$ ,  $\geq 2.0$ ,  $\geq 5.0$ ,  $\geq 10.0$  mg/L) in bacteriologically confirmed and empirically treated TB groups, and stratified by symptoms.

**Results:** At enrollment, 67 participants were diagnosed with bacteriologically-confirmed and 20 with empirically treated TB. Median CRP was 33.0 mg/L (IQR: 5.1, 85.5) in those diagnosed with TB, and 2.6 mg/L (IQR: 0.8, 11.7) in those without TB. More than half (53%) of participants had baseline CRP  $\geq 3.0$  mg/L. As the CRP threshold increased from  $\geq 1$  mg/L, to  $\geq 3$ ,  $\geq 5$ , and  $\geq 10$  mg/L, the PPV for TB in the total cohort increased from 22.4% to 28.1%, 29.2%, and 35.4%, respectively, and the NPV decreased from 96.9% to 94.8%, 92.3%, and 92.3%. If CRP concentrations had been included in the ART eligibility algorithm, then with CRP thresholds of  $< 1$ ,  $< 2$ ,  $< 3$ ,  $< 5$ , and  $< 10$  mg/L, a total of 25.5%, 38.2%, 46.4%, 54.6%, and 64.9% of participants would have been eligible for same-day ART. A total of 0.8%, 2.2%, 2.4%, 4.2%, and 5.0% participants, respectively, would have had untreated active TB at ART initiation despite a CRP below the cut-off.

**Conclusions:** This study highlights the potential utility of CRP for decision making about same-day ART when there are symptoms of TB, but optimal thresholds are needed and may vary by symptom type. CRP may be helpful in high-burden settings without access to mycobacterial culture and chest radiographs.

## WEPEB069

Evaluation of the efficacy of DTG-based regimens at 12 and 24 months of treatment in DTG-initiated patients in Senegal: a WANETAM study

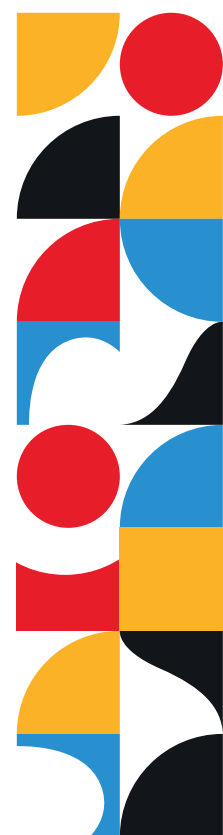
M. Fall<sup>1</sup>, A.A. Ba<sup>1</sup>, N.M.P. Manga<sup>1</sup>, N. Leye<sup>2</sup>, P.Y. Sene<sup>1</sup>, O. Diop-Diongue<sup>1</sup>, D. Samate<sup>1</sup>, S. Mboup<sup>2</sup>, S. Ndiaye<sup>1</sup>, S. Diallo<sup>1</sup>, C. Toure-Kane<sup>2</sup>, H. Diop-Ndiaye<sup>1</sup>

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**Background:** In Senegal, the transition to use DTG-based regimens began in 2020. The aim of our study was to evaluate the efficacy of DTG after 12 and 24 months of antiretroviral treatment in naïve HIV-1 patients adults and children.

**Methods:** A descriptive study was performed on adults and children on DTG after 12 months (M12) and 24 months (M24) of ART. Viral load (VL) measurement was done on m2000rt/sp (Abbott) and CobasTaqman (Roche) platforms. Virological success rate (VSR) defined by VL $<1000$  copies/ml were assessed at M12 and M24 and genotyping was carried out for VL $>1000$  copies/ml in protease (PR), reverse transcriptase (RT) and integrase (IN) using the HIV-1 Genotyping kit (Thermo Fisher, USA). Sequence ed-





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iting and drug resistance mutation (DRM) analysis were performed using Recall (V2.32.1) and phylogenetic analysis using Seaview.

**Results:** From January 2022 to December 2023, 426 patients (36 children and 390 adults) at M12 and 498 patients (30 children and 468 adults) at M24 were included. Mean ages were 12 years [1-17] and 36 years [18-81] for children and adults, respectively. The sex ratio (M/F) was 1.3 in children and 1.1 in adults.

At M12, the VSR was 80.5% (29/36) in children and 90.5% (353/390) in adults. At M24, the VSR was 66.7% (20/30) in children and 94.4% (442/468) in adults.

In children, genotyping performed on PR-RT (2/7) showed no mutation at M12, while at M24 M184V (2/5) and K103N (1/5) were found out of 5 sequenced.

In adults, 18/37 were genotyped at M12 and 3 showed DRM (M184V, K70E, V106VI and E138A).

At M24, 11/26 were genotyped and 1 sample showed multiple DRM (M41L, T215Y M184V, K103N and E138A).

No major mutations were found in IN for both children and adults and only accessory mutations were present, namely H51Y, L74M, and E157Q.

Phylogenetic analysis showed a large genetic diversity with the predominance of CRF02 in both PR-RT and IN.

**Conclusions:** Our results show a good VSR to DTG regimen in adults, whereas in children the failure rate was high at M24. Preliminary genotyping data show a low circulation of resistant strains and a large genetic diversity.

## WEPEB070

### Anogenital warts co-infection with HIV among men who have sex with men in Lagos, Nigeria

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**Background:** Anogenital warts, caused by Human Papillomavirus (HPV), are the most common sexually transmitted infection among men who have sex with men (MSM); it is potentially serious because it serves as potential indicators of increased vulnerability to HIV and associated risk with anal cancer. The study aimed to determine the prevalence of anogenital warts and its associated risk with HIV.

**Methods:** A prospective cross-sectional study was conducted over 12 months between January and December 2023 involving MSM aged 18 to 45 presenting at the Centre for Population Health Initiatives' one-stop-shop center in Lagos, Nigeria. Anogenital warts symptoms were clinically assessed, and blood samples were collected for HIV testing using the national algorithm. Descriptive statistics and logistic regression analyses were employed to deter-

mine co-positivity rates and associated factors.

**Results:** A total of 1,252 MSM accessed HIV testing services. Anogenital warts symptoms were identified in 66.5%. HIV positivity was observed in 10.1% of the cohort. Notably, 52.2% of those presenting with anogenital warts symptoms were living with HIV. Co-infection was statistically associated with MSM's age ( $p<0.001$ ) and was detected in 55.3% of the MSM living with HIV. The number of sexual partners was statistically associated with the symptoms identified ( $p<0.001$ ; OR=2; 95% CL:0.55-7.11).

**Conclusions:** The findings underscore a substantial co-infection rate of anogenital warts with HIV among MSM in Nigeria. The co-occurrence of these infections emphasizes the need for integrated healthcare strategies targeting MSM to address both anogenital warts and HIV. The study reveals a critical intersection between sexually transmitted infections, highlighting the importance of holistic approaches to MSM health.

## WEPEB071

### Mortality by HIV status among children diagnosed with TB in Accra-Ghana. A single Centre Retrospective study

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**Background:** TB is the leading cause of death in among people living with HIV (PLHIV). Data on HIV-TB treatment outcomes is however limited. The study sought to investigate the factors associated with TB mortality among children living with HIV (CLHIV).

**Methods:** A retrospective cohort study that extracted treatment records of children below 15 years of aged diagnosed with TB between 2015 and 2019 at the child health department of Korle-Bu teaching Hospital (KBTH) in Ghana. Binary logistic regression model was used to assess the factors associated with TB mortality among the children. Sub-group analysis was further performed separately for two CLHIV and non-CLHIV groups. Stata MP version 18 was used for analysis.

**Results:** A total of 407 children diagnosed with TB were involved in the study with a median age of 6 years (IQR=2-10years), approximately half being males (51.1%) and 42.8% were CLHIV. Extra pulmonary TB clinically diagnosed TB, sputum positive TB were 33.9%, 61.7% and 4.4% respectively. Treatment completion, default and mortality were 68.3%, 14.3% and 17.4% respectively. Mortality was higher among CLHIV (23.0%) compared to non-CL-

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HIV (13.3%) whilst default was higher among non-CLHIV (18.0%) compared to CLHIV (9.2%). The adjusted odds of deaths were 4 times high among the CLHIV ( $\alpha\text{OR}=4.00$ ,  $\text{CI}=1.11\text{--}14.45$ ,  $p=0.034$ ) compared to non-CLHIV.

Among the CLHIV, relative to children aged below 1 years, the odds of death were less among children aged 1–4 years ( $\alpha\text{OR}=0.33$ ,  $\text{CI}=0.11\text{--}0.99$ ,  $p=0.049$ ), 5–9 years ( $\alpha\text{OR}=0.18$ ,  $\text{CI}=0.06\text{--}0.53$ ,  $p=0.002$ ) and 10–14 years ( $\alpha\text{OR}=0.26$ ,  $\text{CI}=0.08\text{--}0.83$ ,  $p=0.024$ ). None of the variables were associated with mortality among the non-CLHIV.

**Conclusions:** Mortality among children diagnosed with TB was higher in CLHIV compared to those who were not CLHIV and specifically CLHIV who were infant had higher risk of death compared to older CLHIV. Strengthening TB/HIV collaborative efforts is essential to improve TB treatment success among TB/HIV coinfecting children.

## WEPEB072

### Utility of sputum culture (MGIT) to diagnose pulmonary TB in hospitalized people living with HIV in South Africa

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**Background:** TB is a leading cause of morbidity and mortality amongst people living with HIV (PWH) in high HIV prevalence settings, but often is paucibacillary. In the face of a negative Xpert MTB/RIF Ultra (Ultra) and persistent symptoms of TB, current guidelines require sputum be subjected to automated liquid culture using mycobacterial growth indicator tube (MGIT). We assessed the incremental yield of MGIT in hospitalized PWH, tested with XpertUltra and point-of-care urine lipoarabinomannan (u-LAM)

**Methods:** We recruited hospitalized adults with presumptive pneumonia between May 2019 and October 2021 in a three tertiary hospitals in South Africa. All participants had a sputum sample tested Ultra and MGIT; PWH had u-LAM testing, irrespective of CD4 count. Other data was abstracted from clinical records.

**Results:** 2000 study participants were recruited of whom 1079 (54%) were PWH. A high proportion (383/1079, 36%) reported prior TB. 650/1079 (60%) of PWH were receiving an-

tiretroviral therapy (ART) their median CD4 was 204 cells/ml (80 – 333) and 249/650 (38%) were virally suppressed (<50 copies/ml). Most PWH provided an analyzable sputum specimen (822/1079, 76%).

Among 349 TB diagnoses in PWH, 219/349 (63%) had both Ultra and MGIT results – 144/219 (66%) diagnosed by XpertUltra, 99/219 (45%) by MGIT, and 107/219 (49%) by u-LAM – the remaining TB diagnoses were based on clinical findings. MGIT detected 8 (3%) more people with TB than Ultra (95% CI 2% – 7%), whereas u-LAM detected 67 (31%) additional participants (67/219, 95% CI 25% – 37%).

**Conclusions:** In hospitalized PWH sputum MGIT identified few additional participants with TB when compared to Ultra, whereas u-LAM which detected an additional 31% (67/219) of TB relative to Xpert Ultra.

Our findings challenge the utility of sputum culture in this group, considering the high cost, complexity, and limited availability of MGIT testing in resource-constrained environments.

## Co-morbidities and clinical complications of HIV and antiretroviral therapy

## WEPEB073

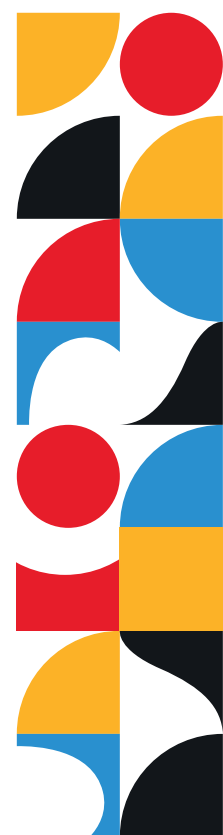
### Prevalence and associated factors of chronic kidney disease in young people living with HIV in Uganda

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**Background:** Young people living with HIV (YPLHIV) are at increased risk of developing chronic kidney disease (CKD). CKD is usually diagnosed late and associated with high mortality and morbidity.

We set out to determine the prevalence, associated factors and to compare serum creatinine and cystatin C for diagnosis of CKD among YPLHIV in Kampala, Uganda.







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**Methods:** A cross sectional study with YPLHIV aged 10 to 24 years was conducted in seven HIV clinics. Participants provided a urine and blood sample to measure urinary albumin, proteinuria, serum creatinine and cystatin C levels at baseline and at three months. The estimated glomerular filtration rate (eGFR) and albumin creatinine ratio (ACR) were calculated. Prevalence of CKD was estimated using CKDEPI 2021 equation in those aged >18 years and bedside Schwartz in those aged <18 years.

Logistic regression was used to determine the associated factors and chi square tests used to compare proportions of people with urinary abnormalities correctly diagnosed by creatinine or cystatin C.

**Results:** A total of 500 participants were enrolled. Females were 56% (280) and aged 10 to 17 years 66.9% (335). The prevalence of CKD ranged from 0 to 1.2% depending on age and the biomarker. Among those aged >18 years, prevalence was 0.2% using serum creatinine and 0% using cystatin C. Among those aged 10 to 17 years, prevalence was 0% using creatinine and 1.2% using cystatin C. ACR above 30mg/g was 10.1% and 24% of YPLHIV had proteinuria.

The associated factors were being aged 10 to 17 years with adjusted odds ratio (aOR) 7.3 (95% CI 2.4-22.2,  $p < 0.001$ ), being male aOR 2.2 (95% CI 1.3-3.9,  $p = 0.006$ ) and having proteinuria aOR 4.3 (95% CI 2.4-7.4,  $p < 0.001$ ). Cystatin C emerged as the better biomarker as eGFR from cystatin C identified more YPLHIV with increased ACR, proteinuria and hypertension  $p$  value 0.03.

**Conclusions:** The prevalence of CKD among YPLHIV was low. However, the prevalence of kidney damage was high. The definition of CKD and best biomarker for YPLHIV should be revised to correctly identify all that have CKD. Estimating equations should be validated in YPLHIV to improve their accuracy in estimating GFR.

## WEPEB074

Low achievement rate of metabolic and cardiovascular targets in a cohort of women with HIV: an urgent call for action for cardiometabolic health

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**Background:** Cardiometabolic health became crucial in people with HIV, especially in women (WWH). Therefore, we assessed achievement of targets for hypertension, dyslipidaemia, and diabetes (H/Dy/DT) in primary prevention in our cohort of WWH.

**Methods:** Cross-sectional analysis including all WWH in our clinic, excluding those who had a myocardial infarction. We evaluated rate of achievement of the different H/Dy/DT according to EACS guidelines and individual car-

diovascular risk, CVR (measured by ESC calculator), by using logistic regression to evaluate differences in H/Dy/DT achievement between migrant and Italian women.

**Results:** We included 292 WWH, 55.5% Italian and 44.5% migrant, median age and CD4+count were 50 (IQR:42-58) years and 617.5 (448-825) cell/mm<sup>3</sup>, respectively, 94.5% had HIV RNA< 50 copies/ml. Median time living with HIV was 16 (9-25.8), 55.1% women had a high level of education, 27.1% were smokers, 19.2% did regularly physical exercise, 64.4% presented multimorbidity. Overall, 76%, 19% and 5% women presented a low, a high, and a very high CVR, respectively. Among Italians, 28.4% and 6.2% women presented a high and a very high CVR, respectively. Considering migrants, 7.7% and 3.8% women presented a high and a very high CVR, respectively.

Figure 1 summarizes the rate of H/Dy/DT achievement in Italian vs. migrant women and by the presence of prescribed treatments (statins, anti-hypertensives, hypoglycaemic drugs). Overall, the subset of women with high CVR and migrant were more likely to be not at target than those with low risk (especially for LDL-c and blood pressure in people on treatment), despite no detected statistically significant differences. By contrast migrants were more likely to achieve glycaemic targets than Italians ( $p=0.032$ ).

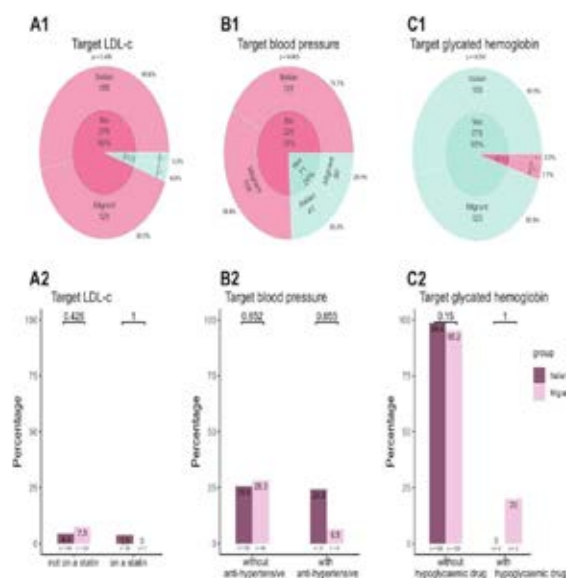


Figure 1.

**Conclusions:** Even if CV screening was performed, H/Dy/DT achievement is suboptimal, especially in migrants. A more aggressive pharmacological control, also assessing adherence to medical prescriptions, and promotion of healthy lifestyle should be urgently implemented, possibly redrawing current model of care.

## WEPEB075

### Effects of long-acting therapy on renal and metabolic profiles in people living with HIV: results from the SCohoLART study

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**Background:** Aim of this study was to evaluate changes in kidney and metabolic parameters in people living with HIV (PLWH) switching to long-acting (LA) cabotegravir (CAB) and rilpivirine (RPV).

**Methods:** SCohoLART (NCT05663580) is a single-center, prospective, cohort study of PLWH on virological suppression enrolled when switched to two-monthly LA CAB/RPV. Participants' characteristics were reported as median (interquartile range, IQR) or frequency (%).

Crude annual mean changes (slopes) with corresponding 95% confidence interval (95%CI) in renal and metabolic parameters were estimated using linear mixed models. Participants starting/stopping statin during follow-up were excluded.

**Results:** We included 504 participants: 453 (89.9%) were male, median age was 49.0 (40.0-56.4), median years from HIV diagnosis 14.4 (9.0-21.2), and median months of study follow-up in LA therapy 9.4 (6.4-11.4); other characteristics are reported in Table 1.

Parameters	N=504
<b>Creatinine (mg/dL)</b>	1.1 (1.0-1.2)
<b>Estimated glomerular filtrate rate (mL/min/1.73 m<sup>2</sup>)</b>	80 (70-90)
<b>Body mass index</b>	25.0 (23.0-27.4)
<b>Glucose (mg/dL)</b>	89 (82-97)
<b>Triglycerides (mg/dL)</b>	99.0 (76.0-136)
<b>Cholesterol (mg/dL)</b>	181 (159-203)
<b>Cholesterol HDL (mg/dL)</b>	49 (41-58)
<b>Cholesterol LDL (mg/dL)</b>	114 (96-137)
<b>Cholesterol TOT/HDL</b>	3.7 (3.1-4.4)

Table 1.

Overall, mean decrease in creatinine was -0.12 mg/dL/year (95%CI:-0.15,-0.1, p<0.0001) and mean increase in estimated glomerular filtrate rate +7.36 mL/min/1.73m<sup>2</sup> (95%CI:5.78,8.94, p<0.0001).

In participants switching to LA, mean changes in high-density lipoprotein (HDL) and low-density lipoprotein (LDL)-cholesterol were +2.14 mg/dL/year (95%CI:0.48-3.81, p=0.012) and +4.59 mg/dL/year (95%CI:0.55-8.63, p=0.026), respectively. People treated without tenofovir alafenamide before starting LA had a higher increase of LDL-choles-

terol [+6.81 mg/dL/year (95%CI:1.56-12.07, p=0.011)]. Mean change in weight was +0.97 Kg/year (95%CI:0.02-1.92, p=0.045) and in BMI +0.34/year (95%CI:0.03-0.66, p=0.034). Other changes are described in Figure 1.

Variable	Overall crude mean change per year (95% CI)	Crude mean change per year among people treated without tenofovir alafenamide long-acting start (95% CI)	Crude mean change per year among people treated with tenofovir alafenamide post start (95% CI)	p-value (vs. LA)
Weight (kg)	0.97 (0.02,1.92), p=0.045	0.8 (-0.40,2.04), p=0.208	1.24 (-0.25,2.73), p=0.102	p=0.112
Body Mass Index (kg/m <sup>2</sup> )	0.34 (0.03,0.66), p=0.034	0.31 (-0.10,0.72), p=0.139	0.39 (-0.10,0.88), p=0.115	p=0.094
Glucose (mg/dL)	-3.34 (-7.33,6.95), p=0.512	-3.48 (-8.84,1.87), p=0.177	-2.18 (-6.73,3.96), p=0.483	p=0.305
Triglycerides (mg/dL)	-3.88 (-11.86,3.46), p=0.303	-5.1 (-12.48,6.34), p=0.334	-4.93 (-15.35,5.48), p=0.434	p=0.569
Cholesterol (mg/dL)	2.69 (-2.43,6.46), p=0.349	2.27 (-3.38,7.92), p=0.430	1.82 (-5.18,7.95), p=0.602	p=0.640
Cholesterol HDL (mg/dL)	2.14 (-0.40,3.81), p=0.012	1.64 (-0.56,3.85), p=0.146	2.79 (-0.23,3.31), p=0.033	p=0.034
Cholesterol LDL (mg/dL)	4.59 (0.55,8.63), p=0.026	6.81 (1.56,12.07), p=0.011	5.37 (-4.92,7.86), p=0.468	p=0.035
Cholesterol TOT/HDL	-0.28 (-0.58,0.02), p=0.083	-0.29 (-0.88,0.38), p=0.42	-0.11 (-0.78,-0.64), p=0.18	p=0.189

Figure 1. Crude mean changes in renal and metabolic parameters.

**Conclusions:** In people switching to CAB/RPV, kidney function significantly improved. HDL and LDL-cholesterol and weight slightly increased; however, longer follow-up is needed to confirm these changes over time and assess potential cardiovascular risk modification.

## WEPEB076

### Weight gain and health-related quality of life in people with HIV on antiretroviral therapy

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**Background:** Studies have reported an increase in adverse weight gain associated with certain classes of antiretroviral drugs. This study evaluated the impact of weight gain on health-related quality of life (HRQoL) among people with HIV (PWH) using real-world data.

**Methods:** Data from the Adelphi HIV Disease Specific Programme (DSP)<sup>TM</sup>, a real-world, cross-sectional survey of physicians and virologically suppressed PWH under their treatment in the US between June 2021 and July 2022 was used. PWH weight at date of data collection and at 12 months prior were abstracted from medical chart. HRQoL was assessed using the Impact of Weight on Quality of Life - Clinical Trials (IWQoL-Lite-CT) questionnaire with a score ranging from 0-100, with higher values indicating a better functioning. Propensity score matching (PSM) was used to balance the pre-specified covariates between PWH groups with 12-month weight gain of ≥5% and those with weight <5% (includes PWH with weight loss). The IWQoL-Lite-CT composite scores were compared between the groups using the Average Treatment Effect (ATE) obtained from the weighted regression.

**Results:** A total of 225 PWH (≥5%: 54 and <5%: 171) consulting at 60 participating physicians were analyzed. The overall mean age was 46.3 (SD: 12.5) years; 222 (80.1%) males; 152 (54.9%) White and 86 (31.0%) Black; mean Charl-



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son Comorbidity Index 4.2 (SD: 0.67). After PSM and regression adjustment, the  $\geq 5\%$  weight gain group vs  $< 5\%$  had a lower average IWQoL-Lite-CT total composite score (65.8 vs 74.4; ATE=8.6,  $p<0.001$ ) and sub-domain scores, indicating poorer HRQoL (Figure 1).



Figure 1.

**Conclusions:** PWH with  $\geq 5\%$  increase in weight in the past 12 months were found to have poorer HRQoL. These findings show the humanistic impact of weight gain in PWH highlighting the need to monitor and consider weight gain when selecting antiretroviral therapy in the management of HIV to improve the patient quality of life.

## WEPEB077

Bone health in Malaysian women living with HIV: uncovering the pores in osteoporosis screening and management in a high-risk population

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**Background:** Post-menopausal women face heightened osteoporosis risks. For women living with HIV (WLWH), these risks are compounded by accelerated aging and chronic inflammation. In Malaysia, tenofovir-based therapies, linked to increased bone turnover, are first-line treatment. Yet, data on bone health among WLWH in our region is scarce.

Our study aims to identify gaps in screening and management of osteoporosis and osteopenia among Malaysian WLWH in a tertiary teaching center.

**Methods:** We reviewed the records of adult Malaysian WLWH who attend the Infectious Diseases Clinic, University Malaya Medical Centre. We collected demographics, HIV metrics, body mass index, menopausal status, and serum vitamin D levels. We noted bone mineral density (BMD) examination results. Diagnoses of osteoporosis and osteopenia followed definitions from the Malaysian Clinical Practice Guidelines. For osteoporotic women, we checked treatment initiation. For osteopenic women, the fracture risk assessment tool (FRAX®) score was computed to determine treatment need. We provide descriptive statistics.

**Results:** We collected data from 168 WLWH. The median age was 50 years (Interquartile Range IQR: 43,58), with 82(48.8%) aged  $< 50$  years and 86(51.2%)  $\geq 50$  years. The median duration of living with HIV was 12 years (IQR 7,17). All participants received antiretroviral therapy, and 160(95.2%) had an undetectable viral load. Menopause status was recorded in 67.9%(n=114), of which 47.3%(n=54) were menopausal. Only 10(6%) were active smokers. Of those aged  $< 50$  years (n=82), 26.8%(n=22) had a BMD examination, all of whom had normal z-scores. Among women aged  $\geq 50$  years (n=86), only 40(46.5%) had a BMD examination, with 8(20%) and 24(60%) having osteoporotic and osteopenic t-scores respectively. Amongst the 8 osteoporotic women, half had low BMI, three (37.5%) received treatment and two (25%) were on a tenofovir-based regimen. Only 2(25%) had Vitamin D levels, with both readings  $< 35$  nmol/L. The osteopenic women (n=24) had median FRAX® 10-year risks of 3%(IQR 2,6) for major fractures and 0.8%(IQR 0.2,1.5) for hip fractures. However, most women (n=21,87.5%) had their last BMD examination  $> 2$  years ago, and half (n=12, 50%) continue on tenofovir-based regimens.

**Conclusions:** Older Malaysian WLWH face under-screening and inadequate management of bone health. HIV physicians should extend care beyond viral suppression, emphasizing comprehensive bone health.

## WEPEB078

Prevalence of mental health conditions among people living with HIV in Odessa, Ukraine: results of the implementation of a screening model

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**Background:** Highly prevalent mental health disorders, including depression, are associated with poor outcomes among people living with HIV. Integrating the screening and treatment mental health conditions into routine HIV care can improve treatment outcomes.

Here, we aimed to describe the prevalence of mental health disorders in people living with HIV identified following the implementation of a model for depression screening and management of mental health conditions at the Test & Treat Clinic in Odessa, Ukraine.

**Methods:** In this cross-sectional study, 776 people living with HIV were enrolled between 2018-2023. Depression screening was done using the Patient Health Questionnaire PHQ-2 and PHQ-9.

**Results:** Among 776 people living with HIV screened with PHQ-2/PHQ-9, 315 (40.5%) had a syndromic diagnosis of depression; the prevalence among women was signifi-


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cantly higher (44.5%) than in men (35.4%;  $p=0.010$ ). Of the 315 clients identified with depression, 297 (94.2%) started treatment with antidepressants or neuroleptics.

A previously established diagnosis of depression was more frequently reported in the 35-50 years old group (51.1%) than among participants over 50 years of age (34%) or among those in the 25-35 years old group (8.0%;  $p = 0.005$ ). A third of the clients (268, 34.3%), were diagnosed with other psychiatric and/or behavioural disorders on consultation of those, only 25 (9.3%) did not seek specific pharmacological treatment or psychotherapy. Differences in the prevalence of mental and behavioural disorders by gender were noteworthy: alcohol and substance use disorders predominated in women (4.2% vs. 0.9% among men;  $p = 0.005$ ); stress related neurotic disorders and somatoform disorders were also significantly more common in women (7.2% vs. 3.6% in men;  $p = 0.050$ ). Schizophrenia and schizotypal disorders occurred only in males (2.4%;  $p = 0.001$ ). Contrastingly, mood disorders were rare, and no significant differences were observed by gender (0.9% and 2% among men and women, respectively).

**Conclusions:** The model for depression screening revealed that depression is common but commonly missed among people living with HIV. Routine screening of depression is a low-cost strategy to promote diagnosis and care and improve overall client outcomes.

## WEPEB079

A comparative study evaluating renal outcomes after switching from TDF+FTC+EFV To TDF/3TC/DTG (TLD) versus DTG+3TC in virologically suppressed Thai PWH

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**Background:** PWH in Thailand on TDF+FTC+EFV are switched to TDF/3TC/DTG (TLD) according to the WHO 2022 and Thai HIV guidelines. Switching to tenofovir-sparing dual therapy with 3TC+DTG is safe and effective compared with tenofovir-based combined ART (cART). However, there is yet a direct comparison of estimated glomerular filtration rates (eGFR) among PWH currently treated with TDF-based regimens who are switched to TLD versus 3TC+DTG.

**Methods:** We prospectively enrolled virologically suppressed PWH age  $\geq 18$  years currently on TDF+FTC+EFV to either switch to TLD or 3TC+DTG at 2 tertiary care hospitals. At 24 weeks, we evaluated changes of eGFR calculated by creatinine, LDL, body weight, and BMI.

**Results:** Among 50 recruited participants, there were 19 and 15 participants completed the 2<sup>nd</sup> follow-up in the TLD and 3TC+DTG group, respectively. The mean age was lower in the TLD than in the 3TC+DTG group (Table 1). The eGFR was significantly reduced in the TLD than in the 3TC+DTG:  $-18.23 \pm 7.77$  vs.  $-8.4 \pm 9.03$  ml/min/1.73 m<sup>2</sup> ( $p=0.002$ ) (Figure 1). Switching to 3TC+DTG is a strong predictor for lesser odds for the reduction in the eGFR after switching with an odds ratio  $<0.001$  (95% CI  $<0.0001 - 0.057$ ) even after adjusting for age and BMI from the general linear regression model ( $p=0.005$ ).

Baseline characteristics	TLD (n = 19)	3TC+DTG (n = 15)	p-value
Age, years ( $\pm$ SD)	39.53 $\pm$ 15.65	50.47 $\pm$ 12.26	0.04*
Sex, male, n (%)	17 (89.5)	9 (60)	0.10
Body mass index, kg/m <sup>2</sup> (IQR)	21.98 (19.53, 23.66)	24.9 (23.82, 25.73)	$<0.01^*$
Duration from HIV diagnosis to switching, years ( $\pm$ SD)	7.22 $\pm$ 3.73	10.37 $\pm$ 6.87	0.12
Nadir CD4, cells/mm <sup>3</sup> ( $\pm$ SD)	297.28 $\pm$ 270.24	226.93 $\pm$ 196.55	0.43
Pre-switch CD4, cells/mm <sup>3</sup> ( $\pm$ SD)	455.32 $\pm$ 200.44	639.93 $\pm$ 303.94	0.06
Pre-switch creatinine, mg/dL ( $\pm$ SD)	0.95 $\pm$ 0.14	0.91 $\pm$ 0.22	0.55
Pre-switch eGFR by CKD-EPI (ml/min/1.73 m <sup>2</sup> )	98.61 $\pm$ 17.43	88.2 $\pm$ 21.26	0.13
Comorbidities, n (%)			
- Diabetes mellitus	0 (0%)	5 (20%)	0.08
- Chronic kidney disease	1 (5.3%)	1 (6.7%)	1.00
LDL, mg/dL ( $\pm$ SD)	128.7 $\pm$ 34.68	130 $\pm$ 43.28	0.65

Table 1.

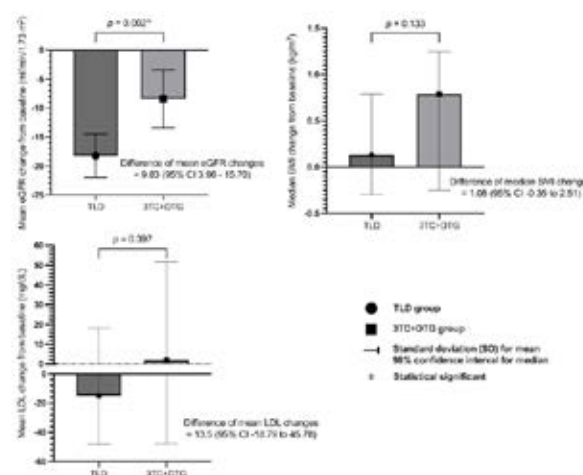


Figure 1.

**Conclusions:** There was a significant reduction of eGFR among PWH who were switched to TLD than to the 3TC+DTG. Changes in the LDL and BMI were comparable. Dual therapy with 3TC+DTG may be a preferred option as a switching therapy over TLD in selected cases with renal safety concerns.





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## WEPEB080

### HIV and inflammation predict initiation of methamphetamine use in sexual and gender minorities

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**Background:** Methamphetamine use is an established risk factor for HIV and inflammation. We sought to determine if the converse is also true. Do HIV seroconversion and greater inflammation increase risk for initiation of methamphetamine use in sexual and gender minority (SGM) people?

**Methods:** This prospective cohort study enrolled 1,302 SGM people ages 16–29 who were assigned male at birth to identify multi-level determinants of substance use and HIV. Youth with HIV were enrolled at baseline ( $n = 195$ ) or seroconverted during follow-up ( $n = 89$ ). Plasma samples were collected to measure systemic inflammation (C-reactive protein (CRP), interleukin-6, tumor necrosis factor - alpha) among 834 participants.

Only participants where HIV diagnosis and inflammatory markers preceded incident, first-time methamphetamine use were included. From 2015–2023, prevalence of any self-reported methamphetamine use was estimated.

Among youth reporting no history of methamphetamine use at baseline, the rate of incident, first-time methamphetamine use (i.e., self-report or reactive urine toxicology results) was examined.

**Results:** Most participants were Black (32%) or Latinx (30%), identified as cisgender men (90%), and were HIV-negative (85%) with mean age of 21.5 (SD = 3.2) years. Participants were followed for a median of 5.0 (IQR = 2.0–7.1) years.

There were significant increases in the prevalence of methamphetamine use from 2015–2023 (IRR = 1.17; 95% CI = 1.04–1.33;  $p = 0.01$ ) that were most pronounced among participants ages 25 or older at baseline (IRR = 2.20; 95% CI = 1.33–3.63;  $p = 0.002$ ). The median age of incident, first-time methamphetamine use was 23.9 (IQR = 22.1–26.9).

Adjusting for other substance use, there was a two-fold greater rate of incident, first-time methamphetamine use after HIV diagnosis (aHR = 2.02; 95% CI = 1.27–3.23;  $p = 0.003$ ). Higher CRP independently predicted greater rates of incident, first-time methamphetamine use (aHR = 1.18; 95% CI, 1.05–1.34;  $p = 0.008$ ).

**Conclusions:** Biobehavioral interventions to prevent methamphetamine use should focus on emerging adulthood, people with HIV, and those with greater systemic inflammation. Identifying the mechanisms whereby HIV

and inflammation alter key neurobehavioral processes favoring use (e.g., anhedonia) would inform interventions to prevent initiation of methamphetamine use.

## WEPEB081

### Epigenome-wide and methylation risk score analysis of body mass index among people with HIV

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**Background:** People with HIV (PWH) on antiretroviral therapy (ART) may experience weight gain, elevating the risk of type 2 diabetes and cardiovascular disease. While DNA methylation (DNAm) markers have been associated with obesity in the general population, its role in PWH remains unknown.

This study investigated epigenetic associations with body mass index (BMI) in PWH, aiming to enhance the understanding and management of obesity-related risks in this population.

**Methods:** An epigenome-wide association study (EWAS) of BMI was conducted on 992 male PWH of African ancestry from the Veterans Aging Cohort Study (VACS). Associations between DNAm and BMI were examined using linear mixed models with adjustment for potential confounders. Soluble CD14 (sCD14) was additionally adjusted for given its moderate association with BMI and role as an epigenetic modifier.

Results were compared with previously reported BMI-associated cytosine-guanine nucleotide (CpG) sites among people without HIV (PWoH).

To examine the joint impact of CpG sites on BMI in PWH, previously reported CpG sites and machine learning methods were utilized to calculate and evaluate methylation risk scores (MRS) of BMI.

**Results:** EWAS meta-analysis identified thirty CpG sites significantly associated with BMI after correction for multiple testing (Bonferroni-corrected  $p$ -value  $< 0.05$ ). After adjusting for sCD14, only four sites (cg17061862, cg10601624, cg04907505, and cg06178669) remained genome-wide significant.

When compared to 1,063 previously reported BMI-associated CpG sites in PWoH, 70.3% of those were directionally consistent (binomial test  $p$ -value  $< 2.2 \times 10^{-16}$ ) in PWH. A


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BMI MRS constructed from 349 CpG sites explained 17.6% of BMI variance in PWH. The performance of internally trained BMI MRS using Elastic-Net models, as assessed by the median R-squared value ranged from 22.0% to 24.8% in 5-fold cross-validation.

**Conclusions:** Identified DNAm markers and MRS were strongly associated with BMI among PWH, with a significant overlap in epigenetic profiles between PWH and PWH.

This indicates shared and independent molecular pathways underlying BMI. Integrating a large epigenetic study of BMI among PWH and PWH could provide insights into obesity-related risk in the context of HIV infection and ART, potentially guiding targeted strategies to mitigate the elevated chronic disease risk among PWH.

## WEPEB082

Relationship between TM6SF2 rs58542926 genotype, liver fibrosis and diabetes mellitus among people with HIV who have steatotic liver disease

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**Background:** Steatotic liver disease (SLD) is increasingly prevalent in people with HIV (PWH) in the contemporary antiretroviral therapy (ART) era. Little is known regarding the role of genetic polymorphisms in the development of advanced liver fibrosis, or pathogenesis of diabetes mellitus (DM) in PWH and SLD.

**Methods:** PWH aged ≥18 years in a HIV cohort in Bangkok, Thailand, were routinely evaluated with FibroScan for liver stiffness measurements (LSM) and controlled attenuation parameter (CAP). SLD and advanced liver fibrosis were defined as CAP ≥248 dB/m and LSM ≥7.5 kPa, respectively. Participants who tested for single nucleotide polymorphisms (SNPs) including patatin-like phospholipase-domain-containing 3 (PNPLA3) rs738409 and transmembrane 6 superfamily member 2 (TM6SF2) rs58542926 were included.

In this cross-sectional analysis, multivariable logistic regression was used to investigate associations of these SNPs with advanced liver fibrosis and DM. Analyses were stratified by the presence of SLD.

**Results:** A total of 756 participants (35% female, median age 45 [interquartile range, 36–52] years) were analysed. TM6SF2 rs58542926 CC, CT and TT genotypes were present in 77%, 21% and 2%, respectively. Median CD4 count was 581 (422–753) cells/mm<sup>3</sup>; 36% had SLD (22% with advanced liver fibrosis) and 19% were diabetic. TM6SF2 rs58542926 CT/TT (vs. CC) was associated with an increased risk of advanced liver fibrosis (adjusted odds ratio [aOR]=1.91, 95%CI 1.17–3.14, p=0.009) after adjusting for age, sex, BMI, waist circumference, hypertension, dyslipidemia, AST, SLD, PNPLA3rs738409 genotype and ART duration. However, the association was only significant among individuals with SLD (3.33, 95%CI 1.56–7.13, p=0.002), not among those without SLD (p=0.36).

In contrast, TM6SF2 rs58542926 CT/TT (vs. CC genotype) was associated with a decreased risk of DM among individuals with SLD (0.36, 95%CI 0.13–0.95, p=0.039). We found no association with the PNPLA3rs738409 genotype and advanced liver fibrosis or DM.

**Conclusions:** The TM6SF2 rs58542926 T allele was associated with an increased risk of liver fibrosis but provided modest protection from DM among individuals with HIV and SLD. This suggests a complex interplay of genetic factors influencing both hepatic and metabolic outcomes in this population, emphasizing the need for tailored therapeutic approaches and further exploration of the underlying mechanisms.

## WEPEB083

Characteristics of PLHIV who acquire TB disease after completing TB Preventive Therapy at a large facility in Kampala, Uganda

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**Background:** Even though, Tuberculosis preventive therapy (TPT) has proven to be an effective measure in reducing the incidence of active tuberculosis (TB) disease among people living with HIV (PLHIV) who are at an elevated risk, the prevalence of TB in this specific population remains at 5.8% post-completion of a TPT course.

This study therefore set out to investigate the characteristics of PLHIV who acquire TB disease after successful completion of TPT.

**Methods:** We performed a retrospective cohort analysis of PLHIV records in TB and ART registers between 1<sup>st</sup> January 2022 and 31<sup>st</sup> December 2023 at Kawaala Health Centre IV, a large ART facility in Kampala. Data on socio-demographic and clinical characteristics were collected using a data transcription form. Data were entered in Excel and later exported to SPSS for further management and analysis.





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In Excel, we traced back TPT completion using ART numbers from EMR and client files. The participant characteristics were summarised in descriptive terms such as mean, median, standard deviation (SD) or percentage, as appropriate.

**Results:** A total of 9,417 PLHIV who had completed TPT were included in the analysis; the mean age was 36.6 (SD  $\pm$  13.6) years old and most were female 6,912 (73.4%). Eighty-seven (0.9%) PLHIV acquired TB disease after completion of TPT and of these 68 (78%) had a documented TPT completion date with the average duration between TPT completion and TB diagnosis 2.5 (SD  $\pm$  13.1) years, 55 (63%) were bacteriologically diagnosed, more than half were female 46 (53%), majority 80 (92%) were on DTG based regimens, most 66 (76%) had a documented viral load within 1 year of being diagnosed with TB and of these 52 (79%) were virologically suppressed (viral load <200 copies/ml). Of the 87, 2 died before completion of treatment.

**Conclusions:** In this cohort, it is the stable PLHIV who acquire TB disease after completion of TPT. This shows that the current measures are not enough. There is need to strengthen intentional routine screening of TB even among stable PLHIV who may be enrolled in various Differentiated Service Delivery community and facility models.

## WEPEB084

### Putting people first: holistic HIV care with integrated mental health services

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**Background:** AIDS Healthcare Foundation - India implements the Centre of Excellence ART Clinics - The People's Clinic in Delhi and Mumbai. This study emphasizes prioritizing individuals' well-being by integrating mental health services into HIV care. Focusing on the relationship between mental well-being and HIV treatment outcomes, it integrates mental health services for 2200 individuals in antiretroviral therapy (ART).

The approach puts people at the center, addressing both physical and mental health in HIV care.

**Description:** The study seamlessly integrated mental health screenings into routine HIV treatment evaluations. A specialized interview captured mental health indicators alongside standard physical assessments.

The aim was to establish correlations between mental health status, ART adherence, and treatment outcomes, prioritizing people behind the data.

**Lessons learned:** Findings reveal a significant link between mental health and HIV treatment success. Integrated mental health support led to higher ART adherence, improving viral suppression and overall well-being. Untreated mental health challenges were associated

with lower adherence, compromising efficacy and quality of life. Among 2200 clients, 46% required mental health interventions, with anxiety predominant at 71%, followed by depression (26%) and psychosis (3%). Notably, 24% needed referrals to mental health specialists. 27% underwent pharmacological interventions, while 73% had non-pharmacological interventions.

Addressing mental health issues improved client retention, emphasizing the positive impact of a people-centric approach.

Mental Health Challenges	Percentage
Anxiety	71%
Depression	26%
Psychosis	3%

Management Type	Percentage
Referrals	24%
Interventions in clinic	76%

**Conclusions/Next steps:** This research advocates for a paradigm shift in HIV care, emphasizing the critical integration of mental health services as a fundamental component. Recognizing and proactively addressing the mental health needs of individuals living with HIV optimizes treatment adherence, improves outcomes, and fosters a holistic approach.

The study urges policymakers, clinicians, and healthcare systems to seamlessly integrate mental health services with HIV treatment protocols, prioritizing people and paving the way for a more effective model of care. This approach addresses the multifaceted needs of individuals living with HIV, enhancing overall care quality.

## WEPEB085

### Impact of depression on virological outcomes and quality of life among people living with HIV in Thailand

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**Background:** Depressive symptoms impact the well-being and quality of life (QoL) in people living with HIV (PLWH), and is often associated with poorer virological control.

This study investigated the relationship between depression, virological outcomes, and QoL among PLWH.

**Methods:** A cross-sectional study was conducted among PLWH at HIV-NAT, Thai Red Cross AIDS Research Centre, Thailand, from December 2020 to June 2023. A Patient Health Questionnaire (PHQ)-9 score  $\geq 10$  was considered to represent moderate-to-severe depression. QoL was measured using the World Health Organization's Quality of Life-HIV (WHOQOL-HIV BREF) which is a validated 31-item in six domains, each rated on a 5-point scale. Mean scores for each domain were computed. The scores ranged between 4 and 20. Higher scores indicated better QoL.

**Results:** Among 508 participants, 17.5% were female, and the median age was 33.3 years, with 90.4% had viral loads  $< 50$  copies/mL. Fifty individuals (9.8%) experienced moderate-to-severe depressive symptoms.

Of all participants, 72.1% reported good or very good overall QoL and 71.1% expressed satisfaction and very good satisfaction with their general health perception. PLWH with minimal or mild depression had higher mean overall QoL ( $4.0 \pm 0.7$  vs.  $3.2 \pm 0.7$ ,  $P < 0.001$ ), general health perception ( $3.9 \pm 0.8$  vs.  $3.2 \pm 0.9$ ,  $P < 0.001$ ), and higher proportion with HIV RNA  $< 50$  copies/mL (91.7% vs 78%,  $p = 0.002$ ) compared to those with moderate-to-severe depression. In a multivariable model, females (aOR: 4.18, 95%CI: 1.04-16.72) and HIV RNA  $\geq 50$  copies/mL (aOR: 3.07, 95%CI: 1.28-7.35) had higher risk to develop moderate-to-severe depression. PLWH with moderate-to-severe depression and virological non-suppression had the lowest QoL overall and in each QoL domain.

	Overall (mean $\pm$ SD)		Domain (mean $\pm$ SD)					
	Overall QoL	General health percep- tion	I. Physical	II. Psycholo- gical	III. Level of independ- ence	IV. Social relation- ships	V. Environ- mental	VI. Spirituality/ Self-beliefs
Total (N=508)	3.9 $\pm$ 0.7	3.8 $\pm$ 0.9	16.4 $\pm$ 2.6	15.7 $\pm$ 2.6	16.4 $\pm$ 2.5	15.1 $\pm$ 2.5	15.4 $\pm$ 2.4	15.4 $\pm$ 3.2
Minimal and mild depression (N=458)	4.0 $\pm$ 0.7	3.9 $\pm$ 0.8	16.7 $\pm$ 2.3	16.0 $\pm$ 2.3	16.6 $\pm$ 2.4	15.4 $\pm$ 2.4	15.6 $\pm$ 2.3	15.7 $\pm$ 3.1
Virological suppression (n=420)	4.0 $\pm$ 0.7	3.9 $\pm$ 0.8	16.7 $\pm$ 2.3	16.0 $\pm$ 2.4	16.7 $\pm$ 2.4	15.4 $\pm$ 2.5	15.6 $\pm$ 2.4	15.7 $\pm$ 3.1
Virological non- suppression (n=38)	3.9 $\pm$ 0.7	3.7 $\pm$ 1.0	17.2 $\pm$ 1.9	16.2 $\pm$ 2.1	16.2 $\pm$ 2.1	15.6 $\pm$ 2.1	15.7 $\pm$ 2.0	15.7 $\pm$ 3.2
Moderate to severe depression (N=50)	3.2 $\pm$ 0.7	3.2 $\pm$ 0.9	13.0 $\pm$ 3.1	12.6 $\pm$ 2.5	14.3 $\pm$ 2.4	12.6 $\pm$ 2.2	13.3 $\pm$ 2.4	12.7 $\pm$ 3.0
Virological suppression (n=39)	3.2 $\pm$ 0.7	3.3 $\pm$ 0.9	13.8 $\pm$ 2.8	12.8 $\pm$ 2.3	14.9 $\pm$ 2.2	12.9 $\pm$ 2.2	13.4 $\pm$ 2.4	13.1 $\pm$ 2.9
Virological non- suppression (n=11)	2.9 $\pm$ 0.9	2.8 $\pm$ 0.9	10.3 $\pm$ 2.6	11.9 $\pm$ 2.9	12.3 $\pm$ 2.0	11.6 $\pm$ 2.0	13.0 $\pm$ 2.5	11.5 $\pm$ 3.4

Table 1. Comparing the quality of life among (QoL) PLWH based on depression status and virological outcomes.

**Conclusions:** PLWH with elevated rates of depression had lower QoL scores and were higher rates of virological non-suppression. Prioritizing mental health care is essential to improve health outcomes and quality of life in PLWH.

## WEPEB086

### The risk profile of people living with HIV switched to Dolutegravir who gain clinically significant weight at a large program HIV clinic in Uganda

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**Background:** Weight gain has been described for people living with HIV (PLWH) switched to integrase strand transfer inhibitors. It is important to understand which PLWH are at risk of significant weight gain ( $\geq 10\%$  of their baseline) and prioritize them for weight reduction initiatives. We conducted a retrospective analysis in the programmatic setting among PLWH who were switched to Dolutegravir (DTG) at the Infectious Diseases in Uganda to determine those at risk.

**Methods:** Socio-demographic and clinical data was extracted from the electronic database for the period February 2017-December 2022. We included all PLWH who had been on Efavirenz (EFV), Nevirapine (NVP), and Protease Inhibitors (PIs) (Atazanavir ATV/r and Lopinavir LPV/r) for at least 24 months, with a viral load  $< 1000$  copies/ml, and were on DTG for at least 12 months. We carried out a cox-proportional regression analysis at 95% level of significance.

**Results:** Of the 5,323 PLWH included in the analysis, at the time of switch 3,138 (58.9%) were female, the median age was 45 years (IQR; 40-52), 3130 (58.8%) were previously on EFV, 1558 (29.3%) on NVP, and 635 (11.9%) on PI. Median duration on previous ART was 8.9 years (IQR; 6.0 - 12.8), 2,570 (48.7%) had a BMI between 18.5-24.9 kg/m<sup>2</sup> with a median of 24.3 kg/m<sup>2</sup> (IQR; 21.3 - 28.1).

The cumulative risk of  $\geq 10\%$  weight gain at 24 months was 32.3% (IQR; 30.4% - 34.3%). The median weight change in the general cohort at 24 months was 1.9 kg (IQR; -1.2 - 5.1) and in those who had  $\geq 10\%$  weight gain, it was 5.3 kg (IQR; 1.2 - 9.4).

PLWH were more likely to gain weight if they were previously on EFV or PI (adjusted Hazard Ratio (aHR) 1.52; 95% Confidence Interval (CI) 1.30-1.78 and aHR 1.79; 95% CI 1.41 - 2.29 respectively), were female (aHR 1.68; 95% CI 1.48 - 1.90) or had BMI  $< 18.5$  kg/m<sup>2</sup> (aHR 1.64; 95% CI 1.35 - 2.00). Those who had a BMI  $\geq 25.0$  kg/m<sup>2</sup> were less likely to put on weight (aHR 0.70; 95% CI 0.61-0.81).

**Conclusions:** Females, those previously on PIs and EFV are more likely to put on significant weight and could be prioritized for weight reduction initiatives.



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## WEPEB087

### Changes in weight over 5 years in people with HIV (PWH) and the general population from the German Ruhr-area

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**Background:** Increased prevalence of obesity is observed globally. Weight gain is a multifactorial process associated with demographics, diet, exercise, psychological and clinical comorbidities, and co-medications. Increased prevalence of obesity has also been observed among PWH, but the role of HIV treatment on weight gain is unclear.

This study evaluates weight change over 5 years in PWH compared to the general population, utilizing robust propensity score methodologies.

**Methods:** The HIV-HEART (HIVH; PWH cohort) and Heinz Nixdorf Recall Study (HNR: general population cohort) are prospective studies assessing cardiovascular risk using similar methodologies in the Ruhr area of Germany. HIVH and HNR cohorts were matched 1:1 using propensity score (PS) methods. The covariates in the PS matched model included: age, sex, diabetes mellitus, blood pressure, lipids, smoking, and physical activity. Linear regression models were used to estimate differences in 5-year weight change parameters between HIVH and HNR cohorts.

**Results:** After matching the cohorts, there were 624 participants in HIVH- and HNR each (17.6% female participants). Covariates used in the PS matching were well balanced [Figure].

Linear regression analysis showed lower baseline weight (-6.6kg [95%CI -8.12;-4.65]), and BMI (-2.8kg/m<sup>2</sup> [95%CI -3.3;-2.3]) in the HIVH cohort. Five-year changes in weight and body-mass-index (BMI) were modestly higher in HIVH compared to HNR (Figure): +0.8kg (95%CI 0.15;1.44); +1.15% (95%CI 0.36;1.94).

On average, the HIVH cohort had lower 5-year weight (HIVH: 80.5kg vs. HNR: 85.4kg) and BMI (HIVH: 26.2±5.1kg/m<sup>2</sup> vs. HNR: 28.4±4.7kg/m<sup>2</sup>).

		HIVH (prevalence ~ age at B1, sex at B1, smoking at B1, DM at B1, LDL/HDL/Chol at B1, syst/dia. BP at B1, phys. activity at B1, PS matched, PS matching (greedy alg. exact: 100))							
		Baseline				5-Year Follow-Up			
		HIVH		HNR		HIVH		HNR	
		N	%/MEAN±SD	N	%/MEAN±SD	N	%/MEAN±SD	N	%/MEAN±SD
sex	female	624	110 (17.6%)	624	110 (17.6%)	624	110 (17.6%)	624	110 (17.6%)
age	(years)	624	53.5 ± 8.3	624	54.2 ± 8.4	624	60.1 ± 8.3	624	59.3 ± 8.4
systolic blood pressure	(mmHg)	624	136.4 ± 18.0	624	137.3 ± 17.7	624	137.2 ± 23.0	622	136.9 ± 26.0
diastolic blood pressure	(mmHg)	624	81.6 ± 11.0	624	83.3 ± 11.2	624	84.0 ± 20.8	622	82.6 ± 10.6
diabetes mellitus	yes	624	40 (6.4%)	624	39 (6.2%)	624	305 (48.9%)	624	335 (53.6%)
LDL	(mg/dl)	624	130.7 ± 37.8	624	133.0 ± 34.3	364	134.4 ± 43.0	622	125.4 ± 34.3
HDL	(mg/dl)	624	51.0 ± 14.0	624	50.9 ± 14.3	359	51.3 ± 25.3	622	50.8 ± 14.3
total cholesterol	(mg/dl)	624	212.1 ± 42.5	624	214.3 ± 36.3	367	205.0 ± 45.5	622	215.3 ± 36.3
weight	(kg)	624	77.5 ± 14.6	624	84.3 ± 15.8	624	80.5 ± 15.2	624	85.4 ± 15.9
BMI	(kg/m <sup>2</sup> )	624	25.1 ± 4.5	624	27.9 ± 4.6	624	26.2 ± 5.1	624	28.4 ± 4.7
weight-to-hip ratio		624	0.91 ± 0.07	624	0.93 ± 0.03	415	0.93 ± 0.14	624	0.97 ± 0.08
smoking	yes	624	262 (42.0%)	624	240 (38.5%)	616	279 (45.3%)	622	196 (31.5%)
physical exercise	yes	624	148 (23.7%)	624	141 (22.6%)	425	68 (16.2%)	622	243 (39.2%)
mean changes within 5 years									
standardized abs. weight	(kg)					624	2.05 ± 5.66	624	1.20 ± 5.89
standardized rel. weight	(%)					624	2.77 ± 7.50	624	1.62 ± 6.06
standardized abs. BMI	(kg/m <sup>2</sup> )					624	0.34 ± 7.21	624	0.51 ± 5.88
standardized rel. BMI	(%)					624	3.08 ± 8.75	624	2.40 ± 6.09
Linear Reg. relation						R [95%CI]			
weight at baseline (kg)						-6.6 [-8.3 to -4.9]			
BMI at baseline (kg/m <sup>2</sup> )						-2.8 [-3.3 to -2.3]			
abs. weight diff. after 5 years (kg)						1.8 [0.2 to 3.5]			
rel. weight diff. after 5 years (%)						1.2 [0.3 to 2.1]			

**Conclusions:** PWH had lower weight and BMI compared to the general population at baseline. Propensity score matched participants in both cohorts gained weight over 5 years.

Despite the significantly greater weight gain by 1% in PWH compared to the general population, the 5-year gains were modest (+160 grams/year) and likely not clinically meaningful. After 5 years, weight in PWH still remains less than in the general population.

## WEPEB088

### Hypertension management and risk of dementia in people with and without HIV infection

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**Background:** Hypertension is a well-established risk factor for dementia. Few studies have examined how the degree and duration of hypertension control may affect dementia risk among people living with HIV.

**Methods:** We conducted a retrospective cohort study of demographically matched people with and without HIV who were members of a large US healthcare system be-



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tween 7/1/2013 and 12/31/2021. Included individuals were  $\geq 50$  years old and had a hypertension diagnosis but no dementia diagnosis in the electronic health record. People with HIV were additionally required to have  $\geq 1$  antiretroviral therapy prescription fill.

Hypertension control was calculated using a novel disease management index (DMI) which captured the degree and duration above the hypertension treatment goals of systolic blood pressure (SBP)  $< 140$  mmHg and diastolic blood pressure (DBP)  $< 90$  mmHg (based on clinical guidelines during the study period). DMI values ranged from 0% to 100% (perfect control); hypertension was considered "inadequately controlled" if DMI  $< 80\%$  (i.e., not in control for at least 80% of the time).

Annual, time-updated DMI was calculated separately for SBP and DBP. The outcome of interest was incident dementia, identified using ICD codes. The associations of annual SBP and DPB control with incident dementia were evaluated using extended Cox regression models, accounting for sociodemographics, substance use, body mass index, depression, anxiety, cardiovascular disease, diabetes, and outpatient visit frequency.

**Results:** The study included 3,026 people with HIV (mean age: 58.3 years, 90.0% men) and 66,016 people without HIV. During follow-up, 83 people with HIV and 2,480 people without HIV were diagnosed with dementia. Each year of inadequate SBP control was associated with greater dementia risk in both people with HIV (adjusted hazard ratio [aHR]=1.27, 0.93-1.65) and people without HIV (aHR=1.28, 1.22-1.35; p-interaction=0.75).

Similarly, inadequate DBP control was also associated with greater dementia risk in both people with HIV (aHR=1.42, 0.87-1.97) and people without HIV (aHR=1.75, 1.53-1.98; p-interaction=0.35).

	People with HIV N=3,026 aHR (95% CI)	People without HIV N=66,016 aHR (95% CI)	p for interaction
Each year of inadequate SBP control	1.27 (0.93-1.65)	1.28 (1.22-1.35)	0.75
Each year of inadequate DBP control	1.42 (0.87-1.97)	1.75 (1.53-1.98)	0.35

**Conclusions:** Findings suggest the association of inadequate hypertension control with greater dementia risk is similar by HIV status. Stronger associations of DBP control with dementia will be important to investigate further.

## WEPEB089

### Prevalence and risk factors of chronic kidney disease among people living with HIV older than 50 years at Newlands Clinic, Zimbabwe

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**Background:** Renal dysfunction is independently associated with morbidity and mortality among people living with HIV (PLHIV). Elderly PLHIV face numerous health challenges including deterioration of kidney function due to multiple risk factors. We assessed the burden of chronic kidney disease (CKD) and its associated risk factors among PLHIV older than 50 years enrolled in an HIV treatment program in Zimbabwe in 2024.

**Methods:** Routinely collected patient data were exported from the clinic's electronic records to excel and analyzed using Stata version 16.1. Kidney function was assessed by estimated glomerular filtration rate (eGFR) calculated using the chronic kidney disease epidemiology collaboration (CKD-EPI) equation.

We defined CKD as  $\geq 2$  eGFR measurements  $< 60$  mL/min/1.73m<sup>2</sup> for  $\geq 3$  months and determined the prevalence of moderate, and severe kidney dysfunction among participants with CKD defined as eGFR  $< 60$ , and  $< 30$  mL/min/1.73m<sup>2</sup>, respectively. We used multivariable logistic regression to determine factors associated with CKD.

**Results:** Among 2 472 adults aged  $> 50$  years, 1 517 (61%) were female and 955 (39%) were male. The median age was 57 years (Interquartile range (IQR): 53-62) and the median BMI was 26 (IQR: 23-31). The median nadir CD4 cell count was 180 cells/mm<sup>3</sup> (IQR: 93-330) and median duration of antiretroviral therapy (ART) was 14 years (IQR: 9.8-17.4), 99% had a viral load of  $< 1000$  copies/mL. Hypertension was common (n=1389, 56%).

A total of 502 (20.3%) had CKD. Among participants with CKD, 465 (92.6%) and 37 (7.4%) had moderate and severe CKD, respectively. Hypertension (aOR 1.6, 95%CI 1.3-2, p $< 0.001$ ), was the most significant risk factor associated with CKD (Figure 1).

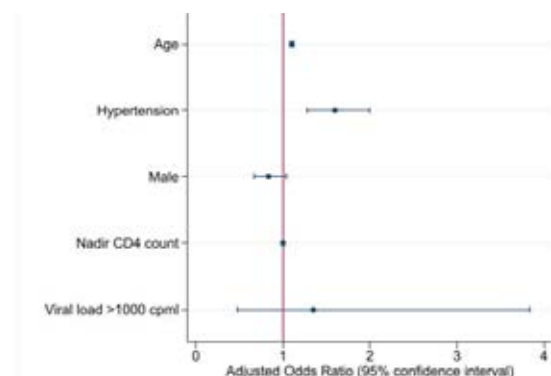


Figure. Forest plot showing adjusted odds ratios of having chronic kidney disease (eGFR  $< 60$  mL/min/1.73m<sup>2</sup>).



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**Conclusions:** Our data show a high burden of CKD among elderly PLHIV highlighting the need for routine renal function monitoring. Early ART initiation and adequate control of hypertension and HIV may play a role in improving renal function in elderly PLHIV.

## WEPEB090

Improving cervical cancer screening and treatment outcomes for women living with HIV utilizing virtual and social media platforms in Zambézia Province, Mozambique

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**Background:** Cervical cancer (CC) is a leading cause of cancer-related deaths among women in sub-Saharan Africa, including Mozambique, particularly those living with HIV. In Mozambique, CC is the most frequent cancer among women over 25 years of age.

We report the impact of a capacity-building intervention utilizing virtual and social media platforms as training tools to enhance early identification of pre-cancerous/cancerous lesions among women living with HIV (WHIV) in Zambézia Province, Mozambique.

**Description:** We used a conceptual framework for quality improvement to understand barriers to CC screening, design and implement interventions. Lack of continuous training for nurses was the main barrier identified. Interventions commenced in October 2022, including virtual training sessions using Zoom-application and weekly training via WhatsApp groups, during which teaching images were shared and discussed on how to identify squamous columnar junction, transformation zone, low- and high-grade lesions, and characteristics of cervixes with malignant transformation(s).

Concomitantly, access to thermocoagulation treatment was expanded. We analyzed aggregated data from 140 health facilities describing trends in WHIV undergoing screening via visual inspection with acetic acid, and in WHIV diagnosed with abnormal lesions and receiving treatment, comparing the periods October 2021-September

2022 (12 months pre-implementation) and October 2022-September 2023 (12 months during-implementation).

**Lessons learned:** During the implementation period, 38 virtual (Zoom) trainings and 38 weekly WhatsApp sessions were done involving 144 Maternal and Child Health nurses, with average participation rates of 30% (mainly due to challenges related to inconsistent internet access at peripheral sites) and 72%, respectively. Pre-implementation, 3,754 (3.5%) of 106,301 screened WHIV were identified with pre-cancerous lesions, with 3,082 (82%) receiving treatment: predominantly cryotherapy (73%), also via thermocoagulation (20%) and/or loop electrosurgical excision procedure (LEEP) (7%).

During intervention, there was a 3.5-fold increase in yield, with 12,267 (13%) of 94,405 screened WHIV identified with pre-cancerous lesions, and a 13% increase in proportion receiving treatment (93%), 18% via cryotherapy, 79% via thermocoagulation and 3% via LEEP.

**Conclusions/Next steps:** Using continuous virtual training, we saw an improved CC pre-cancerous lesions identification. The success of this approach underscores the potential of leveraging clinical quality improvement methods and m-health technology in resource-constrained settings.

## WEPEB091

Inside out: inflammation in acute HIV predicts persistent depressive symptoms despite antiretroviral therapy

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**Background:** Depression is two- to three-times more prevalent among people with HIV (PWH) and is associated with increased mortality risk despite suppressive antiretroviral therapy (ART). Although pathophysiological alterations during acute HIV acquisition (AHA) could

have long-term neuropsychiatric consequences, scant research has examined depressive symptom trajectories post ART initiation.

**Methods:** RV254/SEARCH010 is an AHA cohort in Bangkok, Thailand. Participants undergo extensive clinical phenotyping, including self-reported depressive symptom severity, during AHA and following ART initiation.

Hierarchical density-based spatial clustering with uniform manifold approximation and projection was used to examine depressive symptom trajectories over 96 weeks. ANOVA and chi-square tests examined the associations of demographic, clinical, behavioral, and inflammatory correlates of persistent depressive symptom trajectories. Logistic regressions were conducted to estimate odds ratios.

**Results:** A total of 443 participants were included in the analysis. The median age of participants was 27, and more than half reported having a bachelor's degree or higher. Ninety-eight percent of the sample identified as sexual minority men.

Nearly one-in-five participants (19%) reported methamphetamine use, 15% reported amyl nitrite (e.g., popper) use, and 8% reported using erectile dysfunction (ED) medications during the AHA visit. Two clusters emerged through machine learning analyses.

Cluster 1 (n=258, 58%) included participants who started with depressive symptoms that exceeded the screening threshold for a depressive disorder over 96 weeks.

Cluster 2 (n=185, 42%) included participants who started with low levels of depressive symptoms that continued to decline post-ART initiation. The odds of persistent depressive symptoms were higher among participants who reported ED med use (OR = 2.855, 95% CI=1.048, 7.778) and popper use (OR = 2.388; 95% CI=1.169, 4.877).

Additionally, the odds of persistent depressive symptoms increased for every 1 unit increase in log plasma viral load (OR = 1.272; 95% CI= 0.988, 3.353) and sTNFaR2 (OR=1.229, 95% CI=1.039, 1.453).

**Conclusions:** Half of participants reported persistent depressive symptoms over 96 weeks, despite early ART intervention. Greater systemic inflammation, higher plasma viral load, and chemsex drug use at the AHA visit were associated with persistent depressive symptom trajectories over 96 weeks of suppressive ART. AHA may represent a critical setpoint where biobehavioral factors have long-term mental health consequences.

## HIV and ageing

### WEPEB092

#### Development and validation of a risk prediction model for concurrent physical frailty in people living with HIV

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**Background:** Frailty occurs earlier in those living with HIV compared to the general population, and its diagnosis often necessitates specialized training and functional tests.

This study aimed to estimate how well a selected range of sociodemographic, clinical, and medication-related factors can predict the risk of physical frailty in a population of people aging with HIV, potentially aiding in clinical decisions and early interventions.

**Methods:** Utilizing baseline data from the Positive Brain Health Now study, our analysis involved 824 adults, predominantly male (85%) with a mean age of 53. Physical frailty was evaluated using a modified Fried's Frailty Phenotype, with scores  $\geq 3$  indicating frailty. We considered a broad spectrum of sociodemographic, lifestyle, physiological, and clinical predictors.

The cohort was divided into 80% training and 20% testing groups. Feature selection was performed using machine learning and statistical methods, leading to model development via logistic regression, random forest, extreme gradient boosting, and neural networks.

Model performance was gauged using metrics like F-beta and AUC-ROC, with calibration checked by Brier scores and calibration plots. Decision Curve Analysis was applied to determine the models' clinical benefit.

**Results:** In our cohort, frailty prevalence was 16%. The most effective predictive model was a logistic regression derived through Learning Vector Quantization feature selection.

Key predictors, ranked by importance, included weakness, anticholinergic burden, numbness, alcohol use, education, slim limbs, antidepressant use, anxiety/depression, comorbidity count, non-antiretroviral medication count, HIV duration, and albumin levels. The model demonstrated acceptable discrimination in the test set (F-beta = 0.65,



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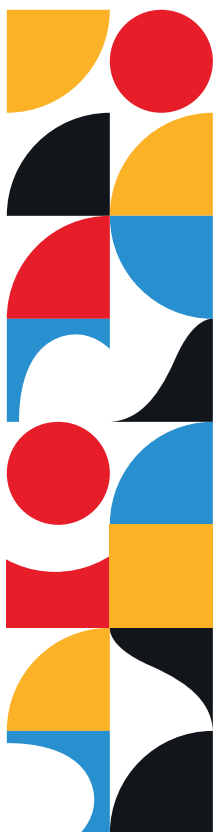
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AUC = 0.84, Sensitivity = 0.84, Specificity = 0.71). A Brier score of 0.11 and a calibration plot confirm the model's reasonable accuracy, with a mean absolute error of 0.074. Decision Curve Analysis revealed the model's clinical utility, offering benefits over non-intervention, although it did surpass the "treat-all" strategy at any point.

**Conclusions:** The model demonstrated robust discriminative ability in predicting concurrent physical frailty using readily available variables. Given the calibration and decision curve outcomes, its clinical utility is optimally positioned as a decision support tool for low-cost and low-harm interventions. Further research should focus on external validation and refining the model's calibration.

## WEPEB093

### Association of depression with non-adherence to antiretrovirals and to co-medications in older adults living with HIV in Brazil

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**Background:** Older people living with HIV (OPWH) often experience multimorbidity, including non-communicable diseases and mental health disorders, leading to a high prevalence of polypharmacy. Depression is a highly prevalent condition in this population, with potential impact in adherence to antiretroviral therapy (ART) and to co-medications. We explored the associations of depression with non-adherence to ART and to co-medications among OPWH in Brazil.

**Methods:** We enrolled OPWH aged ≥50 years on antiretroviral therapy in four outpatient clinics located in three Brazilian cities. Our main outcomes were non-adherence to ART and to co-medications based on self-report of a missing ≥1 dose in the past four days. Our main exposure was depressive symptoms, measured by the Patient Health Questionnaire (PHQ-9; scores range 0-27; higher scores correspond to higher depression symptoms). Logistic regression models were used to estimate the associations between PHQ-9 scores and study outcomes adjusted for site, gender, race, income, substance use (any use in past 3 months), alcohol consumption (>weekly use in past 3 months) and polypharmacy (≥5 medications). We also quantified the association between non-adherence to ART and non-adherence to co-medications using logistic regression model.

**Results:** Of 703 OPLWH included, mean age was 62 years; 63% were cisgender men, 35% cisgender woman, and 2% transgender women. Most were non-white (55%), <12 years of education (60%), low income (42%, <USD480/month), polypharmacy (72%); 9% and 29% reported substance use and alcohol consumption, respectively. Median PHQ-9 score was 3(IQR:1-7); 16% score ≥10 (≥moderate depression symptoms). Prevalence of non-adherence to ART and to co-medications were 9% and 21%, respectively. Non-adherence to co-medications was strongly associated with non-adherence to ART (OR12.65, 95%CI:7.13-23.31). In multivariable models, non-adherence to ART was associated with PHQ-9 scores depression (aOR1.07, 95%CI:1.02-1.12; per 1-point increase) and substance use (aOR2.42, 95%CI:1.07-5.13). Non-adherence to co-medications was also significantly associated with depression (aOR1.08, 95%CI:1.04-1.12) and polypharmacy (aOR2.58, 95%CI:1.47-4.75).

**Conclusions:** We observed low rates of non-adherence to ART but higher rates of non-adherence to co-medications among OPWH in Brazil. Providers should deliver comprehensive adherence counseling to OPWH on polypharmacy. HIV care services should include screening for depression among OPWH to provide mental health treatment and adherence support.

## WEPEB094

### Frailty in people living with human immunodeficiency virus aged 50 years and older: prevalence and predictors

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**Background:** Life expectancy improvement for people living with HIV is coming up against the problems associated with aging and chronic diseases. Frailty is a concern affecting a growing number of patients, particularly the elderly in this population.

Our study aimed to determine the prevalence of frailty and its predictors on people living with HIV aged 50 years and older followed at the Outpatient Treatment Clinic (CTA) in Dakar.

**Methods:** We conducted a cross-sectional study of descriptive and analytic purposes ranging from November 2022 to August 2023, in CTA, Dakar (Senegal). We included people living with HIV aged 50 years and older under antiretroviral therapy for at least 6 months (≥ 6 months).


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Frailty was considered according to Fried criteria with a score  $\geq 3$ . To identify the predictors of frailty, we performed a multivariate logistic regression analysis using STATA software version 18.

**Results:** We included 199 patients. The median age at the moment of the study was 58 years old [50-91] with a sex ratio (M/F) of 0.58. The most representative age group was that of [50-59] years (59.3%). HIV-1 profile was most common in 89.45%. The median duration under antiretroviral therapy was 180 months [6-284] and 94% of patients received a Tenofovir Diproxyl Fumarate (TDF)-containing regimen with 43% of them for at least 10 years.

Viral load was undetectable ( $\leq 40$  copies/ml) in 98% of cases. WHO Stage III was more common at inclusion and 55.78% had nadir TCD4+ Lymphocyte counts  $< 200$  elements/mm<sup>3</sup>. In our study, 80% of patients underwent at least one comorbidity ( $\geq 1$ ) and 31% of patients had poly-medication ( $\geq 5$ ). Nutritional disorder was found in 65 patients.

Frailty and prefrailty appeared in 28% and 36% of cases respectively. In multivariate analysis, nutritional disorder [aOR=3.8 (2.3-6.4)], length of TDF-containing regimen exposure  $\geq 10$  years [aOR=29.03 (9.5-89.7)], and polypharmacy [aOR=1.53 (1.1-2.12)] were associated with frailty.

**Conclusions:** Our study confirms the high prevalence of frailty among older people living with HIV. Its prevention should consider the management of comorbidities and the implementation of non-pharmacological interventions such as nutrition.

## WEPEB095

Incidence, predictors and health outcomes associated with cognitive frailty in people ageing with HIV

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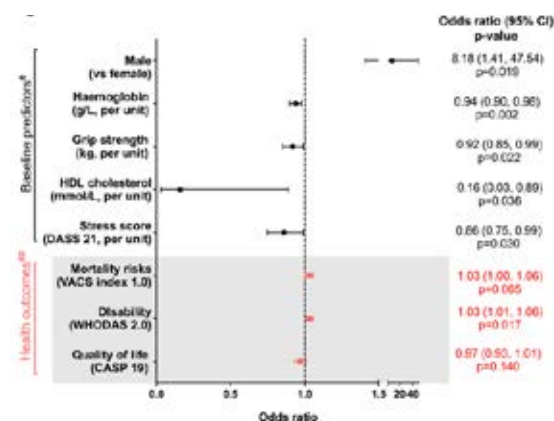
**Background:** Cognitive frailty (CF) is associated with an increased risk of dementia, disability and mortality but little is known about this construct among people with HIV (PWH). We explored the incidence, predictors and health outcomes associated with CF in ageing PWH.

**Methods:** 180 PWH on antiretroviral therapy (ART) and under routine HIV care in University Malaya Medical Centre, Malaysia and 81 controls (all  $\geq 25$  years) were prospectively assessed for frailty, cognitive function and health out-

comes at two time-points; 2014-2016 (baseline) and 2020-2023 (follow-up). Incident CF was defined as the new onset of frailty ( $\geq 2$  Fried's criteria) and impaired Montreal cognitive assessment (MoCA) scores (global deficit score  $\geq 0.5$ ) at follow-up in participants without clinical dementia.

Multivariate logistic regression was performed to assess baseline factors predicting the simultaneous worsening of MoCA and frailty scores during follow-up and to assess the association of CF with outcomes of quality of life (CASP-19), mortality risk scores (VACS 1.0) and disability (WHODAS 2.0).

**Results:** All 261 participants were followed-up and the median (interquartile range, IQR) duration between visits was 7 (6-7) years. Median (IQR) age at baseline among PWH and controls were 43 (36-50) and 45 (31-53) years, respectively. 83% of PWH and 56% of controls were males. CF incidence was higher in PWH vs controls (4.53 vs 2.22 per 100 person-years). Male sex, lower stress scores, lower HDL, lower grip strength and lower haemoglobin levels independently predicted declines in both physical and cognitive health in PWH (Figure 1). CF in PWH was associated with greater disability but not poorer QoL and increased mortality risks.



\* Stepwise logistic regression: Other factors included in the model but not significant were age, ethnicity, social isolation score, depression score, anxiety score, nutrition score, BMI, blood pressure, appendicular skeletal muscle mass, baseline and current CD4, AIDS-defining illness, CD4 CD8 ratio, hepatitis C and B status, total number of comorbidities, total number of medications, eGFR, fasting glucose, HbA1c, LDL, total cholesterol, triglycerides, total protein, hsCRP, CVD risk.  
\* Multivariate logistic regression: Adjusted for age, sex and ethnicity

Figure 1.

**Conclusions:** Ageing PWH on stable ART experience an increased risk of CF which negatively impacts their functional ability. Modifiable factors, potentially amenable to lifestyle interventions, predicted declines in physical and cognitive health among PWH. The unexpected protective role of stress against CF needs further investigation.



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## WEPEB096

An assessment of clinical frailty and early aging among a cohort of people living with HIV in Ontario, Canada

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**Background:** In order to meet the UNAIDS targets, focus must be placed on quality of life for older adults living with HIV (OALWH). OALWH experience earlier biologic aging and have an increased risk of aging-associated cognitive and physical comorbidities. Aging involves complex biopsychosocial factors which interact to yield a clinical phenotype of frailty.

In this analysis, we used a cumulative deficit model to examine frailty in a cohort of OALWH.

**Methods:** The OHTN Cohort Study (OCS) is an open longitudinal cohort of people living with HIV at 15 clinical sites in Ontario, Canada, with currently over 5000 people under active follow-up.

The study includes data abstraction from clinical records, laboratory reports, and an annually administered questionnaire. We identified clinical frailty using the modified frailty index (mFI), approximated with aggregations of ICD-10 codes from diagnostic records. Presentation of a frailty related condition contributes to a frailty score. A score of 0 represents no clinical frailty, 1-2 is pre-frailty, and  $\geq 3$  is clinical frailty.

**Results:** Data from 6582 participants and diagnostic reports from 1940-2018 were included. Overall, the median age was 51. 52.4% had no indicators of frailty, 41.6% had pre-frailty (median age 44), and 6.0% had clinical frailty (median age 55). The frailty indicators with the highest prevalence were COPD/pneumonia (17.0%), impaired sensorium (15.4%), non-independent functional status (13.9%), and hypertension (13.6%).

Females were found to have greater pre-frailty (41.4% vs. 42.7%) whereas males had greater clinical frailty (6.3% vs. 4.3%). Among those who acquired HIV from intravenous drug use (IVDU), there were higher rates of pre-frailty (52.2% vs. 39.5%) and clinical frailty (7.6% vs. 5.7%).

In a multivariate logistic model, IVDU (OR 2.03,  $p < .0001$ ), AIDS (OR 1.58,  $p < .0001$ ), and age (OR 1.04 pre-frailty,  $p < .0001$ ; OR 1.08 clinical frailty,  $p < .0001$ ) were found to be associated with frailty. Adjusted sex and non-white race were not independently associated with frailty.

**Conclusions:** OALWH in Ontario exhibit greater rates of clinical frailty at earlier ages than people living without HIV, predisposing this population to an increased risk of

poor health outcomes. Policy and service providers must aim at better integrating HIV and geriatric care models to effectively support OALWH.

## WEPEB097

Associations between HIV diagnosis and frailty, cognitive impairment, and sarcopenia in Brazilian older adults

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**Background:** Despite improvements in lifespan, studies suggest that older adults living with HIV (OALH) are at a higher risk of chronic noncommunicable diseases and geriatric syndromes compared to age-matched counterparts.

**Methods:** We enrolled OALH and older adults without diagnosed HIV (OANH) in neighboring outpatient units in Sao Paulo, Brazil, to investigate associations between HIV diagnosis and frailty, cognitive impairment, and sarcopenia. Frailty was assessed using the Fried Phenotype scale (0, not frail; 1-2, pre-frail;  $\geq 3$ , frail). Cognitive impairment was assessed using the Montreal Cognitive Assessment ( $< 10$ , severe impairment; 10-17, moderate; 18-25, mild;  $\geq 26$  normal cognition). Sarcopenia was evaluated using the Short Physical Performed Battery ( $\leq 2$ , sarcopenia; 3-9, possible sarcopenia;  $\geq 10$ , no sarcopenia).

We fit multivariable modified Poisson models for binary outcomes (moderate/severe cognitive impairment; pre-frail/frail condition; possible sarcopenia/sarcopenia) adjusted for age ( $\leq 65$ ; 66-70; 71-75; 76-80;  $> 80$  years old), sex (male/female), race (White/non-white), monthly income ( $\leq 2$ ; 3-6; and  $> 6$  minimum wages), and number of comorbidities.

**Results:** We included 110 OALH and 84 OANH  $\geq 60$  years old between September/2022-October/2023. Compared to OANH, the group of OALH was younger (median age 68 vs. 74;  $p < .001$ ), had a higher percentage of males (62 vs. 29%;  $p < .001$ ), and higher number of comorbidities (median 3 vs. 2;  $p < .001$ ; Table). In multivariable models, HIV status was not significantly associated with cognitive impairment ( $p = 0.104$ ), frailty ( $p = 0.192$ ), or sarcopenia ( $p = 0.340$ ).


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## Antiretroviral therapies and clinical issues in adults

### WEPEB098

Bictegravir/emtricitabine/tenofovir alafenamide for the treatment of primary HIV infection: the BIC-PHI clinical trial

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**Background:** Primary HIV infection (PHI) is a period with a high risk of transmission. Thus, rapid antiretroviral therapy (ART) initiation and rapid viral load suppression are essential in this period.

Our aim was to evaluate the efficacy and safety of rapid initiation of bictegravir/emtricitabine/tenofovir alafenamide (BIC/FTC/TAF) treatment during PHI.

**Methods:** Multicenter, single-arm clinical trial in persons with confirmed PHI (<3 months post-infection, documented by seroconversion or incomplete confirmatory serologic tests) starting BIC/FTC/TAF. Primary endpoint was proportion of participants with VL<50 copies/mL at 48-weeks by ITT, according to FDA Snapshot analysis.

**Results:** We included 64 participants, 94% male, median (IQR) age 32 (26;41) y.o.; 78% were MSM and 58% from Europe. At ART initiation, Fiebig stages were II (14%), III (11%); IV (5%), V (54%) and VI (16%); median (IQR) VL was 496,520 (110,000;1,285,000) copies/mL (highest VL was 113,000,000 copies/mL); median (IQR) CD4 T cell count was 406 (322;535) cells/ul; 6% had active HBV co-infection. Median (IQR) time between HIV diagnosis and ART initiation was 0 (0;3) days. VL decline was rapid (Figure 1);

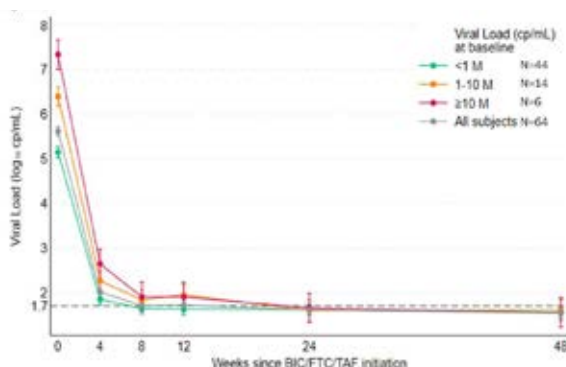


Figure 1.

	Older adults living with HIV N=110	Older adults without diagnosed HIV N=84	p-value
Median age (IQR)	68 (65-71)	74 (69-77)	<0.001
Gender identity (%)			
Men	68 (62)	24 (29)	<0.001
Women	41 (37)	59 (70)	
Transgender man	0 (0)	1 (1)	
Transgender woman	1 (1)	0 (0)	
Median number of comorbidities (IQR)*	3 (2-4)	2 (1-3)	<0.001
MOCA (%)**			
Normal cognition	15 (14)	16 (20)	0.566
Mild impairment	76 (69)	50 (63)	
Moderate impairment	18 (16)	13 (16)	
Severe impairment	1 (1)	0 (0)	
Fried frailty (%)			
Not frail	62 (65)	41 (51)	0.596
Pre-frail	45 (41)	38 (47)	
Frail	3 (3)	1 (1)	
SPPB (%)			
No sarcopenia	71 (65)	51 (61)	0.745
Possible sarcopenia	38 (35)	33 (39)	
Sarcopenia	1 (1)	0 (0)	

\*Among the following list of comorbidities: hypertension; coronary artery disease; cerebrovascular disease; cardiovascular disease; hyperlipidemia; diabetes; osteoporosis; chronic lung disease; depression; cancer

\*\*Missing five participants without diagnosed HIV

Table: Demographic characteristics, comorbidities, and geriatric syndromes among study participants, by HIV status

**Conclusions:** In this study, we found no significant associations between HIV diagnosis and prevalent frailty, cognitive impairment, or sarcopenia.

Potential limitations include residual confounding; single-site enrollment; small sample size; and limitations of screening instruments. Neighborhood matching may have balanced important social determinants of health that need additional investigation.

Despite these limitations, this is one of the few studies reporting geriatric syndromes in populations living with and without HIV, providing relevant insights to an increasing population of older adults globally.



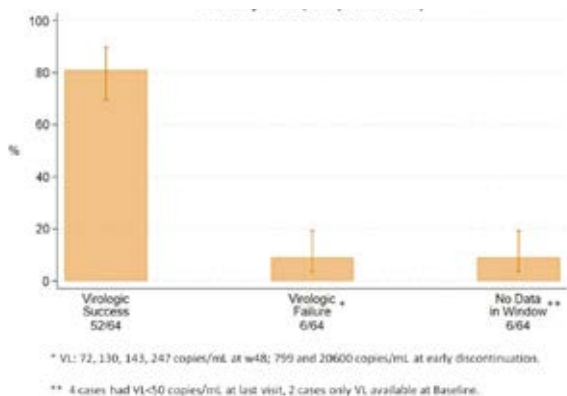


Figure 2. Efficacy w48 (Snapshot FDA).

81% had undetectable VL at 48-weeks by ITT (figure 2); 52/56 (93%, 95CI:83%;98%) participants who were on-treatment at 48-weeks had VL <50 copies/mL. Adverse events (AE) were common (72% of participants had at least one), but only 3% were grade 3/4; 91% were not-related to BIC/FTC/TAF and none led to discontinuation. Four serious AE were reported, none related to BIC/FTC/TAF.

**Conclusions:** BIC/FTC/TAF was associated with rapid virological decline, good safety and tolerability and high virological suppression rates in participants with PHI.

## WEPEB099

Switching to doravirine in the absence of genotypic resistance tests in people living with HIV virally suppressed on antiretroviral treatment at a London HIV clinic

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**Background:** Doravirine is a non-nucleoside reverse transcriptase inhibitor (NNRTI) recommended for switch and first-line antiretroviral therapy (ART) in major guidelines. Doravirine does not have a high genetic barrier to resistance, and genotypic resistance testing (GRT) pre-switch is recommended. Data on its use without pre-switch GRT is limited.

We describe the outcomes of doravirine use in virologically suppressed patients in routine practice.

**Methods:** Data were extracted from electronic health records of people with HIV prescribed doravirine 12/2019-11/2023 at a London service. Demographics, ART history, GRT, and virological and clinical outcomes were analysed. Virological failure (VF) was defined as  $\geq 2$  detectable HIV viral loads (VL) >200copies/mL or one VL >200copies/mL considered VF clinically.

**Results:** 603 patients were prescribed doravirine: 76% male, 56% White, and median age 50 years (IQR:43-57). Median time on doravirine was 93 weeks (IQR:59-138). 97% (n=586/603) were ART-experienced with a median number of previous regimen changes of 3 (IQR:2-5). Of these, 86% were prescribed as doravirine/emtricitabine/tenofovir-disoproxil fixed-dose combination (FDC).

Emtricitabine/tenofovir-alafenamide FDC plus doravirine was the next most common regimen (6%). For ART-experienced patients, GRT confirming no doravirine resistance was available for 83% (n=488/586) pre-switch. Of these, 95% (n=462/488) maintained continuous virological suppression (VL<50copies/mL), 3% (n=15/488) had viral blips/rebounds and re-suppressed without regimen change, <1% (n=2/488) had low-level viraemia, and 2% (n=8/488) experienced VF; 2 with NNRTI and NRTI resistance. For ART-experienced patients with pre-switch GRT, 23% (n=114/488) switched away from doravirine.

Among those switched to doravirine without baseline GRT (n=98), all were virally suppressed at switch and 62% were already on an NNRTI. 95% (n=93/98) maintained continuous virological suppression; 4% (n=4/98) had viral blips/rebounds and re-suppressed without regimen change. 1 patient with documented poor adherence experienced VF after 93 weeks; subsequent GRT demonstrated NNRTI and NRTI resistance.

23% of ART-experienced without GRT (n=23/98) switched away from doravirine; common reasons included transaminitis (20%), sleep disturbance (16%), and gastrointestinal symptoms (16%).

**Conclusions:** In our clinical practice, doravirine demonstrated safety and efficacy, including in the absence of GRT. Only 1% of virally suppressed patients switching to doravirine without baseline GRT experienced VF, compared to 2% with GRT. However, consequent extensive NNRTI resistance limits future ART options.



## WEPEB100

## Characteristics and outcomes of PLHIV on antiretroviral therapy with viral non-suppression in Vietnam (2018-2023)

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**Background:** While Vietnam has one of the highest HIV viral load (VL) suppression rates globally, the management of people living with HIV (PLHIV) on antiretroviral therapy (ART) with viral non-suppression remains a challenge. Vietnam HIV treatment guidelines recommend repeat VL testing within three months and enhanced adherence counseling (EAC) with non-suppression. We aim to investigate the characteristics, management, and outcomes of PLHIV on ART with viral non-suppression in Vietnam.

**Methods:** Electronic medical records data from HIV treatment sites in five provinces and two cities in Vietnam between January 1, 2018 – July 31, 2023, were analyzed. Participants with unique identifiers and  $\geq 2$  VL results during ART were included in the analysis. VL results were categorized as non-suppressed (VL  $\geq 1,000$  copies/mL) and suppressed (VL  $< 1,000$  copies/mL).

The characteristics of participants with viral non-suppression and their subsequent virologic outcomes were examined. Data for enhanced EAC, available for clients treated in Ho Chi Minh City, was analyzed.

**Results:** Of 46,465 participants included in the analysis, 2,444 (5%) had  $\geq 1$  non-suppressed VL. Of 2,444 participants with  $\geq 1$  non-suppressed VL, 50% were aged 40-59 years and 75% were male.

The median time for those with a first non-suppressed viral load (N= 1,414) to their second viral load measurement was five months (IQR: 4-8 months); 24% of participants received a second VL within the recommended three months.

Of the 2,444 participants with  $\geq 1$  non-suppressed VL, 1,700 (70%) achieved viral suppression at their last VL; 744 (30%) remained non-suppressed.

Among 3,230 participants in Ho Chi Minh City with  $\geq 1$  non-suppressed VL, 2,597 (80%) had no documented EAC sessions, 631 (20%) had  $\geq 1$  EAC session documented and 385 (12%) had  $\geq 2$  EAC sessions documented.

**Conclusions:** In a five-year analysis, only 5% of PLHIV on ART in this study had  $\geq 1$  non-suppressed VL, the majority of whom subsequently achieved viral suppression. The timing of repeat VL testing and the documentation of EAC for participants with non-suppressed VL did not align with national guidelines. Further analyses to understand the impact of interventions for viral non-suppression, including EAC and ART regimen changes, are planned to inform program priorities.

## WEPEB101

## Prediction of intracellular tenofovir-diphosphate concentrations during pregnancy using a semi-mechanism-based population pharmacokinetic model

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**Background:** Tenofovir(TFV)-based regimens are backbones of HIV treatment and pre-exposure prophylaxis(PrEP) during pregnancy. Multiple cohorts demonstrated decreased dried blood spot (DBS) tenofovir-diphosphate (TFV-dp) concentrations by up to one-third during pregnancy among participants on TFV-disoproxil-fumarate (TDF).

However, there are no published data or mechanism-based models describing concentrations of TFV-dp, the active moiety, inside peripheral blood mononuclear cells (PBMCs) of pregnant individuals receiving TDF or tenofovir-alafenamide (TAF).

**Methods:** Using data from the CONRAD-137 trial, we developed a semi-mechanism-based population pharmacokinetic(PK) model that simultaneously describes plasma TAF, plasma TFV, and PBMC TFV-dp concentrations among non-pregnant, cisgender-women on TAF and TDF. We separately developed population PK models using data from Partners Demonstration Project and International Maternal Pediatric Adolescent AIDS Clinical Trials(IMPACT) network-P1026s to identify the impact of pregnancy (specifically second and third trimesters) on PK parameters.



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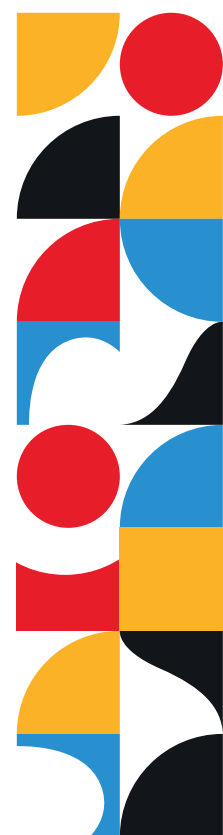
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Using the developed models, we simulated 14 days of daily oral 300mg TDF or 25mg TAF dosing in 1000 virtual individuals, integrating the pregnancy effects. The simulated PBMC TFV-dp concentration reductions were compared to the reduction observed in IMPAACT-2009 DBS TFV-dp concentrations during pregnancy.

**Results:** The simulation of PK in pregnant individuals on TDF showed a 30% reduction of steady-state trough TFV-dp concentrations in PBMC relative to non-pregnant individuals (Figure 1.A). The simulated steady-state trough PBMC TFV-dp concentrations among pregnant individuals on TAF were not distinguishable from those of non-pregnant individuals ( $p=0.92$ ) (Figure 1.B).

Solid lines represent the predicted median pharmacokinetics profile for non-pregnant (black) and pregnant (red) populations. The regions encompass the 5% and 95% percentiles of prediction for non-pregnant (grey) and pregnant (pink) populations. Black dots represent non-pregnant data from CONRAD 137. In Panel B, only pregnant simulation point-estimate (red line) and overlapping 95% confidence band (grayish-pink) are apparent due to complete overlap of pregnant and non-pregnant simulations.

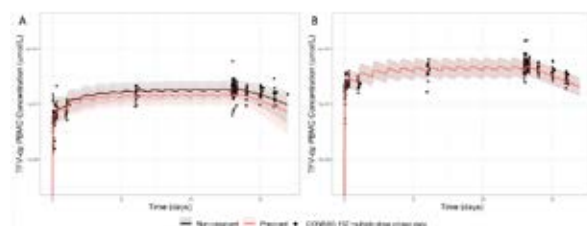


Figure 1. Concentration-time profiles for TFV-dp in non-pregnant and pregnant individuals (A) PBMCs TFV-dp concentration after TDF dosing, (B) PBMCs TFV-dp concentration after TAF dosing.

**Conclusions:** Among pregnant individuals on TDF, our simulation showed a 30% reduction in PBMC TFV-dp concentrations. Increased PrEP failure with TDF-based PrEP in pregnancy has not been reported, but is challenging to evaluate. Among individuals on TDF-based treatment in pregnancy, decreased TFV-dp exposure has not been associated with virologic failure; dose adjustment is not recommended given the presence of a third antiretroviral. Among individuals on TAF during pregnancy, negligible reduction in PBMC TFV-dp concentrations was predicted; evaluation of TAF-based PrEP efficacy in cisgender-women is ongoing.

## WEPEB102

### How OECD HIV clinical guidelines address adherence to antiretroviral therapy: a scoping review

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**Background:** Approaches to antiretroviral therapy (ART) adherence abound as to its definition, thresholds, assessment, addressed barriers, and proposed interventions. To gain clarity, this review synthesized these features across HIV clinical guidelines.

**Methods:** A scoping review was conducted. Eligible HIV guidelines and their updates concerned adults with HIV and ART from Organization for Economic Co-operation and Development (OECD) countries and international health organizations. English or French publications since 2017 were included. Three databases were searched in March 2023, along with grey literature in five guideline-specific databases.

A targeted Google search for omitted OECD countries was conducted. Two reviewers participated in document selection and data charting. Content analysis was performed with NVivo software.

**Results:** There were 24 guidelines identified from 7 countries and 2 international health organizations. Only one (8%) provided a definition of ART adherence and none offered a threshold for adequate adherence (one (4%) addressed this topic, noting the lack of a minimum threshold).

However, most guidelines (20;83%) reported interventions for adherence, including reducing pill burden (15;63%), education (13;54%), and peer or social support (13;54%). Nineteen guidelines (79%) highlighted methods to assess adherence, such as clinical assessment with patients (8;33%), viral load monitoring (6;25%), and examining pharmacy records or pill count (5;21%).

Eighteen guidelines (75%) proposed a frequency for assessing adherence, including at each visit (11;46%) and suspected or observed drug resistance or virologic failure (8;33%). Fourteen (58%) guidelines identified adherence barriers, including lifestyle or activities (11;46%), social challenges (10;42%), and health system barriers (9;38%).

**Conclusions:** Despite its centrality to ART's success, this review underscores a conspicuous lack of definition and consensus around adherence and its management. Very few guidelines define adherence, none offer an optimal



threshold, and there is no agreement on how to gauge it. More systematic and preventative approaches to monitoring adherence may be needed.

## WEPEB103

### Early learnings from Zambia's introduction of darunavir/ritonavir (DRV/r) for second-line HIV treatment

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**Background:** Zambia was the first country in sub-Saharan Africa to introduce best-in-class Darunavir/ritonavir 400/50mg (DRV/r) for use in second-line (2L) HIV treatment, starting a phased introduction in 2022.

With national scale-up underway, the programme reflects on early learnings to inform further scale-up within Zambia and the broader region.

**Description:** The first phase of Zambia's 2L DRV/r introduction began in 2022 in 15 sites across 3 provinces, prioritizing recipients of care (ROC) failing dolutegravir-based first-line (1L) regimens.

Phase II, starting in early 2023, expanded eligibility to ROC on atazanavir/ritonavir and increased the geographic footprint to 35 sites. National scale-up commenced in late 2023, with approximately 700 ROC on DRV/r by the end of 2023.

Critical components of the successful introduction process included partnerships with communities, through engagement meetings and joint supportive supervision visits and monthly virtual mentoring sessions.

**Lessons learned:** Data collected during supervision visits and interviews with healthcare workers (HCW) and ROC yielded the following lessons:

1. Quality and ongoing training and mentorship is critical to empower HCW to feel confident making switching decisions for 2L ROC, especially amidst HCW attrition;
2. Strengthening enhanced adherence counseling practices can prevent adherence-related treatment failure and shorten time to regimen switch when clinically indicated;
3. Expanding access to point-of-care VL can mitigate delays in laboratory result delivery that slow switching decisions;
4. High prevalence of tuberculosis in ROC failing treatment complicates protease inhibitor (PI) sequencing in absence of access to generic rifabutin;
5. Clients appreciated a reduction in side effects compared to legacy PIs;

6. Early involvement of community groups increased momentum for transition at national and site levels.

**Conclusions/Next steps:** Zambia's introduction of DRV/r in 2L has highlighted the complexities around treatment optimization in treatment-experienced ROC, lessons learned for further scale-up, as well as the client benefits of using optimal medicines. The programme is collecting data on viral suppression to better understand the clinical impact of 2L DRV/r in resource-limited settings.

As momentum for broader 2L DRV/r adoption grows, with the WHO evaluating its guidelines for PIs and PEPFAR initiating procurement, disseminating lessons from early adopter countries will be critical to support broader access and uptake.

## WEPEB104

### Perceptions, barriers, and facilitators for injectable lenacapavir in the management of HIV

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**Background:** The six-monthly injectable lenacapavir antiretroviral therapy (ART) provides a treatment option for people living with HIV (PLWH) particularly those who are heavily treatment experienced with drug resistance or experiencing pill fatigue.

This study aimed to understand the preferences, barriers and facilitators for uptake and implementation of lenacapavir to inform clinical practice.

**Methods:** In-depth, semi-structured qualitative interviews and focus groups with purposively sampled PLWH and healthcare professionals (HCP) from UK HIV services were conducted. Verbatim pseudonymised transcripts were analysed using summative and conventional content analysis based on Hsieh et (2005) framework.

**Results:** Thirty-four PLWH with varied ART experience were recruited from 2 UK HIV services. 22 were male (64.7%) 6 (35.3%) female; median age was 55 years (range 26-76); 14 (41.2%) were White British, 9 (26.5%) were Black African; 17 (50%) were men who have sex with men. 14 HIV HCP (7 (50%) HIV physicians, 6 (42.9%) staff nurses, 1 (7.1%) HIV nurse specialist) took part in 3 focus groups.

Four key themes were identified: lenacapavir as a treatment option; lenacapavir versus oral ART; switching considerations and; administering lenacapavir.

The majority (30, 88%) of PLWH were interested in switching to lenacapavir if offered. However, PLWH preferred an all-injectable regimen: preference was reduced to 26.5% if an oral ART pairing was required. PLWH cited the con-



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venience of a six-monthly dose schedule, freedom from pill burden and reduced stigma as reasons for interest in lenacapavir, but had concerns regarding efficacy, dosing intervals windows, monitoring and side effects. HCP felt the benefit of lenacapavir was as a treatment option for those with adherence issues, resistance to other ART, and a high pill burden. Broader use of lenacapavir raised concerns over drug resistance, delivery capacity and storage.

Theme	Quote
Lenacapavir as a treatment option	<p>"It would stop me worrying for six months, I'd know I've got the injection, I've had it, so I just don't need to worry anymore...I can get on with everything and just forget" (PLWH participant, PT27)</p> <p>"At the moment I'd be quite hesitant...I've only just got myself comfortable with like the undetectable untransmissible and it's taken a lot of research to get my mind feeling better about it...[so] I wouldn't say I'd be 100% keen" (PLWH participant, AC24)</p> <p>"For those with that struggle to take the oral, or when they have limited options...yeah I think for that" (HCP participant, FG2)</p>
Lenacapavir versus oral ART	<p>"When I started the antiretrovirals [it was] because I was dying...so you know it is a constant reminder that somethings wrong, really wrong...everyday" (PLWH participant, MSG13)</p> <p>"You'd just have to sort of balance it up, in what is the least hassle...if you are having some sort of injectable and you are taking fewer pill, or pills not so often, then it would still be of interest to me" (PLWH participant, SL32)</p>
Switching considerations	<p>"Not having to take three pills everyday would be nice, but it's not the major factor. The major factor is effectiveness, number 1, sustainability and security [of supply], number 2" (PLWH participant, AB01)</p> <p>"[What] I am worried about is the long-term effects...with an injection I don't know, I might get some serious ones or are they going to be long-term?...If it's one big dose, is that really strong? how will that make me react?" (PLWH participant, JM19)</p>
Administering lenacapavir	<p>"I don't think I would feel confident enough...if I don't take my pill properly I know...but I'd be worried that if I didn't administer it [the injection] right, and you wouldn't know if you had or not" (PLWH participant, AC24)</p> <p>"I quite like the staff at the HIV clinic...I'd rather visit them than anyone else, I don't mind going...it keeps everything nice and neat. So bloods then injection" (PLWH participant, KW28)</p> <p>"It's capacity for us at the moment...for the other one too [cabotegravir + rilpivirine]...amazing potential but we have to make sure we have the systems to deliver it in place" (HCP participant FG1)</p>

**Conclusions:** Lenacapavir would be a suitable treatment choice for many PLWH, provided an all-injectable regimen was available. HCP raised concerns over capacity and viral resistance if large numbers of PLWH were on lenacapavir. Feasibility assessments for provision of injectable ART and research on self-administration are needed.

## WEPEB105

### Clinical pharmacokinetics and safety of orally administered VH4011499 (VH-499), a novel HIV-1 capsid inhibitor, in Adults Without HIV

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**Background:** VH4011499 (VH-499) is a novel HIV-1 capsid inhibitor that demonstrated potent in vitro antiviral activity against a wide spectrum of HIV-1 strains and clinical isolates. We present the pharmacokinetics, drug interaction potential, and safety of VH-499 in a first-time-in-human study.

**Methods:** This double-blind, randomized, placebo-controlled, phase 1 study evaluated oral VH-499 in healthy adults administered as single ascending doses as powder-in-bottle (PiB) and tablet (parts 1 and 3, respectively) and as multiple ascending doses as PiB for 14 days with or without midazolam (part 2), evaluating VH-499 inhibition/induction of CYP3A4.

**Results:** 73 participants were included (placebo, n=17; VH-499, n=56); 93% and 93% were male, 30% and 56% identified as Black or African American, and median age was 37 and 34 years in parts 1 and 3 and part 2, respectively. VH-499 plasma exposures (C<sub>max</sub> and AUC) displayed less-than-dose-proportional increases, with median t<sub>max</sub> of 8 to 12 hours (PiB) and 24 hours (tablet). Geometric mean of the terminal half-life was >2 days, ranging from 51 to 66 hours, leading to maintenance of VH-499 above the therapeutic target (3.3 ng/mL; Figure).

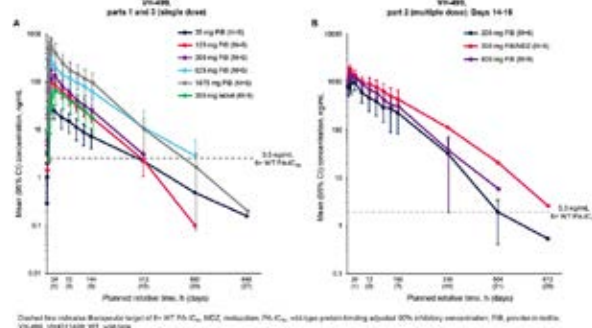


Figure. Mean plasma VH-499 concentration-time plots in (A) parts 1 and 3 and (B) part 2 (semi-logarithmic scale).

Tablet administration led to 45% to 63% less exposure compared with PiB. Midazolam exposures were unchanged.

Frequency of adverse events (AEs) was comparable between placebo and VH-499 groups. VH-499-related AEs were predominantly grade 1 (none serious). No AEs leading to withdrawal or deaths were observed.

There were no trends in vital signs, electrocardiograms, or laboratory hematology or chemistry parameters, except for a possible trend of increased total and low-density-lipoprotein cholesterol at exposures anticipated to exceed therapeutic exposures.

**Conclusions:** VH-499 was well tolerated, does not inhibit/induce CYP3A4, and exposures exceeded the anticipated therapeutic target across a range of single and multiple oral doses.

These early data support further development of VH-499 as a long-acting antiretroviral for the treatment of HIV-1.

## WEPEB106

Phase 1, open-label study to evaluate the drug interaction between MK-8527, an HIV-1 nucleoside reverse transcriptase translocation inhibitor, and the oral contraceptive levonorgestrel/ethinyl estradiol in healthy adult females

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**Background:** Hormonal contraceptives are among the most commonly used contraceptive options; however, clinically significant drug-drug interactions (DDIs) can occur when used concurrently with some medications, including certain HIV antiretroviral agents. MK-8527 is a novel deoxyadenosine analog under clinical development as an antiretroviral for treatment of HIV-1.

A phase 1 clinical trial was conducted in healthy participants to evaluate potential effects of MK-8527 when given concurrently with the oral hormonal contraceptive levonorgestrel (LNG)/ethinyl estradiol (EE).

**Methods:** This was an open-label, 2-period, fixed-sequence trial of healthy females aged 18 to 70 years who were postmenopausal or had undergone bilateral oophorectomy. In Period 1, participants received a single oral dose of LNG 0.10 mg/EE 0.02 mg followed by a 7-day washout (Figure).

In Period 2, a single dose of LNG 0.10 mg/EE 0.02 mg was coadministered with a single 12-mg oral dose of MK-8527. Pharmacokinetic samples for evaluation of plasma LNG and EE (Periods 1 and 2) and MK-8527 (Period 2) concentrations were collected predose and up to 168 hours post-dose in each period.

Safety and tolerability were assessed by standard clinical evaluations, including adverse event (AE) reporting, vital sign monitoring, laboratory values (including hematological parameters), and electrocardiograms.

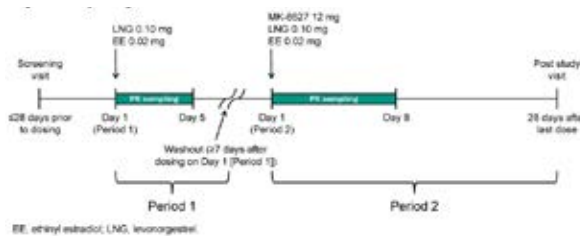


Figure. Study design.

**Results:** Fourteen postmenopausal females were enrolled. The pharmacokinetics of LNG and EE were determined with and without MK-8527 to assess any interaction (study complete; finalized data pending).

Five participants (36%) reported AEs that were mild in severity; 4 were deemed treatment-related by the investigator. No participants reported serious AEs or discontinued study treatment due to an AE.

**Conclusions:** The study evaluated the potential for any DDI of LNG/EE with MK-8527 to allow the use of hormonal contraceptives without dose adjustment in individuals receiving MK-8527. Coadministration of a single dose of MK-8527 with LNG/EE was generally well tolerated; further pharmacokinetics results to be presented at the conference.

## WEPEB107

Five-day-on-two-day-off (FOTO) vs daily BIC/FTC/TAF: a proof-of-concept randomized clinical trial

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**Background:** *In vitro* studies suggest that bicitegravir (BIC)/emtricitabine (FTC)/tenofovir alafenamide (TAF) could be taken less frequently to maintain viral suppression. This open-label, randomized clinical trial determined the trough plasma concentration ( $C_{trough}$ ) of BIC and compared the virologic efficacy with daily BIC/FTC/TAF versus with BIC/FTC/TAF taken five-day-on-two-day-off (FOTO) in people with HIV (PWH).

**Methods:** 60 PWH aged  $\geq 20$  years who had achieved plasma HIV RNA load (PVL)  $< 50$  copies/ml with BIC/FTC/TAF for  $\geq 6$  months were randomized in a 1:1 ratio to daily vs FOTO group.

The primary end-point was the proportion of participants maintaining BIC  $C_{trough}$  above the in-vitro protein-adjusted 95% effective concentration of 162 ng/ml at Week 4, 28, and 52. The secondary end-point was the proportion of participants with PVL  $< 50$  copies/ml at the same time points. After Week 52, all participants entered the extension phase to receive FOTO BIC/FTC/TAF.



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**Results:** There were no significant differences in the baseline clinical characteristics between the two groups. In FOTO group, the percentages of trough BIC concentrations  $>162$  ng/ml at Week 4, 28, and 52 were 90%, 93.3%, and 100%, respectively, and their respective median BIC trough concentrations were 649.9, 835.8, and 637.8 ng/ml. In intention-to-treat analysis, the rate of maintaining PVL  $<50$  copies/mL at Week 4, 28, and 52 was 100%, 93.3%, 100%, respectively, in the FOTO group, compared with 96.7%, 93.3%, and 96.7%, in the daily group. The median concentrations of intracellular tenofovir-diphosphate also showed significantly lower in FOTO than daily group at Week 4 (103.2 vs. 224.3 fmol/ $10^6$  cells) and 28 (23.1 vs. 70.7), but not at Week 52 (79.9 vs. 101.6).

Of the 5 participants in the FOTO group who had trough BIC concentrations  $<162$  ng/ml at Week 4 ( $n=3$ , 85.5, 116.6, and 108.8, respectively) and 28 ( $n=2$ , 46.0 and 110.5), all maintained PVL  $<50$  copies/ml. 57 participants entered the extension phase and, at week 84, all continued to maintain PVL  $<50$  copies/ml.

**Conclusions:** Our finding of successfully maintaining viral suppression with FOTO BIC/FTC/TAF provides support to undertake a randomized clinical trial of a large sample size to confirm the efficacy of FOTO BIC/FTC/TAF.

## WEPEB108

Factors associated with poor adherence to antiretroviral therapy in people with HIV in Taiwan

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**Background:** According to UNAIDS statistics, there are 39 million people with HIV (PWH) globally in 2022. Antiretroviral therapy (ART) has been used for decades and dramatically improved life quality and life expectancy of PWH. However, factors affecting ART adherence are major concerns by caregivers because poor adherence could cause poor viral suppression that contributes to treatment failure. Therefore, we conducted this study to find out factors causing poor adherence to ART.

**Methods:** This study recruited PWH from one single HIV clinic in northern Taiwan between December 2018 and December 2020. All participants who agreed to join this study would be interviewed face to face by recording charts and Medication Adherence Report Scale (MARS-5). MARS-5 was used to evaluate treatment adherence and score  $<23$  defined as poor adherence. This study was approved by the IRB of TCH (no. TCHIRB-10612120).

**Results:** 831 participants were enrolled, and 93 participants were considered poor adherence to ART. The different characteristics between two groups were that people with low medication adherence were younger, lower body mass index, shorter ART treatment duration, lower education level, lower income level, more history of gonorrhea acquired, more illicit drugs use within 3 months especially methamphetamine and sildenafil, living with friends, more with chronic disease, lower CD4 counts and detectable viral load.

Univariate analysis showed that PWH with poor adherence were associated with having chronic disease (OR=1.991,  $p=0.002$ ), history of gonorrhea acquired (OR=2.101,  $p=0.012$ ), taking illicit drugs within 3 months (OR=2.976,  $p=0.002$ ) which methamphetamine (OR=2.78,  $p<0.001$ ) and sildenafil (OR=2.976,  $p=0.002$ ) were significant, living with friends (OR=3.39,  $p=0.004$ ) and detectable viral load (OR=5.927,  $p<0.001$ ).

Older age (OR=0.944,  $P<0.001$ ), longer ART treatment duration (OR=0.951,  $P=0.02$ ), higher CD4 count (200-499 OR=0.299,  $p=0.034$ ;  $\geq 500$  OR=0.174,  $p=0.003$ ), higher income level (OR=0.466,  $p=0.027$ ) and education level above university (OR=0.589,  $p=0.026$ ) were prone to good adherence.

**Conclusions:** Factors of PWH with poor adherence in this study were younger age, shorter ART treatment duration, with chronic disease, history of gonorrhea acquired, living with friends, illicit drugs use within 3 months especially methamphetamine or sildenafil using, lower CD4 count and detectable viral loads. Therefore, for PWH with these characteristics, we need to pay more attention to whether they have poor adherence.

## WEPEB109

Real world experience on the use of two-drug antiretroviral therapy in older people with HIV

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**Background:** Two-drug regimens (2DRs) may reduce long-term drug toxicities and drug-drug interactions for people with HIV (PWH) on antiretroviral treatment (ART). However, older PWH were under-represented in major 2DRs studies. This retrospective study explored real-world outcomes of PWH 50 years or older (PWH $\geq 50$ ) who switched from standard ART to oral 2DRs.

**Methods:** PWH $\geq 50$  virally suppressed on standard ART who switched to oral 2DRs at the HIV clinic of Queen Elizabeth Hospital, Hong Kong were identified through elec-

tronic records. 2DR formulations and clinical outcomes at 48 and 96 weeks after switch were retrieved. Viral suppression (VS) was defined as sustained plasma HIV RNA (VL) <50 copies/mL; virologic failure (VF) was VL >200 copies/mL.

**Results:** Between January 2014 and December 2023, 113 PWH ≥50 (86% male, median age 59 years, median pre-switch ART duration 14 years) switched to oral 2DRs. All but one received INSTI-based 2DRs: 97 (86%) combined with NRTI, 10 (9%) with PI, and 5 (4%) with NNRTI. 24% had pre-ART genotypic resistance tests and 16% had histories of VF pre-switch.

By 48 weeks, two discontinued due to adverse effects (AEs), three succumbed, and 105/108 (97.2%) of the remaining PWH maintained VS (VF=1; blip=2). Among 89 who continued 2DRs beyond week 48, three discontinued due to AEs, five succumbed (including one with VF), and 77/81 (95.1%) of the remaining PWH maintained VS (VF=0; blip=3; loss to follow-up=1).

The first VF was related to unplanned treatment interruption; VS was achieved after original 2DR resumption.

The second VF was taking DTG+3TC, without past history of VF, had M184I mutation without INSTI-associated resistance at the time of VF, achieved VS after changing to standard ART but succumbed to malignancy.

Parameters, median (IQR)	All PWH who switched to 2DRs (N=113)
Age at 2DR switch, year	(all ≥ 50 at switch) 59 (55-66)
Duration on ART pre-switch, year	14 (7-19)
CD4+ T-cells (x 10 <sup>9</sup> cells/L), pre-switch	523 (380-662)
DTG+3TC regimen, n (%)	97 (85.8%)
Virologic failure (VL>200 copies/ml), n	Week 0-48 = 1; Week 49-96 = 1
2DRs discontinuation due to adverse effects, n	Week 0-48 = 2 (rash, sleep disturbance) Week 49-96 = 3 (diarrhea, involuntary movement, hyperlipidemia) All grade 1-2 reactions
All-cause mortality, n	8 (malignancy (2), non-HIV related infection (4), untraceable (2))

**Conclusions:** In this group of older PWH who had stable switch to oral 2DRs, virological control was achieved in most while VF was uncommon at week 96 post-switch.

## WEPEB110

### The pharmacokinetics, pharmacogenetics, and toxicity of the interaction between efavirenz and isoniazid

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**Background:** People with *CYP2B6* poor metaboliser genotypes have higher efavirenz concentrations, which are further increased by isoniazid, which inhibits the accessory metabolising enzyme of efavirenz, CYP2A6.

We hypothesized that higher efavirenz concentrations would be associated with more toxicity in *CYP2B6* poor metabolisers on isoniazid preventive therapy (IPT) and efavirenz-based antiretroviral therapy (ART).

**Methods:** We conducted a post-hoc substudy of participants randomized to the efavirenz arm of the ADVANCE trial (NCT03122262), who received IPT and consented to genotyping. We compared efavirenz concentrations on and off IPT and stratified by *CYP2B6* genotype.

We used linear regression to detect associations between *CYP2B6* genotype and the following outcomes: efavirenz concentrations on IPT; changes from baseline to week 24 in lipids, alanine aminotransferase (ALT), fasting plasma glucose, sleep quality, and Modified Mini Screen (MMS) scores.

Multivariable models adjusted for age, sex, weight, viral load, CD4 count, baseline value of outcome variable, *NAT2* acetylator and *CYP2A6* genotypes.

**Results:** We enrolled 176 participants, median age 32 years, 58% female. Baseline, median HIV-1 RNA 4.38 log<sub>10</sub> copies/mL and CD4 count 297 cells/μL.

Efavirenz concentrations on IPT were greater than off IPT (pseudo-median difference 0.48 μg/mL [95% CI 0.19 to 0.91] p-value=0.001). In multivariable analysis *CYP2B6* poor metabolisers had higher log-transformed efavirenz concentrations on IPT than extensive metabolisers (β=1.66 [95% CI 0.98 to 2.34] p<0.001).

Total cholesterol and high-density lipoprotein (HDL) increased over 24 weeks. In multivariable analyses *CYP2B6* slow metabolisers had greater increases in total cholesterol (β=0.44 [95% CI 0.01 to 0.86] p=0.04) and HDL-cholesterol (β=0.39 [95% CI 0.21 to 0.57] p<0.001) than extensive metabolisers.

There was no association between *CYP2B6* genotype and change in ALT, fasting plasma glucose, triglycerides, low-density lipoprotein (LDL), sleep scores or MMS scores over 24 weeks.



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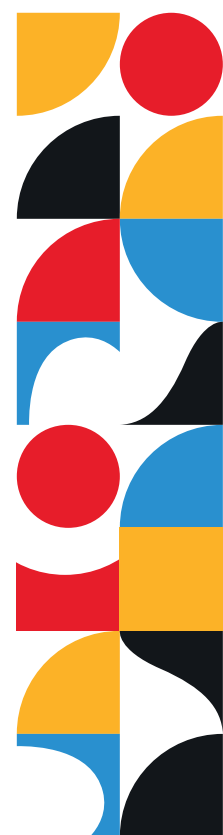
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**Conclusions:** *CYP2B6* slow metabolisers on IPT had greater increases in total cholesterol and HDL-cholesterol. We found no association between *CYP2B6* genotype and worsening sleep quality or psychiatric symptoms.

## WEPEB111

Effectiveness and durability of dolutegravir/lamivudine in older people with HIV from the Veterans Aging Cohort Study (VACS)

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**Background:** Dolutegravir/lamivudine (DTG/3TC) is a 2-drug antiretroviral regimen (2DR) demonstrating non-inferior efficacy and safety compared to 3-drug regimens (3DRs) in clinical trials. Real-world data on DTG/3TC use among older people with HIV (PWH) remains limited.

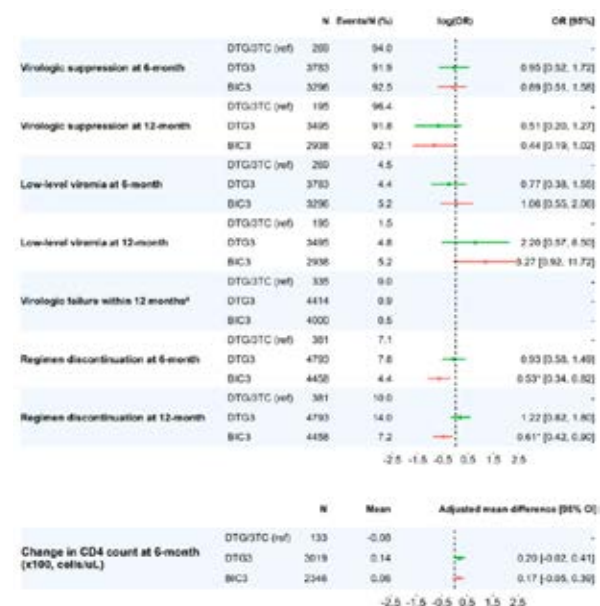
**Methods:** Treatment-experienced, virologically suppressed [viral load (VL) <50 copies/mL] PWH enrolled in the VACS ≥50 years old and switching to DTG/3TC, DTG- or bictegravir (BIC)-based 3DRs 01JAN2014 – 30SEP2022 were included. Virologic suppression (VS; VL <50 copies/mL), low-level viremia (VL ≥50 and <200 copies/mL), and regimen discontinuation were compared 6- and 12-month post-regimen switch (baseline). Virologic failure (VF; 2 consecutive VLs ≥200 copies/mL, or 1 VL ≥200 copies/mL followed by regimen discontinuation) was evaluated over 12 months. Change in CD4 cell count from baseline was assessed at 6 months. Outcomes were compared using inverse probability of treatment weighted logistic or linear regression.

**Results:** Among 9,632 treatment-experienced, suppressed older PWH (37% ≥65 years old, 96.8% male, 7.5% Hispanic, 46.9% Black), 381 received DTG/3TC, 4,793 DTG-3DR, and 4,458 BIC-3DR. Polypharmacy was common (median of 9 classes of non-ARVs taken at baseline). Six-month VS (DTG/3TC: 94.0%; DTG-3DR: 91.9%; BIC-3DR: 92.5%) and low-level viremia (DTG/3TC: 4.5%; DTG-3DR: 4.4%; BIC-3DR: 5.2%) were statistically comparable across regimens.

Twelve-month VS (DTG/3TC: 96.4%; DTG-3DR: 91.8%; BIC-3DR: 92.1%) and low-level viremia (DTG/3TC: 1.5%, DTG-3DR: 4.8%, BIC-3DR: 5.2%) were statistically comparable across regimens (Figure 1). VF was rare across regimens (DTG/3TC: 0%; DTG-3DR: 0.9%; BIC-3DR: 0.5%).

Discontinuations by 6 and 12 months were similar between DTG/3TC and DTG-3DR. BIC-3DR showed reduced likelihood of discontinuation at both 6 (BIC-3DR: 4.4% vs.

DTG/3TC: 7.1%) and 12 months (BIC-3DR 7.2% vs DTG/3TC 10.0%). Change in CD4 at 6 months showed no statistical differences between regimen groups.



<sup>1</sup> Odds ratios and confidence intervals were calculated from inverse-probability weighted models, which adjusted for age, sex, race and/or ethnicity, region, smoking, alcohol use disorder, drug use and dependence, homelessness, baseline low-density lipoprotein, baseline CD4 count, baseline viral load, baseline VACS 2.0 index, and years on ART regimen. \*, \*\*, and \*\*\* indicate significance at the 10%, 5%, and 1% levels.

<sup>2</sup> Virologic failure could not be modeled due to zero events in the DTG/3TC group. Abbreviations: DTG3: dolutegravir-based 3-drug regimen; BIC3: bictegravir-based 3-drug regimen; DTG/3TC: dolutegravir/lamivudine (DOVATO); ART: antiretroviral therapy; PWH: people with HIV; OR: adjusted odds ratio; CI: confidence interval; VACS: the Veterans Aging Cohort Study; CD4: clusters of differentiation 4.

Figure 1. Treatment outcomes for those receiving DTG- and BIC-based 3-drug regimens compared to those receiving DTG/3TC among ART-experienced PWH<sup>1</sup>.

**Conclusions:** Among treatment-experienced PWH ≥50 years old, DTG/3TC demonstrated high levels of effectiveness comparable to DTG- or BIC-based 3-drug regimens.

## WEPEB112

Multiple ATIs and protection of HIV Gag-specific CD4 T cells enables durable CD8 T cells immunity and viral control

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**Background:** Auto-vaccination blunts HIV viral rebound and allows an analytical treatment interruption (ATI) to demonstrate the efficacy of gene and cell therapy (CGT) of genetically modified T cells protected from HIV with micro RNAs that block CCR5, Tat, and Vif.

**Methods:** Four volunteers, previously infused with CGT product underwent autovaccination (NCT05540964) by allowing their HIV viral load to rise above 100,000 cps/mL. They resumed treatment, and when HIV was no longer detectable, they underwent a second ATI. They were followed for up to three months and then placed back on their original HIV treatment program.

**Results:** All four volunteers demonstrated partial immunological control of their disease and allowed a second ATI to demonstrate a clinical setpoint that was lower

than the anticipated historical setpoint. After antiviral treatment was resumed all volunteers achieved an undetectable viral load and the resumption of a normal CD4 count.

There were no serious adverse events, there was no resistance to their original HIV medication, and there was no report of HIV transmission. Participants will be continuously monitored for 15 years as part of the Long Term Follow Up protocol (NCT05529342).

All our participants already had their first-year follow-up visit and more than half had their second-year visit.

**Conclusions:** Autovaccination can play an important role in HIV gene therapy trials by establishing partial immunological control and preventing robust viral rebound. In this study, the technique was safe and effective.

## WEPEB113

Population pharmacokinetics (POPPK) for thigh as alternative Rilpivirine Long-Acting (RPV LA) injection site

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**Background:** RPV LA, with cabotegravir (CAB) LA, is the first all-injectable regimen for HIV-1 treatment. A healthy volunteer Phase 1 study and a Phase 3 substudy in ATLAS-2M in participants with HIV-1 evaluated pharmacokinetics (PK) and safety of single dose or short-term (4 monthly, 2 every 2 months injections), respectively, intramuscular (IM) administration of CAB+RPV LA in the vastus lateralis (thigh) muscle, as potential alternative injection site. The RPV LA POPPK model was updated to evaluate potential continuous thigh administration of RPV LA.

**Methods:** The existing RPV LA POPPK model, including 2 separate PK depots describing gluteal absorption, was updated by evaluating RPV plasma concentrations after thigh injection from above mentioned (sub)studies. To adequately describe RPV thigh absorption, two separate PK absorption depots, different from gluteal PK absorption depots, were included. The updated POPPK model was used for modeling and simulation of continuous monthly and every 2 months RPV LA dosing in thigh as compared to gluteal muscles.

**Results:** RPV plasma concentrations after thigh IM injection in healthy volunteers and participants with HIV-1 were similar to those observed for gluteal IM injection. RPV absorption from thigh was best described by 2 parallel

absorption pathways: a fast absorption route describing the initial RPV peak and a second slow absorption route determining the terminal part of the RPV concentration-time curve, reflecting flip-flop kinetics after IM injection.

After absorption from the IM injection site, RPV disposition was described by an open, 1-compartment model with linear elimination, similar for gluteal and thigh administration.

There were no significant covariates explaining variability in RPV exposure after IM administration of RPV LA in the thigh. RPV PK after chronic IM thigh dosing was simulated with this updated model. Median RPV C<sub>trough</sub> and C<sub>max</sub> after thigh administration was similar to or higher than that after gluteal administration, with a large overlap of ranges. These differences are not considered clinically relevant. RPV LA thigh administration was overall well tolerated.

**Conclusions:** Modeling and simulation informed by clinical data showed that chronic IM administration of RPV LA in the thigh muscle resulted in similar RPV plasma exposure compared to IM administration in the gluteal muscle.

## WEPEB114

In vitro characterization of VH4524184 (VH-184, S-365598), a new third-generation integrase strand transfer inhibitor (INSTI) with a unique resistance profile

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**Background:** VH4524184 (VH-184) was discovered by Shionogi & Co., Ltd. (S-365598) and currently under development by ViiV Healthcare as a third-generation HIV-1 integrase strand transfer inhibitor (INSTI) with potential for use in ultra-long-acting HIV regimens. We present the in vitro antiviral potency, mechanism of action, and resistance profile of VH-184.

**Methods:** Antiviral activity of VH184 was measured against HIV laboratory strains and clinical isolates using cell lines and/or PBMCs. Mechanism of action was determined using in vitro integrase strand transfer assays. Fold change in susceptibility against INSTI-resistant site-directed mutants was determined with a HeLa-CD4 cell assay.

**Results:** VH-184 inhibited HIV integrase in an in vitro strand transfer assay with an IC<sub>50</sub> of 5.8 nM. VH-184 inhibited integration of HIV proviral DNA in an MT-4 cell based assay system with an IC<sub>50</sub> of 0.46 nM and resulted in the accumulation of 2-LTR circles. VH-184 exhibited an IC<sub>50</sub> of 0.95 nM in an MT-4 cell based HIV-1 IIIB assay. To evaluate for barrier to resistance of VH-184, a passage study was conducted but no amino acid substitution was identified



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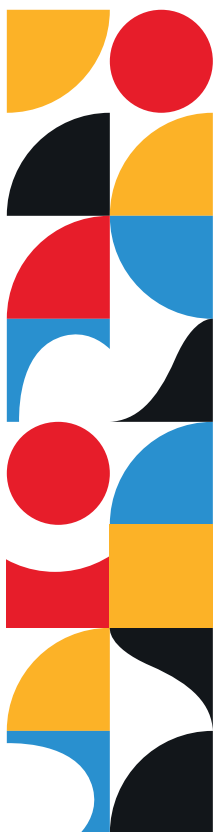
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for 112 days in the presence of VH-184. The broad-spectrum antiviral activity was confirmed by testing VH-184 against HIV-1 primary isolates from subtypes A, B, C, D, E, G, O, CRF01\_AE and HIV-2 isolates ( $IC_{50}$  range in this assay was 0.0337 to 0.911 nM). VH-184 has demonstrated in vitro anti-HIV activity against wild type virus as well as lab strain NL432 harboring first- and second-generation INSTI-resistance associated site-directed mutations (see Figure).



*Figure. Antiviral activity of VH-184 against a panel of HIV-1 molecular clones harboring INSTI-resistant associated mutations. Blank bars represent the variants which were not tested.*

**Conclusions:** The in vitro antiviral potency of VH-184 is comparable to DTG and CAB and its resistance profile is distinct from prior INSTIs. VH-184 is a third generation INSTI candidate with a superior resistance profile compared to DTG and CAB. These data support its further development for HIV-1 treatment.

## WEPEB115

Cabotegravir/rilpivirine long-acting therapy real world experience in a large clinical cohort of HIV patients

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**Background:** Long acting (LA) Cabotegravir/Rilpivirine (C/R) is a new paradigm in antiretroviral therapy (ART), showing a high rate of efficacy and patients acceptance, both in clinical trials and real world cohorts.

**Methods:** Prospective, ongoing, single center cohort to assess safety and efficacy of C/R outside clinical trials in the first year of implementation in a monographic HIV outpatient clinic at a tertiary center in Madrid, Spain.

**Results:** Between Jan-2023/Jan 2024 270 patients started C/R (8% of patients on ART at our center), after patient's request in 129 (48%). Mean time on ART was 112 months (1-385), and median prior ART lines 4.4±3.7. Prior ART was BIC/TAF/FCT in 139 (51.5%); 98(36%) were NNRTI-experienced, with failure and resistance mutations in 4: Y181C (N=2),

K103N (N=1), N348I plus V108I (N=1). Prior AIDS in 140 (51.8%). Mean age 43.8 years (range 23-70), 35(13%) were women. Women were older (51.7±11 vs 44.6±12, p=0.001), and with a longer time on ART (190±112 vs 132±96 months; p=0.001). Comorbidities were present in 136 (50%), mostly dyslipidemia (22%) and hypertension (20%), and 12% had prior psychiatric disorders.

Overall, 110 (40.7%) had concomitant medications. HIV-subtype was available in 44% (N=119, 71% B-subtype). Baseline BMI was 25.3 (16-43), with 29 (10.7%) with BMI>30. Baseline CD4 was 734 cells/mL (31-1958). Three subjects started C/R with detectable HIV-RNA. 59 patients (22%) lacked HBsAb antibodies (17 isolated HBcAb, 42 not fully vaccinated and/or vaccination failure). The rate of discontinuation was low (2.5%, N=7), 5 due to AES (1.8%). Of note, none of the patients with prior INSTI-related CNS toxicity (N=27) discontinued for CNS-related AES. 2 transient blips were observed, and only one confirmed virological failure. No subjects with NNRTI-mutations had viral rebound.

**Conclusions:** Cabotegravir/Rilpivirine was used in 8% of our patients, in an aged HIV population with a significant rate of comorbidities, long time on ART, and concomitant medications. In this real world cohort, Cabotegravir/Rilpivirine was safe, showing a low rate of discontinuations similar to that reported in clinical trials (2.5%).

We observed only one confirmed viral failure and two transient HIV RNA blips, and patients with prior NNRT-mutations maintained undetectable HIV load

## WEPEB116

Phase 1a safety and pharmacokinetics of single ascending doses of oral GS-1720 in people without HIV-1

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**Background:** Long-acting oral antiretroviral agents for HIV-1 infection may help address suboptimal adherence, stigma, and treatment fatigue. GS-1720, an oral integrase strand transfer inhibitor (INSTI), has potent anti-HIV-1 activity with physicochemical properties suitable as a long-acting agent. Safety and pharmacokinetics (PK) of single-ascending doses (SAD) of GS-1720 were evaluated in participants without HIV-1.

**Methods:** This Phase 1a randomized, blinded, placebo-controlled study enrolled adults without HIV-1 into multiple cohorts, with data from four SAD cohorts reported here. Participants received a single oral GS-1720 dose of 50, 150, 450, and 1350 mg (n=8/cohort), or matched placebo (n=2/cohort), under fasting conditions on Day (D) 1. Primary endpoints included the incidence of adverse events (AEs) and laboratory abnormalities, and plasma PK parameters (including terminal half-life [ $t_{1/2}$ ], maximum concentration [ $C_{max}$ ], and area under the concentra-

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tion-versus-time curve extrapolated-to-infinity [ $AUC_{inf}$ ]). All participants were followed-up until D70. PK data were used in population PK modeling to inform dose selection for a Phase 1b proof-of-concept monotherapy study in participants with HIV-1.

**Results:** Of the 40 participants enrolled, median age was 34 years and 50% of participants were male. GS-1720 appeared to be generally well tolerated with a favorable safety profile; there were no serious AEs, Grade 3/4 AEs, or clinically significant laboratory abnormalities at any dose level.

Based on preliminary data to date (cut off: November 15, 2023), GS-1720 median  $t_{1/2}$  was 9.3 days and time to reach  $C_{max}$  was 4 hours. GS-1720 demonstrated nonlinear PK, with 3-fold dose increases in each SAD escalation resulting in  $C_{max}$  increases of 1.6–2.2 fold and  $AUC_{inf}$  increases of 1.7–2.5 fold.

Based on population PK modeling leveraging these data, the initial cohort dose for the Phase 1b study was GS-1720 450 mg on D1 and D2, 3 which would achieve plasma concentrations of approximately five-fold the 95% effective concentration on Day 11.

**Conclusions:** GS-1720 was well tolerated across the doses tested and exhibited a nonlinear PK with a half-life supportive of once-weekly oral dosing. The emerging safety and PK data from this study were used to inform dose selection for Phase 1b and Phase 2 studies.

## WEPEB117

Safety and pharmacokinetic profile of single and multiple ascending doses of GS-4182, an oral prodrug of lenacapavir, in participants without HIV-1

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**Background:** Lenacapavir (LEN) is a first-in-class capsid inhibitor with a long half-life and can be dosed orally or by subcutaneous injection. LEN undergoes rapid absorption following oral administration, but its absolute bioavailability is low. GS-4182 is a novel, solubilizing oral prodrug of LEN that undergoes conversion to LEN in the gut, and is under development as a once-weekly (QW) HIV-1 therapeutic.

The present, first-in-human study assessed the safety and pharmacokinetics (PK) data from a Phase 1a study of GS-4182 in participants without HIV-1.

**Methods:** This randomized, blinded, placebo-controlled study included single ascending doses (SAD; per cohort: active n=6, placebo n=2) and multiple ascending doses (MAD; per cohort: active n=9, placebo n=3) of oral GS-4182 in participants without HIV-1 aged 18–45 years. Plasma PK parameters for GS-4182-derived analytes, and safety (treatment-emergent adverse events [TEAEs] and labora-

tory abnormalities), were assessed through study Day 77 (SAD) and 113 (MAD). Here, we report data from two SAD cohorts (GS-4182 200 mg or 600 mg) and one MAD cohort (GS-4182 200 mg QW for 6 weeks).

**Results:** GS-4182 was undetected in most participants after administration, with mean LEN concentrations rapidly achieving target efficacy levels (inhibitory quotient-4). LEN exposure following single-dose GS-4182 200 mg was similar to previously published exposure from LEN 300 mg tablet administration (CROI 2020, Abstract 470).

Following single-dose GS-4182 600 mg, LEN exposure was double that of previously published LEN 600mg tablet administration (CROI 2022, Abstract 433). Mean LEN concentrations on Day 7 following single doses of GS-4182 200 mg and 600 mg achieved an inhibitory quotient of 4.2 and 9.3, respectively.

Following GS-4182 MAD 200 mg QW, 3.7-fold accumulation was observed for LEN  $C_{trough}$ . No Grade  $\geq 2$  TEAEs, serious TEAEs or discontinuations due to TEAEs occurred. Eight Grade  $\geq 3$  treatment-emergent laboratory abnormalities were reported.

**Conclusions:** GS-4182 demonstrated favorable LEN PK, with LEN exposure following oral GS-4182 600 mg administration approximately double compared with the equivalent dose of oral LEN. GS-4182 was well tolerated with a favorable safety profile, supporting its further development as a QW oral agent for HIV-1 treatment.

## WEPEB118

Reasons for discontinuation of dolutegravir-based two- and three-drug regimens

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**Background:** Drug-sparing antiretroviral therapies (ART) have become popular under the promise of favorable (long-term) tolerability and toxicity profiles.

This study aimed to explore differences in reasons for discontinuation from dolutegravir (DTG) containing two- (2DR) and three-drug-regimens (3DR) in people with HIV (PWH).

**Methods:** Retrospective analysis of clinical routine data from a single, large HIV center in Munich, Germany. People with HIV (PWH) on a DTG-based 2DR (either in combination with lamivudine (3TC) or rilpivirine (RPV)) were identified for analysis in the 2DR stratum of the study, while those on a DTG-based 3DR (DTG with a combination of 2 NRTIs) without a history of a DTG-based 2DR served as the comparison group.

Proportions of PWH discontinuing in the 2DR and 3DR arms were compared by reasons for discontinuation, using Bonferroni-adjustment for multiple testing.







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**Results:** 854 PWH were included, of which 462 (54.1%) were on a 2DR. 135 discontinuations were observed, of which 102 (75.6%) occurred in the 3DR group. The figure illustrates the proportion of PWH discontinuing for distinct reasons in the 2DR and 3DR arms.

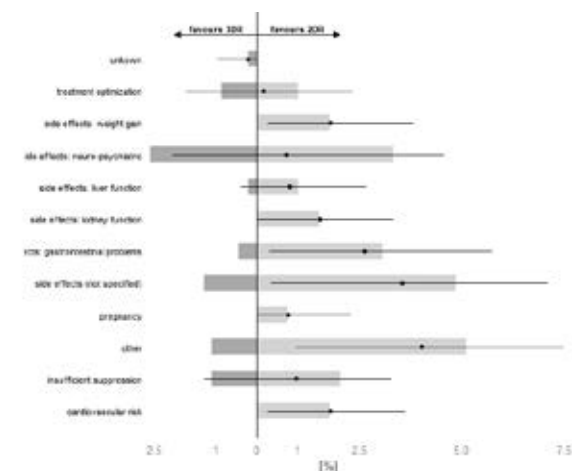


Figure.

**Conclusions:** Discontinuation in general, but in particular for reasons including weight gain, gastrointestinal problems, general side effects, and in order to reduce cardiovascular risk, were significantly more frequent in the 3DR arm.

While some of these individual reasons might be less relevant today with the availability of abacavir- and tenofovir disoproxil-free 3DRs, our data are some of the first real-world evidence to support the notion of better tolerability, probably because of less toxicity, with DTG-based 2DRs compared to 3DRs.

## WEPEB119

### Outcomes in people with HIV (PWH) who resume or switch to B/F/TAF following an antiretroviral treatment interruption (TI)

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**Background:** B/F/TAF is a guideline-recommended antiretroviral treatment (ART) regimen for treatment-naïve and experienced PWH. This observational study evaluated clinical outcomes among PWH who resumed treatment on B/F/TAF following first TI.

**Methods:** Retrospective study using EMR and dispensing data from Trio Health HIV Network in the US Population: PWH age ≥18, initiated a new ART after 01/01/2021 with ≥6 months follow-up. Virologic failure (VF): viral load (VL) ≥500

copies/mL or 2 consecutive VLs ≥200 copies/mL; TI: ≥90 day gap in dispenses. Virologic outcomes were analyzed after TI, stratified by viral load detectability.

**Results:** 2,710 PWH with ART dispenses were analyzed; 90% were on single-tablet regimens, 93% treatment-experienced; 765 (28%) had a TI. PWH with TIs were more likely to be female (24% vs 19%), Black (50% vs 35%), with substance use (14% vs 9%), CD4 <200 cells/mm<sup>3</sup> (15% vs 8%), and less likely to be commercially insured (48% vs 62%) or virologically suppressed prior to TI (76% vs 85%).

Of 765 PWH with TI, 370 restarted previously discontinued B/F/TAF and 9 switched to B/F/TAF. Mean observation period after resumption was 7.5 months. Of PWH with TI, 9% had a subsequent gap ≥90 days after restart.

Among 47 with confirmed viremia at restart, 27 (57%) had ≥1 VL during follow-up, 17 (63%) were suppressed (77% within 3 months, 94% within 6 months), Table.

Of 87 with unknown viral status at restart, 46 (53%) had ≥1 VL during follow-up, and 44 (96%) achieved VS (61% within 3 months, 86% within 6 months).

Of 245 suppressed at restart, 137 (56%) had ≥1 VL during follow-up, 129 (94%) maintained viral suppression (VS).

VL at Restart of B/F/TAF *Numerator/denominator represent those with available viral load during follow-up.	N	Suppressed During Follow-up (F/U)*	With ≥3 Months F/U Post Restart	Suppressed During ≥3 Months F/U*	With ≥6 Months F/U Post Restart	Suppressed During ≥6 Months F/U*
Suppressed	245	129/137 (94%)	141 (58%)	113/117 (97%)	111 (45%)	95/97 (98%)
Unknown	87	44/46 (96%)	59 (68%)	39/41 (95%)	43 (49%)	31/33 (94%)
Viremic	47	17/27 (63%)	21 (45%)	15/19 (79%)	12 (26%)	9/11 (82%)

**Conclusions:** In a US cohort between 2021-2023, over 25% PWH had a TI ≥90 days. Unexpectedly, 65% were suppressed at restart; 94% of those suppressed at restart maintained VS during follow-up. The majority of those viremic or of unknown virologic status restarting B/F/TAF maintained or achieved VS during follow-up. Future prospective studies evaluating the effectiveness of B/F/TAF in rapid restart may be warranted.

## WEPEB120

Inflammatory biomarkers as potential mediators of the association between HIV status and depressive symptoms in young people

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**Background:** People living with HIV are at three times greater risk for depressive symptoms. Inflammation is a notable predictor of depression, and people with HIV exhibit chronic inflammation despite antiretroviral therapy. We hypothesised that inflammatory biomarkers may mediate the association between HIV status and depressive symptoms.

**Methods:** We recruited  $N = 60$  young people (53% girls, median age 15.5 years, 70% living with HIV) in Cape Town, South Africa. Participants completed the nine-item Patient Health Questionnaire (PHQ-9). We measured inflammatory biomarkers in the brain (choline and myo-inositol) using magnetic resonance spectroscopy and in blood serum (16 proteins) using immunoassays.

We then calculated the standardised indirect effect estimate with 95% confidence intervals for each biomarker as a potential mediator of the association between HIV status and PHQ-9 score using structural equation modelling.

**Results:** Median [interquartile range] total PHQ-9 score was 3 [0, 7]. HIV status was significantly associated with total PHQ-9 score ( $B = 3.32$ ,  $p = 0.022$ ). Participants with

HIV showed a higher choline-to-creatine ratio in the basal ganglia than those without HIV ( $\beta = 0.86$ ,  $p_{FDR} = 0.035$ ). In blood serum, participants with HIV showed higher monocyte chemoattractant protein-1 (MCP-1,  $\beta = 0.59$ ,  $p_{FDR} = 0.040$ ), higher chitinase-3 like-1 (YKL-40,  $\beta = 0.73$ ,  $p_{FDR} = 0.032$ ), and lower interleukin-1beta (IL-1 $\beta$ ,  $\beta = -0.67$ ,  $p_{FDR} = 0.047$ ) than those without HIV.

None of the biomarkers were significantly associated with total PHQ-9 score. Consequently, none of the indirect effects were significant, mediating <13.1% of the association. Findings remained consistent when accounting for age, gender, and time between neuroimaging and PHQ-9 administration.

**Conclusions:** We have shown that participants living with HIV in a community-based sample reported greater depressive symptoms than those without HIV, but we did not find that neuroimaging and blood biomarkers of inflammation significantly mediated this association. Further research with participants experiencing severe depression may help to clarify the links between HIV, inflammation, and depression.

## WEPEB121

Results of the CombinADO Implementation Science Study, a multicomponent, youth-focused, youth-informed intervention to improve viral suppression among adolescents and young adults living with HIV in Mozambique

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**Background:** Adolescents and young adults living with HIV (AYAHIV) lag behind adults in achievement of 95-95-95 targets. The 2021 Mozambique Population HIV Impact Assessment estimated that for young people aged 15-24 years, the 95-95-95 target achievements were 54-53-42 underscoring the urgent need for interventions to improve AYAHIV outcomes.



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**Methods:** From 2021 - 2023, the CombinADO study was implemented in adolescent-friendly services at 12 health facilities (HF) in Nampula, Mozambique. Using a cluster randomized trial design, we compared the effectiveness of the CombinADO strategy, a human-center designed multilevel intervention to improve HIV outcomes among AYA HIV, to an enhanced standard of care (eSOC) on the primary outcome of VS (viral load <50 copies/mL).

The CombinADO strategy consisted of an empathy-building community campaign (billboards, radio ads), youth-friendly clinic experience (treatment and self-reflection toolkits, motivational video/wall, mental health screening, peer support) and AYA HIV/caregiver support groups.

Generalized estimating equations were utilized to evaluate the impact of the intervention and covariates on VS, reporting adjusted odds ratios (aOR) with 95% confidence intervals (CI).

**Results:** Outcomes were assessed among 1380 AYA HIV at 12 HF: 67% female; 25% 10-14y, 36% 15-19y, 39% 20-24y. There were no differences in participant characteristics between CombinADO vs eSOC sites. VS <50 copies/mL was 54%, with no differences by intervention condition (eSOC 55% vs CombinADO 54%). VS at different thresholds did not vary by intervention condition (<200 copies/mL: 71%, <1000 copies/mL: 81%). Females were more likely to achieve VS (56%) than males (50%), and VS rates increased with age (43% 10-14y, 53% 15-19y, 63%, 20-24y).

Age and sex-aORs showed that individuals in the highest socioeconomic category were twice as likely to achieve VS (aOR: 2.04, 95% CI: 1.38-2.04,  $p < 0.001$ ) versus the lowest category. Increased self-reported adherence, HIV knowledge and adherence self-efficacy measures were significantly associated with VS, though these were not different by intervention condition.

**Conclusions:** Overall rates of VS in this population of young people on dolutegravir-based ART were low but implementation of the CombinADO strategy did not result in higher rates of VS among AYA HIV attending adolescent-friendly services compared with an eSOC. Ongoing analyses are exploring other critical AYA HIV outcomes including retention, adherence and mental health.

## WEPEB122

### Results of a stepped-wedge, cluster-randomized, multisite trial of a combination intervention to improve viral suppression among youth on antiretroviral therapy in Nigeria

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**Background:** Interventions are needed to improve antiretroviral treatment (ART) adherence and viral suppression (VS) among youth living with HIV (YLH). We combined two youth-specific, evidence-based interventions (peer navigation and TTX daily text message ART reminders) in our study, iCARE Nigeria, and demonstrated efficacy in a pilot of 40 YLH on ART in Ibadan.

To further evaluate the combination intervention, we conducted a trial in diverse ART clinics across four Nigerian cities.

**Methods:** We recruited from six sites with active ART-adherence programs. Eligibility required age 15-24 and ART for at least 3 months. Using a stepped-wedge design, Cluster 1 (Ibadan, pilot site) was non-randomized, and Cluster 2 (three sites in Lagos) and Cluster 3 (Sagamu and Jos) were randomized to sequences of routine care (control period) and 48 weeks of the combination intervention (intervention period).

The primary endpoint was VS (viral load <200 copies/mL). Secondary endpoints included adherence measured by self-report using a 30-day recall via the visual analogue scale, with at least 90% considered adherent. Post-hoc analysis assessed virologic control below 50 copies/mL and 1000 copies/mL, the WHO benchmark.

Generalized estimating equations determined the difference between intervention and control periods in the intention-to-treat population while controlling for secular trends and cluster membership.

**Results:** We enrolled 558 YLH (17 were withdrawn) and followed 541 over time (mean age 18 years, 53.8% female, 71.7% perinatally infected, and 38.6% virologically non-suppressed (>200 copies/mL) at enrollment). Most (71%) were on a dolutegravir-based, first-line regimen. For the primary endpoint, the intervention periods displayed a small but non-significant increase in VS (OR = 1.16 [0.88,

1.54],  $p = 0.297$ ). Post-hoc analysis showed a significant effect of the combination intervention only when virologic control was assessed using the WHO  $<1000$  copies/mL threshold (OR = 1.42 [1.03, 1.94],  $p = 0.030$ ). Self-reported adherence increased significantly during the intervention (OR = 2.07 [1.46, 2.95],  $p < 0.001$ ).

**Conclusions:** The combination of peer navigation and daily text message ART reminders significantly improved virologic control among ART-experienced YLH only when using the WHO threshold, despite significant improvement in adherence. This highlights the complexities of improving viral suppression among YLH in care, particularly those perinatally infected.

## WEPEB123

### "Make it convenient for us": design and delivery preferences for a targeted long-acting drug-combination injectable treatment for children and youth with HIV in Kenya

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**Background:** Long-acting all-in-one injectable combination-ART (LAI-cART) has potential to improve adherence and treatment outcomes for people with HIV. User acceptability and implementation feasibility are important to reap the full benefit. Given high rates of HIV among youth and challenges to oral-ART in children, LAI-cART products could provide significant benefit for these populations.

Understanding client and provider preferences early in LAI development can guide design and delivery strategies, thus accelerating pediatric access to LAI-cART.

**Methods:** The Targeted Long-acting Combination ART (TLC-ART) program has validated a combination triple drug LAI-cART. Grounded in the TLC-ART-101 and -301 products, we conducted semi-structured focus group discussions (FGDs) with adolescents with HIV (ages 14-19), parents of children (ages 0-10) with HIV, and healthcare workers (HCWs) from two clinics in Kenya. FGDs were audio recorded, translated and transcribed. Thematic analysis was used to identify key factors influencing LAI-cART preferences.

**Results:** Fifty-four individuals participated in 6 FGDs. All participants believed LAI-cART could improve adherence by reducing pill fatigue, lowering stigma, and addressing challenges with syrup formulations (Table). Most participants preferred less frequent dosing, small volumes and a single injection, with the key feature being ease of ac-

cess and convenience. Adolescents were particularly concerned about visible injection site reactions, while all participants expressed concerns about having to return to oral regimens during stockouts, having to switch to a new regimen to receive LAI-cART, and lack of proper storage leading to reduced medication effectiveness.

While the TLC-ART product is developed to be a subcutaneous injection, most participants preferred clinic-based delivery by HCWs given concerns about self-injection pain, storage at home, and missing out on HCW support. For rollout, HCWs emphasized the importance of determining eligibility requirements, while all participants felt community education, universal access and free cost would be essential.

Theme	Example Quotation
Side effects	"For me, what will make this drug undesirable is if after having it, it results in body weakness. Then I will rather have the pills."
Design	Delivery Location "So coming over here [to clinic] is better because you will find a person who will motivate you and cheer you up, then you will be at ease to take the injection. But back at home there would be no one to talk to or cheer you up, so I prefer coming to the clinic."
Dosing Frequency	"The one-month duration is challenging for those in boarding school....in that one month you find you have an exam going on at school. You are not going to ask for permission to come get the injection. They will have to increase the duration."
Product supply and stockouts	"Sometimes we have drug shortages. Will there be a shortage of those injectable drugs.....because you can't say you want to bring us a new drug, yet after using it for the first 5 or 6 years there will be a shortage that will make us go back to the old form of drugs."
Delivery	Community Education and Sensitization "We have elderly who will question each and every bit. You will hear some say it's a way for the whites to kill us so that they can take over Africa. That's how they began when the COVID vaccine was introduced. So, we should create awareness."
Equitable Access	"In Kenya the rich overcome the poor. They are not supposed to undermine some people, or they inject the injectables only for the rich and look down on the poor. If it's here to help everyone, it should help everyone."

Table: Design and delivery considerations

**Conclusions:** LAI-cART products for children and adolescents should address self-injection fears and accessibility barriers, and include consideration of health system processes and constraints.



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## WEPEB124

### Effectiveness and safety of tenofovir alafenamide fumarate (TAF) –based therapy in children and young people living with HIV (CYP) in the European Pregnancy and Paediatric Infections Cohort Collaboration (EPPICC)

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**Background:** TAF is approved for first- and second-line treatment in CYP, and has been shown to be safe and effective in paediatric trials, but data are limited from routine care settings.

**Methods:** Data on CYP aged <18 years at ART initiation, <25 years at TAF start, and ever followed in paediatric clinics in 12 European cohorts were included. Characteristics at TAF start, proportion with viral load (VL)<50c/ml at 48 and 96 weeks on TAF, cumulative incidence of VL<50c/ml among those unsuppressed (VL≥50c/ml) at TAF start, cumulative incidence of virologic failure (VF, defined as failure to suppress within 48 weeks, or, ≥2 consecutive VL≥50c/ml, or 1 VL≥50c/ml followed by change in anchor drug), and the rate of treatment-emergent laboratory events (DAIDS criteria) were analysed. Follow-up time was censored at earliest of TAF discontinuation (+30 days for laboratory analysis), death, 25<sup>th</sup> birthday or last visit.

**Results:** Among 580 CYP on TAF-based regimens, 57% were female, 98% had perinatally-acquired HIV or were aged <10 years at HIV diagnosis; 41% from UK/Ireland, 33%

Spain, and 26% rest of Europe. Median age at ART initiation and TAF start were 3.1[IQR 0.6,8.8] and 15.7[12.6,18.5] years, respectively.

At TAF start: 58% were on INSTI-based regimens, 27% PI, 8% NNRTI; 53% previously used TDF; 4% were treatment-naïve, 53% treatment-experienced with VL<50c/ml, 25% treatment-experienced with VL≥50c/ml and 18% treatment-experienced with unknown VL.

Median duration on TAF was 1.7[0.7,2.9] years. At 48 and 96 weeks on TAF, 84% (262/312) and 86% (168/196) had VL<50c/ml. By 48 weeks, cumulative incidence of VL<50c/ml among those viremic at TAF start was 79% (95% CI 71%, 86%).

By 96 weeks the cumulative incidence of VF was 3% (1%, 6%) among those treatment-experienced with VL<50c/ml and 30% (20%, 43%) among those treatment-experienced with VL≥50c/ml (insufficient numbers for treatment-naïve).

Among 371 (64%) with laboratory data, 20 (5%) had 23 grade ≥3 events, giving an event rate of 2.3(1.5, 3.6) per 100 person-years. There were no deaths.

**Conclusions:** CYP starting TAF-based regimens had high levels of viral suppression and the incidence of virologic failure was low among those suppressed at start. Few had severe or life-threatening laboratory events.

## WEPEB125

### Association between worsening social determinants of health and depressive symptoms among young adults affected by HIV in New York City during the COVID-19 pandemic

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**Background:** CASA is a longitudinal study following New York City-based youth with perinatally-acquired HIV or perinatal HIV-exposure from adolescence (N=340). We ex-

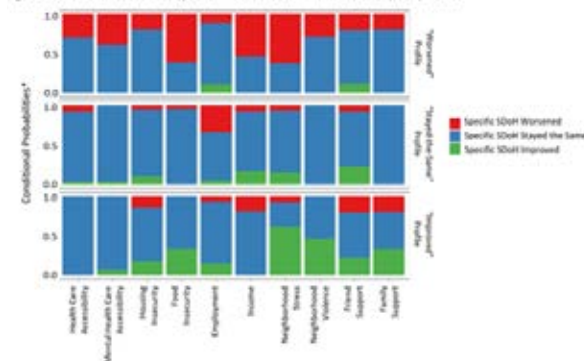
amined how the COVID-19 pandemic impacted social determinants of health (SDoH) for this population in young adulthood (mean age 28.5 years).

**Methods:** Survey data collected from 60 CASAH participants interviewed immediately before (3/2018-3/2020) and during the pandemic (3/2020-3/2021) were examined. We used Latent Class Analyses to identify "pandemic SDoH profiles" based on whether participants "worsened", "stayed-the-same", or "improved" across 10 SDoH variables (Figure 1).

We compared participant demographics by pandemic profiles and used logistic regression to estimate the association between pandemic profiles and the presence of depressive symptoms measured during the pandemic. Participants were classified as having depressive symptoms if they self-reported being depressed, scored  $\geq 5$  on the Patient Health Questionnaire-9, or met criteria for depression on the DISC.

**Results:** Three distinct pandemic experience profiles (Fig 1) were identified: 1) "Worsened" (n=9; more food insecurity, neighborhood stress, and violence); 2) "Staying-the-Same" (n=38; few SDoH changes); 3) "Improved" (n=13; less neighborhood stress and food insecurity, more familial support.) There were no demographic or HIV differences between profiles. The prevalence of depressive symptoms during the pandemic was high (44.7%), and significantly higher among participants with "Worsened" (77.7%) versus "Improved" (30.8%) profiles; those with "Worsened" profile had 15 times the odds of pandemic depressive symptoms versus "Improved" profile (p=0.01), adjusting for age, sex, HIV status, and depressive symptoms pre-COVID.

Figure 1. Conditional Probabilities by Pandemic Social Determinants of Health (SDoH) Profiles



\*Conditional Probabilities are the probability of a CASAH participant reporting that a SDoH improved, stayed the same, or worsened during the pandemic, conditional on belonging to one of the three identified Pandemic SDoH Experience Profiles ("Improved", "Stayed-the-Same", "Worsened").

**Conclusions:** We found high rates of depression symptoms among young people affected by perinatal HIV during COVID-19, with a small vulnerable subgroup experiencing worsening SDoH and > 3/4 of that group reporting depressive symptoms.

These findings, underscore the importance of mental health services for this population, and systemic changes to address the persistent SDoH challenges, in the context of a public health emergency like the COVID-19 pandemic.

## WEPEB127

### The prevalence of depression and associated factors among adolescents and young people living with HIV at a first-level hospital in Lusaka, Zambia

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**Background:** Depression is associated with poor clinical outcomes among people living with HIV. Screening, assessment, early diagnosis, and early intervention has the potential to improve the quality of life. However, few studies in sub-Saharan Africa have examined the prevalence and associated risk factors in routine HIV care.

We aimed to determine the prevalence and associated factors of depression among adolescents and young people living with HIV and receiving antiretroviral therapy (ART) at a primary health care facility in Lusaka, Zambia

**Methods:** We conducted a cross-sectional survey from September to December 2023 at a first-level hospital in Lusaka. A total of 307 young people aged 15 to 24 years living with HIV were enrolled through a complete enumeration of hospital ART registers.

Depression was measured using the Patient Health Questionnaire (PHQ-9) administered by a research assistant, with a positive screen defined by a score  $\geq 5$ .

Frequencies and proportions were used to determine prevalence and a logistic regression model, was employed to identify correlates of depression

**Results:** Out of 307 participants, 94.8% consented, with females comprising 66%, and a median age of 20 years (IQR 18-23).

Overall depressive symptoms were prevalent in 70% (95%CI 64-75), with 55% having mild, 31% moderate, 12% moderately severe, and 2% severe depression. Females showed higher rates of moderate (60%) and moderately severe depression (64%) than males. The highest rate of moderately severe (48% CI 28-69) and severe depression (75% CI 19-99) were among those aged 21-24 years compared to the other age groups.

For all levels of depression, those aged 15-17 years had the lowest proportions compared to those aged 18-20 and 21-24 years.



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Individuals who self-reported feeling stigmatized ( $\alpha\text{OR}$  2.13; 95%CI 1.07-4.49,  $p=0.037$ ) and those forced into their last sexual encounters ( $\alpha\text{OR}$  8.64; 95%CI 1.67-159,  $p=0.04$ ) were more likely to have depressive symptoms.

**Conclusions:** There is a high prevalence of depression among young people living with HIV. Routine screening for depression is feasible and can be integrated into routine HIV clinic visits.

Efforts to address HIV-related stigma and sexual abuse must be strengthened to support adolescents and young people who are a vulnerable population.

## WEPEB128

### Uncovering the impact of socio-ecological barriers on longitudinal ART adherence trajectories among adolescents living with HIV in South Africa

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**Background:** Adherence to antiretroviral therapy (ART) among adolescents remains low compared to other age-groups. No studies have explored the integrative pathways linking these barriers to long-term ART adherence trajectories among adolescents living with HIV (ALHIV). Anchored by socio-ecological theory, this study explored the mechanisms linking socio-ecological barriers to longitudinal ART adherence among adolescent.

**Methods:** We used data from a cohort of 1046 adolescents living with HIV (55% female aged on average 13.8 years), conducted in the Eastern Cape Province of South Africa. Adolescents aged 10-19 were recruited at baseline (2014) and followed up twice between 2016 and 2018. ART adherence outcome was categorised as four distinct longitudinal adherence trajectories modelled over three study waves, namely: consistent adherence, low start and increasing adherence, gradually decreasing adherence, and low start and decreasing adherence. Bivariate logistic regression was used to select baseline barriers for inclusion ( $p<0.20$ ) in the subsequent analysis – for each trajectory depicting inconsistent adherence over time— compared with the consistent adherence trajectory group. Path analysis examined the direct and indirect associations of baseline barriers and longitudinal adherence trajectories.

**Results:** Experiencing any mental health symptoms ( $\alpha\text{OR}^{\text{DE}}=1.33$ , 95%CI 1.07-1.67), and medication side-effects ( $\alpha\text{OR}^{\text{DE}}=1.33$ , 95%CI 1.04-1.72) at baseline were directly associated with the low start and increasing adherence trajectory, while experiencing food insecurity ( $\alpha\text{OR}^{\text{DE}}=1.42$ ,

95%CI 1.02-2.0) and clinic travel ( $>1$  hour) ( $\alpha\text{OR}^{\text{DE}}=1.60$ , 95%CI 1.12-2.28) was directly associated with gradually decreasing adherence trajectory. Any mental health symptoms ( $\alpha\text{OR}^{\text{DE}}=1.49$ , 95%CI 1.02-2.21), medication side-effects ( $\alpha\text{OR}^{\text{DE}}=1.86$ , 95%CI 1.25-2.77), internalized HIV stigma ( $\alpha\text{OR}^{\text{DE}}=2.30$ , 95%CI 1.55-3.44), clinic travel ( $>1$  hour) ( $\alpha\text{OR}^{\text{DE}}=2.72$ , 95%CI 1.15-6.43), and witnessing domestic violence ( $\alpha\text{OR}^{\text{DE}}=1.67$ , 95%CI 1.01-2.78) was directly associated with the low start and decreasing adherence trajectory.

The association between medication side-effects and low start and increasing adherence trajectory was partially mediated by experiencing any mental health symptoms ( $\alpha\text{OR}^{\text{E}}=1.14$ , 95%CI 1.02-1.31), while the association between emotional bullying and low start and increasing adherence trajectory was fully mediated by mental health symptoms ( $\alpha\text{OR}^{\text{E}}=1.12$ , 95%CI 1.01-1.25).

**Conclusions:** We identified multiple modifiable socio-ecological barriers and their unique pathways to longitudinal suboptimal adherence. Understanding how adolescents' experiences at the individual, household, community, and healthcare level interact to influence their long-term ART adherence may facilitate the development of multi-level tailored adherence support intervention packages for ALHIV.

## WEPEB129

### HIV diagnostic disclosure and health outcomes among children and adolescents living with HIV aged 8-14 years in four provinces of Mozambique

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**Background:** The increasing availability and effectiveness of antiretroviral treatment (ART) has enabled HIV-positive children to survive to older age. HIV diagnostic disclosure (HDD) has become crucial for achieving successful treatment outcomes as well as psychological well-being for this population. The estimated prevalence of HDD among children and adolescents living with HIV (CALHIV) in Sub-Saharan African countries is 58%, and in Mozambique, in 2022, was 45%.

We analyzed HDD rate and health outcomes according to disclosure status among CALHIV aged 8-14 in provinces supported by the USAID-funded Efficiencies for Clinical HIV Outcomes (ECHO) project.

**Methods:** This is a quantitative cross-sectional study of CALHIV aged 8-14 who initiated ART from November 2019 to March 2023. Data was extracted from electronic medical records from 148 health facilities in four project-supported provinces. Descriptive statistics were used to characterize study sample and determine HDD rate,



defined as the proportion of CALHIV with partial or total (full information and knowledge about HIV) HDD, and the prevalence of health outcome variables (viral load (VL) suppression, defined as VL test result <1,000 copies/ml, and retention in care until end of March 2023).

**Results:** 3,448 CALHIV aged 8-14 were included in the analysis, of whom 54.7% (1,886/3,448) were female. The median age was 12 years [interquartile range (IQR) 9 – 14 years]. HDD rate was 51.4% (1,772/3,448), of whom 65% (1,150/1,772) had full disclosure and 35% (622/1,772) partial disclosure. Among those with full disclosure, 69.4% (697/1,005) of eligible CALHIV had an updated VL test result, 79.6% (555/697) were virally suppressed, and 100% were retained in care. Among those with partial disclosure, 65.2% (328/503) had an updated VL test result, 83.5% (274/328) were virally suppressed and almost 100% (621/622) retained in care. For the group without HDD, results were 31.9% (494/1,549), 81% (400/494) and 50.2% (841/1,676), respectively.

**Conclusions:** HDD rate was found to be low, although comparable with regional and national prevalence. While VL suppression was found to be equivalent across all groups, VL coverage and retention in care were double among CALHIV with full or partial disclosure. Targeted interventions will be needed to improve HDD rate, prioritizing those who are potentially sexually active.

## Antiretroviral therapies and clinical issues in neonates, infants and children

### WEPEB130

Missed opportunities for HIV diagnosis and management among children born to HIV positive women: case studies from the child health and mortality prevention surveillance (CHAMPS) network, Kenya

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**Background:** Pediatric HIV remains a public health challenge in many African countries including Kenya, with mother-to-child transmission being a major source of HIV acquisition. Missed opportunities for early diagnosis and treatment initiation among exposed infants persist, con-

tributing to preventable child mortality. We used mortality surveillance data to analyze characteristics of deaths among children and infants of HIV-positive mothers.

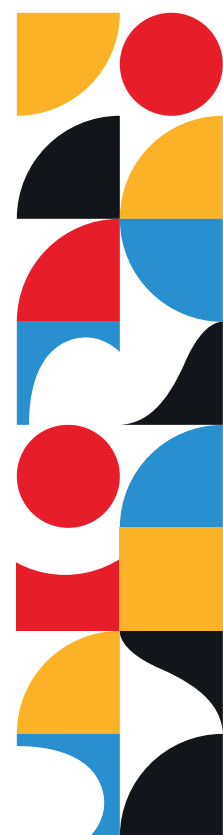
**Methods:** We analyzed Kenya Child Health and Mortality Prevention Surveillance (CHAMPS) data (May 2017-December 2022) from maternal and child health records in western Kenya. CHAMPS identifies deaths of children aged <60 months and utilizes minimally invasive tissue sampling (MITS), postmortem laboratory and pathology testing, verbal autopsy, and expert adjudication to determine cause of death.

This analysis included decedents aged 1 to 59 months born to HIV positive mothers, who underwent MITS, had documented immediate cause of death and HIV test result. Causes of death among all decedents and characteristics of HIV-positive decedents are described.

**Results:** In total, 81 underwent MITS of whom 92.6% (n=75) had HIV test results and documented cause of death. The leading immediate causes of death were pneumonia (30.7%, n=23/75), sepsis (26.7%, n=20/75) and malaria (22.7%, n=17/75). Malnutrition was the most common underlying cause of death at 37.3% (n=28/75) including 51.4% (n=18/35) among HIV positive decedent of whom 94.4% (n=17/18) had severe wasting compared with 25.0% (n=10/40) among HIV negative decedent (odds ratio 2.83, 95% CI: 1.06 – 7.51).

In total, 46.7% (n=35/75) tested HIV-positive [with higher rates in children aged >12-59 months (56.8%, 21/37) than in infants aged 1-12 months old (36.8%, 14/38)] of whom 26 (74.3%) were not on ART. Of the 26, 17 (65.4%) had up-to-date immunization, 14 (53.8%) died in the community, 13 (50%) had HIV wasting syndrome, 8 (30.8%) had ever been hospitalized and 3/14 (21.4%) had documented maternal HIV negative status from antenatal clinic.

**Conclusions:** Majority of deaths of children born to HIV-positive mothers are preventable. Most HIV-positive children were not on ART half of whom had severe malnutrition. Closing gaps in timely HIV case identification, linkage to treatment and appropriate management of childhood illnesses remains critical.







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## WEPEB131

### Integrase inhibitor (INSTI) use and outcomes among children living with HIV in Latin America & the Caribbean

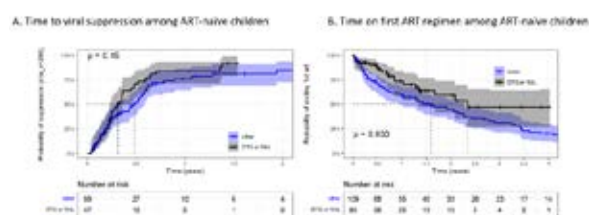
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**Background:** Though dolutegravir (DTG) is recommended for primary treatment for all people with HIV, limited data exist on integrase strand inhibitor (INSTI) use among children. We assessed DTG and raltegravir (RAL) use and outcomes among Latin American and Caribbean children living with HIV.

**Methods:** Caribbean, Central and South America network for HIV epidemiology cohorts from Brazil, Haiti, Honduras, and Peru contributed data for children (age <18 years) receiving care since widespread availability of DTG/RAL (approximately 2013-2022). Trends and factors associated with INSTI (DTG/RAL) initiation were examined using multivariable logistic and Cox regression models among antiretroviral therapy (ART)-naïve and -experienced children, respectively.

We compared outcomes (viral suppression, ART switch, CD4 recovery, and mortality) among ART-naïve children starting INSTI vs. other ART using generalized linear and Cox regression models.



**Results:** Among 192 ART-naïve children, 77 started DTG, 6 started RAL, and 109 started other ART. The proportion of ART-naïve children initiating INSTI-based ART increased from 0% in 2013 to 93% (13/14) in 2022.

In adjusted analyses, starting INSTI-based ART was more likely in Haiti and Brazil, older children, and more recent calendar years ( $p < 0.001$  for all). Among 560 ART-experienced children, 123 switched to DTG and 30 switched to RAL. More recent calendar year, greater number of prior ART regimens, and living in Haiti or Brazil were associated

with a higher incidence of switching to INSTI in adjusted analyses ( $p < 0.05$  for all). There was no statistical difference in CD4 recovery, virologic suppression (Figure A), nor mortality among ART-naïve children by INSTI use ( $p > 0.05$  for all). Children started on INSTI had longer duration of first regimen than those started on other ART (Figure B).

**Conclusions:** INSTI use among children has increased parts of Latin America and the Caribbean. As more children start INSTI regimens, further research is needed to understand the impact of INSTI on clinical outcomes.

## WEPEB132

### Pediatric Dolutegravir Optimization: 18 month follow up of viral load suppression

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**Background:** In August 2021, Eswatini began optimizing children on first line Antiretroviral Therapy (ART) and under 20kg to pediatric dolutegravir (pDTG)-based treatment. All children with viral load (VL)  $\leq 400$  copies/mL were optimized to ABC/3TC/DTG. Those with VL 401-999 received adherence counseling then repeated VL. Those with VL  $\geq 1000$  copies/mL accessed genotypes and those results informed an optimized NRTI backbone with pDTG. All new pediatric clients were initiated on ABC/3TC/DTG. Since starting pDTG, some children have now transitioned to 50mg DTG based ART per national weight-based dosing guidelines.

**Methods:** This is a retrospective review of routinely collected data from all children on first line ART optimized to pDTG based ART from August 2021 until January 2023 at Baylor College of Medicine Children's Foundation-Eswatini. Data were extracted from electronic medical records and imported into STATA 17 for analysis. McNemar's Test using 95% confidence intervals ( $p < 0.05$ ) was used to determine significance in viral suppression ( $\leq 400$  copies/mL).

**Results:** Between August 2021 and January 2023, 368 children accessed pDTG, 58 as new initiations and 310 through optimizations.

Of the newly initiated with VL data, 41/58 (71%) remain active in care. They are 51% female with average age at DTG initiation of 19 mos. VL suppression is 87.8% (36/41) at average 16 months post pDTG initiation.

Of the children optimized to pDTG with VL data, 255/310 (82%) remain active in care. They are 54% female with an average age of 56 months at time of DTG initiation. Majority (99%) were transitioned from ABC/3TC/LPV/r to a pDTG based regimen, 251 to ABC/3TC/LPV/r and 4 to AZT/3TC/LPV/r based on genotype results. VL suppression in-



creased from 91.3% pre switch (233/255) to 94.9% (242/255) at average 18.5 months post switch (23-124wks) ( $p=0.06$ ). When both groups were combined and stratified by age, VL suppression was  $>90\%$  for all ages except for the 24mos-36mos group who were at 72%.

**Conclusions:** Many children have benefited from the introduction of pDTG, however improvement in viral suppression observed was not statistically significant. Some of our youngest clients still struggle with adherence despite improved formulations. Focus must still be on improving this group through innovative programming.

## WEPEB133

### Emerging dolutegravir resistance in children and adolescents living with HIV in Malawi

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**Background:** In 2021, Malawi transitioned children and adolescents living with HIV (CALHIV) to dolutegravir-based ART. Most had zidovudine exposure and transitioned to abacavir/lamivudine/dolutegravir ( $< 30$ kgs) or tenofovir/lamivudine/dolutegravir ( $\geq 30$ kgs). Transitions often happened without recent viral load (VL) results. CALHIV VL suppression rates improved post DTG transition but remain below 85%, raising concerns about emergence of dolutegravir resistance.

**Methods:** National guidelines recommend HIV drug resistance (HIVDR) testing for individuals with confirmed virological failure (VL  $\geq 1,000$  copies/mL after enhanced adherence counseling) on dolutegravir-based regimens. We reviewed HIVDR testing applications and available

genotype results between December 2019 and November 2023 from CALHIV 0-18 years on dolutegravir-based ART in Malawi's ART program. Genotyping was performed from DBS samples at National Health Reference Laboratory in Lilongwe, Malawi or National Health Laboratory Service, Johannesburg, South Africa. Drug resistance was defined as resistance score  $\geq 15$  (Stanford HIVdb version 9.5.1).

**Results:** Of 310 applications from CALHIV with confirmed virologic failure (all on 2NRTI+dolutegravir), 99 were approved and had genotype results; 31(31%) had dolutegravir resistance (Table).

Categories of genotypic resistance	Genotypes
No resistance detected (wild type)	26
Single-class resistance: NRTI only and NNRTI only	21
Single-class resistance: DTG only	3
Dual-class resistance: NRTI + DTG	5
Dual-class resistance: PI + DTG	1
Dual-class resistance: NNRTI + NRTI / NNRTI + PI / NNRTI + DTG	23
Triple-class resistance: NRTI+NNRTI+PI / NRTI+NNRTI+DTG	18
Quadruple-class resistance: NRTI+NNRTI+PI+DTG	2
Total	99

Table. Genotypic results of 99 Malawian CALHIV with confirmed virological failure.

Among 31 CALHIV with dolutegravir resistance, median age was 10 years (range 2-18). Four (13%) were  $<5$  years and 16(52%) 10-18 years; 19(61%) were male. Median total time on ART was 75 months (range 21-182), median on current regimen 21 months (range 1-39); 25(81%) were on abacavir/lamivudine; 2(6%) on zidovudine/lamivudine and 4(13%) on tenofovir/lamivudine. Dolutegravir resistance mutations caused 12(39%) high, 17(55%) intermediate and 2(6%) low-level resistance. Two children (10%) presented with quadruple class resistance, including one with darunavir resistance.

**Conclusions:** While access to HIVDR testing has remained limited in Malawi, dolutegravir resistance was confirmed among a large proportion of CALHIV with confirmed virologic failure on dolutegravir-based ART. Streamlined protocols are needed to detect dolutegravir resistance early and define practical, appropriate adherence support and switching strategies.



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## WEPEB134

### Accelerating progress in pediatric HIV and elimination of vertical HIV transmission in seven PEPFAR focus countries, October 2022-September 2023

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**Background:** Gaps and inequities remain in elimination of vertical transmission (EVT) and HIV diagnosis and treatment for children. Between October 2022 and September 2023, PEPFAR introduced the Accelerating Progress in Pediatrics and PMTCT initiative (AP3) in seven countries with the largest gaps in PMTCT and pediatric HIV outcomes: Democratic Republic of the Congo, Mozambique, Nigeria, South Africa, Tanzania, Uganda, and Zambia.

**Description:** AP3 countries' objectives were to:

1. Reduce HIV acquisition in children,
2. Identify children living with HIV and link them to treatment, and;
3. Increase rates of pediatric viral suppression.

PEPFAR AP3 country teams planned and implemented a six-pronged surge for pediatric and EVT programming that included dedicated human resources; strategic budgeting and expenditure monitoring; strengthened monitoring and evaluation efforts; pediatric community-led monitoring (CLM); socioeconomic support, psychosocial support, and case management; and regular review meetings.

Teams used routine PEPFAR monitoring, evaluation and reporting and custom indicators to monitor their implementation strategy. An AP3 steering committee comprised of pediatric, PMTCT, and orphans and vulnerable children experts facilitated cross-country sharing, ensured quality technical assistance, and monitored quarterly progress.

**Lessons learned:** AP3 demonstrated progress across all objectives. Notably, between July and September 2022 and July and September 2023, maternal HIV retesting increased from 39% to 62%, pediatric viral suppression (<1,000 copies/mL) increased from 85% to 88%, and the volume of pediatric dolutegravir bottles dispensed increased 32%.

AP3 encouraged collaborations and synergies across program areas to achieve key results and strengthened collaborations with ministries of health, social welfare workforce, civil society, and other stakeholders.

Best practices included equitable resourcing, use of granular data and custom indicators and CLM to monitor implementation; regular, timely meetings to review data and adjust strategy; and cross-sectoral and cross-country sharing of implementation successes and challenges.

**Conclusions/Next steps:** Through a concerted effort to close pediatric and EVT gaps, the AP3 initiative made progress toward its objectives, but did not fully reach them.

Continued and dedicated support for EVT and pediatrics is needed in country plans to end HIV and AIDS in children. A population-specific initiative like AP3 may be useful in helping to achieve these goals in other settings.

## WEPEB135

### Inadequate serologic response following vaccination against hepatitis B virus in children who were exposed to HIV

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**Background:** Given the global burden of Hepatitis B virus (HBV) and HIV co-infection, ensuring an appropriate response to vaccination among children who were HIV exposed and uninfected (CHEU) is essential to reduce their morbidity and mortality.

The objective of this study was to assess seroprotection following a primary series of vaccination against HBV among CHEU.

**Methods:** Retrospective study of mother-infant pairs enrolled in the CMIS Montreal Cohort (1997-2020). Anti-HBs titers were measured in first trimester of pregnancy, and in CHEU after 3 doses of HBV vaccine given according to guidelines at birth, 1 month and 6 months between 1998-2012 (early schedule) and at 2 months, 4 months and 18 months between 2013-2020 (late schedule).

Infants born to women with evidence of active HBV infection were excluded. A titer of <10 IU/ml following completion of the primary series was considered non-protective (NP) according to provincial guidelines.

**Results:** 161 CHEU were included; 144 were tested <5 years following their primary HBV series (median = 7.3 months, IQR = 6.1-17 months) and 17 at age > 5 years (median = 5.3 years, IQR = 4.8-6.8 years).

Overall, 13.2% of infants were considered NP. Among those with HBV titers first assessed at >5 years, 53% were NP vs. 6.6% of those assessed at <5 years. There was a higher proportion of NP among CHEU vaccinated according to the early vs late schedule (22% vs 8.3%,  $p = 0.015$ ) and those born to women with CD4 counts <200 vs >200 cell/mm<sup>3</sup> at delivery (33% vs 12.2%,  $p = 0.08$ ), but no difference according to maternal viral load at delivery or receipt of maternal HBV vaccination during pregnancy. There was no significant correlation between maternal first trimester anti-HBs and post-vaccination titers in children ( $R^2 = -0.073$ ,  $p = 0.82$ ).

**Conclusions:** While the overall proportion of CHEU considered NP after an HBV primary series (8.3%) was slightly higher than that reported in the general population (5%), the proportion NP when tested >5 years after vaccination was very high (53%). These data suggest that response to HBV vaccination may be inadequate among CHEU and should be further assessed in larger cohorts.

## WEPEB136

### Improved growth during bNAb-only treatment among early-treated suppressed children with HIV

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**Background:** Broadly neutralizing monoclonal antibodies (bNAbs) are an ART-sparing HIV treatment option with potential to avoid toxicities associated with lifelong ART. We evaluated anthropometrics over time among children in Botswana who underwent up to 6 months of ART interruption while receiving dual-bNAbs (VRC01LS and 10-1074) alone.

**Methods:** The Tatelo Study included 25 early-treated children with HIV who paused lopinavir/ritonavir-based triple ART and received dual bNAbs for up to 24 weeks. Anthropometric data were converted to length/height-for-age (HAZ) and weight-for-age (WAZ) z-scores using World Health Organization Growth Standards adjusted for age and sex. We included up to 38 months of data for each child during different treatment modalities: before dual bNAb initiation (including single-bNAb PK assessment for a subset), ART plus dual bNAb administration, dual bNAbs alone, and ART restart after bNAb discontinuation. Wilcoxon signed rank test was utilized to assess for changes in z-scores before and after dual bNAb-only treatment (ART pause).

**Results:** Eleven (44%) participants maintained viral suppression for 6 months during dual bNAb-only treatment period and 14 experienced virologic rebound (Figure 1). HAZ remained stable over time throughout follow-up for all participants. In participants who maintained viral suppression during bNAb-only treatment, there was a slight improvement in WAZ (median change pre-post ART pause 0.28, IQR 0.14 – 0.49,  $p=0.02$ ), which was not sustained following ART restart (median change from 1 to 6 months following ART restart -0.10, IQR -0.34 – 0.13,  $p=0.15$ ). In participants with viral rebound on bNAb-only treatment (and less time off ART), no significant changes in WAZ were observed.



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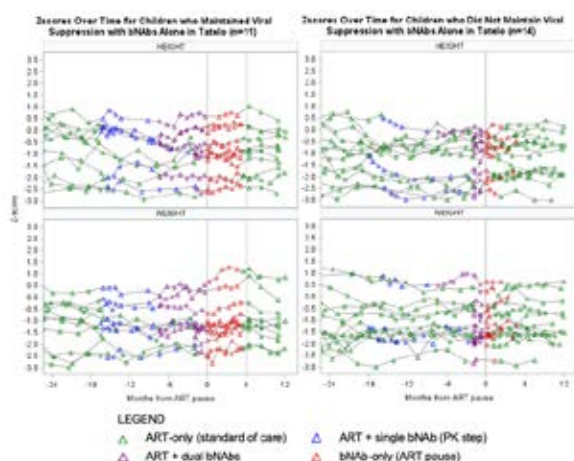


Figure 1. Z-scores over time for early treated children enrolled in Tatelo study (n=25).

**Conclusions:** Children who maintained virologic suppression during dual bNAbs-only treatment had significant improvement in WAZ that was not sustained following ART restart.

These results suggest improved WAZ during bNAbs treatment and ART pause, though further studies are needed to assess the impact on growth with different ART regimens and longer ART pauses.

## WEPEB137

Viral load outcome of CALHIV in disclosure groups in Haiti

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**Background:** Adherence to antiretroviral therapy (ART) remains the burden and the most considerable cause of virologic failure and non-suppression in children and adolescents living with HIV (CALHIV), while being a determinant part of the management of HIV.

When a child is not aware of his/her status, management of disease can be challenging due to stigmatization and lack of psycho-social support for both the CALHIV and caregivers, especially in low-and middle income countries, like Haiti. Since 2021, Caris Foundation International via the USAID funded Impact Youth program, started leading disclosure groups for caregivers and their CALHIV between the ages of 9-17 years old.

Via the disclosure groups, caregivers can choose to disclose their child's status themselves or choose for their social worker and their clinic's psychologist to assist with the process.

**Description:** A pediatric cohort of 293 CALHIV aged from 9-17 years old was taken from The Impact Youth project in Haiti. Through the implementation of disclosure groups for CALHIV over the past 3 years, data showed that 111 CALHIV enrolled in disclosure groups were 2.13 times more likely to attain viral load suppression, versus those who were not.

Association between being in a disclosure group and VL suppression (outcome of interest) were assessed using a multivariate mixed effect logistic regression model.

**Lessons learned:** Children aged 9-17 years old knowing their HIV status were 2.13 were likely to be virally suppressed. Scaling up children disclosure groups has been successful and led to increased viral load suppression in CALHIV. Participation in these support groups increased adherence to ART, viral load coverage, peer-to-peer support, and increased knowledge on disease management and other pertinent health-related topics.

**Conclusions/Next steps:** The Caris OVC program continues to work with caregivers of HIV-positive 9 to 17 years of age who are not aware of their status to participate in disclosure groups. Caris continues to work with caregivers who have refused for their children to attend disclosure groups to overcome these barriers. Caris is also developing other approaches to reach CALHIV who are not enrolled in disclosure groups, and targeting their caregivers, to improve adherence and have better health outcomes.

## Clinical issues specific to key populations

## WEPEB138

Disclosure decision-making processes and antiretroviral therapy adherence among gay, bisexual, and other men who have sex with men living with HIV in Jamaica

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**Background:** Decision-making processes for HIV disclosure are shaped by antecedent goals to achieve positive outcomes (approach-focused goals) and prevent negative outcomes (avoidance-focused goals). HIV prevalence among men who have sex with men (MSM) in Jamaica is 29%, and only 38% take ART and 31% are virally suppressed. Yet little is known of their experiences navigating HIV care. To address this knowledge gap, we explored disclosure experiences and ART engagement among MSM living with HIV in Jamaica.

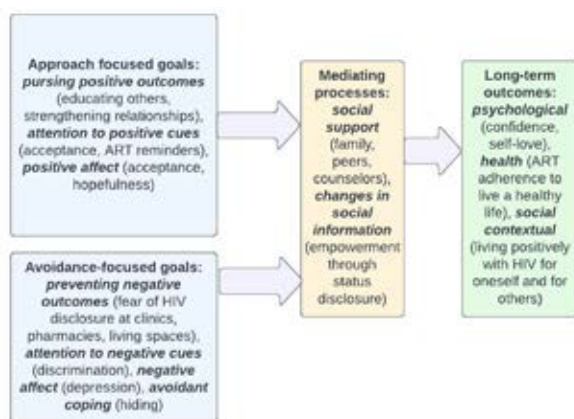
**Methods:** We conducted three focus groups and twenty-one in-depth interviews with MSM living with HIV, and ten key informant interviews with HIV and LGBTQ health/social service providers, in Kingston, St. Ann, and Montego Bay, Jamaica.

We explored disclosure experiences and HIV care engagement. We applied thematic analysis guided by the Disclosure Process Model to understand antecedent goals associated with ART uptake and adherence.

**Results:** Participants included MSM (n=49) in focus groups (n=28, mean age: 28.43, standard deviation [SD]=5.49) and interviews (n=21, mean age: 24.5, SD=3.16) and n=10 key informants (5 cisgender women, 5 cisgender men).

Participants reported avoidance-focused antecedent goals that presented barriers to ART adherence, including: preventing negative outcomes (fear of HIV disclosure at clinics, pharmacies, living spaces), attention to negative cues (discrimination), negative affect (depression), and avoidant coping (hiding).

Approach-focused goals that facilitated ART adherence included: pursuing positive outcomes (educating others about HIV, strengthening relationships), attention to positive cues (acceptance, ART reminders), and positive affect (acceptance, hopefulness). Social support and changes in social information (empowerment through HIV disclosure) facilitated long-term psychological (confidence, self-love), health (ART adherence), and social-contextual (living positively with HIV) outcomes.



**Conclusions:** Decision-making processes regarding ART uptake and adherence among MSM in Jamaica are shaped by complex, multi-level considerations and goals. Findings can inform ART adherence interventions informed by the Disclosure Process Model, supportive programs, and stigma reduction with and for MSM with HIV.

## WEPEB139

### Influence of gender identity stigma and COVID-19 economic stressors on mental health and HIV risk of transgender women in South India: findings from mediation analyses

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**Background:** Transgender women (TGW) globally bear a disproportionate HIV burden. Harmful social conditions such as gender identity-related stigma faced by them, and COVID-19 economic stressors may contribute to syndemic psychosocial conditions and HIV risk.

We examined whether the effects of transgender identity stigma, sex work stigma and COVID-19 economic stressors on condomless anal sex (CAS) are mediated through mental health and internalized transprejudice among TGW in Chennai, South India.

**Methods:** We conducted path analyses in Mplus8 on cross-sectional data collected between September-December 2022 through online and offline surveys among 250 TGW. Standardized scales were used to measure stigmas, and psychosocial health conditions (past 2-week depression: PHQ-2, past 2-week anxiety: GAD-2, past 3-month problematic alcohol use: AUDIT-C) dichotomized as presence or absence of syndemics (co-occurrence of two or more psychosocial conditions).

The binary outcome measure was past 2-month CAS with male partners ('any type', regular and non-regular). The analyses were adjusted for educational status, social support and gender affirmation. Standardized coefficients ( $\beta$ ) are presented for effect estimates.

**Results:** Participants' mean age was  $29 \pm 5.7$  years; 47% had a college degree. A majority (90%) engaged in sex work and 86% reported CAS. The prevalence of psychosocial syndemics was 70%.

Transgender identity stigma and COVID-19 economic stressors had significant direct effects on syndemics and CAS with non-regular partners (Figure 1).

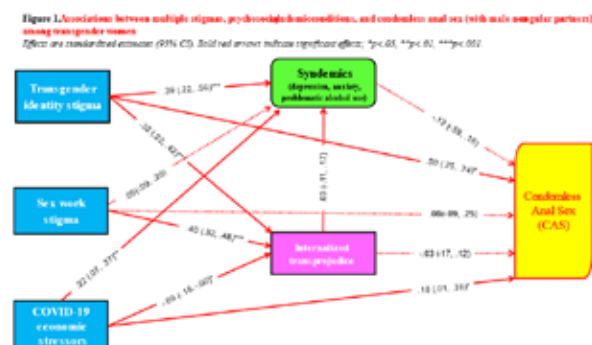


Figure 1. Associations between multiple stigmas, psychosocial conditions, and condomless anal sex (with male non-regular partners) among transgender women. Effects are standardized estimates (beta). Solid red arrows indicate significant effects: \*p<0.05, \*\*p<0.01, \*\*\*p<0.001.



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Total effects of identity stigma ( $\beta=.45$ ; 95% CI.26,.64;  $p<.001$ ) and COVID-19 economic stressors ( $\beta=.16$ ; 95% CI .01, .31;  $p=.04$ ) on CAS were significant. Identity stigma had similar effects on CAS with regular and 'any type' of partners. Further, mediation effects were non-significant in all the models.

**Conclusions:** Experiences of stigma and COVID-19 stressors play a pivotal role in increasing HIV risk and psychosocial syndemics among TGW. Trans-specific HIV-prevention interventions, therefore, need to take steps to reduce transgender identity stigma and economic vulnerabilities, and promote mental health.

## WEPEB140

Lymphogranuloma venereum serovars in men who have sex with men (MSM) and transgender women (TGW) in Buenos Aires, Argentina

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**Background:** In Argentina, the first reports of lymphogranuloma venereum (LGV) occurred in 2018. Since then, new cases have occurred mainly in MSM living with HIV. This study aims to describe the sociodemographic, clinical characteristics and serovars involved in LGV diagnosis among MSM and TGW in Buenos Aires, Argentina.

**Methods:** We conducted a retrospective review of the LGV cases assisted at one research site in Buenos Aires, Argentina from March 2019 to December 2022. LGV diagnosis was made in first void of urine, rectal and/or ulcer swabs by sequencing a fragment of the ompA gene among those samples with previous positive Chlamydia trachomatis PCR.

Sociodemographic data included age, gender, educational level, substance use, and sex work. We also collected data regarding HIV pre-exposure prophylaxis (PrEP) use and concomitant sexually transmitted infections (STIs) at the time of LGV diagnosis: including HIV, syphilis, gonorrhea and viral hepatitis.

**Results:** We included 19 LGV cases: 16 (84%) among MSM and 3 (16%) in TGW, median age was 29 years (CI 26-41): 47% completed tertiary education, 53% reported substance use (mainly cannabis and cocaine) and 100% of TGW reported sexual work. Regarding concomitant STIs, 7 had HIV diagnosis (3/7 recent diagnosis), 4 syphilis, 2 gonorrhea, 3 hepatitis B resolved infection and one active HCV.

Among those HIV negative (12, 63%), 92% were on PrEP. Anatomic location was rectal (89%) and genital (11%); 89% were symptomatic. We detected 3 serovars: L1 (9, 47%), L2b (5, 26%) and L2 (5, 26%).

We found no association between serovars and sociodemographic variables. However, we observed an association between L1 serovar and being HIV negative ( $p: 0.006$ ), as well as being on PrEP ( $p:0.028$ ) and between L2b serovar and genital localization ( $p:0.044$ ) (Table 1)

Variable/serovar	Overall, n = 19	L2b, n = 5	L2, n = 5	L1, n = 9
HIV				
Negative	12 (63%)	1 (20%)	2 (40%)	9 (100%)
Positive	7 (37%)	4 (80%)	3 (60%)	0 (0%)
PrEP	11 (58%)	1 (20%)	2 (40%)	8 (89%)
Rectal LGV	17 (89%)	3 (60%)	5 (100%)	9 (100%)
Genital LGV	2 (11%)	2 (40%)	0 (0%)	0 (0%)

Table 1.

**Conclusions:** Most LGV were diagnosed in PrEP users, among these L1 was the prevalent serovar. Rectal localization was the most frequent among all serovars. Clinical suspicion is important to avoid delay in diagnosis, prevent complications and stop transmission.

## WEPEB141

Pilot study of a clinical-community Peer Mentor program for postpartum women living with HIV

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**Background:** Studies have generally shown that people living with HIV (PLHIV) are more vulnerable to mental health and a high prevalence of depression reportedly leads to quality of life and poor treatment adherence; For WLHIV postpartum depression (PPD) is the most common co-morbidity; It impacts ART treatment adherence to care resulting in increased viral load with poor health outcomes including opportunistic infections. An accumulative effect of these could lead to transmission of HIV to the infant.

The prevalence of PPD among WLHIV is high. The first 12 months postpartum is the most vulnerable, with minor and major depression occurring frequently post-delivery, particularly in the first three months [2]. Symptoms of PPD feelings of inadequacy, guilt, tearfulness, irritability, fatigue, and a loss of appetite[3].

It is important to catch PPD early, as high prevalence of PPD among HIV-positive pregnant women has been associated with higher rates of poor adherence to ART, adversely affecting the outcome of their HIV care.



**Description:** We proposed a program that would strengthen Adherence counseling and prevent treatment failure. Early identification and management of PPD has to be considered. HIV positive perinatal women need counseling to PPD.

**Lessons learned:** The research is still in progress but important lessons have already been learned including prioritizing the optimization of HIV care and treatment for pre and postpartum women - something that has been neglected in health care and policy and including people with lived experience in a multi-disciplinary team of investigators.

**Conclusions/Next steps:** We have already completed our first Aim, which was to develop a comprehensive wellness package (Training and Peer Support Network) to support postpartum mothers with HIV through clinical-community integration.

This aim sought to connect healthcare providers and community organizations to develop an innovative package for postpartum mothers with HIV that address mental health concerns and increased adherence to HIV care and treatment.

We continue to work on our second Aim which is to determine feasibility and acceptability of delivering the wellness package to postpartum mothers with HIV in other clinical settings, especially those serving women living with HIV.

## WEPEB142

### Impaired adherence and higher prevalence of experienced antiretroviral treatment side-effects among migrants living with HIV in Sweden

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**Background:** Patient reported outcomes (PROs) applies in HIV-care as part of person-centered care for people living with HIV (PLHIV). In Sweden, PROs assessing physical, psychological and sexual health, experience of side effects, adherence and satisfaction with care were integrated

nationally in HIV-care since 2011. The PROs are available in 10 languages, aimed to be assessed yearly and included in the Swedish National InfCareHIV registry.

The aim of this study was:

- To investigate sociodemographic differences between migrants and Swedish-born living with HIV and;
- To investigate PROs in PLHIV with focus on antiretroviral treatment (ART) adherence and experienced side effects among migrants and Swedish born living with HIV.

**Methods:** Cross-sectional observational study including all adult ( $\geq 18$  years) PLHIV who had performed PROs in the National Quality Registry InfCareHIV for year 2020.

**Results:** The descriptive analysis of the data showed sociodemographic differences between migrants and Swedish-born individuals. Of 7766 adults PLHIV ( $\geq 18$  years) were 64% migrants and 36% were Swedish-born individuals.

Women were overrepresented among migrants while men were overrepresented among Swedish-born individuals. Heterosexual transmission was the most common route among migrants, while homosexual transmission was the most common route among Swedish-born individuals.

The study showed impaired adherence among migrants compared to Swedish born living with HIV, where 14,1% of migrants reported 1-2 missed doses last week, compared to 7% of Swedish born (OR 1.92; 95% CI 1.4-2.62;  $p < 0.001$ ).

Overall, 12,2% reported experienced side effects from ART; 14% of migrants compared to 10.2% of Swedish born individuals ( $p = 0.01$ ).

**Conclusions:** Socio-demographic differences between Swedish-born and migrants living with HIV require need-based support to different groups of PLHIV. Impaired ART adherence and experience of side effects to ART were more common in migrants compared to Swedish-born living individuals.

These differences calls for targeted interventions with participatory approach to improve adherence. Interventions to address experience of ART side-effects may, besides consider ART change, include actions to increase PLHIV participation in care and support physical health.



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## WEPEB143

### Stimulant use and its correlates in MSM and TGW populations: an analysis in a multi-country context - ImPrEP study

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**Background:** The use of substances is linked to increased vulnerability to HIV/STI among men who have sex with men (MSM) and transgender women (TGW). It is essential to identify the most commonly used substances and their related health issues in order to understand their impact on adherence to prevention measures such as oral PrEP and DoxyPEP.

This study evaluated substance use and factors associated with stimulant use among MSM/TGW attending HIV/STI testing/clinics in Latin America.

**Methods:** ImPrEP, a multi-country implementation study, evaluated the feasibility of providing same-day oral PrEP delivery to MSM/TGW in Brazil (n=3,928), Mexico (n=3,288), and Peru (n=2,293). Utilizing baseline data, we examined the prevalence of substance use in the three months preceding PrEP initiation.

A Poisson model was used to identify factors associated with stimulant use, including substances such as ecstasy, lysergic acid diethylamide, or gamma-hydroxybutyrate, cocaine (powder, crack, or paste).

**Results:** Overall, 94.3% were cis-MSM, 5.7% TGW, 26.1% aged 18-24, 32.2% aged 25-34, and 41.7% aged >34 years old. The majority (73.1%) were Black/Pardo/Mestizo, with more than secondary education (81.3%). The most prevalent substances or consumption pattern across the three countries were: binge drinking (65.3% Brazil, 61.1% Mexico, and 73.2% Peru), marijuana (28.4%, 46.3%, and 16.5%), and stimulants (18.2%, 27.0%, and 6.1%). Stimulant use was higher in Mexico (aPR=1.38, 95%CI:1.22-1.55,  $p<0.0001$ ) compared to Brazil and lower in Peru (aPR=0.32, 95%CI:0.26-0.39,  $p<0.0001$ ).

Associated factors with higher stimulant use included being white (aPR=1.28, 95%CI:1.14-1.44,  $p<0.0001$ ), having primary education (aPR=1.50, 95%CI:1.01-2.22,  $p<0.05$ ), multiple sex partners (2-3 partners: aPR=1.32, 95%CI:1.01-1.71,  $p<0.04$ ;  $\geq 4$  partners: aPR=2.47, 95%CI:1.97-3.09,  $p<0.0001$ ), receptive condomless anal sex (aPR=1.15, 95%CI:1.02-1.29,  $p<0.02$ ), transactional sex (aPR=1.56, 95%CI:1.38-1.77,  $p<0.0001$ ), and binge drinking (aPR=1.82, 95%CI:1.61-2.05,  $p<0.0001$ ). Seek-

ing PrEP when attending the service (aPR=0.82, 95%CI:0.68-0.99,  $p=0.04$ ), and being young (18-24 years, aPR=0.76, 95%CI:0.66-0.88,  $p<0.01$ ) were protective factors.

**Conclusions:** MSM/TGW in Latin America exhibited a high prevalence of substance use, which was linked to increased sexual HIV exposure.

These findings underscore the necessity for tailored and comprehensive interventions, incorporating harm reduction strategies, mental health support and PrEP adherence support to enhance the overall effectiveness of PrEP.

## Other strategies and therapies

## WEPEB144

### CCR5Δ32/Δ32 Allogeneic hematopoietic stem cell graft: time to analytical antiretroviral interruption?

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**Background:** To date, six reported cases of remission/functional cure after Hematopoietic stem cell transplantation (HSCT) challenged the current paradigm that HIV cure cannot be achieved. Five of those cases received an allogeneic HSCT (aHSCT) from HLA-compatible CCR5Δ32 homozygous donors, while the last one received aHSCT from an unrelated HLA-matched wildtype CCR5 donor. We report here a new case in which Analytical antiretroviral Treatment Interruption (ATI) was considered.

**Methods:** HIV RNA/DNA detection was performed using commercial assays, NeuMoDx/Xpert and Generic, respectively, with an ultrasensitive (US) procedure for some samples. HIV-1 Western blot confirmatory assay was performed on sequential samples. HIV RNA/DNA sequencing was performed by Sanger or Next-Generation Sequencing (NGS) (Illumina) technologies with quasispecies analysis. Standard HIV-1 co-culture and cell permissiveness to R5 HIV-1 were attempted using in-house protocols.

**Results:** We report a woman in her 50s diagnosed with HIV in 1999 and with acute myeloid leukemia in February 2020. She received aHSCT from an HLA-mismatched (HLA-A) donor with CCR5Δ32 homozygous genotype in July 2020 after conditioning based on Baltimore (fludarabine 150 mg/m<sup>2</sup>, cyclophosphamide 29 mg/kg and total body irradiation 200 cGy) and GVHD prophylaxis.

Full donor chimerism was obtained after three donor lymphocyte infusions. She was HIV-treated with Tenofovir DF/FTC and Raltegravir pre-graft, then was switched



to Abacavir/3TC and Raltegravir from 14-months post-graft. Pre-graft, HIV DNA was 32 copies/million PBMC, HIV RNA was undetectable (<20 copies/mL) and CD4 cell count was 250 cells/mm<sup>3</sup>. HIV genotypic tropism tests by NGS showed R5 tropism without minority X4 viruses.

Post-graft, HIV-DNA/RNA were undetected on 12 sequential blood samples, even under US conditions, and CD4 cell count increased to 1535 cells/mm<sup>3</sup>.

Sequential Western blot showed progressive disappearance of seven major reactivities with only anti-gp160 reactivity eventually remaining at month 41. HIV-1 co-culture was negative and host cells were non-permissive to R5 HIV-1.

**Conclusions:** This case questions about the most appropriate conditions allowing ATI in people living with HIV-1 post-CCR5D32/D32 HSCT.

Determining the predictive elements of HIV remission appears to be an important task as similar attempts have failed previously due to virological rebound, or to premature death related to the hematological malignancies.

## WEPEB145

### Improved targeting of human CD4+ T cells by nanobody coupled lipid nanoparticles

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**Background:** Antiretroviral drug therapies do not target the integrated proviral DNA (i.e. the provirus). PROVIREX is developing novel cure approaches based on the *in vitro* engineered Brec1 recombinase which excises the provirus of most HIV-1 strains and subtypes with high specificity. The current approach involves lentiviral transduction of hematopoietic stem cells and autologous transplantation of these modified cells, which is very complex and cost-intensive.

Nanobody-coupled lipid nanoparticles (LNP) could simplify the administration of the HIV-specific recombinase and also make this type of personalized medicine available to low-income countries.

**Methods:** LNP coupled with CD4 specific nanobody were tested on a T cell line, CD4+ / CD4- mixed cultures, as well as on primary CD4+ T cells and PBMC with regard to transfection rates, specificity and antiviral activity. Cell lines and primary cells were transfected with LNP and examined using flow cytometry, ddPCR and endpoint PCR.

**Results:** The transfection experiments with LNP coupled with nanobodies showed excellent transfection rates of over 90% on T cell lines and high specificity in CD4+ / CD4- mixed cultures. Very good transfection rates of could also be achieved with low LNP concentrations in CD4+ primary T cells of up to 30%. In PBMC, high CD4-dependent transfection rates of up to 25% could be achieved in CD4+ T cells, with low background in the other cell populations. Antiviral activity was demonstrated in HIV reporter cells and HIV infected cell lines.

**Conclusions:** LNPs with CD4-specific nanobodies coupled to their surface can be used to successfully transfect cell lines and primary CD4+ T cells, as well as CD4+ T cells in a mixture of blood cells (PBMC). Antiviral activity of functional HIV-specific recombinase could be detected after transfection of HIV reporter cells and in infections experiments.

Targeting of infected CD4+ T cells *in vivo* could aid in diminishing the reservoir, thus leading to reconstitution of the immune system, thereby enabling PLWH to maintain stable viral loads without the need of additional medication ("functional cure"). It could also result in prolonged ART-free intervals, lowering the risk of both the development of drug resistance and long-term toxicity.

## ART resistance

## WEPEB146

### Resistance analyses during treatment of lenacapavir with broadly neutralizing antibodies in people with HIV

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**Background:** Combination of lenacapavir (LEN) with broadly neutralizing antibodies (bNAbs) teropavimab (TAB; 30 mg/kg), and znlirvimab (ZAB; either 10 or 30 mg/kg) was investigated in a phase 1b randomized clinical study in virally suppressed people with HIV. Enrolled participants' virus was susceptible to both bNAbs (Primary Cohort, n=20) or susceptible to either TAB or ZAB (Pilot Cohort, n=10), defined for this protocol as IC90 ≤ 2 µg/mL in the PhenoSense mAb assay (Monogram Biosciences). Virologic suppression (HIV-1 RNA < 50 copies/mL) was maintained in 27/30 participants at 26 weeks. Here, we describe resistance analyses through week 26.

**Methods:** Genotypic and phenotypic analyses of proviral Gag and Env were performed at baseline using deep sequencing (Seq-IT) and the PhenoSense Gag-Pro and mAb assays. For participants with virologic rebound (VR; HIV-





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1 RNA  $\geq$  50 copies/mL), commercial genotyping methods were unsuccessful. Therefore, low copy number genotyping methods for capsid and a 1 kb stretch of gp120 (nt# 102-1092) from rebound virus were developed and performed. Amplicons were cloned into vectors to determine phenotypic susceptibility to LEN, TAB, and ZAB.

**Results:** One participant in the Primary Cohort (10 mg/kg ZAB) experienced VR at week 16 (124 copies/mL). At baseline, the participant was susceptible to LEN and both bNAb. The participant developed Q67H in capsid at week 16 (fold-change = 3.65-4.71), but had no resistance to bNAb and resuppressed with resumption of oral ART. Two participants in the Pilot Cohort (10 mg/kg ZAB) experienced unconfirmed VR at week 26 (55 and 87 copies/mL). At baseline, neither of the two participants had mutations to LEN, one was susceptible to TAB, and one was susceptible to ZAB. Neither participant had emergent resistance to LEN or changes in susceptibility to TAB or ZAB compared to baseline.

**Conclusions:** High rates of virologic suppression were maintained during treatment with LEN and bNAb, including among participants susceptible to only one bNAb. Development of low-copy number genotyping allowed geno- and phenotypic resistance analyses in three participants with VR, with emergent LEN resistance only detected for one participant. All three participants with VR received 10 mg/kg of ZAB, suggesting a higher dose of ZAB may decrease risk of VR.

## WEPEB147

### Acquired drug resistance to dolutegravir among people living with HIV in Cameroon: implications on treatment strategies in low- and middle-income countries

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**Background:** The World Health Organisation (WHO) recommends dolutegravir (DTG)-based regimens as the preferred antiretroviral therapy (ART) in low- and middle-income countries (LMICs). However, a client's clinical

status, unsuppressed viremia and treatment history may favour the emergence of HIV drug resistance (HIVDR) to DTG, hence calling for surveillance to optimise ART-strategies. In Cameroon, a country with 69.2% viral load (VL) coverage, we determined the prevalence and patterns of integrase strand-transfer inhibitor (INSTI) resistance-associated mutations among DTG-treated people with unsuppressed-viremia.

**Methods:** Following WHO recommendations, a laboratory-based sentinel-surveillance survey was conducted from January 2022 to August 2023 on 174 plasma-specimens from clients with viremia (>1000 copies/ml) receiving DTG-containing ART at the Chantal BIYA International Reference Centre for research on HIV/AIDS prevention and management in Yaoundé-Cameroun.

Following consecutive-sampling of all eligible specimens, Sanger-sequencing of HIV-1 protease/reverse-transcriptase and integrase was performed and drug resistance mutations (DRMs) interpreted and estimated using the Stanford HIVdb.v.9.5, with susceptible and potential drug resistance classified as susceptible.

**Results:** Overall, the median-age [IQR] was 38 [17-46] years; 57.5% female; median-viremia: 13,364 [1,563-135,271] copies/mL and median-CD4: 186 [70-365] cells/mm<sup>3</sup>. Median-duration on DTG-containing ART 12 [6-24] months, with 42.0% (73) on first-line, 16.0% (28) second-line, and 42.0% (73) third-line ART. The prevalence of DTG acquired-resistance was 2.86% [95%CI: 0.93-6.54].

The following INSTI mutations were detected: R263R/K (n=3), T66I (n=2), L74I/M (n=2), G118R (n=2), E138K (n=2), S153Y (n=1); ranging from 1-5 DRMs per person. DTG-resistance was found in two cases of unsuppressed-viremia when transitioning from first-line TDF-3TC-EFV(TLE) to TDF-3TC-DTG(TLD) with K65R and M184V detected at failure of TLD (i.e. DTG functional-monotherapy); two third-line cases with multi-class HIVDR (of which one case of 4-class resistance); and one third-line case of HIV/tuberculosis coinfection on concomitant anti-tuberculosis treatment (DTG50mgx2/day).

**Conclusions:** Though transition to TLD is generally successful, INSTI-resistance emergence is detected in cases following transition on first-line therapy to TLD with unsuppressed-viremia; switching to third-line regimen without the benefit of genotypic resistance data (functional-monotherapy); or co-administration of DTG and anti-TB drugs.

Considering these case-scenarios for public-health actions in the landscape of treatment strategies, would substantially limit the emergence of resistance to DTG in LMICs.

## WEPEB148

### CAB/RPV-LA in patients with history of failure and/or drug resistance mutations to NNRTIs or INSTIs: the experience of a French university hospital

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**Background:** Long-acting cabotegravir and rilpivirine (CAB/RPV-LA) are indicated for people with HIV (PWH) with no previous history of failure and/or drug resistance mutations (DRMs) to non-nucleoside reverse transcriptase inhibitors (NNRTIs) or integrase inhibitors (INSTIs).

To better understand factors associated with virological response, we examined the case of seven PWH who received CAB/RPV-LA with history of DRMs/failure on one or both classes which was unknown to physician at CAB/RPV-LA initiation.

**Methods:** Seven PWH were included: 6 with virological control on CAB/RPV-LA for >18 months and 1 with failure at 3 months after CAB/RPV-LA initiation. Blood samples taken before the initiation of CAB/RPV-LA were analyzed retrospectively. A near full-length single HIV genome nanopore sequencing was performed on HIV-DNA to search for archived DRMs and evaluate the intactness of sequences harboring DRMs. A custom bioinformatic pipeline adapted from iGDA algorithm was developed to recover haplotypes. The DRMs frequency in *RT* and *integrase* genes was evaluated with NGS HIV-DNA sequencing using Sentosa® SQ HIV Genotyping Assay.

**Results:** 251 HIV-DNA sequences were obtained with Nanopore technology (mean: 36 sequences/participant). The percentage of sequences harboring ≥1 major DRMs to NNRTIs and/or INSTIs (n=27) varied from 0% (in 2 subjects with virological control despite previously described DRMs to NNRTIs (5 and 9 years before) to 32% between participants. 25 genomes were defective (11 large deletions, 13 hypermutations, and 1 Ψ/MSD defect).

Notably, all major G-to-A DRMs were found on hypermutated genomes. Two genomes with DRMs were found intact, both harboring the H221Y mutation on *RT*. They belonged to the same subject with viral control and represent 11 copies/10<sup>6</sup> PBMCs. For the subject with virological failure, 13% of sequences harbored DRMs and were all defective. He had a BMI of 30.2 and low antiretroviral concentrations.

**Conclusions:** Our findings suggest that achieving virological response to CAB/RPV-LA is possible in cases with prior history of DRMs and/or failure on one agent within the



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antiretroviral classes. This could be related to the prevalence of DRMs present primarily on defective genomes with intact genomes hosting only a limited fraction. Further studies are needed to define a mutational load below which a virological control could be achieved.

## WEPEB149

### Increasing levels of protease inhibitor resistance in the South African public sector: implications for salvage treatment in the dolutegravir era

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**Background:** Following WHO recommendation in 2022, many countries implemented tenofovir-lamivudine-dolutegravir (TLD) as the regimen of choice. This public health approach yields good virological suppression rates in treatment-naïve people living with HIV (PLWH) and people failing NNRTI-regimens. However, data on whether PLWH with unsuppressed viral load on a protease inhibitor (PI) regimen might require HIV drug resistance (HIVDR) testing prior to switching to TLD, is limited. We assessed the prevalence of PI resistance in PLWH failing PI-based regimens in South Africa.

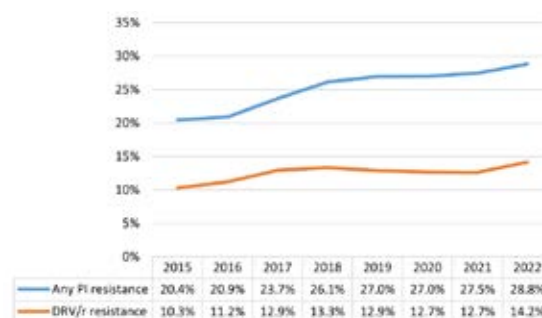
**Methods:** Retrospective analysis was conducted using partial pol sequences collected from the South African public sector between 2015 and 2022. Demographic and clinical data were extracted from the laboratory information system.

Resistance was defined as low-level resistance or higher (score  $\geq 15$ ), using Stanford HIVdb v9.5.0.

**Results:** A total of 18 170 sequences were available from PLWH with recorded PI-exposure at time of HIVDR testing. Sixty percent of clients were female, 72% were older than 19 years and median viral load was 4.7 log<sub>10</sub> copies/mL (IQR: 4.1-5.3). PI resistance was detected in 26.0% of sequences with a significant increase from 20.4% in 2015 to 28.8% in 2022 ( $p < 0.0001$ ). Darunavir resistance in PI-exposed, darunavir-naïve PLWH, increased from 10.3% in 2015 to 14.2% in 2022 ( $p < 0.0001$ ). High-level darunavir resistance increased from 1.4% to 5.0% ( $p = 0.0969$ ).

The overall prevalence of darunavir resistance was higher in ritonavir-boosted lopinavir (LPV/r)-exposed PLWH (13.5%) compared to ritonavir-boosted atazanavir (ATZ/r) exposed PLWH (9.3%,  $p < 0.0001$ ).

Likewise, high-level resistance to darunavir was more commonly observed in LPV/r-exposed PLWH (1.6%) versus 0.7% in those exposed to ATZ/r ( $p < 0.0001$ ).



**Conclusions:** We observed a notable increase in PI resistance, including resistance to darunavir, in South Africa since 2015. Despite the availability of TLD, performing HIVDR testing, in PLWH failing PI-based regimens, prior to switching to TLD, is recommended to assess the value of darunavir in salvage regimens.

## WEPEB150

### Safety and immunogenicity of a single dose of COVID-19 vaccine: Ad26.CoV2.S, BNT162b2 or SARS-CoV-2 rS-protein-nanoparticle in previously vaccinated and unvaccinated adults living with HIV in South Africa

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**Background:** For people with immunosuppression, the World Health Organization recommends an additional COVID-19 vaccine dose as part of the primary vaccination series. The safety and immunogenicity of vaccine strategies was evaluated in people living with HIV (PLWH).

**Methods:** A phase 2a randomized, observer-blinded, multicenter study was conducted. PLWH (on antiretroviral therapy) who previously received one-dose of Ad26.CoV2.S, or two-doses of BNT162b2, or were unvaccinated with prior SARS-CoV-2 acquisition (study groups), received a single-dose of Ad26.CoV2.S, BNT162b2 or SARS-CoV-2-rS-Protein-Nanoparticle (study arms) at least 2-months post-vaccination. Immunogenicity was evaluated pre- and two-weeks post-study vaccination.

**Results:** Between July 2022 and February 2023, of 599 PLWH enrolled, 258 and 254 were previously vaccinated with Ad26.CoV2.S and BNT162b2 respectively and 87 were unvaccinated. Mean age was 43 years, 65.8% female, 99.7% Black African, 88.1% virally suppressed, and median CD4 count 764(IQR 545-1008) cells/mm<sup>3</sup>. Local reactions were reported in 19.4%, 34.5% and 12.3% and systemic reac-

tions in 35.4%, 37.4% and 28.7% of participants in the Ad26.CoV2.S, BNT162b2 and SARS-CoV-2-rS-Protein-Nanoparticle arms respectively. Overall 96.7% of local and systemic reactions were mild to moderate.

There were 30 unsolicited adverse events within 28-days of vaccination, 97% mild to moderate. The Geometric Mean Fold Change (GMFC) in ELISA SARS-CoV-2 spike-binding antibody titres between baseline and day 15 in each arm was: Ad26.CoV2.S (2.2 [1.9-2.5]), BNT162b2 (7.3 [6.4-8.2]), and SARS-CoV-2 rS-Protein-Nanoparticle (3.7 [3.3-4.2]); neutralizing antibody titres (VSV assay) was 2.6 (2.2-3.0), 10.2 (8.7-11.8) and 4.5 (3.8-5.3) respectively.

Antibody responses stratified by prior vaccination group are shown in Figure A. The proportion of participants with CD4+ T-cell ICS responses at day 15 was 98.2%, 99.4% and 100% in the three arms respectively, and CD8+ T-cell responses was 64.1%, 66.3% and 46.3%.

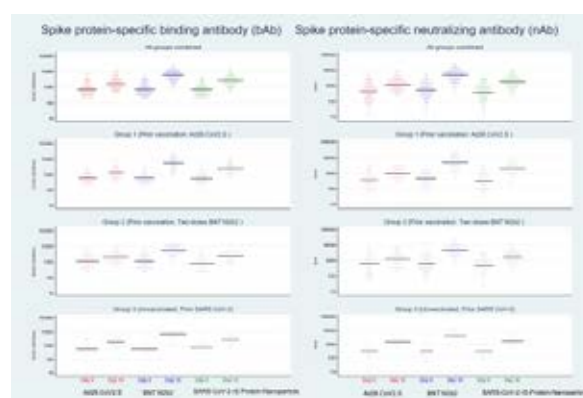


Figure A. Antibody titres.

**Conclusions:** Among PLWH, whether previously vaccinated, or unvaccinated with prior SARS-CoV-2 acquisition, Ad26.CoV2.S, BNT162b2 and SARS-CoV-2-rS-Protein-Nanoparticle were well tolerated and induced significant immune responses. (CEPI-Funded).



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## WEPEB151

### Factors associated with COVID-19 vaccine hesitancy among people vulnerable to HIV in two communities in Western Kenya

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**Background:** Vaccine perception and uptake are influenced by behavioral and social factors that fluctuate over time and across subgroups. Prior COVID-19 vaccine research in Kenya has identified wide ranges of vaccine acceptance and hesitancy during the COVID-19 pandemic in the general population.

This analysis provides an assessment of COVID-19 vaccination hesitancy among individuals in Western Kenya with behavioral vulnerability to HIV.

**Methods:** From December 2021 to April 2023, participants aged 15-36 years with a high vulnerability to HIV completed questionnaires at enrollment into an HIV incidence cohort at two sites (Kericho and Homa Bay) in Western Kenya. The questionnaire included prompts regarding participant demographics, history of COVID-19 diagnoses, methods of protection against COVID-19, and receipt of a COVID-19 vaccine.

Multivariable robust Poisson regression models were used to estimate prevalence ratios (PRs) and 95% confidence intervals (CIs) for factors potentially associated with COVID-19 vaccine hesitancy.

**Results:** Questionnaires were completed by 394 participants, including 314 (80.0%) aged 15-24 years, 312 (79.2%) assigned female at birth, and 256 (65.0%) employed as sex workers. A total of 226 (57.4%) participants reported never receiving a COVID-19 vaccine, and of those 121 (53.4%) reported that they were unsure or unwilling to receive a COVID-19 vaccine. The factors that were associated with COVID-19 vaccine hesitancy were a preference to build immunity to COVID-19 through natural acquisition, concerns that the COVID-19 vaccine was unsafe, and not avoiding meetings with crowds (Figure).

**Conclusions:** Participants vulnerable to HIV that were unsure or unwilling to take a COVID-19 vaccine represented a majority of those that were not vaccinated against COVID-19.

The identified factors associated with COVID-19 vaccine hesitancy provides opportunities for future vaccination campaigns to target this population to better educate

about COVID-19 transmission, and vaccine safety and effectiveness for COVID-19 and future outbreaks of vaccine preventable diseases.

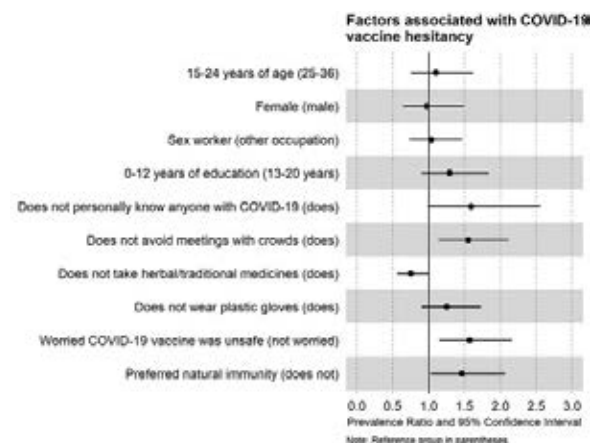


Figure.

## WEPEB152

### Immune response induced by the recombinant novel coronavirus vaccine (Adenovirus Type 5 Vector) (Ad5-nCoV) in persons living with HIV (PLWH)

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<sup>1</sup>Fundacion Huesped, Research Department, Ciudad de Buenos Aires, Argentina, <sup>2</sup>CanSino Biologics Inc, Toronto, Canada, <sup>3</sup>Hospital Juan A. Fernández, Ciudad de Buenos Aires, Argentina, <sup>4</sup>FUNCEI, Ciudad de Buenos Aires, Argentina, <sup>5</sup>Helios Salud, Ciudad de Buenos Aires, Argentina, <sup>6</sup>Dalhousie University, Canadian Center for Vaccinology, Halifax, Canada, <sup>7</sup>CanSino Biologics Inc, Tianjin, China

**Background:** COVID-19 vaccination is recommended for PLWH. We studied a scheme based on the Ad5-nCoV CanSino vaccine. Primary endpoint: to evaluate immunogenicity of two doses of Ad5-nCoV in PLWH. ClinicalTrials.gov:NCT05005156

**Methods:** Phase 2b, open label study. PLWH received two doses of Ad5-nCoV at days 0 and 56, and were assessed for immunogenicity through 52 weeks. Immunological endpoints: proportion of participants with geometric mean increase (GMI)  $\geq 4$  from baseline of receptor-binding domain (RBD) and neutralizing antibodies (nAbs) at days 28, 84, weeks 24 and 52. Overall 52 weeks' humoral responses are presented.

**Results:** Between June 2021-January 2022, 140 PLWH were vaccinated. 93.6% had baseline viral load  $\leq 40$  copies/mL, median CD4 count: 728 cells/ $\mu$ L. 99.3% participants were on HAART. S-RBD seroconversion occurred in 80% at day 28 after the first vaccination. At day 84 seroconver-


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sion was 93%; at week 24, 84% and at week 52, 84%. Five subjects never reached S-RBD seroconversion. Increase in S-RBD antibodies was statistically significant between day 0 and all other visits ( $p < 0.01$ ). Geometric mean concentration (GMC) of S-RBD antibodies: day 0, 7.02 [95% CI 5.79 – 8.51], week 52, 395.29 [95% CI 257.56 – 606.66]. (Figure 1). The nAbs seroconversion occurred in 35% at day 28, 78% at day 84; 57% at week 24 and 78% at week 52. (Figure 2) The mean titres (GMT) of neutralizing antibodies on day 0 was 5.54 [95% CI 4.88 – 6.30] at day 364 73.94 [95% CI 50.16 – 108.99]. The increase in the GMT was statistically significant between day 0 and all other visits ( $p < 0.01$ ).

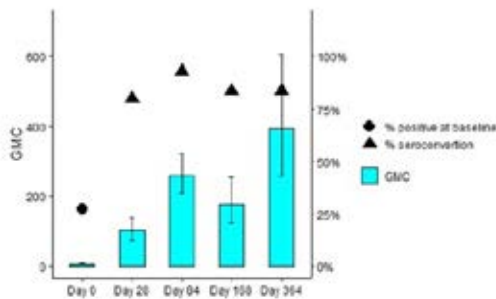


Figure 1. GMC, percentage of positive subjects at baseline and seroconversion rate for S-RBD antibodies per period after vaccination.

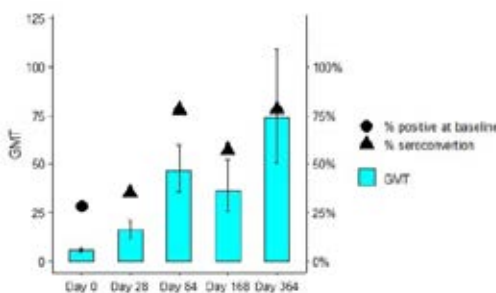


Figure 2. GMTs, percentage of positive subjects at baseline and seroconversion rate for nAbs antibodies per period after first vaccination.

**Conclusions:** Ad5-nCoV vaccine induced an adequate immune response in virologically suppressed PLWH and maintained the titers at least during the first year post-vaccination.

Further vaccine efficacy studies in PLWH should be performed to elucidate the potential impact of various immunization strategies, according to their disease status.

## WEPEB153

### Comparing the coping strategies and resilience adopted by HIV positive and negative LGBT+ individuals during COVID-19 pandemic in India

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<sup>1</sup>The Humsafar Trust, Mumbai, India, <sup>2</sup>Center for Sexuality and Health Research and Policy (C-SHaRP), Chennai, Chennai, India, <sup>3</sup>VOICES- Thailand Foundation, Chiang Mai, Thailand, <sup>4</sup>Center for Sexuality and Health Research and Policy (C-SHaRP), Chennai, India, <sup>5</sup>University of Toronto, Factor-Inwentash, Social Work, Toronto, Canada

**Background:** In India, COVID-19 and lockdowns posed several physical/emotional challenges for the LGBT+ communities. In response a Mumbai based eHealth study was launched in India which aimed at exploring the differentials in coping strategies adopted by both HIV-positive and HIV-negative LGBT+ communities during the pandemic.

**Methods:** In-depth interviews were conducted online with a purposive sample of 43 LGBT+ individuals (Lesbian/Bisexual women having sex with women=10, Transgender Persons=17, Gay/Bisexual MSM=16) aged 18 and above between Oct-Dec 2022 as a part of a larger study. Results were analysed thematically using constant comparison method.

**Results:** Out of the 43 participants, 14% identified as HIV-positive (4 transgender women, 2 gay/bisexual men) while 86% were HIV-negative or unaware of their status. The majority (62.8%) were aged 26-35, 93% had secondary education or higher and 86% were employed.

HIV-positive individuals coped with the physical challenges related to COVID-19 era via activities like home workouts, yoga and meditation, thus fostering positive transformation whereas HIV-negative individuals focused on overall health without any specific emphasis.

*Emotional resilience* was common, with both groups stressing the importance of a positive mindset and seeking support from friends, family, and the community; with HIV-positive relying on meditation, virtual relationships and sharing experiences and HIV-negative individuals focusing on various activities such as cooking, reading, gaming and engaging in educational pursuits. However, both groups demonstrated similar adaptability and resourcefulness during lockdowns, addressing stressful financial situations via pursuing alternate income generation activities.

Both groups expressed fear and concerns about COVID testing. Challenges also existed in accessing healthcare and COVID vaccinations, especially for HIV-positive; all of which were overcome with the support from individuals and community-based organizations.

Support from LGBTQ+ groups and NGOs in the form of financial support, groceries, and information sharing was acknowledged by both groups.





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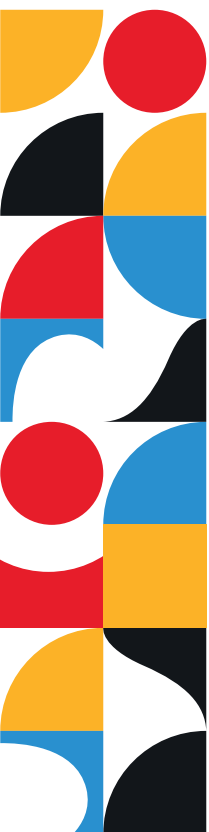


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**Conclusions:** While there are notable similarities in coping strategies, the differences highlight the unique challenges faced by HIV-positive LGBT+ individuals, including specific concerns related to accessing medication and vaccinations. Both groups, however, underscore the importance of community support, adaptability, and *emotional resilience* in navigating the complexities of the COVID-19 pandemic.



### Epidemiology of HIV

#### WEPEC154

HIV mortality among persons seeking care at CDC-supported antiretroviral therapy treatment sites in Guatemala and Honduras, October 2020–September 2022

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**Background:** Mortality surveillance is essential for monitoring HIV epidemic trends. A review of causes of mortality among people living with HIV (PLHIV) in Guatemala and Honduras suggested that advanced HIV disease (AHD) was a leading cause of death among PLHIV. In October 2021, Guatemala expanded the recommended World Health Organization (WHO) AHD package of services to include individuals with AHD being reengaged to care and those failing ART. Honduras expanded services in October 2022.

We sought to examine trends in mortality in Guatemala and Honduras, where, due to country-specific resources, interventions began at different times.

**Methods:** Descriptive epidemiological analyses were conducted on data collected at 18 CDC-supported sites in Guatemala and Honduras. AHD was defined as CD4<200 or WHO HIV clinical stage 3–4. Causes of death documented by a national mortality report at these sites were captured in routine data collection systems.

**Results:** In year 1 (October 2020 – September 2021), prior to WHO AHD package implementation, Guatemala and Honduras reported 1.8% and 1.6% all-cause mortality in all PLHIV, respectively. In year 2 (October 2021 – September 2022), in Guatemala, mortality reduced to 0.7% of the total PLHIV cohort, while mortality increased in Honduras to 2.1%.

Across both years, 32.5% of deaths were related to AHD and 11% related to TB, making these the leading causes of death. Deceased clients were 68.5% (343/501) men, 13.3% (67/501) men who have sex with men (MSM), and 0.4% (2/501) were transgender women. MSM were on average

observed to reach mortality 3.6 years after diagnosis, compared to a 6-year average for all other groups. In Guatemala and Honduras, 76% and 86% of deaths were among clients that had previously received ART but had treatment interruptions, respectively.

**Conclusions:** Interventions designed to support AHD clients, such as the WHO AHD package, may have contributed to a reduction in the number of deaths reported in included sites in Guatemala. However, further studies are needed to understand the impact of these interventions as countries adopt recommended strategies. Improvement of mortality surveillance is necessary to refine data quality and obtain accurate causes of death to further tailor interventions.

#### WEPEC155

Associations between sexualized drug use and risky sexual behaviors among men who have sex with men in Southwest China

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**Background:** Sexualized Drug Use (SDU) involves the intentional use of psychoactive substances before or during sexual activity to facilitate, enhance or prolong sexual experiences. This behavior can contribute to the transmission of HIV and STIs by promoting high-risk sexual behavior. Although prevalent among men who have sex with men (MSM), SDU has received limited attention in China. The study aims to examine the prevalence of SDU and risky sexual behaviors among MSM in China and explore the associations between SDU and risky sexual behaviors.

**Methods:** From December 2021 to February 2022, we conducted an anonymous cross-sectional survey was conducted in Chengdu, China. A total of 813 MSM were recruited through two channels: those conducted HIV testing and counselling services at a local gay-friendly organization (Chengdu Tongle Health Counselling Service Centre) and those invited online through the Tongle volunteer peer network.

Among the participants, 727 eligible subjects were included in the analysis. Logistic regression models were employed to analyze the associations between SDU and other risky sexual behaviors.

**Results:** A total of 289 individuals (39.8%) reported SDU in the last 6 months. The prevalences of multiple sexual partners (>1), unprotected sex, group sex, STI and HIV testing positively were 48.6%, 46.3% 15.6%, 3.9% and 5.6%, respectively. Logistic regression models revealed positive associations between SDU and multiple sexual partners ( $aOR = 3.15$ , 95%CI: 2.26–4.39), unprotected sex ( $aOR = 1.74$ , 95%CI: 1.26–2.40), group sex ( $aOR = 2.32$ , 95%CI: 1.48–3.62), STI ( $aOR = 3.67$ , 95%CI: 1.53–8.81).



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**Conclusions:** In conclusion, SDU may contribute to the transmission of HIV by fostering other risky sexual behaviors. Strengthening health education on safer sex is crucial among MSM groups engaged in SDU.

## WEPEC156

### Guangzhou could be a transit hub of HIV-1 CRF59\_01B epidemic in China: a molecular network and phylogeography analysis

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**Background:** HIV-1 CRF59\_01B was first identified in 2013 in China, and has been detected nationwide, urging early prevention and control. Guangzhou, the central city in South China, has a substantial CRF59\_01B circulation. This study aimed to investigate the role of Guangzhou in the spread of CRF59\_01B.

**Methods:** We established a HIV-1 *pol* gene sequence dataset by incorporating all available CRF59\_01B sequences and their metadata from Guangzhou CDC or the Los Alamos National Laboratory database. These sequences collected outside of Guangzhou were categorized into six groups according to their sampling regions.

To investigate the spatio-temporal dynamic, a molecular network was constructed to characterize the transmission while Bayesian phylogeography analysis was performed to unveil the migration pattern between these regions.

**Results:** Of the 265 CRF59\_01B sequences sampled between 2007 and 2021, 209 (78.9%) formed 25 molecular clusters, comprising 1,131 links. Around 25% of these connections occurred between Guangzhou and the nearby city Shenzhen while Guangzhou showed wide transmission linkages with four other regions.

Bayesian phylogeography analysis indicated that CRF59\_01B could originate in Shenzhen (posterior probability = 0.722) around 1997.5 (95% highest probability density interval: 1992.9–2001.5). By counting the transitions of location state along the phylogeny, Guangzhou exhibited similar export to Shenzhen, but twice import, being a key recipient and source in CRF59\_01B migration. Seven migration pathways between regions were strongly supported (posterior probability 0.50 and Bayes factor 3).

The migration history of CRF59\_01B revealed its introductions from Shenzhen to Guangzhou (5.08 events/year) and North China, followed by its spread to Central, East,

South, and Southwest China from Guangzhou. Moreover, CRF59\_01B returned to Shenzhen from Guangzhou (1.89 events/year).

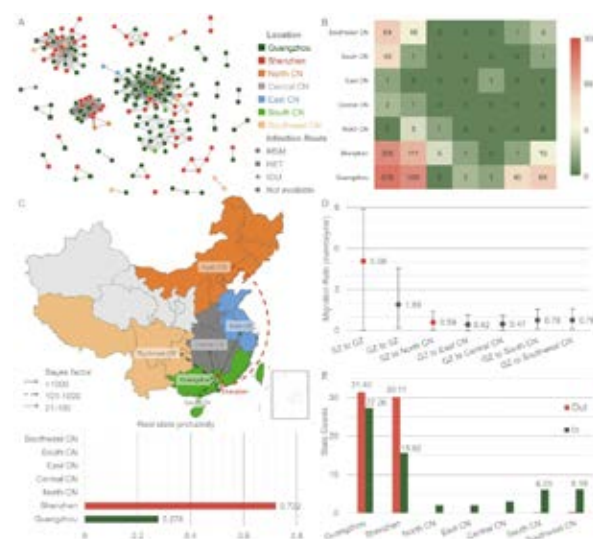


Figure 1. The nationwide transmission pattern of HIV-1 CRF59\_01B in China. (A) The molecular network based on 265 sequences collected from China during 2007 and 2021. (B) The intensity matrix of transmission. The number in the grid cell at the intersection of two regions represents the number of links between the sequences in two regions. (C) The migration map with the root state posterior probability shown at the bottom. (D) The migration rates for significant pathways. (E) The total counts of location state transitions.

**Conclusions:** Shenzhen might be the origin and Guangzhou could serve as the transit hub of CRF59\_01B epidemic in China. These findings underscore the importance of joint precise prevention strategies between regions, focusing the origin and the transit hub.

## WEPEC157

### Identifying sexual risk profiles for clients and non-paying partners of female sex workers to inform HIV prevention in Port Elizabeth, South Africa: a latent class analysis

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**Background:** Female sex workers (FSW) in South Africa experience disproportionate HIV burden, with approximately 60% living with HIV. Little is known about the sexual behaviors and characteristics of clients of FSW, which could inform HIV prevention efforts. We characterized partnership patterns among male clients and non-paying partners of FSW in Port Elizabeth, South Africa.

**Methods:** Time-location sampling was used to recruit 563 male clients and/or non-paying partners in a cross-sectional bio-behavioral survey in 2017. We used LCA to identify underlying groups of men with similar risk profiles based on:

1. Years buying or exchanging sex;
2. Number of paid/transactional partners;
3. Number of primary non-paying partners;
4. Number of non-paying casual partners; and,
5. Condom use during vaginal and anal sex in the last 3 months.

We fit latent class models with 2-4 classes and inspected fit statistics to identify the best-fitting model. Demographic characteristics, HIV seropositive prevalence, and service use patterns were estimated by class.

**Results:** The median age of participants (N=563) was 32 years [IQR:27-34], and most (n=343, 60.9%) engaged in transactional sex for >10 years. HIV prevalence in the overall sample was 14.2% (80/563). We identified a 3-class solution as the best-fitting latent class model, which consisted of the following behavioral profiles:

Class 1: consistent condom use, multiple partners of all types, shortest duration paying for sex (n=268, 48%);

Class 2: consistent condom use, 1 main partner, no casual unpaid partners, longest duration (n=234, 42%);

Class 3: inconsistent condom use, 1 main partner, no casual unpaid partners, moderate duration (n=61, 11%).

HIV prevalence was 21.7% in class 3, 16.0% in class 2 and 11.3% in class 1.

**Conclusions:** Distinct sexual risk profiles among clients of FSW were identified. Tailored interventions should focus on reaching men at greatest risk for HIV especially those with inconsistent condom use. Data collection is needed to assess trends in behavioral risks and HIV among clients over time.

## WEPEC158

### Prevalence of HIV and viral hepatitis in transgender women in Cali Colombia

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**Background:** Transgender women (TGW) have been identified as a key at-risk population for HIV and viral hepatitis. Previous studies in Colombia have shown a prevalence of HIV ranging from 18% to 29% in TGW; however, the prevalence of viral hepatitis is unknown. Due to social exclusion and economic marginalization, TGW are a hard to reach population. We performed a respondent-driven sampling study to assess the prevalence of HIV and viral hepatitis in TGW in Cali, Colombia.

**Methods:** Eight seed TGW were identified from the community to start the referral chain, with a maximum of two referrals allowed per participant. A sociodemographic and behavioral survey was performed followed by a targeted physical examination. Serum was collected and tested for HIV (3<sup>rd</sup> and 4<sup>th</sup> generation Enzyme Linked Immunosorbent Assay [ELISA]), hepatitis B (HBsAg and anti-core ELISAs) and C (ELISA). Point estimates of demographic, behavioral and HIV/hepatitis measures were adjusted for individual network degree using the RDS-II method.

**Results:** Between May and October 2023, 169 TGW were enrolled. The median age was 41, 32% had completed at least high school and only 8.5% were employed full-time. Approximately half of the participants reported onset of sexual activity before age 14, 52% reported a history of sexual abuse and only 14% had never engaged in commercial sex. HIV, hepatitis C, HBsAg, and anti-core ELISAs were positive in 39%, 2.4%, 4.2% and 44% of the participants, respectively. The adjusted prevalences were 37.5% (95%CI 26.2-48.8) for HIV, 1.8% (95%CI 1.1-2.6) for hepatitis C, 3.4% (95%CI 1.9-4.9) for active hepatitis B and 40.4% (95%CI 29.5-51.3) for exposure to hepatitis B. Data achieved convergence on HIV and hepatitis measures, and there was no evidence of homophily.

**Conclusions:** In Colombia the prevalence of HIV has been estimated at 0.25 per 100 inhabitants, while the prevalence of viral hepatitis is unknown. Therefore, our results reveal the extreme burdens of HIV and viral hepatitis in



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TGW in Cali, Colombia despite universal healthcare coverage. There is a failure of the health care system to provide optimal care to diverse populations and an urgent need for tailored strategies to provide adequate health care in these populations.

## WEPEC159

Factors associated with HIV-infection in people who use new psychoactive substances in Kazakhstan: a multicentre hospital-based study

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**Background:** The prevalence of HIV infection in Kazakhstan is 0.3%. Over the past decade, parenteral transmission of HIV infection has decreased significantly. National experts attribute this trend not only to the effectiveness of harm reduction measures, but also to the rapid spread of new psychoactive substances (NPS). Hospitalizations for people with NPS use disorders have increased from 6% in 2017 to 25% in 2021.

While HIV prevalence among people who inject drugs (PWID) has decreased over the last decade (7.6% in 2022), there are no national data on HIV prevalence specifically among people who use NPS. The aim was to investigate factors associated with HIV infection among people with NPS use disorders.

**Methods:** We retrospectively reviewed 1633 medical records of people hospitalised for NPS use disorders in 20 drug addiction treatment centres across Kazakhstan from 1 January 2018 to 31 December 2021. We examined the association of positive HIV status with key demographic characteristics and NPS use patterns using binary logistic regression.

**Results:** Of the total sample, 198 individuals had positive HIV status (12.1%), with significantly higher HIV prevalence among women: 18.7% and 11.0% respectively ( $\chi^2=11.33$ ,  $p=0.001$ ). The mean age of the sample was 32.39 years ( $SD=7.82$ ), with older age among those with positive HIV status (difference=4.87,  $p<0.001$ ). Regarding the NPS groups used, 304 people (18.6%) had problems with synthetic cannabinoids, while 1462 (89.5%) used synthetic stimulants. In the regression model, HIV infections were associated with the female sex ( $OR=1.78$ ; 95%CI: 1.17, 2.69), synthetic stimulant use ( $OR=2.70$ ; 95%CI: 1.04, 7.00), and NPS combination with heroin injections ( $OR=10.06$ ; 95%CI: 6.65, 15.23).

Among people with synthetic stimulant use, HIV infection was additionally associated with parenteral routes of stimulant administration ( $OR=3.47$ ; 95%CI: 2.21, 5.44).

**Conclusions:** Our results indicate a higher prevalence of HIV infection among treatment-seeking populations with NPS use disorders compared with PWID.

Well-organised and tailored harm reduction interventions are needed in Kazakhstan, especially for women with NPS experience and for people using synthetic stimulants.

## WEPEC160

Trends in the prevalence of HIV and other self-reported Sexually Transmitted Infections in Malawi: DHS 2004, 2010 and 2015-2016

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**Background:** HIV and sexually transmitted infections (STIs) pose significant health challenges globally, particularly in sub-Saharan Africa. Malawi, like many other countries in the region, faces a substantial burden of these infections, impacting public health and socioeconomic stability. We explored trends in the prevalence and spatial distributions of self-reported STIs and HIV in Malawi in the last two decades.

**Methods:** We analyzed data from the 2004, 2010, and 2015-2016 Malawi Demographic Health Surveys for individuals aged between 15 and 49. We profiled the STI and HIV cases and estimated prevalence and co-infections at district level and utilized geospatial methods to visualize spatial patterns. Sample weights were applied to calculate weighted proportions and their corresponding confidence intervals.

**Results:** A total of 33,195 individuals (5,150 in 2004; 13,588 in 2010; 14,457 in 2015-2016) were included in HIV analysis, and 66,622 individuals in STI analysis (13,113 in 2004; 25,716 in 2010; 27,793 in 2015-2016). We observed a decrease in HIV prevalence and HIV/STI co-infections over time, and an increase in STI prevalence.

HIV prevalence was 11.8% (95%CI: 11.0%-12.7%) in 2004, 10.6% (95%CI: 10.1%-11.1%) in 2010 and 8.8% (95%CI: 8.3%-9.2%) in 2015-2016. STI prevalence was 7.8% (95%CI: 7.3%-8.3%) in 2004, 10.5% (95%CI: 10.2%-10.9%) in 2010 and 13.6% (95%CI: 13.2%-14.0%) in 2015.

Prevalence of HIV/STI co-infections was 9.6% (95%CI: 7.7%-11.6%) in 2004, 11.8% (95%CI: 10.5%-13.2%) in 2010 and 9.1% (95%CI: 8.0%-10.2%) in 2015. HIV, STI and HIV/STI prevalence varied across the districts with higher prevalence in southern region districts than other regions (Figure 1).

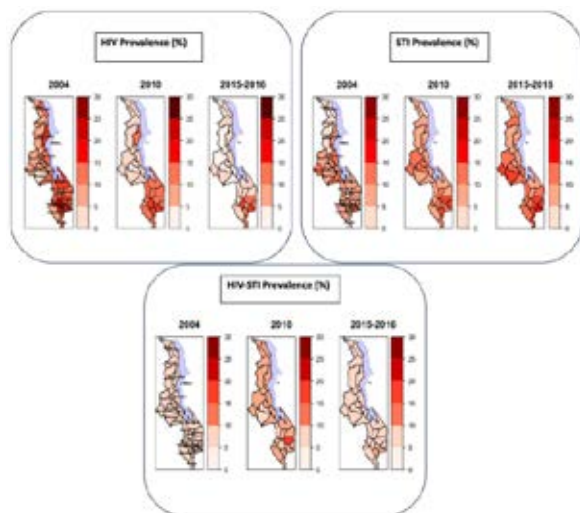


Figure 1. Prevalence of HIV, STI and HIV-STI co-infections.

**Conclusions:** The decline in HIV prevalence and co-infections can be linked to the effectiveness of several HIV prevention and treatment strategies that have been implemented over the years.

The rise in STI infections emphasizes the importance of enhancing screening and treatment of STIs and HIV and promote safer sexual practices among the sexually active population.

## WEPEC161

### Prospective monitoring of HIV transmission cluster dynamics in North Carolina, 2020-2023

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**Background:** Responding to clusters is a pillar of the US Ending the HIV Epidemic (EHE). However, uncertainty remains in optimal cluster prioritization both within and between EHE and non-EHE regions.

We examined growth dynamics and geographical distribution of clusters in North Carolina (NC) including the Charlotte EHE region.

**Methods:** In 2018, we launched an automated platform integrating HIV sequences, surveillance data, and cluster metrics for monthly cluster monitoring in NC. Sequences are reported from reference laboratories (2010-2023) or de novo sequencing from remnant diagnostic specimens (2018-2022). Clusters were identified using pairwise genetic distance <1.5%. Priority clusters (PCs) were defined as ≥5 members with diagnoses in the prior 3 years and ≥1 mem-

ber without viral suppression (VS) in the prior year. Cluster composition and factors associated with PCs among persons with new diagnoses were evaluated.

**Results:** 22,416 persons had ≥1 sequence and 3,300 were newly diagnosed (2020-2023); most were Black (58%), MSM (60%) and resided in Charlotte (22%) or Raleigh (22%). Most new diagnoses were in a cluster (64%), distributed in 676 clusters; 146 clusters were identified at least once as a PC. By 2024, median PC size was 13 (range 5-129 members) and only 18 (12%) PCs comprised a majority of Charlotte EHE residents.

Across all PCs, there were 1,086 new diagnoses and 1,482 without VS evaluated for bridge counseling. Eleven PCs had ≥20 new diagnoses and involved several regions (Figure). New diagnoses in PCs were more likely to be MSM (73% vs. 54%), <30 years (58% vs. 39%), and less likely to reside in Charlotte (19% vs. 25%) [ $p < 0.01$ ].

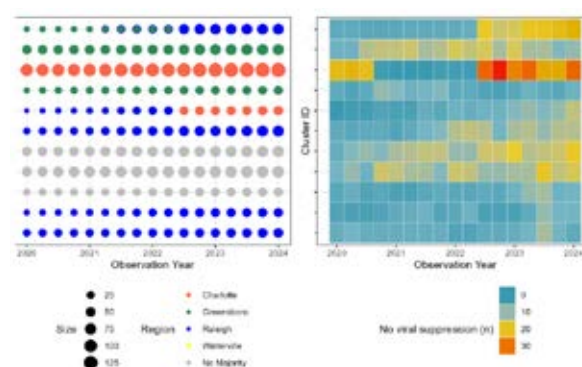


Figure. Clusters with high growth of members with new HIV diagnoses.

**Conclusions:** We identified a high proportion of clustering among persons with new diagnoses which indicates localized recent transmission, crossing multiple regions. Large clusters with incident diagnoses had high numbers of members without VS which underscores the need for innovative strategies to improve care retention.



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## WEPEC162

### Predictive factors of progression to AIDS after diagnosis of HIV acquisition in the vertical transmission cohort - Youth in the state of Sao Paulo

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**Background:** The evolution of people living with HIV depends on the appropriate HIV cascade care. We evaluated the time elapsed between HIV diagnosis and AIDS (TBHA) in adolescents and young adults who acquired HIV perinatally (YHP) and investigated the predictors associated with the AIDS free-time in different diagnosis periods in the State of Sao Paulo.

**Methods:** We have developed a retrospective cohort study, including 6,149 YHP, diagnosed between 1988 and 2003 and followed until 2021. The Kaplan-Meier method was applied to estimate TBHA and the Cox proportional hazards model was used to evaluate the predictors of TBHA, calculating the Hazard Ratio (HR).

The variable period of diagnosis was used as a proxy for the treatments used. Sources of information Data were: the Sao Paulo AIDS Program and Notifiable Diseases Database (SINAN-AIDS)

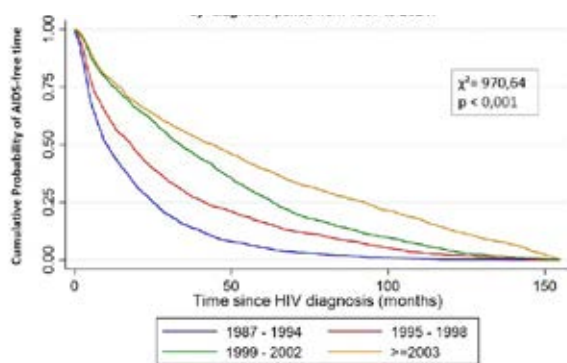


Figure 1. Kaplan-Meier estimates of cumulative probability of AIDS-free time by diagnosis period from 1987 to 2021.

**Results:** The cumulative probability of AIDS-free time for the follow-up of 12 years was 25.5%. The median TPHA was 10.2 months, 18.0 months, 34.0 months, and 44.0 months for the diagnostic periods 1987-1994, 1995-1998, 1999-2002, and after 2003, respectively. It was associated with progression to AIDS regardless of other exposures: period of diagnosis from 1987 to 1994 (HR=3.38;95%CI 3.10- 3.67), from 1999 to 2002 (HR=0.29; 95%CI 0.27-0.32), after 2002

(HR=0.06;95%CI 0.05-0.07), belonging to the age group under 13 years old (HR=1.67;95%CI 1.46-1.90), for 20 to 24 years old (HR=0.36;95%CI 0.32-0.40), between 25 and 29 years old (HR=0.09;95%CI 0.08-0.11), for 30 years old and over (HR=0.02;95%CI 0.01-0.03), and living in the Municipality of Sao Paulo (HR=1.26;95%CI 1.10-1.44) and being male (HR=1.07;95%CI 1.01-1.13).

**Conclusions:** The HIV cascade care for young people has improved over time as it has increased the AIDS-free time, highlighting the importance of public health policies, identifying how many young people are living with HIV/AIDS and how they live.

## WEPEC163

### The reduced impact of HIV in the pediatric inpatient sector: operational results from a breastfeeding infant ward in Mozambique

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**Background:** Mozambique has made impressive strides in its pediatric HIV and PMTCT programs through decentralization, optimization of pediatric antiretroviral treatment (ART), and implementation of Option B+, with improved ART coverage and outcomes, and decreased maternal-child transmission. However, limited data is available to understand the impact of these advancements in the inpatient sector.

**Methods:** Infants hospitalized from January 2020 to December 2023 on the Breastfeeding Ward at Hospital Central de Maputo, the largest academic and referral hospital in Mozambique, were included. Routine data on provider-initiated testing and counseling for HIV (PITC) and point-of-care nucleic acid testing (PoC-NAT) were collected retrospectively from the ward discharge register. Pearson's Chi-squared tests were used to evaluate temporal trends.

**Results:** There were 845, 812, 1231, and 1416 admissions in 2020, 2021, 2022, and 2023, respectively. HIV serostatus was confirmed for 98.5% of patients. The proportion of infants with HIV declined significantly from 5.7% to 1.6% (p<0.001), Figure 1. The proportion of mothers newly diagnosed with HIV declined significantly from 2.5% to 0.4% (p<0.001), as did the positivity of PoC-NAT for exposed infants from 22.2% to 7.5% (p<0.001), Figure 2. HIV-associated mortality was 15.2%, 10.6%, 17.9%, and 16.7% in 2020, 2021, 2022, and 2023, respectively (p=0.704).


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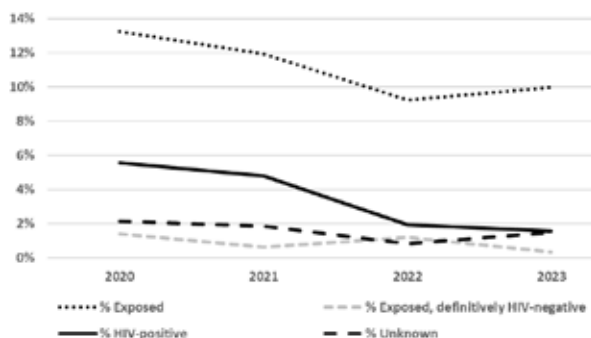
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Figure 1. HIV serostatus of infants hospitalized on the breastfeeding ward at Hospital Central de Maputo, 2020-2023.

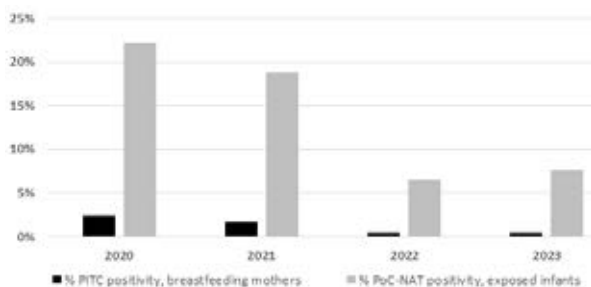


Figure 2. PITC positivity for breastfeeding mothers and PoC-NAT positivity for exposed infants on the breastfeeding ward at Hospital Central de Maputo, 2020-2023.

**Conclusions:** The burden of HIV on inpatient infant care has decreased dramatically, but routine PITC of breastfeeding mothers and PoC-NAT for inpatient early infant diagnosis are still critical for case-finding. Inpatient mortality remains stubbornly high in infants living with HIV, highlighting the importance of the recently-launched national advanced HIV disease program.

## WEPEC164

Using a rule-based algorithm to automatic classify cause of mortality from free-text on death certificates: AIDS-related mortality results among PLHIV registered in the National AIDS Program, Thailand, 2008-2022

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**Background:** The Thai National AIDS Program (NAP) has collected demographic, behavioral, and HIV-related data for all people living with HIV (PLHIV) under Universal Health Coverage since 2008. NAP links individual data with the National Death Registration with non-coded,

free-text data documenting causes of death. We developed a rule-based methods to automatic classify cause of death and analyzed major causes of death to determine geographic disparities from 2008 to 2022.

**Methods:** A rule-based algorithm was developed to classify cause of death (COD) from free-text on death certificates and patient characteristics (age and clinical information prior to death).

We applied text mining technique to categorize free text into 3 major groups: AIDS-related causes, non-AIDS related causes including non-communicable diseases, and ill-defined COD following Thai HIV case surveillance definitions and WHO HIV clinical staging guidelines. Accuracy evaluation involved expert reviews of both free-text and algorithm-derived causes.

We calculated the ratio of AIDS to non-AIDS-related deaths to measure geographical disparity and assessed potential determinants of AIDS-related mortality using multiple regression (SAS v 9.4).

**Results:** The cause of death algorithm achieved 92% accuracy. Of 120,793 deaths, 58.1% were AIDS-related, 37.8% non-AIDS-related, and 4.1% ill-defined causes. Tuberculosis, pneumocystis pneumonia, and other pneumonia were most common among AIDS-related causes. Trend of AIDS-related deaths declined from 60.6% in 2008 to 48.7% in 2022, with a significant decrease in the number of provinces with high AIDS-related deaths and proportion of AIDS-related deaths in the lower northern, northeastern, and central provinces.

Factors associated with AIDS-related mortality included baseline CD4 <200, age <24 years, female gender, key populations (men who have sex with men, sex workers), and no ART history.

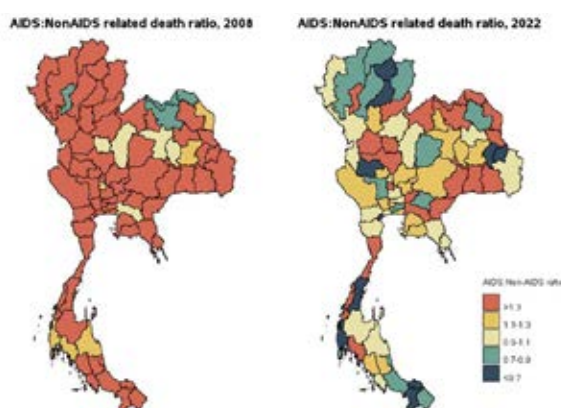


Figure. Geographical distribution of AIDS to non-AIDS-related deaths ratio, Thailand, 2008 and 2022.

**Conclusions:** AIDS-related causes accounted for the majority of deaths using a rule-based algorithm. Targeted interventions to increase ART coverage and TB prevention, diagnosis, and treatment are critical to reduce AIDS-related deaths.





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## WEPEC165

### Retention in care among clients with advanced HIV disease: results from the phased implementation of the Advanced HIV Disease package of care in Nigeria

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**Background:** Nigeria introduced the Advanced HIV Disease (AHD) package of care in 2020 and commenced a phased roll-out in 2021. Phase one of the roll-out was implemented in 28 facilities, and lessons from this phase influenced the ongoing national scale up.

As part of the implementation, the country assessed the retention in care and mortality among clients with AHD at these facilities.

**Methods:** In February 2021, an AHD package of care was piloted at 28 high-volume facilities in 4 states in Nigeria. Clients were enrolled into care from February to September 2021 at the 28 facilities and each client was followed up for 12 months. We assessed the retention in care and mortality among PLHIV with AHD at months 3, 6, and 12 after enrolment.

We also analyzed the Kaplan-Meier estimated survival probabilities at 12 months for this population disaggregated by the presence of opportunistic infections.

**Results:** A total of 1,850 clients with AHD were enrolled in care within the reporting period. Of these, 1,599 clients were retained in care at three months, 1,421 at six months, and 1,204 at 12 months post-enrolment into care. This translates to 86.4%, 76.8%, and 65.1% retention rates in months 3, 6 and 12, respectively. Of the 1,850 AHD clients, mortality data for 174 were unavailable. The mortality rates at months 3, 6, and 12 were 4%, 6%, and 7%, respectively. The Kaplan-Meier estimated survival probability for all clients diagnosed with AHD, regardless of opportunistic infections, at 12-month post-enrolment in care, was 0.93 (95% CI). 0.94 (95% CI) was the survival rate for AHD clients with negative results for TB LF-LAM and CrAg, while that for those who were TB LF-LAM-positive was 0.88 (95% CI) and CrAg positive was 0.82 (95% CI).

**Conclusions:** The 12-month retention rate for AHD clients was lower than the average national retention rate in the general ART population, and the reported mortality was highest in the first three months. This underscores the critical role of active follow-up for AHD clients, as recommended in the AHD package of care, which has been re-intensified for the national scale-up.

## WEPEC166

### HIV infection among key populations in Uzbekistan: epidemiological characteristics in the project cohort (2021-2023)

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**Background:** Despite the growth of the HIV epidemic in Uzbekistan, people belonging to the most vulnerable groups for HIV infection remain underexamined.

The study aimed to determine the epidemiological characteristics of a cohort of people from key populations (KPs).

**Methods:** The study sample is a project-based cohort of people at higher risk of acquiring HIV (people who inject drugs (PWIDs), women who exchange sex for money (female sex workers) (FSWs), men who have sex with men (MSM)) were tested for HIV in Tashkent and the Tashkent region from October 2021 to April 2023. Characteristics of cohort members and risk of HIV-positive diagnosis by sex, age group, and transmission category were described. Odds ratios (ORs), 95% confidence intervals (CIs), and p-values were calculated with the level of statistical significance set at p-value<0.05.

**Results:** Of 8376 persons, 63.1% were men, median age was 33 years. 62.0% were PWID, 25.7% FSWs, and 12.3% MSM. 817 individuals tested positive for HIV. Men and people aged 18 to 39 years are disproportionately affected by HIV, accounting for 67.7% and 59.6% of HIV diagnoses, respectively.

HIV prevalence was 10.4% (95% CI 9.65-11.3) among males, 8.6% (95% CI 7.6-9.6) among females, 12.4% (95% CI 11.5-13.3) among PWID, 4.5% (95% CI 3.7-5.5) among FSWs, and 7.7% (95% CI 6.2-9.5) among MSM (P<0.05). PWIDs were almost three times more likely to test positive for HIV than FSWs (OR=2.9, 95% CI 2.4-3.7) and had a 70% increase in the odds than MSM (OR=1.7, 95% CI 1.3-2.2) (P<0.05).

Women of 18 to 24 years (OR=1.7, 95% CI 1.1-2.6), 35 to 44 years (OR=2.6, 95% CI 1.9-3.6), 45 to 54 years (OR=4.1, 95% CI 2.7-6.2) and aged 55 years and older (OR=11.5, 95% CI 6.4-20.7) had more odds of testing positive for HIV than women aged 25-34 years (P<0.05). However, no such statistically significant differences by age were found among men.

**Conclusions:** Our findings indicated a high HIV prevalence among KPs in Uzbekistan, especially among PWIDs. Women under 24 years and over 34 years were identified

as the particular risk category. Comprehensive prevention efforts among KPs should be implemented to control the HIV epidemic.

## WEPEC167

Factors associated with chemsex and sexually transmitted infection positivity in individuals attending self-screening clinics: a cross-sectional study in Québec, Canada

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**Background:** Chemsex, sexual engagement under drug influence, is associated with increased risks of sexually transmitted infections (STI). While chemsex has been primarily studied in at-risk populations, limited data exist in unselected populations. We assessed prevalence and factors associated with chemsex, and compared STI positivity between chemsex users and non-users attending Prelib STBI self-screening clinics.

**Methods:** We performed cross-sectional analysis on unselected population attending Prelib (12/2018 - 06/2023). We evaluated factors associated with chemsex with multivariable logistic regression with predictor variables: age range, self-identified gender, new sex partner, last unprotected sex (< 2 months), sex worker, men who have sex with men (MSM), drug use (past year), past STI diagnosis, and pre-exposure prophylaxis (PrEP).

We assessed difference in STI positivity proportions (including first valid tests) between chemsex and no-chemsex groups with Fisher's exact test.

**Results:** There were 57765 complete unique client risk assessment questionnaires. 1310 (2.3%) reported chemsex in the past 6 months; the rest (n=56455, 97.7%) reported no chemsex. Factors associated with chemsex included age  $\geq 50$  [aOR 1.6 (95% CI 1.2, 2.2)], self-identified non-binary gender [1.8 (1.3, 2.4)], trans-female [3.8 (2.0, 6.9)], and other [3.3 (1.3, 7.2)], last unprotected sex (< 2 months) [1.5 (1.3, 1.7)], sex worker [3.4 (2.7, 4.4)], MSM [3.3 (2.8, 3.9)], drug use (past year) [8.1 (7.1, 9.2)], past STI diagnosis [1.3 (1.1, 1.4)], taking PrEP everyday [2.5 (1.6, 4.0)], and no disclosure [6.0 (1.8, 17.6)]. Higher proportion of chemsex users tested positive for any STI (13% v. 7%,  $p < 0.0001$ ), NG urinary (1% v. 0.5%,  $p = 0.03$ ), anal (8% v. 2%,  $p < 0.0001$ ) and oral (7% v. 1%,  $p < 0.0001$ ), syphilis (1% v. 0.3%,  $p = 0.007$ ), and HIV (0.3% v. 0.02%,  $p = 0.01$ ).

**Conclusions:** In a large sample of unselected clients attending Prelib, chemsex was associated with older age, self-identified gender, unprotected sex, sex worker, MSM, drug use, past STI diagnosis, and PrEP. Significantly higher proportions of chemsex users tested positive for any STI, NG urinary, anal and oral, syphilis, and HIV.

Future studies are needed to assess the role of chemsex in STI transmission and potential adverse interactions/effects in therapy.

## WEPEC168

The greying pandemic: understanding the comorbidity profile and outcomes of antiretroviral treatment among older population of people living with HIV in western Kenya

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**Background:** Scale-up of efficacious antiretroviral treatment (ART) has improved life expectancy among people living with HIV (PLHIV), with 27% projected to be over the age of 50 by 2040. Aging-related conditions pose challenges to HIV care, in settings such as sub-Saharan Africa where expertise on management of co-morbidities, poly-pharmacy and social issues is inadequate. There is little data on ART outcomes and comorbidities in older ( $\geq 50$  years) people in Kenya.

This study compares the comorbidity profile and ART outcomes among PLHIV  $\geq 50$  years with those  $< 50$  years in two counties in Kenya.

**Methods:** We conducted a retrospective cohort analysis of routinely collected data from 105 facilities, for PLHIV on ART who made  $\geq 1$  clinic visit between October 2021-September 2023. Comorbidities of interest included hypertension, diabetes, chronic kidney disease, cancer, and asthma while the outcomes included most recent viral suppression (VS;  $< 200$  copies/ml) status and continuity of treatment (COT; no interruption for  $> 30$  days). Generalized linear models were used to assess treatment outcomes by age.

**Results:** Of the 96,589 PLHIV on ART, the median age was 39 [Interquartile range (IQR) 31 - 48] years; with a median duration on ART of 7.74 [IQR 4.61 - 10.56] years. 20,706 (21%) were aged  $> 50$  years, with 51% (10,495) in the older group having been on ART  $> 10$  years. The median age in the older and younger group was 57 [(IQR) 53-63] years and 36 years (IQR 38-42) respectively.

Overall, 92% and 87% of older and younger clients had COT, with VS at 95% and 92% respectively. Comorbidity prevalence was 8% and 1% among older and younger



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clients respectively. After adjusting for sex, regimen and time on ART, older clients were more likely to have a chronic illness (adjusted risk ratio (aRR):4.62, 95%CI:4.24-5.03) compared to younger clients. There was no significant difference in VS, [aRR:1.02, 95%CI:1.00-1.04], COT (aRR:1.01, 95%CI:0.99-1.03) by age.

**Conclusions:** The older population was four times more likely to have comorbidities but were not significantly different from the rest in VS and COT. Therefore, there is need to define geriatric services in Kenya. A minimum package of care for older clients and integration of services to manage non-HIV clinical outcomes is critical.

## WEPEC169

Factors associated with mortality of people living with HIV in Senegal

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**Background:** In Senegal the epidemic is concentrated, with low prevalence in the general population and high prevalence in certain particular groups and regions. The national strategic plan to combat AIDS 2018-2022 had the objective of reducing AIDS deaths by 80% in 2022. UNAIDS Spectrum estimates show a steady decline in deaths during this period. However, the analysis of factors associated with mortality is necessary to avoid their early occurrence and thus improve the quality of life of HIV-infected patients.

The objective of this study is to identify factors associated with mortality in HIV-infected patients.

**Methods:** This is a retrospective and analytical study carried out from January 2018 to December 2022 and covering 26,272 patients living with HIV under ARV treatment across treatment sites in the country. Data was collected in EXCEL. Statistical analysis was carried out with SPSS 20.0 software.

**Results:** 2307 cases of AIDS-related deaths were recorded. The female sex represented 53.3% of deaths, 92.3% were aged 15 and over. The average age was 45 years old. Depending on the level of study, 62.5% of patients have no education, 23.8% primary level, 10.5% secondary level and 3.1% higher level. Among the deaths recorded, 57.1% of patients had clinical stage 3 or 4, 10.5% were diagnosed positive for tuberculosis and 10.5% were positive for HBSAg. Multivariate analysis shows that, WHO stage 3 and 4 (OR = 4.2 [1.53-9.50]; p = 0.009), the occurrence of tuberculosis in patients on antiretrovirals (OR = 4.3 [1.2-10.2]; p=0.003), positive diagnosis of hepatitis B was independently associated with HIV/AIDS-related death.

**Conclusions:** Opportunistic infections such as tuberculosis, positive diagnosis for hepatitis B and late clinical stage constitute factors associated with AIDS-related mortality

in Senegal. Efforts are needed to take into account cases of HIV at advanced stages. Active search for signs of TB as well as treatment of tuberculosis before starting ART in HIV+ patients will help reduce this mortality.

The new strategy for providing differentiated services, GenXpert, constitutes an asset for the early diagnosis, care and monitoring of PLHIV who contribute to the reduction of AIDS-related mortality among PLHIV in Senegal.

## Surveillance: Measuring the HIV pandemic

### WEPEC170

A decade of progress against HIV in Kenya: approaching epidemic control targets, declines observed in HIV incidence in Siaya County, Western Kenya, 2010-2022

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**Background:** Assessing HIV incidence trends is vital for understanding the epidemic and evaluating interventions, yet quality incidence data during a period of treatment scale-up are lacking, especially in Eastern Africa. We leveraged over a decade of longitudinal serological/behavioral data from serial surveys in a high-prevalence region of Kenya to help address this evidence gap.

**Methods:** We conducted retrospective analysis of data collected through HIV behavioral and serological surveys, conducted roughly every two years from 2010-2022, in a health and demographic surveillance system (HDSS) among ~220,000 individuals in Siaya county, Western Kenya. Surveys measured HIV status, and treatment coverage. We estimated age-adjusted HIV prevalence and incidence per 1,000 person-years (PY), and used Poisson regression to calculate HIV incidence rate ratios (IRRs) by age/gender for persons aged ≥15 years.

**Results:** HIV prevalence rose from 11.2% (95%CI: 11.0-11.4) in 2010 to 12.6 (95%CI: 12.4-12.9) in 2022; current ART use increased from 81.4% (95% CI: 80.6 - 82.3) to 97.1% (95% CI: 96.8 - 97.5) over this same period.

During this period, we observed 680 new HIV infections across 155,839 years of follow-up (cumulative incidence: 4.36/1,000 PY). Overall HIV incidence declined 60.0% from 6.5/1,000 PY (95% CI: 5.7-7.4) in 2010-2012 to 2.6/1,000 PY (95% CI: 1.9-3.6) in 2020-2022.



Incidence significantly declined among those aged 15-24 and women aged 25+, with less change observed among males aged 25+ (Figure). There were no incident HIV cases detected among males in 2022.

**Conclusions:** Over a decade, HIV prevalence rose moderately as near-universal treatment coverage was attained in this high-burden region. The 60% decline in HIV incidence signifies progress towards HIV epidemic control. However, the incidence rate of 2.6/1,000 PY in 2020-2022 indicate gaps persist, especially among key groups like adults aged 25+.

Still, substantial declines among persons 15-24 years provide encouraging evidence that investments in HIV programming are translating into tangible impact in Siaya County, Western Kenya.

## WEPEC171

### Establishing laboratory-based cyclical acquired HIV drug resistance surveillance in Tanzania

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**Background:** Tanzania implemented the first round of laboratory-based acquired HIV drug resistance (HIVDR) surveillance using remnant HIV viral load (HVL) specimens in 2023.

The objective of the surveillance activity is to measure the prevalence of HIVDR mutations affecting efficacy of dolutegravir (DTG)-containing regimens and other antiretroviral therapy (ART) regimens over time.

**Description:** Seven of 19 HVL reference laboratories in mainland Tanzania and two point-of-care HVL testing sites in Zanzibar were purposively selected to participate. Prior to implementation, government and technical stakeholders developed the surveillance protocol, assessed the capacity of laboratories to identify samples, and trained laboratory staff.

During implementation, eligible plasma samples from clients with HVL  $\geq 1,000$  copies/mL and on DTG-containing regimens for  $\geq 9$  months were identified at the HVL reference laboratory. Eligible samples were shipped to a central laboratory for extraction and genotypic analysis. The extracted RNA was amplified using ThermoFisher HIV-1 genotyping kit with protease, reverse-transcriptase (PRRT) and integrase genes and sequenced on Sanger sequencing platform.

The Stanford database for HIVDR mutations was used to interpret results. Clients' clinical and demographic information were abstracted from the electronic national HIV/AIDS database and linked with HIVDR data for analysis.

**Lessons learned:** Sample identification began in April 2023 for a period of 6 months but the time each laboratory actively identified samples varied due to stock-out, equipment breakdown, and staff turnover. In total, 1,381 plasma samples were identified and shipped to the central laboratory. PRRT amplification failures were common (62%); remediation included repeating samples and using a version of the genotyping kit without integrase. Poor sample quality, cold chain interruptions, and sensitivity of genotypic primers might have contributed to amplification failure. Sequence failures were uncommon overall (12%); failure rate was improved using a software to recall failed sequences.

On-site supportive supervision at laboratories and weekly check-in meetings with the surveillance staff improved overall protocol compliance.

**Conclusions/Next steps:** Establishing HIVDR surveillance required an interdisciplinary team to design the protocol and oversee implementation. Functioning HIV/AIDS information systems, selection of HVL laboratories, capacity of laboratories and staff to conduct testing, and analyze data were paramount. Lessons learned during initial implementation will be incorporated into future HIVDR surveillance in Tanzania.

## WEPEC172

### Forecasting recent HIV and HIV-related mortality to determine progress towards HIV epidemic control by mid-2025 using October 2020 to October 2023 surveillance data in Zambia

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**Background:** Despite HIV being a major public health problem, Zambia has achieved good progress towards the 95-95-95 epidemic elimination targets with 89% persons living with HIV aware of their status, 97% on antiretroviral therapy and 96% have viral suppression. This



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progress can be attributed to comprehensive intervention addressing both treatment and prevention of HIV acquisition. UNAIDS proposed four potential criteria of determining epidemic control including percentage reduction in incidence, incidence-to-mortality ratio, incidence-to-prevalence ratio, and annual incidence.

To compliment the 95-95-95 achievements, the incidence-to-mortality ratio as an alternative indicator for HIV epidemic control was explored. The recent HIV and HIV related mortality were forecasted to mid-2025 to access readiness in view of mid-term epidemic control review.

**Methods:** A time series analysis was performed with data from October 2020 to October 2023. A recent HIV was defined as having tested positive for HIV-1, a positive test for recent infection (TRI) and an initial viral >1000, while an HIV-related mortality was a mortality whose cause of death was HIV-related as captured in. Data were synched by facility and time from October 2020 to October 2023. An autoregressive integrated moving average (ARIMA) model was fitted in R, decomposed the data for trends, seasonality, and autocorrelation before making a 24-month's forecast.

**Results:** Mortality counts initially surpassed recent HIV until August 2021, after which they consistently remained lower. Recent HIV peaked around November 2022 before gradually declining, but still consistently exceeding mortality counts. Females and individuals aged >30 years had sustained higher recent HIV, with mortality trendlines by gender crisscrossing at various points.

The forecasted recent HIV remained sustainedly higher than HIV-related mortality by mid-2025, projected at 267 (95% CI: 21-513) recent HIV and 96 (95% CI: -106-298) HIV-related mortality.

**Conclusions:** The observed higher trend of recent HIV among females, despite a comparable mortality trend, suggests improved health-seeking behavior among females. However, the forecasted persistence of higher recent HIV emphasizes the imperative to intensify HIV preventive measures.

Despite progress towards epidemic elimination, the sustained higher trend of new HIV acquisition suggests that HIV may not be controlled by mid-term review, therefore a refocus on intervention may be necessary

## WEPEC173

### Progress towards 95-95-95 and challenges with viral suppression among people who inject drugs in Unguja, Zanzibar, 2023

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**Background:** Zanzibar has a concentrated HIV epidemic among key populations, including people who inject drugs (PWID). Several biobehavioral surveys (BBS) have been implemented to monitor the epidemic and progress towards realizing the UNAIDS 95-95-95 targets. We present findings among PWID from the latest BBS conducted in Unguja Island, Zanzibar, in 2023.

**Methods:** We used respondent-driven sampling to recruit individuals aged ≥15 years who had lived in Unguja for ≥3 months and injected drugs in the past 3 months. We assessed HIV testing and treatment history through an interviewer-administered questionnaire and offered point-of-care HIV testing per national guidelines. For those testing HIV-positive, we quantified HIV viral load (VL). We defined viral suppression as <1,000 HIV RNA copies/mL, low level viremia (LLV) as 50-999 copies/mL, and an undetectable VL as <50 copies/mL.

We classified those who disclosed a positive HIV status or were virally suppressed as knowing their status, and those who self-reported ART use or were virally suppressed as on ART. We produced weighted point estimates, reported as percentages with 95% confidence intervals (CI).

**Results:** We recruited 455 PWID with a median age of 38 years (interquartile range: 32-45 years). HIV prevalence was 9.3% (n=41; 95%CI: 6.0-12.4). Of PWID who tested HIV positive, 89.3% (95%CI: 74.1-100.0) knew their HIV status. Of those, 98.3% (95%CI: 82.0-100.0) were on ART, of whom 80.2% (95%CI: 64.2-95.5) were virally suppressed. Among PWID who were virally suppressed, 93.7% (95%CI: 84.5-100.0) had an undetectable VL, and 6.3% (95%CI: 0-15.5) had LLV.

**Conclusions:** The findings highlight gaps in the first and third 95 targets. To enhance diagnosis and viral suppression, interventions including expanded HIV testing, such as self-testing, removing barriers to ART retention, and harm reduction services are essential.

**WEPEC174****Generalizability of the sample of people living with HIV in the all of us database**

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**Background:** There are an estimated 1.2 million people living with HIV (PLWH) in the United States. HIV diagnoses disproportionately occur among non-Hispanic Black, Latine, gay, bisexual, and other men who have sex with men (GBMSM). Databases with large sample sizes for studying HIV are few and rarely representative of the U.S. HIV population. In 2018, the All of Us (AoU) Research Program was launched, with the goal of enrolling 1 million Americans under-represented in biomedical research such as people with HIV. This study examined the diversity and generalizability of data contributed by PLWH in AoU. Specifically, we sought to characterize the AoU HIV cohort and compare this cohort to U.S. HIV surveillance statistics.

**Methods:** We used the 'allos' R package to extract survey responses to the HIV-related questions with the relevant concept IDs (1384391, 43530505, 43528832, 43530347). We compared demographic statistics to Centers for Disease Control and Prevention HIV surveillance statistics using Pearson's chi-squared tests.

**Results:** 1,714 people self-reported having HIV. Most were male (n=1282, 76.4%) and reported a non-heterosexual sexual orientation (n=1239, 71.2%). A plurality were 55 and older (n=821, 47.9%), and a quarter were aged 45-55 (n=459, 26.8%). Nearly half were non-Hispanic White (n=783, 45.7%), 30.6% (n= 525) were non-Hispanic Black, 16.4% (n=281) were Hispanic. Compared to the national data, the AoU self-reported HIV population was similar to the national HIV population in gender/sex and age but not in race/ethnicity (Table 1).

	All of Us Cohort (n=1714) n (%)	US population living with HIV (n~1,200,000) n (%)
Age category		
13-24	<20 (1.1)	45,900 (3.8)
25-34	173 (10.1)	218,700 (18.2)
35-44	243 (14.2)	228,000 (19.0)
45-54	459 (26.8)	290,000 (24.2)
55+	821 (47.9)	407,100 (33.9)
Gender		
Female	348 (20.8)	263,900 (22.0)
Male	1282 (76.4)	925,800 (77.2)
Gender diverse	47 (2.8)	10,300 (0.8)
Race/ Ethnicity *		
Non-Hispanic White	783 (45.7)	338,600 (28.2)
Non-Hispanic Black	525 (30.6)	479,300 (39.9)
Hispanic	281 (16.4)	294,200 (24.5)
Mixed race	34 (2.0)	54,100 (4.5)
Other	36 (2.1)	22,800 (1.9)

\* = Chi-square p-value <0.05

Table 1: Demographic proportions in All of Us compared to U.S. population by chi-square.

**Conclusions:** Despite being similar in age and gender/sex, individuals from non-Hispanic Black and Hispanic backgrounds remain underrepresented in AoU. This may be due to the lack of a sampling frame in AoU. Future research will reevaluate generalizability after expanding the AoU HIV cohort definition to use health records and medications. However, interpretations of AoU compared to the U.S. HIV population should consider limitations in generalizability.

**WEPEC175****Facility- and client-level predictors of AIDS-related cause of death among people living with HIV on antiretroviral drug treatment in Nigeria, 2021-2023: a multilevel model analysis**

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**Background:** Nigeria recently introduced verbal autopsy (VA)-based mortality surveillance (MS) to determine the cause of death (COD) among people living with HIV (PLWH). However, little is known about the simultaneous effect of health facility- and client-level factors on AIDS-related deaths (ARD).

This study aimed to identify facility- and client-level predictors of ARD among dead clients on ART.

**Methods:** A retrospective cross-sectional data analysis of 812 clients across 39 facilities in Gombe, Kaduna, Kogi, and Lagos States dying between 9<sup>th</sup>, April 2021 and 8<sup>th</sup>, June 2023, with COD from computer-certified VA. Facility-level variables included derived variables measuring facility-level performance averaged across 2020-2023 (e.g. HIV viral load (VL) coverage, VL suppression rate ( $\geq 95\%$ ), and rate of client's interruption in treatment (IIT) – missing clinical appointment for  $\geq 28$  days). Client-level variables included client's clinical and demographic profiles.

The study outcome was the proportion of ARD among all COD. We used multilevel Generalized Estimating Equations to estimate adjusted odd ratios (AOR), specifying exchangeable working correlation matrix and robust standard errors for clustering effect of clients nested within facilities.

**Results:** The median age was 43 years (IQR=34-53), with 430 (53%) female and 382 (47%) male. The median ART duration from initiation to death was 2.80 years (IQR=0.25-



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9.32), while 26% of clients had at least one episode of IIT. Fifty-two percent (422) of clients died of ARD. Of 578 PLWH having VL results, 76% were virally suppressed (last VL). Twenty-eight (71%) of the facilities were secondary level-of-care while 25 (64%) had high VL coverage (> median of 88%).

Client-level predictors of ARD were age-group (AOR=0.49 [p=0.020] for 0-14 years, and AOR 1.51 [p=0.001] for 25-49 years compared to 50+) and ART duration (AOR=1.46 [p=0.048] for <3years compared to ≥8 years). Facility-level predictors were state of location (AOR=1.98, p=0.038 for Kaduna compared to Gombe), low facility VL coverage compared to high (AOR=1.67, p=0.003); and higher facility IIT level (third quintile) compared to lowest quintile (AOR=2.67, p<0.001).

**Conclusions:** Both facility- and client-level factors may be critical for ARD. Improving facility-level performance, especially IIT rates and VL coverage, and strengthening HIV care and treatment interventions may reduce HIV-preventable deaths among PLWH.

## WEPEC176

Seroprevalence of HIV, Hepatitis B, HIV/Hepatitis B co-infection and associated risk factors among the population aged 15-64 years: evidence from the 2018 Cameroon Population-based HIV Impact Assessment (CAMPHIA)

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**Background:** The Hepatitis B virus (HBV) can cause acute and chronic liver infections, especially among people living with HIV. While a vaccine for HBV exists, there is no cure for those living with HIV. Our objective was to estimate the national HIV, HBV, and HIV/HBV co-infection prevalence among adults aged 15-64 years and explore associated risk factors.

**Methods:** We used data from CAMPHIA, a two-stage cluster sampling and cross-sectional household-based national survey, that was conducted between July 2017 and February 2018 to estimate national HIV and HBV prevalence and measure the uptake of HIV care and treatment services. Eligible participants were interviewed and tested for HIV using the national serial algorithm with refer-

ence laboratory confirmation of seropositive samples. A representative subsample was tested for chronic active HBV. We estimated HIV, HBV, and HIV/HBV co-infection prevalence, and associated factors were explored using a multinomial logistic regression.

**Results:** Of the 27,264 adults aged 15-64 years enrolled, the median age was 29 years [IQR: 21-40] and 50.9% were women. The estimation of HIV prevalence was 3.7% (95% CI: 3.3 – 4.0), HBV prevalence was 8.3% (95% CI: 6.5 – 10.2) and HIV/HBV co-infection prevalence was 0.3% (95% CI: 0.2-0.4).

Compared to no infection, Males were more likely to have Hepatitis B (aOR: 2.2 ; 95% CI : 1.3-3.7) and were less likely to have HIV Infection (aOR: 0.5 ; 95% CI : 0.4-0.6) and HIV/HBV co-infection (aOR: 0.6 ; 95% CI : 0.3-1.0).

Moreover, uncircumcised males were less likely to have HIV Infection (aOR: 0.4 ; 95% CI : 0.1-0.9). People who did not use condom at last sexual intercourse with their last non-marital, non-cohabitating partner in the past 12 months were 4 times more likely to be HIV/HBV Co-infected (aOR: 4.5; 95% CI : 1.1-19.1).

Compared to no infection, adults beyond 45 years were less likely to be HBV infected (aOR: 0.3 ; 95% CI : 0.1-0.8) than adolescents aged 15-24 years.

**Conclusions:** HIV/HBV co-infection prevalence is low while HBV prevalence is high. This result confirms the burden of HBV in Cameroon, and the need to reinforce prevention strategies including vaccine to fight HBV, specifically among adolescent.

## WEPEC177

Determinants of persistent low-level viremia among HIV recipients of care in three Nigerian States: a retrospective cohort study

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**Background:** HIV programming in Nigeria has made progress towards attaining the UNAIDS 95:95:95 goals with 91% viral load (VL) coverage and 96% viral suppression in 2023. However, the incidence of Persistent Low-Level Viremia (pLLV) defined as two or more consecutive VL measurements between 50 and 999 copies/mL, an early pointer to Virologic Failure (VF), may deter the progress towards epidemic control. Monitoring pLLV among HIV recipients of care (RoCs) has the potential of predicting adherence challenges, VF, and AIDS defining events.

This study aimed at deciphering the prevalence and predictors of pLLV among RoCs.



**Description:** We conducted a retrospective cohort study of RoCs who have been on antiretroviral therapy (ART) for at least 6 months, from October 2019 to March 2023 with at least 2 documented VL tests done across 101 health facilities in Akwa Ibom, Cross River, and Taraba States, in Nigeria. Kaplan-Meier plot was used to assess the probability of occurrence of pLLV by sex, age, WHO Clinical staging, CD4 count, ART status, functional status, ART regimen, weight, and marital status. Cox Proportional Hazard regression was used to ascertain the determinants of pLLV at an alpha level of <0.05 at a 95% confidence interval.

**Lessons learned:** There were 43,750 RoCs (male 34.3%, female 65.7%) with at least two consecutive documented VL with a mean age  $38 \pm 12$  years, CD4 Count  $429 \pm 296$  cells/mm<sup>3</sup>, and  $5.1 \pm 4$  years of pLLV. Prevalence of pLLV was 20.2%. The Kaplan-Meier plots for time-to-pLLV showed that RoCs aged 35-49 years, being on TDF-3TC-DTG, active on ART, CD4 $\geq$ 200 cells/mm<sup>2</sup>, single, married, female sex, and WHO Stage I were less likely to have pLLV ( $p < 0.001$ ). Long rank test revealed significant association of pLLV with marital status ( $p = 0.014$ ), ART regimen ( $p < 0.001$ ), CD4 count ( $p = 0.015$ ), and current ART status ( $p < 0.001$ ). CD4 count  $< 200$  cells/mm<sup>3</sup> (HR=1.3,  $p < 0.001$ ) and reduced body weight (HR=1.1,  $p = 0.029$ ) were predictors of pLLV.

**Conclusions/Next steps:** Our data showed that CD4 count  $< 200$  cells/mm<sup>3</sup> and reduced body weight were predictors of pLLV. Program implementations need to focus on active surveillance for pLLV to optimize quality of care for RoCs to ensure they achieve undetectable VL.

## WEPEC178

HIV risk behaviors and HIV prevalence among people who inject drugs in Georgia – results from simplified bio-behavioral survey methodology, the BBS-Lite

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**Background:** Injecting drug use was considered to be a leading route of HIV transmission in the early stages of the HIV epidemic in Georgia. Simplified BBS-Lite methodology with different approaches to surveillance was developed

in 2021 to assess risky behaviors and HIV/HCV testing uptake among PWIDs and Generate evidence for advocacy, policy-making, and programming. Later in 2023 another round of BBS-Lite was conducted.

**Methods:** 2000 PWIDs were recruited through combined methodology of on-site consecutive recruitment at Needle and Syringes Program (NSP) sites and mobile outreach, and snowball sampling. The study was conducted in seven major cities. A brief online questionnaire was administered through face-to-face interviews with participants. Blood samples were taken to measure HIV/HCV prevalence.

**Results:** 51.3% of study participants never used the NSP services. Among new clients, 19% were recruited through outreach, 60% through the "snowball" method, and 21% through HR service sites. The most common drugs injected the last time was heroin (56%). During the last injection, sharing drug preparation other equipment was mentioned by 34% of respondents, but 96% percent reported using sterile needles. 19% reported injecting practice while abroad in the last 12 months, including countries with no harm reduction programs Turkey (29%), Russia (6%). Usage of condoms during the last sexual intercourse was reported by 33% of respondents. 81% had HIV testing experience. Drug injection and sex behavior among PWID were nearly similar in 2021 and 2023 BBS-Lite surveys.

	2021 BBS-Lite			2023 BBS-Lite		
	Total	Client	Non-client	Total	Client	Non-client
Total sample	2000	1342 (67.1%)	658 (32.9%)	2000	975 (48.8%)	1025 (51.3%)
Median age	43 [35 – 50]	44 [36 – 51]	39 [32 – 48]	42 [34 – 49]	44 [38 – 51]	38 [32 – 46]
Aged $\leq 24$	59 (3.0%)	19 (1.4%)	40 (6.1%)	80 (4.0%)	20 (2.1%)	60 (5.9%)
Female	52 (2.6%)	35 (2.6%)	17 (2.6%)	53 (2.6%)	45 (4.6%)	8 (0.7%)
Inject daily	820 (41.0%)	589 (43.9%)	231 (35.1%)	633 (31.7%)	344 (35.2%)	289 (28.2%)
Overdose in last 12 months	136 (6.8%)	103 (7.7%)	33 (5.0%)	168 (8.4%)	90 (9.2%)	78 (7.6%)
Shared equipment last injection	60 (3.0%)	27 (2.0%)	33 (5.0%)	52 (2.6%)	15 (1.5%)	37 (3.6%)
Received treatment for drug dependence in last 12 months	773 (38.7%)	559 (41.7%)	214 (32.5%)	644 (32.2%)	412 (42.3%)	232 (22.6%)
Received OAMT in last 12 months	501 (16.9%)	379 (28.2%)	122 (18.5%)	395 (19.7%)	263 (26.9%)	132 (12.9%)

Table 1. Selected characteristics of samples recruited

**Conclusions:** BBS-Lite study provided a good alternative for reaching out new clients and assess the drug injecting practices in PWIDs not currently utilizing harm reduction services. Risky sex behavior among PWID remains challenging and requires attention of harm reduction program to develop targeted peer driven interventions to address it.





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## WEPEC179

Ten-year trends in risk behaviors, preventive practices, and services uptake among men who have sex with men, Vietnam, 2012-2022

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**Background:** Rising HIV incidence and prevalence among men who have sex with men (MSM) in Vietnam in recent years is concerning

This study describes the magnitude and trends in HIV-related risk behaviors, preventive practices, and services uptake among MSM in the last decade to identify strategies for prevention interventions.

**Methods:** Using venue-based sampling, repeated cross-sectional surveys were conducted in 11 provinces between 2012-2022 among MSM age  $\geq 16$  years who had anal sex with other men in the previous 12 months. Participants completed a questionnaire to obtain data on sexual and drug use risk behaviors, preventive practices, and services uptake. P-values were calculated for analysis of trends between 2012-2022. National level analysis was adjusted for the clustering effect.

**Results:** Cumulatively, 13,518 MSM participated in the surveys between 2012-2022. For risk behaviors, the percentage of MSM who ever had sex involving more than two people at a time varied from 9.9% in 2014 to 8.3% in 2022. Ever using illicit drugs increased from 15.3% in 2012 to 47.7% in 2022 ( $p < 0.05$ ).

For preventive practices, using condoms at last anal sex increased from 52.7% to 62.4% ( $p < 0.05$ ) and receiving free condoms decreased from 71.0% to 64.3% ( $p < 0.001$ ).

For services uptake, testing for sexually-transmitted infections in the previous 3 months increased from 25.5% in 2012 to 32.0% in 2022 ( $p < 0.001$ ); HIV testing in the previous 6 months increased from 27.9% in 2012 to 45.0% in 2022 ( $p < 0.001$ ).

Among MSM living with HIV, status awareness increased from 5.0% in 2013 to 45.1% in 2020 ( $p < 0.001$ ) and those on anti-retroviral therapy increased from 0% to 96.9% ( $p < 0.001$ ). Measured only in 2022, the percentage of MSM who have ever taken daily pre-exposure prophylaxis (PrEP) was 23.3%.

**Conclusions:** Low HIV status awareness and PrEP uptake, coupled with continuing risk behaviors, may be driving the rising HIV epidemic among MSM in Vietnam. High and increasing prevalence of drug use is of particular concern.

Rapid benefits towards slowing the spread of HIV among MSM in Vietnam may be achieved by diversifying HIV testing modalities and implementing low-barrier PrEP programs.

## WEPEC180

Estimations of antiretroviral therapy coverage and mortality rates among people living with HIV using electronic medical record data from 2007-2023 in Tanzania

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**Background:** Antiretroviral therapy (ART) coverage in Tanzania increased from under 20% in 2007 to over 80% in 2022-2023. Analysis of routine electronic medical record (EMR) data provided the opportunity to examine the long-term relationship between adherence to ART and mortality among people living with HIV (PLHIV) in two regions (Geita and Kagera) of Tanzania, between 2007 and 2023.

**Methods:** The study used Ministry of Health HIV care and treatment data. Datasets documented each facility visit and recorded patient demographics, disease stage, vital status, ART regimen, dispensing dates, visit dates, and facility type. Follow-up started with an individual's first visit and ended either at the last visit, death, or February 28, 2023, whichever was latest.

Adherence was defined as uninterrupted dispensing of ART; an ART interruption event was a period of over 4-weeks without medications. We used a retrospective longitudinal design and an adjusted discrete time survival model.

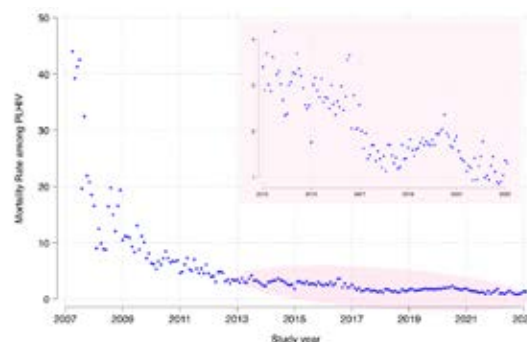


Figure 1. Mortality rates per 10,000 person-months among people living with HIV (PLHIV) between 2007 and 2023 in Geita and Kagera regions of Tanzania.

**Results:** There were 10.2 million person-facility visits from 334,151 individuals and 27,950 deaths. Mortality rates per 10,000 person-months declined sharply from 44 in 2007



to 8 in 2009 ( $P_{\text{trend}} < 0.001$ ), followed by a gradual decrease thereafter (Figure 1). The median durations of follow-up and adherence to ART were 45 months [Interquartile range (IQR): 20-77] and 18 months (IQR: 5-44), respectively. The adjusted hazard ratio for mortality was 0.971 (95% CI: 0.966-0.975) for each month retained on ART, and 1.065 (95% CI: 1.044-1.086) for each ART interruption event, with no difference by sex.

**Conclusions:** Findings from one of the largest studies of EMR data from Tanzania reveal a dramatic decline in mortality among PLHIV who accessed care over the last 16 years. Despite limitations inherent in routine EMR data and in our definition of adherence, the increased risk of mortality associated with treatment interruptions reinforces the need for continuous, lifelong retention on ART to increase survival.

## WEPEC181

### Mapping HIV clustering among pregnant women in Senegal

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**Background:** New HIV infections during pre-conception and pregnancy are significant contributors of mother-to-child transmission in Sub-Saharan Africa. In Senegal, the number of pregnant women newly diagnosed HIV positive was estimated at 762/year from 2019-2022 with strong spatial and temporal variation across the country. Looking at the spatiotemporal perspectives can provide valuable information with the outstanding visualization benefits that maps provide.

This study examines the spatiotemporal trends of newly diagnosed HIV positive among pregnant women from 2019-2022.

**Methods:** The research is based on the PMTCT routine data collected from antenatal clinics from 2019 to 2022 at districts level. ArcGIS 10.1 version was used to explore the spatial distribution of newly pregnant women diagnosed HIV positive and identifying significant hotspot areas through the Index distance weighting and trend tools. The cluster and outlier analysis was performed using the Anselin Local I index to evaluate global and local spatial.

**Results:** Analysis revealed wide spatial and temporal variation in the concentration of pregnant women newly diagnosed HIV positives at regional and district level. From 2019-2020, 10 clusters of high concentration have been identified from Dakar (Z score =2.3,  $P < 0.01$ ) to the localities of Kaolack (Z score =3,  $P < 0.02$ ), Mbour (Z score =1.96,  $P < 0.04$ ) and southern regions as Kolda (Z score =6,  $P < 0.001$ ),

Ziguinchor (Z score =3,  $P < 0.02$ ). From 2021-2022, high clusters were located in Kolda (Z score =7.18,  $P = 0$ ), Sedhiou (Z score =2.13,  $P < 0.03$ ), Dakar (Z score =2.8,  $P < 0.003$ ), Tambacounda (Z score =1.9,  $P < 0.04$ ), Diourbel (Z score =3,  $P < 0.002$ ). The trend analysis confirmed very high concentrations in the southern regions, moderate concentrations from Dakar to the central regions and low concentrations in the Northern regions of Senegal.

**Conclusions:** The study proved strong geographic clustering of newly infected pregnant women in such regions as Kolda and Ziguinchor and moderately Dakar, Kaolack and Sedhiou. However, new hotspots have been recently identified in such areas as Tambacounda, Thies and Diourbel.

Therefore, public health interventions specially targeting these new hotspots are needed to improve awareness and reduce the incidence of HIV/AIDS among pregnant women.

## WEPEC182

### Assessing behavioural HIV risk among men who have sex with men (MSM) across 15 countries in Asia: results from the PrEP APPEAL Study

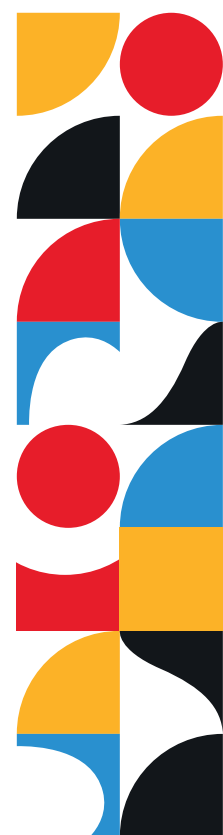
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**Background:** Asia has some of the fastest growing epidemics among men who have sex with men (MSM) globally. Measuring behaviours associated with HIV risk is critical to determine areas for improvement and monitoring.

**Methods:** We used data from an online cross-sectional survey conducted in 15 Asian countries among MSM from May-November 2022. Among those who were sexually active, we assessed behavioural HIV risk from questions on sexual behaviour, condom use, and PrEP use in the last 6 months. Risk categories were:

1. No anal/vaginal intercourse,
  2. Consistent condom use,
  3. Condomless intercourse with casual partners (CLIC) with PrEP, and
  4. CLIC without PrEP (considered at highest-risk for HIV).
- Factors associated with CLIC without PrEP were identified with multivariable logistic regression.





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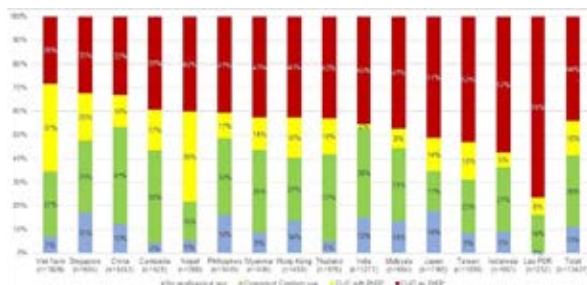
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**Results:** Among 13,437 MSM, within the last 6 months, 1,520 (11.3%) had no anal/vaginal sex, 4,016 (29.9%) consistently used condoms, 1,984 (14.8%) had CLIC with PrEP, and 5,917 (44.0%) had CLIC without PrEP. This varied significantly by country (Figure).

Compared to those not at highest-risk, participants reporting CLIC without PrEP were more likely to: live in a high-income country (28.4% vs 33.9%, aOR=1.40, 95%CI=1.29-1.51), have been paid for sex (10.3% vs 12.8%, aOR=1.37, 95%CI=1.21-1.54), or have engaged in chemsex (18.3% vs 21.2%, aOR=1.23, 95%CI=1.12-1.35). They were less likely to: be older (31.4 vs 30.9, aOR=0.99, 95%CI=0.99-0.99), be in a relationship (44.5% vs 41.9%, aOR=0.93, 95%CI=0.86-1.00), or have engaged in injecting drug use (7.4% vs 6.1%, aOR=0.71, 95%CI=0.61-0.83). They were more likely to prefer event-driven PrEP (23.9% vs 26.0%, aOR=1.29, 95%CI=1.15-1.44) or a monthly oral pill (23.9% vs 26.1%, aOR=1.32, 95%CI=1.18-1.48) compared to daily PrEP.



**Conclusions:** Significant proportions of MSM throughout Asia reported sexual behaviour with a risk of HIV transmission. Greater PrEP access, including to new PrEP modalities, and supporting condom use, should remain priorities in this region.

## WEPEC183

### Non-injection drug use among the incarcerated people in Iran: findings from three consecutive national bio-behavioral surveys

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**Background:** Non-injection drug use inside prison is a significant concern due to its potential progression to injection drug use and other high-risk behaviors inside and outside prison.

This study seeks to address this gap by investigating the prevalence, trends, and associated factors of non-injection drug use among incarcerated people in Iran.

**Methods:** We utilized data from three national bio-behavioral surveillance surveys conducted among incarcerated people in Iran in 2009, 2013, and 2017. Overall, 17,228 participants across all surveys were recruited by multi-stage random sampling.

Each participant underwent a face-to-face interview and HIV test. The primary objective of the study was to assess self-reported non-injection drug use within the prison environment within the last month.

A multivariable logistic regression model was used to determine associated covariates with drug use inside prison and an adjusted odds ratio (aOR) with a 95% confidence interval (CI) was reported.

**Results:** The prevalence of non-injection drug use inside the prison was 24.1% (95% CI: 23.5, 24.7) with a significant decreasing trend (39.7% in 2009, 17.8% in 2013, 14.0% in 2017; P-value<0.001).

Overall, 44.0% of those who used drugs were also receiving opioid agonist therapy (OAT) and we noted that in 2017, 75.4% of them used stimulants. The results of the multivariable logistic regression model indicated that the year of interview [2013: aOR=1.63; 95% CI:1.41, 1.87 and 2009: aOR=7.24; 95% CI:6.26, 8.39], younger age [19-29: aOR=1.33; 95% CI:1.17, 1.50 and 30-40: aOR=1.37; 95% CI:1.22, 1.55], male sex [aOR=2.82; 95% CI:2.08, 3.83], less than high school education [aOR=1.23; 95% CI:1.11, 1.36], having a history of previous incarceration [aOR=1.18; 95% CI:1.08, 1.29], having a history of lifetime HIV testing [aOR=1.43; 95% CI



1.30, 1.59], and insufficient HIV knowledge [ $aOR=1.21$ ; 95% CI: 1.03, 1.42] were associated with recent non-injection drug use inside the prison.

**Conclusions:** Approximately one in four incarcerated people have reported drug use within the last month inside the prison in Iran. Although a decreasing trend was observed, significant gaps in harm reduction programs within prisons in Iran persist.

There is a need for improvement in drug use treatment programs, with a particular emphasis on incorporating initiatives tailored for stimulant users.

## WEPEC184

### High HIV incidence in an urban Ugandan population based cohort for persons aged 13 and above years

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**Background:** Uganda like many other countries with high incidence rates for HIV, has implemented several prevention interventions to achieve the UNAIDS 95-95-95 targets with the goal of ending the epidemic by 2030. However, today limited data are available on HIV incidence in urban settings at population level.

We sought to determine the effect of HIV prevention efforts on incidence using data from Uganda's first predominantly urban population-based cohort in Mid-Western & Central Uganda.

**Methods:** Data were collected from six urban communities in four complete surveys (2018-2023) by the Africa Medical & Behavioral Sciences Organization (AMBSO) population health surveillance (APHS) cohort. APHS is an open, population-based cohort of persons 13+ years.

We assessed trends in the incidence of HIV on the basis of observed sero-conversion data using Poisson regression.

**Results:** A total of 4,192 persons who were initially HIV-negative contributed 7,267 person years (PY) of follow up. The mean age (SD) was 31.4 (14) years and majority were females (56.8 %). By 2023, ART increased from 65.0% (219/337) in 2018/2019 to 73.4 % (174/ 237) in 2022/2023 ( $P<0.001$ ). HIV testing service coverage among negative persons decreased from 81.1% (3,397/ 4,191) in 2018/2019 to 75.1% (930/1,238) in 2022/2023 ( $P<0.001$ ). Male circumcision coverage increased from 54.3% to 60.6% by 2023 ( $P<0.001$ ).

A total of 95 sero-conversions were observed. HIV incidence increased from 1.03 cases per 100 PY (CI: 0.73-1.47) in 2018-2019 to 1.57 per 100 PY (95%CI: 1.11-2.22) in 2019-2020, and later to 1.44 per 100 PY (95%CI: 1.01-2.04) in 2022/2023; greater case declines were between 2021/2022 to 2022/23 among women (2.45 cases per 100 PY; 95%CI: 1.68-3.57 to 1.69 cases per 100 PY; 95%CI: 1.08-2.65) than among men (0.54 cases per 100 PY; 95%CI: 0.22-1.30 to 1.17 cases per 100 PY, 95%CI: 0.66-2.06).

**Conclusions:** The findings suggest a concerning rise in HIV incidence compared to what was seen in rural Rakai, Uganda (2019-2020) before combination HIV prevention. The observed gender differences highlight the importance of targeted interventions.

Therefore, an urgent need to continue monitoring and adapting public health measures to curb the spread of HIV in urban Uganda settings.



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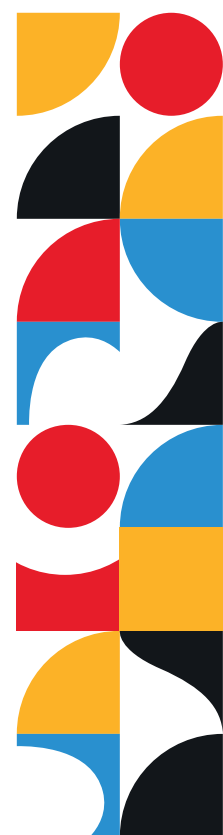
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## WEPEC185

### Temporal trends in rapid initiation of antiretroviral therapy and associated factors among people with newly-acquired HIV: 2015-2023

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**Background:** Early ART initiation is crucial for reducing risk of clinical events, increasing life expectancy and quality of life, and reducing risk of onward HIV transmission.

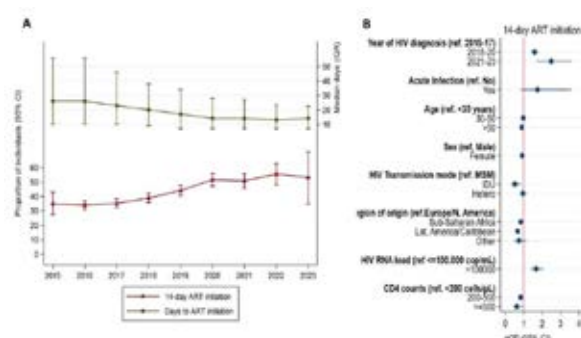
**Methods:** We used data from the CASCADE Collaboration of individuals with well-estimated dates of HIV seroconversion diagnosed September-2015 (START trial publication) to May-2023. We examined temporal trends in the proportion rapidly initiating ART (defined as within 14 days of HIV diagnosis). We used multivariable logistic regression to identify associated factors.

**Results:** Of 5,058 individuals, 5,058 started ART, 88.7% were male and median age at HIV diagnosis was 33.1 years (IQR: 26.7; 42.8). Median CD4 and HIV RNA at HIV diagnosis were 480 cells/ $\mu$ L (IQR: 346;644) and 90,780 copies/mL (18,219;509,249), respectively.

Overall, the median time from HIV diagnosis to ART initiation was 19 days (8; 39) and the proportion of rapid initiators was 40.8% (n=2063), increasing from 34.8% (95% CI:27.7%-42.9%) in 2015 to 55.4% in 2022 (47.9%-62.8%) (P-trend<0.001) (Figure A). Median CD4 count at ART initiation was >400 cells/ $\mu$ L throughout. Among rapid initiators, the median time to initiation was 7 (3; 10) days and remained unchanged over time.

Rapid ART initiation was less likely for those with CD4  $\geq$ 500 cells/ $\mu$ L at HIV diagnosis (aOR, 95% CI: 0.64, 0.43-0.93), for those aged >50 years (0.89, 0.81-0.98), for those originating from Sub-Saharan African countries (0.84, 0.75-0.93) and

Latin-America/Caribbean countries (0.67, 0.59-0.76) and for people who inject drugs (0.52, 0.32-0.84). Rapid initiation was more likely for HIV-RNA >100,000 copies/mL (1.67, 1.37-2.04) (Figure B). Results for rapid initiation defined as within 7 days were qualitatively unchanged.



**Conclusions:** A significant increase in rapid ART initiation was observed from 2015 to 2023. Addressing barriers to rapid initiation remains crucial, however, for optimizing HIV care and reducing transmission risk.

## WEPEC186

### Leveraging HIV case surveillance data to create an epidemiologic profile of people living with HIV in Botswana, 2022

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**Background:** HIV case surveillance (CS) is recommended for monitoring the epidemic, providing information on individuals from diagnosis to death. In 2021, the CS system in Botswana was established using the National Data Warehouse (NDW), which receives patient level data from 85% of government facilities, including laboratory data, and the national births and death registry system. We describe the HIV epidemiological profile of individuals reported in the CS system.



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**Methods:** We created a CS analytical data set by extracting records with an HIV-positive diagnosis in the NDW from the year 2000 to 2022. Demographic, treatment, and mortality data were included. Records were deduplicated and linked longitudinally using demographic information and a national unique identifier. Data were analyzed using STATA software.

**Results:** A total of 343,827 HIV-positive individuals were identified: including 34,723 deceased and 309,104 living. Among individuals on treatment eligible for a viral load (VL) test ( $n=255,572$ ), 95% ( $n=241,723$ ) had a documented VL; 98% ( $n=235,745$ ) were virally suppressed (VLS) at  $< 400$  copies/mL.

Those living included 5,882 newly diagnosed in 2022; of whom 57% were women. Adults aged 35-39 years represented the highest proportion of new diagnoses by age group (17%) and 5-14 years the lowest ( $<1\%$ ).

The highest proportion of new diagnoses by sex and age were 22.4% ( $n=566$ ) among men 35-39 years, and 19.4% ( $n=650$ ) among women 25 - 29 years. Among individuals newly diagnosed, 26% ( $n=1,537$ ) had a documented baseline CD4 count. Of these, 27% ( $n=415$ ) presented with a CD4 count of  $\leq 200$  cells/ $\mu$ L.

Of new diagnoses, 83% ( $n=4,875$ ) had documented treatment initiation; 56% ( $n=2,723$ ) had same day treatment initiation. A tuberculosis diagnosis was made for 3% ( $n=167$ ) of new diagnoses; of whom 66% ( $n=110$ ) were men.

**Conclusions:** More than half of individuals with a new diagnosis were women, majority 20 -34 years, and one-in-four had a baseline CD4 count. Provision of VL test and VLS suppression was high among all individuals, but same day treatment initiation could be improved among those newly diagnosed.

Using unique identifiers, CS data can be used to develop epidemiologic profiles and provide timely information to improve treatment and prevention programs.

## WEPEC187

Persistent high estimates of recent HIV acquisition and incidence among men who have sex with men and transgender women: a trend analysis in a major Brazilian HIV service

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**Background:** In Brazil, men who have sex with men (MSM) and transgender women (TGW) constitute the groups most disproportionately affected by HIV. Accurate HIV incidence estimation is crucial for monitoring the HIV epidemic dynamics.

This study aims to evaluate the temporal trends of HIV estimated incidences using recency testing among MSM/ TGW in Rio de Janeiro, Brazil.

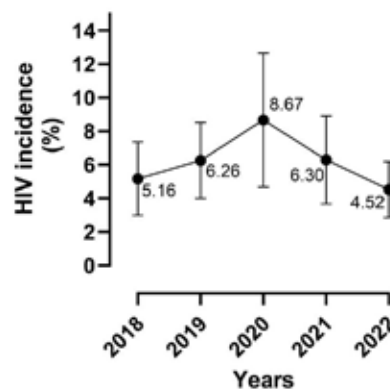
**Methods:** We included MSM/TGW aged 18+ who sought HIV testing at a prominent HIV referral service in Rio de Janeiro, Brazil between March 2018 and December 2022. The Maxim HIV-1 Limiting Antigen Avidity EIA (LAG) was utilized to identify recent HIV acquisition in plasma samples as part of the recency algorithm.

Annualized HIV incidences per year were compared using the UNAIDS/WHO incidence estimator tool and the incidence difference calculator, excluding individuals with a prior HIV diagnosis or prior/current antiretroviral use.

**Results:** Out of 6284 individuals, 5029 (80.0%) identified as MSM and 1255 (20.0%) as TGW. The median age was 27 years (IQR:11). Among 752 individuals living with HIV (prevalence: 12%), 657 (87.4%) had available plasma samples for LAG testing, of which 158 (24%) had recently acquired HIV. The overall estimated HIV incidence was 5.76%/year (95%CI:4.32-7.20).

Estimates ranged from 4.52%/year (95%CI:2.86-6.19) in 2022 to 8.67%/year (95%CI:4.68-12.66) in 2020, representing the year with the highest HIV incidence. Incidence comparisons significantly differed by year when compared to 2018 (2019, 2020, 2021, p-value:0.01) and to 2020 (2022, p-value:0.03).

HIV estimated incidences among MSM and TGW  
Rio de Janeiro, Brazil, 2018-2022



MSM: men who have sex with men; TGW: transgender women. Bars represent lower and upper limits of 95% confidence intervals.

**Conclusions:** Despite the presence of public health prevention strategies in Brazil, HIV incidences among MSM/ TGW remain at unacceptably high levels. Although the 2020 HIV incidence might be overestimated due to Covid-19 restrictions impacting sample availability, the HIV incidence remained elevated post-pandemic. A successful agenda for the HIV response should focus on MSM/ TGW in the most vulnerable settings.



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## WEPEC188

The recent plateauing HIV diagnoses in gay and bisexual men in England masks variation by ethnic group

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**Background:** New HIV diagnoses first made in England in gay, bisexual and other men who have sex with men (GBMSM) halved from 1403 in 2015 to 738 in 2020. This was attributed to high levels of HIV testing in sexual health services (SHS), PrEP availability and ART coverage. Since 2020, HIV diagnoses plateaued despite the sustained numbers of tests during the COVID-19 pandemic. We describe differences in new HIV diagnosis trends, testing and late diagnoses between white and ethnic minority GBMSM between 2020-2022.

**Methods:** New HIV diagnoses (excluding men diagnosed abroad) were taken from the nationally comprehensive HIV and AIDS reporting system (HARS). HIV testing data were taken from GUMCAD, also nationally comprehensive. Late HIV diagnoses were defined as a CD4 count <350 within 91 days of diagnosis, excluding men with recent infection.

**Results:** There were 738 HIV diagnoses in GBMSM in 2020, 784 in 2021 and 724 in 2022. In white men, diagnoses fell from 497 in 2020 to 420 in 2022 but rose in ethnic minority men from 178 to 227 respectively. By 2022, 35% of HIV diagnoses in GBMSM were among ethnic minority men (24% in 2018).

The number of white GBMSM testing at SHS rose by 37% (55,583 to 72,889) between 2020 and 2022 compared to a 61% rise 13,597 to 21,015 among ethnic minority GBMSM. In 2022, 6% of ethnic minority men declined a test when offered compared to 3% of white men. The positivity rate in sexual health clinics fell from 0.5% to 0.3% between 2020-2022 compared to 0.9% and 0.7% in ethnic minority men. Between 2020-2020, the number of white men diagnosed fell slightly from 138 (33%) to 129 (35%) but and rose from 30 (22%) to 77 (37%) in ethnic minority men.

**Conclusions:** The recent plateauing of HIV diagnoses in GBMSM masks a rise in diagnoses in ethnic minority men. While partially accounted for by increased testing in this group, the elevated positivity and late diagnosis rate suggests higher rates of undiagnosed HIV in this population. The profile of newly diagnosed GBMSM is diversifying. Services must keep pace to ensure they remain accessible and culturally competent.

## WEPEC189

Increasing HIV case identification from safe index testing of recent HIV acquisition. Experiences from Laikipia County, Kenya

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**Background:** Increasing case identification from safe index testing of recent HIV acquisition. a case of Laikipia county, Kenya.

To achieve the global goal of linking to care and retaining at least 95% of newly identified HIV acquisition, person newly identified with HIV should be reached and initiated on treatment. Laikipia County has an estimated 11352 persons living with HIV of whom 9786 (86%) have been identified and linked to HIV treatment. In regions where HIV treatment coverage is high, identifying the remaining <14% remains a challenge. Longitudinal Follow up of the Diagnosed Positive is critical to help in the Tracking of the infection Chain.

**Description:** The USAID Tujenge Jamii (UTJ) project working with the County Department of Health in Laikipia County implemented HIV recency surveillance in four high volume health facilities in the year 2022 May to 2023 September. This was aimed at identifying recent infections among the newly identified HIV positive persons. This was done using Asante assay.

**Lessons learned:** Among the 351 (244 female and 107 Male) persons newly diagnosed with HIV in the four facilities, 16(11female and 5 male) were found to have a recent HIV infection. The persons with recent HIV acquisition were counseled on safe ethical index testing and 15 of them gave consent. Those who consented were taken through contact elicitation and 30 contacts were elicited for testing.

Of the 30 contacts elicited, 5 were known positives, 25 were established to be eligible for HIV testing. Those who were successfully reached and tested were 25 with 6 of them being diagnosed as HIV positive and linked. This gave a case identification rate of 24%. This was over 3 times higher than the routine non-targeted case identification rate of about 7%.

**Conclusions/Next steps:** Safe index testing for recent HIV acquisition is an efficient strategy for HIV case identification. It provides a higher case identification rate for fewer HIV tests done compared to the routine HIV testing. Increasing coverage of recency surveillance to more sites and also improving testing of those elicited and eligible for testing is a promising strategy to improve case identification.

# WEPEC190

## Evaluation of the continuity of HIV care in 2023 among the Ukrainian refugees in Poland in comparison to the local population

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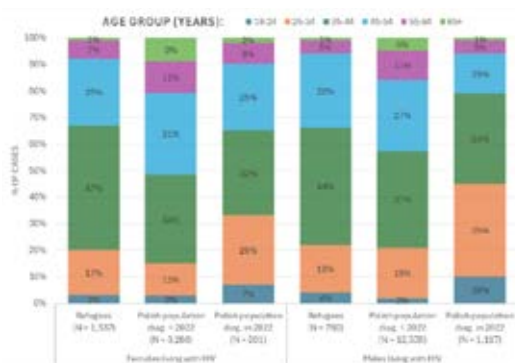
**Background:** Displaced people living with HIV (PLH) experience difficulties to remain in care. Poland received a significant number of refugees from Ukraine in 2022 including PLH, mostly previously in care, who were granted access to public healthcare in Poland.

We aimed to evaluate retention in HIV care in I – VI.2023 of refugees versus local population.

**Methods:** Algorithms using National Health Fund 2015–2022 claims data were developed to identify:

1. Adult PLH registered by 2022, and;
2. Ukraine refugee status. Data on I–VI.2023 claims in this group were categorised by service type (primary care, specialised ambulatory care, hospitalizations).

Due to different age-sex distribution of refugees vs local population (Figure) we report indicators among local population standardized to refugees age-sex distribution. As most of refugees were transferred to care, not newly diagnosed, we take local population diagnosed before 2022 for comparison.



	Refugees with first visit with a HIV-related ICD-10 code in 2022	PLH in Poland diagnosed before 2022	PLH in Poland diagnosed in 2022
Number of PLH	2297	15799	1318
% of PLH with at least one medical service in I–VI.2023	68%	85%	85%
% of PLH with at least one HIV-related service in I–VI.2023	59%	72%	75%
Average number of services per person among those with at least one service in I–VI.2023	2,25	2,78	2,86
% with 4+ services among those with at least one service in I–VI.2023	11%	25%	26%
% with at least 1 service in primary care among those with at least one service in I–VI.2023	2%	2%	3%
% with at least 1 service in outpatient specialist care among those with at least one service in I–VI.2023	95%	84%	87%
% with at least 1 service in telehealth specialist care among those with at least one service in I–VI.2023	5%	16%	13%
% with at least 1 hospitalization among those with at least one service in I–VI.2023	4%	3%	7%

**Results:** There were 2297 refugees and 17117 local PLH with services in 2022, including 1318 diagnosed in 2022 (Table). Of them significantly less refugees (68%) than local PLH (85%) received HIV care in I–VI.2023. In addition, among those who received HIV care, refugees less often received more than 4 services (11% vs 25%) and telehealth services (5% vs 16%).

**Conclusions:** Lower retention rates of refugees could be due to further mobility or barriers in accessing care, both of which can compromise continuity of treatment. Moreover, worse access could be supported by lesser average number of visits. Solutions to improve healthcare access and facilitate possible transfers to care elsewhere should be considered.

## Modelling the HIV pandemic

### WEPEC191

#### Clusters contribute disproportionately to future HIV transmission in the United States

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**Background:** Cluster detection and response is a foundational pillar of the *Ending the HIV Epidemic in the U.S.* initiative. HIV molecular clusters have elevated transmission rates and high proportion of undiagnosed infections at the time of cluster detection. However, the extent of transmission after detection remains unclear. Understanding how clusters contribute to future HIV transmission can elucidate the added value of cluster-based interventions in averting new infections.

**Methods:** Using a stochastic dynamic network simulation model of HIV disease progression and sexual transmission, we applied a cluster generation algorithm to simulate priority molecular clusters representing rapid transmission. These were defined as  $\geq 3$  people with HIV (PWH) diagnosed in 2017 and with sequences, connected using a 0.5% genetic distance threshold. We then applied the algorithm to all PWH to identify the full extent of priority clusters, including people with undiagnosed infection and those with diagnosed infection who are out of care. We calculated a cumulative transmission rate, defined as the number of new infections during 2018–2022 per 100 PWH in 2017, overall and stratified by cluster membership, diagnosis, and viral suppression status. The model was calibrated to 2017 care continuum and molecular cluster distributions from the U.S. National HIV Surveillance System. We simulated 1300 trials (130 runs; 10 replicates/run); medians and ranges are presented.



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**Results:** Cumulative transmission rates during 2018-2022 were 21 [18-23] infections per 100 PWH in 2017 for all PWH and 48 [0-300] for clusters. In clusters, cumulative transmission rates for people with undiagnosed infection and diagnosed but unsuppressed infection were 88 [0-500] and 57 [0-1300], respectively.

Among all PWH, cumulative transmission rates for people with undiagnosed infection and diagnosed but unsuppressed infection were 65 [54-78] and 25 [19-34], respectively.

**Conclusions:** Future transmissions are more than twice as high in HIV clusters as among all PWH, indicating sustained, high transmission five years after cluster detection.

Transmission for people with undiagnosed infection or diagnosed but unsuppressed infection was also higher in clusters, suggesting additional network associated factors contributing to heightened, ongoing transmission.

These findings underscore the importance of focusing testing, prevention, and care activities to reach people in clusters and their networks.

## WEPEC192

Predicating client re-engagement in HIV treatment services amongst clients experiencing interruptions in treatment in Ethiopia using Machine Learning Models

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**Background:** The long-term continuity of people living with HIV (PLHIV) on antiretroviral therapy (ART) is key for improving clinical health outcomes and reducing HIV transmission, yet interruption in treatment (IIT) persists. Machine Learning (ML) models have been used to predict negative health events for PLHIV and when integrated into health information systems (HIS), can inform interventions, creating opportunities for targeted service delivery (SD).

This study developed a classification model to predict re-engagement of PLHIV who experienced ART IIT in community-based service delivery care models in Ethiopia.

**Methods:** Routine program data from the community-based health system, consisting of 1,535 individual clients who experienced IIT and had one or more tracing attempts from October 2022 through May 2023 at facilities in Addis Ababa, Ethiopia, was used to train machine learning classification algorithms.

A logistics regression was selected as the best performing model among seven classification models trained and evaluated, using a cross-validation strategy with

K-folds=5 and a 70/30 train-test split. We evaluated accuracy, specificity, sensitivity, recall, precision, the F1-score, and area under the receiver operating characteristic curve (AUC).

**Results:** The final model predicted clients' re-engagement with 78.74% accuracy, 80.27% specificity and 0.72 AUC. PLHIV who were on ART for longer (3+ years) before interruption (OR=1.83, p=0.005) and those traced through home visits (OR=7.24, p=0.003) were significantly more likely to re-engage. Re-engagement was significantly less likely among clients with 60 to 90 days between tracing date and treatment interruption date (OR=0.46, p=0.027) and >90 days (OR=0.28, p<0.001), compared to clients with less than 30 days between tracing and treatment interruption.

**Conclusions:** Early tracing through home visits was associated with re-engagement in care, underscoring the importance of this intervention. Contacting clients within 30-60 days improves retention and reduces IIT. Predicting IIT creates efficiencies in human resources for health and resource allocation.

Future studies on uses and integration of ML should be tested to improve outcomes for PLHIV, especially considering multi-month dispensing models.

## WEPEC193

The impact of COVID-19 on the HIV epidemic among men who have sex with men in Australia

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**Background:** During the first two years of the COVID-19 pandemic, there was a large reduction in HIV notifications in Australia.

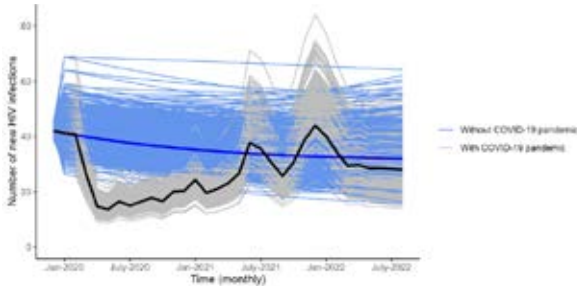
This study aimed to understand this decrease among men who have sex with men in Australia and whether it was due to reduced HIV transmission, a decline in HIV testing, and/or the closure of international borders.

**Methods:** Aggregated monthly data between January 2020 and August 2022 including sexual partnerships, condom use, HIV testing, and pre-exposure prophylaxis use were obtained from the Flux study and routine national HIV surveillance.

A model was developed to estimate monthly HIV incidence given changes in these variables. Two scenarios were simulated: a COVID scenario with all changes in place and a no COVID scenario where input parameters remained at pre COVID-19 values.

**Results:** In the absence of the COVID-19 pandemic, the estimated number of cumulative infections from 2020 to 2022 would have been 1,164 [95% Percentile Interval (PI): 896-1600] compared to 905 (95% PI: 697-1,228) for the COVID-19 scenario (a 22% reduction).

The largest reduction in infections (43%) occurred in 2020 with 259 (95% PI: 204–338) infections versus 457 (95% PI: 361–603) in the no COVID scenario. There was a rebound with 357 infections (95% PI: 269–497) in 2021, followed by a reduction to a level by August of 2022 slightly lower than in the no COVID scenario.



**Figure 1.** Monthly new HIV infections among men who have sex with men in Australia: comparison of two scenarios.

**Conclusions:** COVID-19 resulted in a substantial reduction in new HIV infections in Australia, despite reductions in access to HIV testing and prevention services. Given the rebound in infections seen in 2021–2022, it is imperative to maintain vigorous response efforts and take advantage of the gains made to end HIV as a public health threat in Australia.

## WEPEC194

### Dynamic shifts in the HIV epidemic: analyzing the evolution of risk groups in Sub-Saharan Africa

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**Background:** The HIV epidemic in sub-Saharan Africa, characterized by its dynamic nature, has been profoundly influenced by a myriad of external forces including natural disease progression, societal changes, and targeted interventions. Notably, in regions like the uMkhanyakude district in KwaZulu-Natal, South Africa, these forces have precipitated significant shifts in demographics and risk group compositions, urging a reevaluation of current intervention strategies to address the evolving landscape of HIV transmission.

**Methods:** A compartmental mathematical model was developed, stratifying the population into ten risk groups based on age, socio-economic status, behavior, and healthcare access. The model, parameterized with regional data from the rural uMkhanyakude district in KwaZulu-Natal, comprehensively incorporated compart-

ments for susceptible, acquires HIV (not on ART), and acquires HIV (on ART) within each risk group. A sexual-mixing matrix simulated interactions among these groups.

Ten scenarios, including the introduction of super-spreaders, targeted interventions, behavioral changes, and healthcare infrastructure changes, were evaluated to understand their impact on the force of infection.

Data visualization techniques including heatmaps and Sankey diagrams were employed to demonstrate the infection dynamics and force of infection shifts across risk groups over time.

**Results:** The model unveiled the impact of external interventions and societal dynamics on the HIV infection landscape. Noteworthy shifts in the force of infection were observed, migrating from established high-risk groups to newly emergent ones, underscoring the fluid nature of risk within the population. The scenarios demonstrated that targeted interventions, while beneficial, can inadvertently redirect the epidemic's focus, necessitating the continuous adaptation of strategies.

The emergence of drug-resistant strains and variations in healthcare access further complicated the transmission dynamics, illustrating the intricate interplay of factors influencing HIV risk.

**Conclusions:** This study accentuates the need for adaptable and dynamic intervention strategies in the face of an ever-evolving HIV epidemic in sub-Saharan Africa. Emergence of new high-risk groups, propelled by a confluence of external forces, supports a paradigm shift from static to dynamic approaches in public health responses. By embracing the fluid nature of risk dynamics, we can design more effective public health measures, ensuring that our efforts to combat the HIV epidemic remain robust and responsive to an evolving epidemic.



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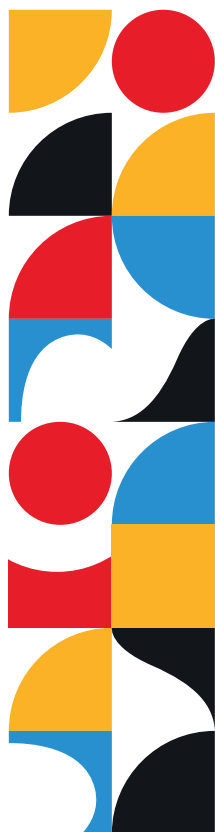
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## WEPEC195

From awareness to use: PrEP cascade among at-risk individuals presenting for HIV screening in northern Thailand

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**Background:** Despite the introduction of pre-exposure prophylaxis (PrEP) in Thailand in 2016, the HIV incidence has not declined.

This study aims to assess the PrEP continuum among individuals at risk of HIV acquisition in northern Thailand.

**Methods:** Any individual aged ≥15 years could self-screen for HIV, syphilis, hepatitis B and hepatitis C free of charge and anonymously at six participating facilities in northern Thailand as part of the Napneung project. Participants completed a tablet-based questionnaire to collect data on demographics, recent risks of HIV acquisition and PrEP awareness, knowledge, use and retention.

This analysis includes participants at recent risk of HIV acquisition – defined as reporting multiple sex partners and non-systematic condom use in last 6 months –, not previously diagnosed with HIV, and born in Thailand or a neighboring country (Myanmar, Laos or Cambodia). Risk factors at each step of the PrEP cascade were assessed using multivariable binary logistic regression models.

**Results:** 1,826 at-risk participants were screened between 19 October 2020 and 31 December 2023. 1,012 (55%) were born male, 937 (51%) were aged 15–24 years, and 1,143 (63%) had never tested for HIV. 850 (47%) had already heard of PrEP, 543 (30%) knew what PrEP is used for, 100 (5%) ever used PrEP and 45 (2%) were currently using PrEP.

No significant change in the PrEP cascade was observed during the study period. Women, men who have never had sex with men and participants never tested for HIV were less likely to have heard of PrEP, to know what PrEP is used for and to have used PrEP. Of 40/1,826 participants

newly diagnosed with HIV, 24 (60%) had heard of PrEP, 15 (38%) knew what PrEP is used for, and none ever used PrEP. Of the 40 participants, 31 were MSM, 4 other men and 5 women; 26 (65%) had never tested for HIV before.

**Conclusions:** PrEP awareness, knowledge and use remain low among people at risk of HIV in northern Thailand, particularly among women and among men who have never had sex with men. Increasing awareness and creating demand may be as much needed as facilitating access to and availability of PrEP.

## WEPEC196

Interest in seeking post-trial PrEP services by postpartum women in Uganda: a case for MTN-042/DELIVER study

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**Background:** Pregnant and breastfeeding women in sub-Saharan Africa have high HIV incidence rates, with 3-fold and 4-fold increase in HIV-1 acquisition risk per condomless sex act respectively. In 2015, WHO recommended once-daily oral pre-exposure prophylaxis (PrEP) for HIV prevention in people at substantial risk of HIV acquisition, including pregnant and postpartum women. There is limited data on post-trial PrEP access following participation in PrEP trials.

**Methods:** MTN-042 is a multi-site, two-arm, randomized, open label Phase 3b study evaluating the safety, adherence, and acceptability profiles of the monthly Dapivirine Vaginal Ring and daily oral Truvada when used by HIV-uninfected pregnant women in Africa. The study took a step-wise approach to dosing as follows; Cohort 1: 36 0/7–37 6/7 weeks, Cohort 2: 30 0/7–35 6/7 weeks and Cohort 3: 12 0/7–29 6/7 weeks. Follow-up started at enrollment through 6 weeks postpartum. Referral for further PrEP services was offered at study exit.

We seek to describe; uptake of referrals for PrEP and reasons for non or delayed uptake as documented in chart notes, number of women who took PrEP at the infant 6-month visit as documented on the infant feeding assessment case report forms.

**Results:** In Uganda, 154 participants were enrolled. 22/44 (50%), 10/42 (23.8%) and 14/68 (21%) in Cohorts 1, 2 and 3, respectively were interested in post-trial PrEP. Women of advanced pregnancy were more interested than their counterparts who used study product longer.

Reasons for low interest in post-trial PrEP included sexual inactivity, absence from and need to consult partners, preference for condoms, frequent HIV testing, faithfulness, drug use and hospital visits fatigue, non-readiness/

unexplained lack of interest, anticipated transport constraints. At the infant's 6 months visit, none of the participants reported being on PrEP despite referral.

**Conclusions:** Results showed low interest (30%) in PrEP post-trial. More data is needed to assess HIV risk perception post-delivery, and if improved community sensitization techniques would increase interest and uptake of PrEP post-trial. There is an ongoing need for PrEP modality choices for HIV prevention, plus other support services and education to promote PrEP re-uptake in this group of sub-Saharan African women.

## WEPEC197

### Increasing uptake to Oral Pre-exposure Prophylaxis (PrEP) for Men who have Sex with Men (MSM) in Taraba state, Nigeria

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**Background:** Men who Sex with Men (MSM) in Taraba state are disproportionately affected by HIV with a prevalence rate of 24% . Pre-exposure Prophylaxis (PrEP) is known to decrease the incidence of HIV and its recommended for all individuals with substantial risk of acquiring HIV.

This study explored the increase uptake of PrEP at the community level between 2019 to 2023 in Taraba state.

**Description:** International Centre for Total Health and Rights Advocacy Empowerment (ICTHARAE) established partnerships in the optimizing HIV investment of impact and National Aligned HIV/AIDS Initiative projects. We identified and validated hotspots through engagements with community stakeholders and by community inclusive planning, tailored oral PrEP services. Our oral PrEP prevention intervention where provided in hotspots, home delivery and community center, PrEP services was followed by risk reduction counseling, and referrals to other support programs. At the community center, psycho-social support were also provided. Men who Sex with Men community members in Taraba led PrEP service provision efforts. Eligibility for oral PrEP screening were Men who Sex with Men who tested HIV negative. Descriptive analysis of routine programmatic data was applied to illustrate program outcomes.

**Lessons learned:** During the four (4) years period, 8515 MSM tested for HIV and 7362 were HIV negative. All the Men who Sex with Men who tested negative were screened for oral PrEP eligibility, and 6995 (95.0%) were eligible. A total of 6855 MSM (98% [6856/6995]) initiated oral PrEP. From October 2019 to September 2023, we recorded a progressive increase in the uptake of oral PrEP by Men who Sex with Men in Taraba state from 37 in 2019 to 205 by December 2020 and 6855 by September 2023. This shows uptake increase from 3% as of December 2020 to 95% as at September 2023.

**Conclusions/Next steps:** Community taking the lead in providing prevention services such as PrEP will give room for context specific approach that addresses structural barriers among the MSM community to enable uptake of services. More efforts will be useful to understand the barriers to increase uptake of PrEP among Men who Sex with Men to 100%.

## WEPEC198

### Factors associated with the use of patient portals to disclose STI test results among U.S. men who have sex with men: a call for patient-facing guidance and interventions

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**Background:** The heightened burden of sexually transmitted infections (STIs), including HIV, among gay men and other men who have sex with men (MSM) persists as a major public health problem in the United States (U.S.). Prior studies demonstrate willingness among MSM to use patient portals as a tool for disclosing STI test results with sex partners.

However, little is known about its reach for accessing test results and use for disclosures among MSM.

To address this gap, the current study estimates the proportion of portal use for disclosures and its association with STI risk factors among U.S. MSM.

**Methods:** Data come from adult participants of the 2022 American Men's Internet Survey. Participants were asked to report their use of patient portals for viewing test results and sharing STI results with partners.

Poisson regression models with robust error variance measured associations of STI risk factors (sexual behavior stigma, PrEP use, number of condomless male sex partners, number of STI tests, and STI diagnosis) with the likelihood to report STI test result disclosure to a partner using the portal. Models controlled for age, race, sex work, and HIV status.

**Results:** 88% (2,700/3,079) reported using a patient portal to view test results and 16% (486/3,079) to share STI results with a partner. In adjusted models (Table), using a portal to share STI test results with a partner was significantly more prevalent among those who reported HIV PrEP use, stigma from family/friends, and '1 to 3' or '4 or more' STI tests versus 'no STI test'.



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Variable	Total	Showed partner STI results using portal		Adjusted Prevalence Ratio (95%CI) <sup>a,b,c</sup>
		Yes (n=486)	No (n=2,593)	
Age (median, interquartile range)	44 (33, 75)	40 (33, 52)	46 (34, 58)	0.99 (0.98, 0.99) <sup>e</sup>
Condomless sex in prior 12 months				
No condomless sex partners	367 (31.4)	39 (20.4)	368 (33.5)	Reference
1 to 2 partners	591 (19.2)	74 (15.2)	517 (19.9)	0.96 (0.72, 1.26)
3 to 4 partners	470 (15.3)	69 (14.2)	401 (15.5)	1.05 (0.79, 1.40)
5 to 10 partners	548 (17.8)	118 (24.3)	430 (16.6)	1.29 (0.99, 1.67)
10+ partners	503 (16.3)	126 (25.9)	377 (14.5)	1.28 (0.97, 1.68)
Sex work in prior 12 months (Yes)	101 (3.3)	28 (5.8)	73 (2.8)	1.38 (1.00, 1.91) <sup>e,f</sup>
Number of STI tests in prior 12 months				
None	1,150 (37.4)	70 (14.4)	1,080 (41.8)	Reference
1 to 3	1,187 (38.5)	180 (36.9)	998 (38.5)	2.30 (1.73, 3.06) <sup>e</sup>
4+	742 (24.1)	227 (46.7)	515 (19.9)	3.33 (2.41, 4.60) <sup>e</sup>
Living with HIV (Yes)	419 (13.6)	53 (10.9)	366 (14.1)	0.76 (0.57, 1.06) <sup>e</sup>
STI diagnosis in prior 12 months (Yes)	575 (18.7)	157 (32.3)	418 (16.1)	1.16 (0.96, 1.40) <sup>e</sup>
Currently on PrEP (Yes)	1,169 (38.0)	279 (57.4)	890 (43.3)	1.26 (1.01, 1.58) <sup>e</sup>
Family or friends stigma (mean, SD)	0.56 (0.98)	0.71 (1.06)	0.53 (0.96)	1.12 (1.01, 1.24) <sup>e</sup>
Healthcare provider stigma (mean, SD)	1.06 (1.76)	1.26 (1.93)	1.02 (1.73)	0.98 (0.93, 1.04)
Social stigma (mean, SD)	0.76 (1.23)	0.97 (1.43)	0.72 (1.19)	1.02 (0.94, 1.11)

Table. Characteristics of United States 3,079 gay, bisexual and other men who have sex with men associated with use of a patient portal to disclose STI test results to a sex partner, 2022-2023.

**Conclusions:** Patient portals have the reach and potential among U.S. MSM to be leveraged as STI prevention tools. Designing interventions that use patient portals to help patients make healthy decisions are a burgeoning field of research. Studies are needed to guide the implementation of patient-facing strategies to optimize sexual health decision-making.

## WEPEC199

Interest in long-acting PrEP modalities among a diverse multisite cohort of women in the United States: findings from the MACS/WIHS Combined Cohort Study (MWCCS)

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**Background:** Despite US women constituting 19% of incident HIV cases, they are vastly underrepresented among pre-exposure prophylaxis (PrEP) users (5%). To improve HIV prevention uptake via a novel delivery formulation, we examined associations with willingness to use long-acting injectable (LAI) PrEP and preferences for LAI versus oral PrEP among a sociodemographically-diverse population of women.

**Methods:** From October 2020-November 2021, we conducted a cross-sectional study of 481 women without HIV across nine U.S. centers of the MACS/WIHS Combined Cohort Study: Atlanta, GA; Birmingham, AL/Jackson, MS; Bronx, NY; Brooklyn, NY; Chapel Hill, NC; Chicago, IL; Miami, FL; San Francisco, CA; and Washington, DC. Multivari-

able logistic regression assessed factors associated with willingness to try LAI PrEP (definitely/probably would vs not sure/definitely/probably would not try), and preference for LAI versus oral PrEP, adjusting for sociodemographic, psychosocial, and behavioral characteristics.

**Results:** Among 481 participants, median age was 52 years, 73% self-identified as Black, 83% as heterosexual, and 51% met the modified CDC criteria for PrEP indication (e.g. endorsing any recent: injection drug use; unprotected sex; 1+ sexual partners; STI).

Overall, 21% were definitely/probably willing to try LAI PrEP. When asked to choose one modality, 30% preferred LAI-PrEP, 10% oral PrEP, 21% were undecided, and 37% were unwilling to use any PrEP. Non-Hispanic Black vs White participants were less willing to try LAI PrEP (OR=0.31; 95% CI 0.15–0.65) whereas LGBTQIA vs heterosexual individuals were more willing (OR=1.91; 95% CI 1.11–3.23).

Depressive symptoms (OR=1.34; 95% CI 1.08–2.79) and perception of HIV risk (OR=5.42; 95% CI 2.79–10.70) were associated with willingness to try LAI PrEP.

Participants who endorsed a preference for LAI vs oral PrEP were more likely to be insured ( $\alpha$ OR: 3.68; 95% CI 1.10–1.36) and have a perception of HIV risk ( $\alpha$ OR 11.30; 95% CI: 1.41–90.41).

**Conclusions:** Participants reported low interest in LAI PrEP but important sub-group differences, particularly by race, LGBTQIA orientation, mental health, and perceived HIV risk, underscore the complexity of PrEP modality preferences.

These multilevel factors must be considered in designing innovative PrEP implementation strategies so that access and uptake are optimized, equitable, and tailored to women's choice.

## WEPEC200

### Stopping and restarting HIV pre-exposure prophylaxis (PrEP): a systematic review and meta-analysis

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**Background:** High coverage of pre-exposure prophylaxis (PrEP) will reduce HIV transmission and help end the HIV pandemic. However, PrEP users face challenges, including long-term adherence. The review aimed to provide a pooled proportion of users who restarted PrEP and document reasons for restarting PrEP.

**Methods:** We systematically searched seven databases for original research studies. We extracted data on the proportion of people who stopped and then restarted PrEP, reasons for restarting and strategies to support people restarting PrEP. We used a random-effects meta-analysis to pool estimates of restarting.

**Results:** Of 988 publications, 34 were included: 27 reported the proportion restarting PrEP, 10 reported reasons for restarting PrEP, and no study evaluated interventions for restarting PrEP. Most studies were from high-income countries (17/27, 63%) and the Americas region (15/27, 56%). Overall, 23.8% (95% CI: 15.9–32.7, I<sup>2</sup>=99.8%, N=85,683) of people who stopped PrEP restarted PrEP during the study period (Figure 1).

There was a lower proportion of restarting in studies from middle-income countries compared to high-income countries (adjusted odds ratio (AOR) 0.6, 95% CI: 0.50 – 0.73, P-value <0.001). There was a higher proportion restarting in studies from Africa compared to the Americas (AOR 1.55, 95% CI: 1.30 – 1.86), and heterosexuals compared to men who have sex with men or transgender women (AOR 1.50, 95% CI: 1.25 – 1.81, P-value <0.001). Reasons for restarting PrEP included perceived higher risk for HIV acquisition and removal of barriers to access PrEP.

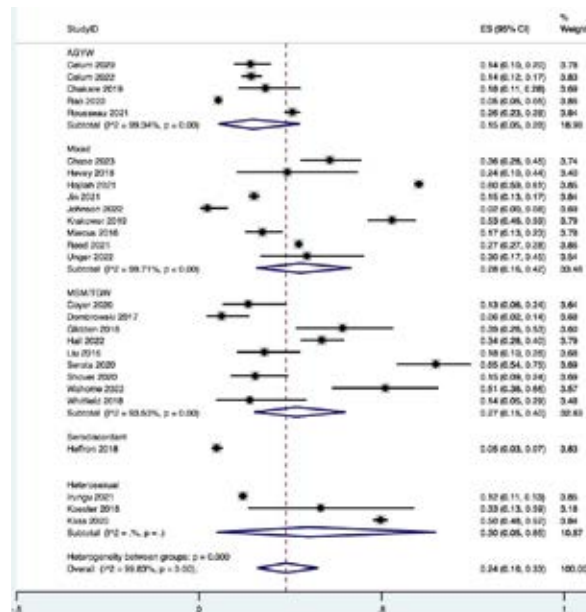


Figure 1.

AGYW = adolescent girls and young women;

MSM = men who have sex with men; TGW = transgender women;

USA = United States of America

**Conclusions:** The proportion of people restarting PrEP is low. There is need for more research and support for individuals to restart PrEP.



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## WEPEC201

### HIV pre-exposure prophylaxis as a statutory health insurance service in Germany - a descriptive, longitudinal claims data analysis

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**Background:** Human immunodeficiency virus (HIV) remains a global public health challenge. The introduction of HIV pre-exposure prophylaxis (PrEP) into the coverage of the German statutory health insurance in September 2019 reduced financial barriers to access to an effective tool for the prevention of HIV infection.

This study aims to provide a descriptive, longitudinal analysis of HIV PrEP care in a real-world setting in Germany between September 1, 2019 and December 31, 2022 using claims data from the statutory health insurance provider BARMER.

**Methods:** We assessed anonymized claims data to gain insight into PrEP care and user characteristics. PrEP initiations, discontinuations and reinitiations were analysed, as well as the proportion of days covered (PDC) as a metric of adherence, post-exposure prophylaxis courses (PEP) and incident HIV infections.

**Results:** 4,299 individuals who initiated PrEP within the study were identified totaling to an observation time of 7,998 person years. The median age of PrEP users at the time of first initiation was 34 years (IQR 28-43). 98.8% of them were male. The median PDC was 92.0% (IQR 80.0%-98.9%) for all observed courses. Of 202 PEP courses detected, 86.1% took place before PrEP initiation (Table 1). The HIV incidence rate was 0.04/100 person years. All detected infections occurred after PrEP discontinuation.

Characteristics	N (%)
<b>Total study population</b>	<b>4,299</b>
Age (years)*	
16-19	77 (1.8%)
20-29	1,267 (29.5%)
30-39	1,522 (35.4%)
40-49	831 (19.3%)
50-59	487 (11.3%)
≥ 60	115 (2.7%)
Sex	
Male	4,247 (98.8%)
Female	52 (1.2%)
No. of PrEP courses initiated	5,643
1	4,299 (100%)
2	1,041 (24.2%)
3	265 (6.2%)
4	36 (0.8%)
5	2 (0.05%)
PEP courses	202 (100%)
Before PrEP	174 (86.1%)
During PrEP	16 (7.9%)
After PrEP	12 (5.9%)
HIV infections	3 (<0.1%)
Deaths	12 (0.3%)

\* age at time of first PrEP initiation

Table 1. Characteristics of BARMER insured PrEP users between September 2019 and December 2022.

**Conclusions:** Overall PrEP coverage was high and PrEP proved to be highly effective with regards to the HIV incidence in a real-world setting.

This study supports previous findings of high PrEP demand within the community of men who have sex with men (MSM) and suggests that barriers to accessing PrEP and gaps in provision still exist outside of MSM communities, at least among women who would benefit from PrEP.

## WEPEC202

### Changes in sexual behavior among adolescent girls receiving long-acting injectable cabotegravir for HIV prevention: the HPTN 084-01 study

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**Background:** The HPTN 084-01 trial evaluated the safety, tolerability, and acceptability of long-acting injectable cabotegravir (CAB LA) for HIV prevention among adolescent girls in Africa. Adopting effective pre-exposure prophylaxis (PrEP) may reduce the concern for HIV acquisition but may lead to other riskier sexual behaviors. We sought to identify evidence of changes in sexual behavior following PrEP initiation within this cohort.

**Methods:** HPTN 084-01 enrolled HIV negative adolescent girls aged 12-17 years from 3 sites in South Africa, Uganda, and Zimbabwe who reported sexual activity with a male in the last 12 months and were willing to provide assent with parent/guardian consent. Data on self-reported sexual behavior, namely

1. Use of a condom at last vaginal sex and
2. Number of sexual partners in past month was assessed at study weeks 0, 4, 5, 9, 17, 25 and 33 by Computer Assisted Self-administered Interview.

Change in frequency of condomless vaginal sex (CVS) and number of sexual partners over time was assessed through generalized estimating equations.

**Results:** In total, 55 adolescents were enrolled with a median age 16 years, a median of 2 (IQR 1-4) episodes of vaginal sex in the past month, and 22% reporting transactional sex. At week 0, median number of male partners in the past month was 1 (range 1-30), and 29% had more than one male partner while mean episodes of CVS in the past month was 1 (sd 2.1), and 47% reported CVS. Between weeks 0 and 33, a modest decline in number of sexual partners was observed though not statistically signifi-



cant; average change -0.3 partners (95% CI -0.61, 0.06,  $p=0.11$ ). We observed a decrease in the number of episodes of CVS between weeks 0 and 33; average change -0.6 episodes (95% CI -1.03, -0.14,  $p=0.0093$ ).

**Conclusions:** In this cohort of African adolescent girls initiating CAB LA for PrEP, we also observed declines in other risk behaviors. This is consistent with other PrEP studies and confirms that HIV prevention trial participation provides benefits beyond access to medical interventions like PrEP.

## WEPEC203

**Fine-grained trends in combination HIV prevention among gay, bisexual and other men who have sex with men in Aotearoa New Zealand 2002-2022 using national surveillance**

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**Background:** New Zealand (NZ) has a well-controlled HIV epidemic concentrated among gay, bisexual and other men who have sex with men (GBM). Eliminating HIV transmission by 2030 requires high uptake of combination HIV prevention at the population level. High-quality behavioural surveillance, capturing these behaviours, can be used to fine-tune HIV prevention delivery and interpret epidemiological trends. We report 20 years of behavioural surveillance data.

**Methods:** Data from repeat cross-sectional HIV behavioural surveillance in NZ 2002-2022 were examined ( $n=18,679$  GBM). Surveys were voluntary, anonymous and self-completed online or in-person at gay community settings. Participants reporting casual sex within six months were grouped into nine discrete combination prevention categories, defined by anal intercourse positioning, HIV status, condom use, pre-exposure prophylaxis (PrEP) or HIV treatment, and HIV testing history. Combination HIV prevention coverage was defined as either no anal intercourse; or consistent condom use; or condomless sex with PrEP or HIV treatments.

We examined trends using nonparametric tests. Routine national epidemiological surveillance data was used to record locally-acquired HIV diagnoses among GBM.

**Results:** Of 12,253 participants reporting casual sex within six months, combination HIV prevention coverage declined from 2002 (77.3%) to 2014 (60.9%), then increased in 2022 (71.4%;  $p<0.001$ ). Consistent condom use declined (45.6% in 2002 to 16.8% in 2022) as did the proportion avoiding anal intercourse (31.8% to 16.5%).

Conversely, condomless sex with either PrEP (0% to 33.7%) or HIV treatment increased (1.6% in 2011 to 4.4% in 2022). The proportion of participants engaging in receptive condomless anal intercourse who had never tested for HIV was highest in 2006 (9.5%) before declining to 2.5% in 2022 ( $p$  for trend all  $<0.001$ ).

Epidemiological surveillance data showed the number of GBM with locally-acquired HIV increased from 33 in 2002 to 97 in 2016, then declined to 34 in 2022.

**Conclusions:** After a gradual decline, combination HIV prevention coverage is now high among NZ GBM and is consistent with trends in HIV diagnoses.

Importantly, many GBM engaging in condomless sex are now likely protected by sexual mixing with partners on PrEP or HIV treatment. GBM should be supported to adopt their choice of combination prevention options.

## WEPEC204

**Systematic use of HIV PrEP medication refill notifications in a population-based PrEP program in British Columbia, Canada**

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**Background:** Publicly-funded HIV PrEP has been available in British Columbia (BC), Canada since 1-Jan-2018, involving over 2000 prescribers and approximately 12,000 cumulative clients. As engagement tools, the centralized program issues client-specific, pre-printed PrEP refill forms prior to anticipated refill dates, and a 'late refill notification' (LRN) if there is an extended lapse without medication dispensing. We describe the utilization of the LRN tool in our population-based PrEP program.

**Methods:** Data from BC's PrEP Program database between 1-Jan-2019 through 31-Dec-2023 were used to determine quarterly counts for:

- Active program clients (i.e., clients with PrEP medication within the last 6 months);
- LRNs sent (after 3-month lapse post-expected refill date for daily prescribed use, or after a 5-month lapse for prescribed on-demand use);
- LRN responses received (i.e., continues PrEP, discontinued PrEP, no longer under the prescriber's care or lost to follow-up, other).

Results were summarized with descriptive statistics.

**Results:** PrEP program participation and LRNs increased over the 5-year period (See Figure). Median (Q1-Q3) quarterly LRNs sent was 572 (481-716). A plateau in program participation was observed during the COVID-19 pandemic, and a high number of LRNs were issued in 3rd quarter of 2020. The quarterly response rate to LRNs sent was median 60% (55-65).



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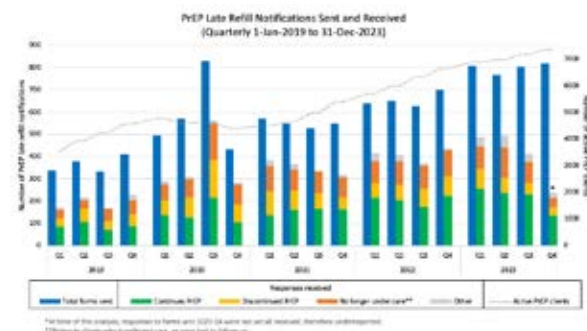


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Responses included: continuing PrEP in median 48% (41-51) of respondents, no longer under the prescriber's care in median 26% (24-28), and PrEP discontinued in median 22% (18-26). Over 75% of 'PrEP discontinued' respondents were reportedly no longer at risk.



**Conclusions:** A centralized PrEP program allows systematic application of an engagement tool, based on possible lapse of PrEP medication. Confirmed PrEP continuation despite an apparent lapse in prescription suggests greater intermittent or on-demand PrEP use than formally captured. PrEP may also be discontinued when no longer indicated. Systematic notifications can remind providers to follow-up with clients who have disengaged from care.

## WEPEC205

### Pre-exposure prophylaxis discontinuation among HIV-negative persons in Nigeria: a three-year retrospective cohort study

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**Background:** This study estimates time and predictors of oral pre-exposure prophylaxis (PrEP) discontinuation among clients at higher risk of contracting HIV. Date of discontinuation was defined as one's last missed clinical appointment when client tracking outcomes confirmed the client as discontinued.

**Methods:** A retrospective cohort study on Nigerian clients who started PrEP between 2020 and 2023 used data from 617 health facilities across 17 states. The cohort included at least 15-year-olds, general or key population (GP or KP) members. The study analyzed demographic factors, and blood pressure (BP) outcomes using multivariate Cox

proportional hazards models and Kaplan-Meier survival model. The "Conditional\_surv\_est" function in R was used to estimate the time to discontinue PrEP.

**Results:** Of 53,936 participants, 22,653 (42%) were male and 31,283 (58%) were female. The median age was 29 years (interquartile range [IQR]:24-34).

Of those clients ever enrolled on PrEP, 13,579 (25.2%) were currently active, and 40,357 (74.8%), had discontinued, the median time to PrEP discontinuation was 279 days (95% CI: 277-285) as of Sept. 30, 2023.

Clients aged less than 20 years exhibited a significantly higher hazard (aHR:1.58, 95% CI: 1.46-1.72, p<0.001) compared to those of higher age group.

Male clients had a significantly higher risk (aHR:1.09, 95% CI:1.04-1.15, p=0.001) compared to female clients; KPs, including female sex workers (FSW), men who have sex with men (MSM), and people who inject drugs (PWID)—FSW; aHR : 0.68, 95% CI: 0.64 – 0.72, p<0.001, MSM; aHR: 0.58, 95% CI: 0.51 – 0.58, p<0.001 and PWID; aHR: 0.84, 95% CI: 0.79 – 0.89, p<0.001—exhibited significantly lesser hazard compared to the GP group.

Clients with an unemployed status (aHR:1.08, 95% CI:1.04-1.12, p<0.001) exhibited a significantly higher hazard compared to those employed.

Conversely, clients with elevated BP had a significantly lower risk (aHR:0.93, 95% CI:0.89-0.98, p=0.003) compared to those with normal BP.

**Conclusions:** The study reveals a higher risk of PrEP discontinuation among clients younger than 20 years, with a decrease in risk as age increases. Unemployed, and male client have a higher risk, while KPs, and clients with elevated blood pressure have low risk. Clients behavioural factors and socio-economic factors are recommended for future studies.

"Everyone should have access to it":  
perspectives on PrEP product choice and  
implementation from MSM and TGW in an  
injectable PrEP trial

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**Background:** HPTN083 demonstrated preventive superiority of CAB-LA. Participants' experiences once they learned their randomization (post-unblinding) can provide insight into implementation, including product choice.

**Methods:** Post-unblinding, participants were offered product choice. Participants (n=150) from five sites (two U.S., three international) completed qualitative interviews and were grouped according to their choices: switching from oral to injectable (n=50), switching from injectable to oral (n=11), staying on oral (n=29), staying on injectable (n=56), other (e.g., switching more than once, change in serostatus, n=4). Data were analyzed using content analysis.

**Results:** To address key factors associated with implementation of injectable PrEP, data were organized according to the Practical Robust Implementation and Sustainability Model (PRISM).

**Implementation and sustainability infrastructure.** Some preferred governments or large NGOs for PrEP oversight and delivery for their existing infrastructure, while others favored clinic-level management.

**Recipients- organizational characteristics.** Participants wanted dissemination to span the medical and lay/community arenas. Specifically, participants noted PrEP needs to be available both in community (e.g., health fairs) and medical settings. Participants wanted PrEP knowledge from healthcare professionals (valued for medical expertise) and PrEP users (to add legitimacy and to support normalization of PrEP use).

**Recipients-patient characteristics.** Participants felt many could benefit from PrEP, particularly younger people. When reporting **preferences for PrEP modality**, participants who chose injectable PrEP favored convenience, perceived effectiveness, and ability to minimize stigma due to discreet delivery.

Participants who chose oral PrEP cited its familiarity (e.g., product has been available for use longer), ability to start and stop at any time, and general mistrust of injections. Underlying many perceptions of PrEP implementation were **external environment** factors of stigma and misinformation; this was particularly salient for injectable PrEP because of its novelty.

Clear messaging on side effects, effectiveness, and the preventive nature of all PrEP formulations, rather than treatment, was emphasized.

**Conclusions:** MSM/TGW described factors that influence product choice; knowledge of these factors may support effective prescriber conversations around PrEP, and aid persons in selecting the most effective product for individual circumstances. Data suggest that successful implementation hinges on correcting negative community beliefs about PrEP and ensuring access in both community and medical settings.



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## WEPEC207

### Acceptability of the monthly vaginal ring and daily oral PrEP during pregnancy in four Sub-Saharan African countries

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**Background:** Pre-exposure prophylaxis (PrEP) including the dapivirine vaginal ring (ring) and oral PrEP as tenofovir/emtricitabine (oral PrEP) are proven effective and acceptable in non-pregnant people.

We evaluated acceptability of both products in pregnant individuals in the MTN-042/DELIVER study conducted in South Africa, Zimbabwe, Malawi and Uganda.

**Methods:** MTN-042 enrolled pregnant individuals in three stepwise gestational age cohorts: cohort 1 (36-37 weeks), cohort 2 (30-35 weeks) and cohort 3 (12-29 weeks). Randomization was 2:1 (cohorts 1 & 2), and 4:1 (cohort 3) to receive ring or oral PrEP respectively and participants were followed until 6-weeks postpartum.

Acceptability of study products was a trial secondary objective. Trained staff assessed perceived attitudes, willingness, product acceptability, sexual behaviors and relationships at the 4-week visit through questionnaires in cohorts 2 & 3 (cohort 1 data not included).

We used descriptive statistics to summarize these endpoints, stratified by study cohort and assigned product. All cohorts additionally had qualitative acceptability assessments (data not shown).

**Results:** Participants' median age was 24 years (IQR 22, 29) across all cohorts (N=408), with 308 (75%) randomized to receive the ring. In cohorts 2 and 3 most participants (97%) reported having a primary partner, however, only 25% reported definitively knowing that their partner was monogamous. At Week 4, satisfaction with their assigned PrEP product and future willingness to use it when pregnant or non-pregnant was high overall and across study arms (Table 1). Participants preferred their assigned products to the alternative. Furthermore, 57% of participants disliked male condom use.

	Cohort 2			Cohort 3		
	Overall (N=143)	Assigned to Ring (n=101)	Assigned to Oral PrEP (n=45)	Overall N=242	Assigned to Ring (n=196)	Assigned to Oral PrEP (n=46)
	% (95% CI)	% (95% CI)	% (95% CI)	% (95% CI)	% (95% CI)	% (95% CI)
Very satisfied or satisfied with assigned study product	98.7 (95.2, 99.8)	99.0 (94.7, 1.00)	97.8 (88.7, 99.9)	99.6 (97.7, 100)	100 (98.1, 100)	97.8 (88.4, 99.9)
Willing to use the assigned study product in future pregnancy	94.6 (89.6, 97.6)	95.2 (89.0, 98.4)	93.3 (81.7, 98.6)	97.9 (95.3, 99.3)	97.5 (94.1, 99.2)	100 (92.3, 100)
Willing to use the assigned study product in the future when not pregnant	94.6 (89.6, 97.6)	97.1 (91.7, 99.4)	88.9 (76.0, 96.3)	96.3 (93.1, 98.3)	95.9 (92.1, 98.2)	97.8 (95.5, 99.9)
<b>Product Preferences</b>						
Vaginal Ring	61.5 (53.7, 68.3)	84.5 (77.5, 91.5)	8.9 (3.5, 17.2)	70.7 (64.5, 76.3)	85.7 (80.0, 90.3)	6.5 (1.4, 17.9)
Oral PrEP	23.6 (16.8, 30.5)	1.9 (0.0, 4.6)	73.3 (60.4, 86.3)	13.2 (9.2, 18.2)	1.5 (0.3, 4.4)	63.0 (47.6, 76.8)
Both	14.9 (9.1, 20.6)	13.6 (6.9, 20.2)	17.8 (6.6, 28.9)	15.7 (11.4, 20.9)	12.2 (8.0, 17.7)	30.4 (17.8, 45.8)

Table 1. Acceptability towards the ring and oral PrEP use at week 4 in the MTN-042 study cohort 2 and 3.

**Conclusions:** High acceptability of the ring and oral PrEP was reported after 4 weeks of use during pregnancy in the MTN-042 study, consistent with qualitative analyses across cohorts\*.

Pregnant people are at high risk of HIV infection and a majority dislike condoms, highlighting the need for optimized HIV-prevention choice during pregnancy.

\*Published elsewhere

## WEPEC208

### Are university students PrEP savvy? A cross sectional study on knowledge, attitudes, and behaviour towards HIV pre-exposure prophylaxis (PrEP) from University of Saskatchewan, Canada

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**Background:** The number of new HIV diagnoses in young adults is increasing globally making this an important group to consider in efforts to end the HIV epidemic. Little is known about the awareness and acceptability of PrEP amongst university students in Canada. We conducted this survey to gain insight into their attitudes as an initial step in scaling up PrEP on campus.

**Methods:** A web-based survey was distributed to all 22,004 actively enrolled students at the University of Saskatchewan between March 11-31, 2022. The 28-item questionnaire investigated students' perception of HIV risk, HIV testing, sexual behaviour, and knowledge and attitude towards PrEP. Descriptive and inferential statistical analyses was performed on all completed responses and for Men who have Sex with Men (MSM). Statistical analyses were conducted using SPSS 26.

**Results:** 3,005 students completed the questionnaire; respondents were predominantly undergraduate students (79%), 28 years or younger (75%). Survey cohort was 66%



female, 30% male, 77% heterosexual, 11% bisexual and 2% gay. Prior to the survey, only 30% of all respondents were aware of PrEP, having heard about it from social media and at university; and only 3% had taken it. These numbers were much higher for Gay MSM (GMSM), being 94% and 35% respectively. Only 34% of respondents were likely to talk to their health care provider about PrEP. 52% were not likely to take PrEP themselves, while 68% would recommend it to others. 94% were willing to take it if recommended by a health care provider. 94% would take it as a daily pill and 92% were willing to get regular STI testing done while on it. 84% of respondents were comfortable seeking PrEP on campus, the main reasons being easy access and feeling safe.

**Conclusions:** PrEP awareness is low amongst students at University of Saskatchewan except for GMSM. Acceptability is high. Scaling up PrEP on campus would require raising awareness among all students not just key populations, a proactive approach by health care providers in discussing PrEP with those vulnerable to HIV, engaging students in raising peer awareness and ensuring that care provided at campus wellness centers is safe, nonjudgmental, and easily accessible.

## WEPEC209

HIV PrEP initiation leads to reduced HIV and PrEP stigma and depression severity among GBMSM in Singapore: a prospective cohort study and mixed-methods analysis

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**Background:** PrEP initiation may be beneficial for emotional well-being among gay, bisexual and other men who have sex with men (GBMSM) through empowerment as well as reduced fears of acquiring HIV. However, no prior study has explored the impact of PrEP initiation on the mental wellbeing of GBMSM in Singapore.

**Methods:** A concurrent mixed-methods study design was employed. Quantitative data were collected at baseline, 6 and 12 months following PrEP initiation at a clinical setting. Outcomes of interest including HIV risk perception, internalised homophobia, depression, HIV stigma and PrEP stigma were measured as the composite score of several Likert scale questions. A longitudinal mixed effect linear model incorporating indicator variables for each

time point and controlling for key sociodemographic variables. Participants were purposively sampled to participate in in-depth interviews about their PrEP experience at the end of the study, which were analyzed through inductive thematic analysis.

**Results:** The baseline cohort consisted of 53 participants, with 40 individuals remaining in the study at the 6-month follow-up and 36 participants at the 12-month follow-up. A total of 13 participants participated in in-depth interviews. At the 6-month mark, HIV stigma ( $C=-2.13$ ,  $CI=[-4.00, -0.26]$ ) and PrEP stigma ( $C=-1.36$ ,  $CI=[-2.59, -0.14]$ ) decreased compared to baseline.

At the 12-month mark, HIV risk perception ( $C=-1.07$ ,  $CI=[-1.87, -0.32]$ ), depression ( $C=-1.55$ ,  $CI=[-2.81, -0.29]$ ), HIV stigma ( $C=-2.26$ ,  $CI=[-4.20, -0.32]$ ) and PrEP stigma ( $C=-2.08$ ,  $CI=[-3.35, -0.81]$ ) decreased compared to baseline.

Participants highlighted in interviews that being on PrEP helped them feel less worried and fearful of acquiring HIV and significantly improved their mental health. They also articulated how initiating PrEP gave them more confidence and opportunities to have sex with people living with HIV, and positively shaped their views towards both HIV and PrEP use in the community.

**Conclusions:** PrEP initiation has a significant positive impact on the mental wellbeing of GBMSM and has the potential to help in destigmatizing both PrEP use and having HIV in the community.

Further research is needed to explore the use of PrEP as a platform for addressing HIV-related stigma.

## WEPEC210

Mapping the locations of client mobilization in voluntary medical male circumcision: from where are clients being mobilized in Gaza and Sofala provinces, Mozambique?

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**Background:** Voluntary Medical Male Circumcision (VMMC) is a critical intervention in reducing heterosexual transmission of HIV in sub-Saharan Africa. Effective demand creation strategies are essential for the success of VMMC programs, thus it is critical to know where to find most clients. To find out from which places clients are being mobilized for VMMC, we present an analysis of VMMC client mobilization efforts in the Gaza and Sofala Provinces of Mozambique, focusing on the period from October 2022 to September 2023 (FY23).

**Methods:** Data were sourced from the National VMMC database and included details of the locations where clients were mobilized for VMMC services in Gaza and Sofala Provinces. Mobilization places for VMMC included health



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facilities, homes (door-to-door mobilization), markets, prisons, community locations, roads, sports pitches, promotional campaigns, religious institutions, schools, and workplaces.

**Results:** In FY23, 26,332 clients were circumcised in both provinces, corresponding to 81% of the target of 32,400 clients. From the total circumcised, 21,245 clients (80.7%) were mobilized from their homes (90% in Gaza and 74.5% in Sofala). Home mobilization decreased as age increased (86% for 15 to 29; 66% for 30 to 49; 16% for 50+ years), was similar between rural and urban areas (91% versus 90%) in Gaza, and different in Sofala (72% urban vs 77% rural). Market mobilization accounted for 1,206 clients (4.6%; 1.1% in Gaza and 6.9% in Sofala), with 3%, 8% and 21% for the three age bands.

Other places combined (prisons, community settings, road works, soccer/sports pitch) accounted for 2,042 clients (8%), with 5%, 17% and 28% for the age bands; 787 clients (3.0%) were mobilized at school and workplaces; 956 (3.6%) clients were mobilized at health facilities; 96 (0.4%) were mobilized at promotional campaigns and religious functions.

**Conclusions:** Home-based mobilization was the most successful strategy for VMMC client recruitment in both Gaza and Sofala Provinces, especially in Gaza, and for younger clients.

Market-based strategies also contribute significantly but could benefit from further enhancement. Strategies involving promotional campaigns, religious institutions, schools and workplaces need reconsideration. The variety of sources highlights the importance of a multi-pronged approach to VMMC demand creation.

## WEPEC211

The relationship between recent condomless anal sex and willingness to use injectable PrEP among transgender women and MSM in India: testing the mediating role of risk perception

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**Background:** Several theories (e.g., Risk Perception Attitude framework) and empirical findings indicate that risk perception may predict future behaviors or intentions to adopt healthy behaviors, and that past behaviors can influence risk perception.

We tested the hypothesis that recent condomless anal sex (CAS) will predict willingness to use injectable PrEP through increased risk perception among TGW and MSM.

**Methods:** In 2022, we conducted online/self-administered and offline/interviewer-administered surveys among 250 TGW and 251 MSM in Chennai. We collected data on CAS with last male non-regular partner (yes/no), risk perception score ("To what extent are you afraid you might contract HIV?: 'not at all afraid'=0, 'to very afraid'=3"), oral PrEP awareness/use, and willingness to use injectable PrEP (yes/no). Causal mediation analysis was used in Stata-18 to estimate the natural direct (NDE), indirect (NIE), and total (TE) effects on willingness to use injectable PrEP.

**Results:** Participants' mean age was 29 years (SD=5.7) for TGW and 30 years (SD=6.9) for MSM. Engagement in sex work: TGW=93.9%; MSM=39.2%. CAS was higher among MSM (41.5%) compared to TGW (21.7%;  $p<.001$ ). Among TGW, CAS had significant direct (NDE=0.35, 95% CI 0.25 to 0.46,  $p<.001$ ) and total (TE=0.41, 95% CI 0.28 to 0.54,  $p<.001$ ) effects on willingness to use injectable PrEP, and a significant indirect effect through risk perception (NIE=0.06, 95% CI 0.01 to 0.10,  $p<.01$ ; proportion mediated=15%).

Among MSM, there were no significant TE, NDE or NIE; however, among MSM who engage in sex work, CAS had a significant direct and total effects on willingness to use injectable PrEP (NDE=0.19, 95% CI 0.04 to 0.35,  $p=.02$ ; TE=0.19, 95% CI 0.04 to 0.34,  $p=.02$ ), but risk perception was not a significant mediator.

Among MSM, CAS was not a significant predictor of risk perception and higher income predicted willingness to use injectable PrEP.

**Conclusions:** Our findings support the mediating role of risk perception in the association between CAS and willingness to use injectable PrEP among TGW. Among MSM, as CAS was not associated with risk perception, strategies to increase accurate HIV risk perception, along with PrEP education campaigns and affordable/subsidized pricing may increase willingness to use injectable PrEP.

## WEPEC212

Highly effective PrEP implementation program under Thailand's Universal Health Coverage (UHC) scheme provided by key population-Led and hospital-based services to reduce newly acquire HIV to end AIDS by 2030

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**Background:** UHC scheme had initiated to pilot free of charge for HIV pre-exposure prophylaxis (PrEP) services for high-risk population in Thailand since 2020. In 2022, there were several Key Population-Led Health Services (KPLHS) run by Community Based Organizations (CBOs) and hospital-based facilities distributed throughout the country to provide PrEP services for KPs.



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**Methods:** PrEP services under UHC were recorded under National AIDS Program (NAP) through online system. We used the data from NAP for newly registered PrEP users in 2022 then followed up to December 2023 to explore PrEP persistence and newly HIV seroconvert among PrEP users who either still used PrEP or discontinued and restarted PrEP later.

We used linked de-identified PrEP users and HIV testing results who newly registered under NAP and initiated PrEP in 2022 and follow up them till December 2023. PrEP retention (continuously on PrEP) and PrEP persistence for 12 months (continuously PrEP users and person who initiated PrEP and stopped > one month, then restarted PrEP again) were analysed. HIV testing results were used to estimate HIV incidence among PrEP users during study period.

**Results:** There were 10,938 people who initiated PrEP under UHC which 9,237 (84.45%) were newly PrEP users and 1,701 (15.55%) who ever used PrEP and restarted to use PrEP again. From 10,938 users, 8,295 (75.84%) received PrEP services by KPLHS and 2,643 (24.16%) by hospitals. Most common key-population were MSM (78.13%) and TGW (9.54%) by KPLHS and MSM (72.34%) and partner of PLHIV (14.30%) by hospital-based services. PrEP retention at 12 months was 14.33% by KPLHS and 15.02% by hospital. PrEP persistence at 12 months was 26.85% by KPLHS and 25.77% by hospital.

There was no single HIV seroconvert among people who were still on PrEP or restarted PrEP during the study period except 3 cases who were found to have HIV positive at one month visited after PrEP initiation.

**Conclusions:** PrEP implementation under UHC by KPLHS and hospital-based facilities had demonstrated the highly effective results to reduce HIV acquisition among high risk population who engaged in PrEP services.

Scaling up PrEP services among KPs and early recruit newly HIV infection on ART will be crucial strategies to end AIDS by 2030.

## WEPEC213

### Acceptability of pharmacy-based Pre-Exposure Prophylaxis (PrEP) refills for people who sell sex in Zimbabwe

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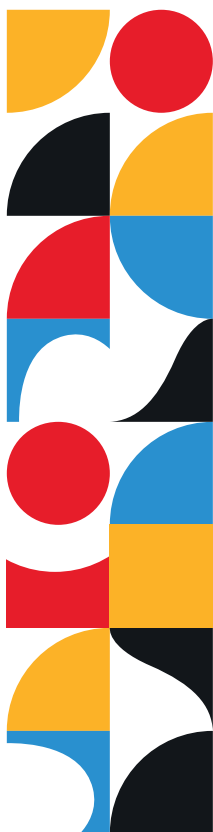
<sup>3</sup>Liverpool School of Tropical Medicine, Sexual Reproductive Health, Liverpool, United Kingdom

**Background:** Pre-exposure prophylaxis (PrEP) has potential to decrease the HIV burden among sex-workers (SW). However, PrEP continuation among SW initiated on PrEP is low, an issue that could be partially mitigated with community-based PrEP refills from pharmacies.

We report on the acceptability of a pharmacy-based PrEP refill program nested within Zimbabwe's existing Key Populations (KP) program (formerly Sisters) for PrEP initiation in Harare, Zimbabwe.

**Methods:** Participants were purposively selected between June-July 2023. In-depth interviews were conducted with SW, pharmacists, and key informants from various health departments, namely, Harare City Health, Ministry of Health, National AIDS Council and CeSHHAR to determine their perspectives on pharmacy-based PrEP refills. SW were selected to ensure diversity in gender, age, and participation levels in the KP program. Thematic analyses were conducted.

**Results:** Overall, 20 SW, aged 16-23 years were interviewed (16 female, 3 transgender females and 1 male). Six pharmacists and 4 key informants were also interviewed. All SW viewed the use of pharmacies for PrEP refills positively, with most SW expressing willingness to collect PrEP from this venue which was viewed as convenient and time saving. Most (n=18, 90%) SW perceived pharmacy staff as friendly. Pharmacies were also viewed as acceptable places for accessing new PrEP technologies such as injectables; and conducting HIV self-tests for PrEP refills. Potential barriers raised by SW included possible lack of confidentiality of pharmacy staff and fear of being judged by pharmacists compared to the KP program staff, who were viewed as creating a safe and comfortable environment. Two (10%) SW perceived pharmacists would provide inadequate health information, and 'felt inferior to pharmacy staff' making it difficult to seek clarification. Pharmacists were highly supportive of the intervention: they acknowledged that SW are part of their clientele and said they would uphold confidentiality as part of their professional responsibility. Key informants viewed pharmacy-based PrEP refills as practical and achievable with potential to increase access options for SW.





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**Conclusions:** SWs, pharmacists, and key informants found pharmacy-based PrEP refills acceptable and potentially feasible if confidentiality is prioritised. A multi-disciplinary team is co-developing a tailored, safe, and acceptable pharmacy-based PrEP intervention for Zimbabwean sex work populations.

## WEPEC214

Elevating PrEP access: a game-changing ePharmacy model for key populations in South Africa

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**Background:** Ensuring access to Pre-Exposure Prophylaxis (PrEP) for key populations, specifically men who have sex with men (MSM) and transgender women (TGW), is crucial in achieving the 95-95-95 goals for HIV prevention. Challenges such as poor patient monitoring, clinic visit costs, and lengthy wait times have been associated with PrEP adherence issues. Recognizing the need for more client-friendly and convenient services, the Aurum Institute's POP INN clinics serving men who have sex with men (MSM) and transgender women (TGW) have successfully implemented an innovative approach - ePharmacy.

**Description:** This online, courier-based medication delivery system, facilitated by CareWorks, a digital and health-care innovation organization in South Africa, has proven effective in reaching these subgroups of KPs across SA. The ePharmacy model is a program that enrolls eligible MSM, connecting them with the Careworks digital and call centre. This innovative system enables clients to engage with telehealth services from any location in South Africa. Careworks proactively contacts clients two weeks before their PrEP supply runs out, allowing clients to specify their preferred delivery location for the next supply.

This flexible approach means clients are not confined to the district where they initiated PrEP, eliminating the need for clinic visits and enabling access to PrEP from any part of South Africa. From April 2022 to December 2023, a total of 813 clients were enrolled in the ePharmacy program. Within this period, 606 clients were actively using daily PrEP, while 56 opted for Event-Driven PrEP.

**Lessons learned:** ePharmacy, when integrated with outreach and facility-based strategies, effectively overcomes barriers such as HIV stigma, lengthy waiting times, staffing costs, and travel expenses. Its cost-effectiveness facilitates consistent provision of pharmaceutical services to remote or non-facility-based community members.

**Conclusions/Next steps:** This model highlights the potential of public-private partnerships in decentralizing access to PrEP. By leveraging digital platforms and courier-based solutions, such partnerships can overcome traditional barriers, ensuring that PrEP is delivered con-

veniently and confidentially to individuals irrespective of their geographic location. This not only improves adherence but also addresses issues such as stigma, long waiting times, and travel costs, making PrEP more accessible and attractive to those who need it the most.

## WEPEC215

Developing a novel mobile app to support adherence to Event-Driven PrEP (ED-PrEP) among MSM: the PrEPsmart Study

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**Background:** Several studies have demonstrated the effectiveness of event-driven (ED)-PrEP as an alternative to daily PrEP. While ED-PrEP has promising potential to increase PrEP uptake/persistence, adherence to this complex regimen is challenging.

**Methods:** Using the Information-Motivation-Behavioral Skills Model, a multi-disciplinary team developed the PrEPsmart app which features pill-taking/sex diary, SMS-reminders for ED-PrEP dosing, and feedback on PrEP protection levels and dosing summaries. We conducted focus groups (FG) among MSM in San Francisco, CA to develop the app, followed by a two-month pilot to assess acceptability using System Usability Scale (SUS).

**Results:** 15 MSM participated in four FGs (mean age 29, 60% minority race/ethnicity). When shown wireframes, participants appreciated how PrEPsmart simplified the process of taking ED-PrEP and liked that the app assisted with planning for sex and notifying them when they would be protected after dosing. Several felt trends and insights are useful in helping MSM understand their sexual patterns and would help them decide whether to switch to daily PrEP. They recommended in-app notifications followed by text messages for dosing reminders, as well as a chat feature to answer questions and stay in touch with their provider. Based on FG feedback, we developed key features of PrEPsmart (figure), removed disliked components (e.g. partner-rating feature in sex diary), and tailored language to be sex-positive.

Among 12 MSM (mean age 41, 42% minority race/ethnicity) in the pilot, baseline median sex partners in last 3 months was 4 (IQR:3-7), and 8 were already using ED-PrEP. Mean SUS score was 64/100 ("good" range). Overall, 83% reported the app met their needs for PrEP support, 83% reported it helped them take ED-PrEP, and 92% would use PrEPsmart in future studies.



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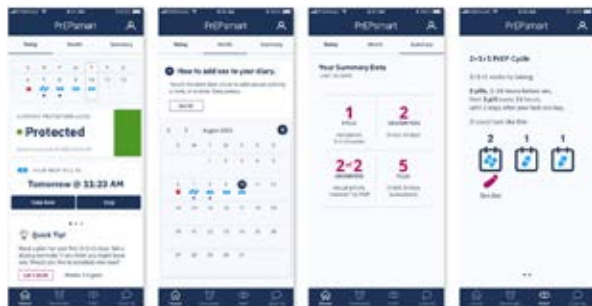
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**Conclusions:** PrEPsmart was found to be acceptable among MSM. Additional research is underway to evaluate efficacy of PrEPsmart in improving ED-PrEP adherence in a national US study.

## WEPEC216

Intention to use long-acting PrEP among MSM in Europe – results from the PROTECT survey from Spain, Italy, Germany, France and the United Kingdom

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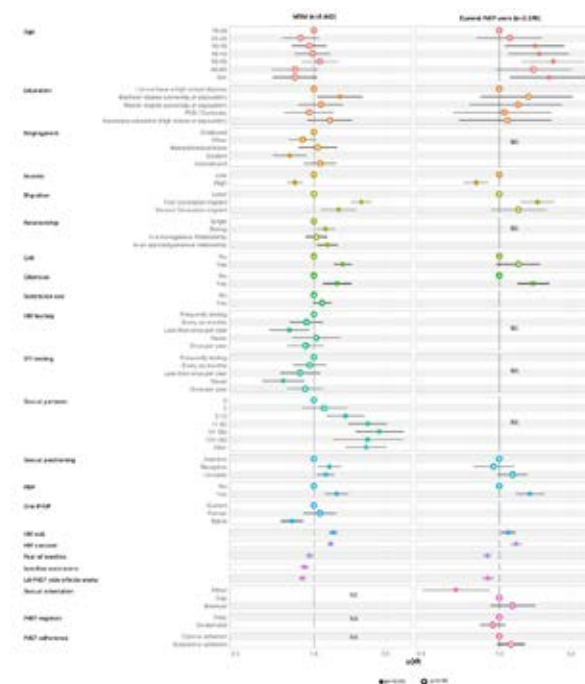
**Background:** Long-acting injectable pre-exposure prophylaxis for HIV (LA-PrEP) is approved for use in Europe and can substantially contribute to HIV prevention by fulfilling unmet needs. To date no large-scale comprehensive data is available that investigates interest and intention to use this new modality among men-who-have-sex-with-men (MSM) in Europe.

**Methods:** Data was collected via a cross-sectional survey from October to December 2023 among 8,642 HIV negative MSM participants from Spain (n=1,982), Germany (n=2,069), France (n=1,921), UK (n=1,137) and Italy (n=1,587). We investigated interest and intention to use LA-PrEP and its determinants, including sociodemographic information, sexual behavior, PrEP use (naïve, current, past; type of regimen), substance use, and psychosocial indicators using multivariable logistic regression.

**Results:** Overall, interest and intention to use LA PrEP were high (74%; 67%), particularly among current oral PrEP users (80%; 79%). Higher likelihood of the intention to use was associated with: dating (aOR=1.19; 1.04-1.379), open relationship (aOR=1.24; 1.06-1.45), past condomless anal intercourse (aOR=1.57; 1.38-1.79), chemsex (aOR=1.42; 1.14-1.76), PEP use (aOR=1.41; 1.18-1.69), more sexual partners (aOR=1.61; 1.22-2.15), sexual positioning (versatile aOR=1.22; 1.07-1.39; bottom 1.27; 1.07-1.51), perceived HIV risk (aOR=1.34; 1.26-1.41), perceived HIV concern (aOR=1.29; 1.23-1.35). It was

lower among MSM reporting: higher education (aOR=0.85; 0.74-0.97), higher income (aOR=0.78; 0.7-0.88), no or second generation migration background (aOR=0.71; 0.53-0.95), HIV testing less than once annually (aOR=0.7; 0.51-0.94), never testing for STI (aOR=0.62; 0.45-0.86), PrEP naïve (aOR=0.72; 0.61-0.85), fear of needles (aOR=0.93; 0.88-0.98), worries about side-effects (aOR=0.84; 0.8-0.88), injection pain (aOR=0.87; 0.82-0.91).

For current oral PrEP users, neither type of regimen (daily or on-demand), nor self-reported adherence predicted LA-PrEP intention to use. For model comparison, see figure.



**Conclusions:** MSM in Europe are interested and intend to use LA PrEP if made available. This innovation has the potential to help fulfilling unmet HIV prevention needs. The results can inform tailoring of access, public health policies, and messaging.





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## WEPEC217

### Demand creation strategies to improve voluntary medical male circumcision uptake in a traditionally non-circumcising community in Eastern Uganda

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**Background:** Voluntary medical male circumcision (VMMC) is a one-time preventive measure that reduces by 60% the risk of transmission of HIV to men in settings of high HIV prevalence. In some areas of Uganda such as Bugisu, most men are traditionally circumcised. However, in Teso sub-region where The AIDS Support Organization (TASO) implemented a U.S. President's Emergency Plan for AIDS Relief (PEPFAR)-funded health system strengthening project from 2017-2023, men do not routinely circumcise and VMMC is associated with myths such as impotence and Islamization. Stigma, fear of pain and prolonged abstinence period are also key barriers.

To increase the uptake of circumcision in this community, we designed a comprehensive community and health systems strengthening strategy.

**Description:** We designed and implemented a comprehensive community and health systems strengthening approach to strengthen VMMC uptake in 10 districts and 1 city in Teso-subregion, that is, Soroti, Kalaki, Kaberamaido, Amuria, Kapelebyong, Katakwi, Kumi, Bukedea, Ngora, Serere districts and Soroti City. The community systems approach involved dialogue meetings and trainings of opinion leaders such as religious, political, and cultural leaders who acted as gate keepers of VMMC mobilization activities. We also trained and engaged community-based peer mobilizers who conducted door-to-door mobilization for VMMC services. The health systems strengthening involved training of 121 health workers, enabling VMMC service expansion from 4 sites in 2017 to 13 in 2023. District health teams conducted regular site support supervision to mobilize men for high-quality, low-risk VMMC. Circumcision uptake increased from 7,515 (63% of target) at the start of the project (April-September 2017) to 24,751 (94% of the October 2017-September 2018 target) and subsequently maintained between 100%-120% (30,000-39,000 per year) until end of project in Sept 2023.

**Lessons learned:** The community is willing to take up VMMC services. Health and community systems strengthening is key to dispel myths and increase access, acceptability, and uptake of VMMC services in a traditionally non-circumcising community.

**Conclusions/Next steps:** Using a comprehensive and health systems strengthening strategy for demand creation increased uptake of VMMC in a traditionally non-circumcising community of eastern Uganda. Adoption and scaling up of these strategies might lead to reaching and sustaining HIV epidemic control.

## WEPEC218

### Falling through the cracks: optimization of post exposure prophylaxis for sexual violence HIV exposure outcomes using a target program cascade approach in Uganda, 2023

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**Background:** Sexual violence significantly impacts many women every year, amplifying the risk of HIV acquisition. Post-exposure prophylaxis (PEP) reduces HIV acquisition risk when taken within 72 hours of exposure and completed as a regimen. A cascade is a model for evaluating client retention across sequential stages of care required to achieve a successful desired outcome. Cascades with targets to standardize and optimize service delivery could improve PEP outcomes.

However, there is no defined cascade for PEP provision. We sought to define a PEP cascade and determine utility in identifying PEP service provision gaps among sexual violence survivors.

**Description:** Using World Health Organization guidelines, we assessed key indicators for PEP eligibility after possible HIV exposure, self-reported PEP initiation, and regimen completion, and HIV test confirmed sero-conversion monitoring among those who completed the regimen. We developed a monthly PEP-cascade data collection tool reporting into the US President's Emergency Plan for AIDS Relief (PEPFAR) Reporting System in Uganda from April to September 2023.

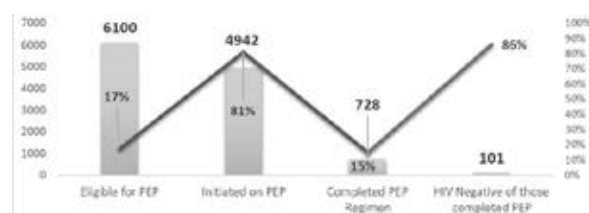


Figure. Post exposure prophylaxis cascade for 35,701 sexual violence survivors from 1806 health facilities in Uganda (April to September 2023).



**Lessons learned:** From 35,701 cases identified, majority were female (98%), and between aged 10-24 years (70%). Overall, 6,100 (17%) were eligible for PEP, 4,942 (81%) initiated PEP, 728 (15%) completed PEP and 101 (14%) of those who completed PEP sero-converted. These findings highlight missed opportunities for client follow-up for PEP regimen completion and sero-conversion monitoring. The PEP cascade presents an opportunity to profile cases, identify repeat PEP users eligible for pre-exposure prophylaxis and improve linkage to care for sero-converted individuals.

**Conclusions/Next steps:** To maximize PEP benefits for sexual violence survivors, it would be best to optimize the proportion of eligible clients initiated and ensure that most of those initiated complete PEP. Like the UNAIDS 95-95-95 treatment targets, a target program PEP-cascade may improve outcomes by identifying gaps to address and avert HIV seroconversions among sexual violence survivors.

## WEPEC219

### High adherence to oral PrEP in a large PrEP implementation project in Kenya

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**Background:** Oral pre-exposure prophylaxis (PrEP) effectiveness is linked to adherence, and accurate adherence measurement is crucial for appropriately interpreting the success of PrEP programs.

We assessed oral daily PrEP adherence via tenofovir diphosphate (TFV-DP) levels in dried blood spots (DBS) from a large PrEP implementation project.

**Methods:** Data are from the Partners Scale-Up Project, a stepped-wedge cluster-randomized pragmatic trial to integrate PrEP delivery in 25 public HIV care clinics in Kenya from 2017-2019. DBS samples were obtained from individuals returning for PrEP refill visits at all clinics on a random subset of days in a month. TFV-DP levels were measured

in DBS using liquid chromatography/tandem mass spectrometry at University of Colorado. We used DBS adherence benchmarks established in men to define the proportion of participants who took 7, 4-6, 2-3, and <2 doses per week. GEE regression was used to evaluate the association between TFV-DP levels  $\geq 700$  fmol/punch (optimal adherence) and demographic factors, including age at enrollment, gender, and serodifferent partnership.

**Results:** Overall, 4898 individuals initiated PrEP. A total of 195 DBS samples were randomly collected from 168 individuals. Median age at enrollment was 33 years (IQR 27-44), 66% were female, 79% were in monogamous marriages, and 90% were in serodifferent partnerships. Median duration between PrEP initiation and sample collection was 6 months (IQR 3-13), with 4%, 16%, and 80% of samples collected at month 1, 2-3, and >3 post-initiation, respectively. Overall, TFV-DP was detectable in 188 (96%) of 195 DBS samples. Median TFV-DP concentration was 1247 fmol/punch (IQR 830-1681) and 82% had TFV-DP levels associated with  $\geq 700$  fmol/punch. Notably, 50% (97), 32% (62), 11% (21), and 7% (15) had DBS TFV-DP levels corresponding to 7, 4-6, 2-3, and <2 doses/week, respectively. TFV-DP levels  $\geq 700$  fmol/punch were more common in older individuals, males, and those in serodifferent partnerships, although none of these differences were statistically significant ( $P < 0.05$ ).

**Conclusions:** We observed high detection of TFV-DP levels suggestive of consistent use among individuals returning for PrEP refills in a large Kenyan PrEP implementation program. These data indicate adherence can be adequately high among clients at risk for HIV and motivated to use oral PrEP.

## WEPEC220

### Client Experiences with the SEARCH patient-centered HIV "Dynamic Choice Prevention" Model in Kenya and Uganda

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**Background:** Identifying the optimal approaches to offering HIV prevention to meet the needs of those at risk is a high priority, particularly given the expanding toolkit of



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biomedical HIV prevention options. The ongoing SEARCH study in rural East African communities evaluated the uptake of a structured patient-centered HIV prevention package with choices of product, testing mode, and location of care delivery. In this qualitative study, we sought to understand clients' experiences of this 'dynamic choice prevention' (DCP) model and highlight pathways of action to inform HIV prevention delivery models.

**Methods:** In-depth semi-structured interviews were conducted from November 2021 through March 2022 with a purposively-selected sample of n=56 participants in the SEARCH study DCP trials (across outpatient departments, antenatal clinics, and community settings), and n=21 healthcare providers (total n=77). A seven-person multi-regional team translated and inductively-coded transcript data. We used a framework analysis approach to identify emergent themes.

**Results:** Individuals taking up PrEP reported feelings of relief, a sense of liberation from fears of acquiring HIV, and satisfaction with being able to take action despite their partner's behaviors. Couples used a range of approaches afforded by the study to persuade partners to get tested and opt for PrEP. PEP use was less common, although women welcomed it in the event of sexual coercion or assault. Participants discussed switching from PEP to PrEP after familiarizing themselves with usage and ascertaining ongoing risk. Participants reported feeling respected by providers and able to contact them directly for telephone support. Prevention uptake was hindered by stigma, limited experience with and knowledge of prevention methods, gendered and generational power dynamics within intimate partnerships and families, and negative perceptions of methods due to properties of the products themselves. Participants anticipated long-acting injectable PrEP could solve their challenges regarding pill size, daily pill burden, and likelihood of unwanted disclosure.

**Conclusions:** Diverse preferences and barriers to uptake of prevention require a choice of HIV prevention options, locations and delivery modalities- but in addition, flexible, competent and friendly care provision is crucial to promote uptake. Helping clients feel valued, and addressing their unique needs and challenges, enables their agency to prioritize their health.

## WEPEC221

### Pre-Exposure Prophylaxis (PrEP) option preferences among sex workers (SW) in seven provinces in Thailand: a national cross-sectional study

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<sup>1</sup>SWING (Service Workers In Group Foundation), Bangrak, Thailand, <sup>2</sup>BIRD (Bangkok Interdisciplinary Research and Development), Phayathai, Thailand

**Background:** Despite Thailand offering free PrEP under Universal Health Coverage since 2019, only 8% of users are sex workers (SW) – males (MSW), females (FSW), and transgender females (TGSW) – Thailand Ministry of Public Health, 2023. As part of a PrEP study among SW in Thailand, current PrEP uptake status and preferred PrEP options reported by SW were investigated.

**Methods:** A national cross-sectional study was conducted from April–December 2023 by SWING Foundation and BIRD (Bangkok Interdisciplinary Research and Development) in seven provinces in Thailand. This study investigated PrEP uptake and associated factors among SW using a questionnaire that included questions on current PrEP status and preferred PrEP options: i) PrEP oral dose; ii) long-acting injectable cabotegravir (CAB-LA); and iii) PrEP vaginal ring. Regarding PrEP options, interviewers provided information on these, mentioning that some options have not yet been registered in Thailand. The study enrolled a total of 1,511 Thai SW (FSW: 621 – MSW: 452 – TGSW: 438), aged ≥18 years old, HIV-negative, and engaged in sex work in the past three months. Data collection was conducted face-to-face by trained outreach workers.

**Results:** The median age of SW was 32 years. Out of the total, 35.9% had started sex work in the past 12 months, 136 (9.0%) reported currently using PrEP, 370 (24.5%) reported not being interested in PrEP, and 898 (59.4%) were willing to initiate PrEP. After explanation of the different options, injectable CAB-LA was the most preferred option (FSW: 43.6%; MSW: 40.0%; and TGSW: 43.6%) followed by daily oral dose (FSW: 30.6%; MSW: 28.8%; and TGSW: 38.1%). Among SW who reported not being interested in PrEP (n=370), after receiving further information, 71.8% selected a PrEP option, with 40% stating a preference for CAB-LA and 17.3% for daily oral dose.

**Conclusions:** Information provided to SW about different PrEP options can increase demand among those previously reporting no interest. Such information enabled interested SW to select the PrEP option best suited to their needs. Enhanced information provision for SW will be needed for PrEP scale up. Different PrEP options need to be made available and accessible for SW, including affordable injectable CAB-LA, in the public health system.

## WEPEC222

### Accelerating HIV prevention in Cameroon: factors associated with early sexual risk among 15-19 adolescent girls and young women, including adolescent mothers

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**Background:** Reaching global HIV targets requires supporting epidemiological transitions in different epidemics, including concentrated epidemics, such as the case of Cameroon, the most HIV-affected country in West Africa. Understanding which adolescent girls and young women should be prioritized for HIV prevention services is central to targeting HIV prevention investments.

This study focuses on examining factors associated with HIV and sexual risk behaviors among adolescent girls (15-19 years) in Cameroon.

**Methods:** The study's specific objectives are to examine differences in sexual risk behaviors among very young adolescent girls and young women in Cameroon by motherhood status, followed by investigating factors associated with outcomes. This study utilized the cross-sectional data from the 2018 Cameroon Population-based HIV Impact Assessment (CamPHIA) survey, with a special focus on adolescents who are mothers.

We assessed eight individual measures of HIV and sexual risk behaviors: inconsistent condom use, transactional sex, age-disparate sex, multiple sexual partners, inequitable sex (transactional sex and age-disparate sex), tested and received HIV results, contraceptive use, and high-risk sex behaviors (inconsistent condom use and any or all the other listed sexual risks).

We calculated, weighted frequencies, odds ratios (ORs), and average marginal effects (AMEs) for individual HIV and sexual risk behaviors associated with vulnerability factors, adjusting for covariates using STATA 16.

**Results:** Bivariate results show that adolescent mothers report higher rates of HIV-related risks in all outcomes. AGYW who were mothers were more likely to report inconsistent condom use ( $\alpha\text{OR}=2.13$ ,  $95\%\text{CI}=1.74-2.59$ ), age-disparate sex ( $\alpha\text{OR}=1.69$ ,  $95\%\text{CI}=1.36-2.10$ ), inequitable sex partner ( $\alpha\text{OR}=1.63$ ,  $95\%\text{CI}=1.33-2.00$ ), high-risk sex ( $\alpha\text{OR}=1.73$ ,  $95\%\text{CI}=1.38-2.18$ ), and knowing their HIV status ( $\alpha\text{OR}=1.43$ ,  $95\%\text{CI}=1.14-1.80$ ) in multivariable analyses. Adolescent girls who were married, mothers, experienced early sexual debut (sex by 16 years), and were not in school had a 71.9% predicted probability of HIV risk behaviors, compared to 12.9% among AGYW who experienced neither of these factors.

**Conclusions:** In times of limited HIV prevention resources, targeting HIV prevention in concentrated epidemics such

as Cameroon may require more intensive efforts to reach very young adolescent mothers, especially those who are out of school and married early.

## WEPEC223

### Roles of key population-led health services (KPLHS) in identifying new cases of HIV acquisition in Chiang Mai, Thailand

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**Background:** The Key Population-Led Health Services (KPLHS) model is critical to Thailand's HIV epidemic and has demonstrated feasibility and accessibility to key population. Chiang Mai, Thailand's second largest city, has two KPLHSs (Caremat Foundation and MPlus) that have been in operation for more than a decade. Their work includes HIV prevention in communities, outreach to key populations, HIV testing services, and referring those who test positive for treatment. The purpose of this study was to describe the HIV prevalence among clients receiving services from KPLHSs in Chiang Mai, as well as the CD4 level at the first HIV diagnosis.

**Methods:** A cross-sectional using secondary data from the KPLHS client databases (eCascade) from 2021 to 2023 was conducted to describe the HIV prevalence and CD4 levels. All clients receiving services from KPLHSs in Chiang Mai were included in the analysis.

**Results:** Out of 24,770 client records reviewed, 24,768 (99.9%) had complete data for analysis. The majority of clients were MSM (89.2%), followed by TGW (4.6%). The mean age was 26.67 years (SD9.22). The HIV prevalence based on the first HIV testing provided by KPLHS appears to be declining between 2021 and 2023 (2.6%,1.6%,1.4%, respectively). Of those who tested positive for HIV, 82.3% were MSM and 11.8% were TGW. The average CD4 level at the first test was 449.22 cells/uL (SD253.87). Data separated by year is shown in Table 1.

Year	2021	2022	2023
All clients (n, %)	6,457 (26.1%)	10,401 (42.0%)	7,910 (31.9%)
Age in years			
Mean (SD)	28.86 (9.20)	26.97 (9.59)	24.05 (8.87)
Key populations (n, %)			
- MSM	5,447 (84.4%)	9,532 (91.7%)	7,104 (89.6%)
- TGW	535 (8.3%)	383 (3.7%)	228 (2.9%)
- Others	475 (7.3%)	486 (4.6%)	578 (7.3%)
HIV positive cases (n, %)			
- MSM	166 (2.6%)	172 (1.6%)	113 (1.4%)
- TGW	136 (81.9%)	146 (84.9%)	89 (78.8%)
- Others	19 (11.4%)	17 (9.9%)	17 (15.0%)
- Others	11 (6.7%)	9 (5.2%)	7 (6.2)
CD4 (cells/uL)			
- Mean (SD)	441.67 (228.57)	446.78 (289.37)	459.22 (243.75)
- Median	456.5	397	393.5

Table 1. KPLHS clients and HIV prevalence (n = 24,768).

**Conclusions:** The majority of KPLHS clients were key populations. The overall average CD4 count of new HIV cases was relatively high.

This information may confirm that KPLHSs in Chiang Mai played an important role in rapidly reaching out to key



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populations who may be at risk of HIV to get tested, know their HIV status, and then receive treatment in order to reduce transmission, in line with the global ultimate goal of ending AIDS by 2030.

## WEPEC224

Epidemiological impact of pre-exposure prophylaxis in HIV prevention: a single center observational experience in pre- and post-PrEP availability era

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**Background:** HIV transmission is decreasing because of effective preventive tools such as treatment as prevention (TasP) and PrEP. In Italy, PrEP was introduced only in 2018: almost half of Italian PrEP users lives in Milan where HIV decrease appears more pronounced compared to the other Italian cities. PrEP net effect on epidemiology has not been clearly proven yet.

The aim of this analysis is to address potential PrEP role on new HIV cases trajectory.

**Methods:** This monocentric retrospective study included all new HIV cases from 2012 to 2023 stratified into 3 periods: pre-TasP (2012-2015), TasP (2016-2018) and PrEP (2019-2023). Descriptive statistics and non-parametric tests were used to depict study population. Linear regression analysis was applied to predict the trajectories of diagnoses in different subgroups including individuals eligible to PrEP, defined as MSM with CD4+ >500 cell/mm<sup>3</sup>.

**Results:** We included 656 persons (343 pre-TasP, 152 TasP and 161 PrEP): demographic and clinical features are summarized in Table 1.

		Overall (n=656)	Pre-TasP (n=343)	TasP (n=152)	PrEP (n=161)	p
Gender, n (%)	Males	507 (77.3)	263 (76.7)	115 (75.7)	129 (80.1)	0.001
	Females	119 (18.1)	73 (21.3)	29 (18.4)	18 (11.2)	
	TGW	30 (4.6)	7 (2.0)	9 (5.9)	14 (8.7)	
Age, years, median (IQR)		37 (30-47)	36 (30-48)	37 (30-50)	40 (31-48)	<0.001
Race/ethnicity, n (%)		371 (56.6)	203 (59.2)	80 (52.6)	88 (54.7)	0.341
Risk Factor, n (%)	MSM	368 (56.1)	173 (50.9)	88 (57.9)	105 (65.2)	0.013
	Heterosexual contact	249 (38.1)	139 (40.8)	60 (39.5)	50 (31.1)	
	IVDU	36 (5.5)	27 (7.9)	3 (2.0)	6 (3.7)	
Reason for testing, n (%)	Parenteral	2 (0.3)	1 (0.3)	1 (0.6)	—	<0.001
	Other disease	361 (55.0)	192 (56.0)	60 (39.5)	89 (55.3)	
	Risky behavior	166 (25.3)	88 (25.7)	47 (30.9)	31 (19.3)	
	Routine screening	44 (6.7)	18 (5.2)	3 (2.0)	23 (14.3)	
	Partner's infection	32 (4.9)	12 (3.5)	5 (3.3)	15 (9.3)	
	Pregnancy	10 (1.5)	8 (2.3)	1 (0.7)	1 (0.6)	
CDC Stage C, n (%)	Other	43 (6.6)	25 (7.3)	16 (10.5)	2 (1.2)	0.033
		164 (25.0)	97 (28.3)	30 (19.7)	37 (23.0)	
T Lymphocyte CD4 count, cells/mm <sup>3</sup> , median (IQR)		538 (119-525)	538 (115-516)	333 (112-517)	350 (129-542)	0.885
HIV RNA, log <sub>10</sub> , median (IQR)		4.92 (4.23-5.54)	4.91 (4.17-5.54)	4.90 (4.14-5.50)	4.99 (4.35-5.54)	0.373

TGW: transgender women; MSM: men who have sex with men; IVDU: intravenous drug users

Table 1. Demographic and clinical features of study population.

MSM were the largest group (56.1%) while PrEP candidates represented only a small portion (17.1%). Features of new cases were significantly different in the three study periods. New HIV diagnoses decreased significantly over time (b-coefficient: -0.167, p=0.018). The linear regression applied to risk factors showed a significant reduction in heterosexuals (b-coefficient: -0.263, p=0.027) and in intravenous drug users (b-coefficient: -1.740, p<0.001) but not in MSM (b-coefficient: -0.219, p=0.226). Subjects eligible to PrEP did not show a decreasing trajectory (b-coefficient: -0.366, p=0.375), but, after period stratification, the model predicted a significant decrease after 2018 when PrEP was available (b-coefficient: -0.727, p=0.015, Figure 1).

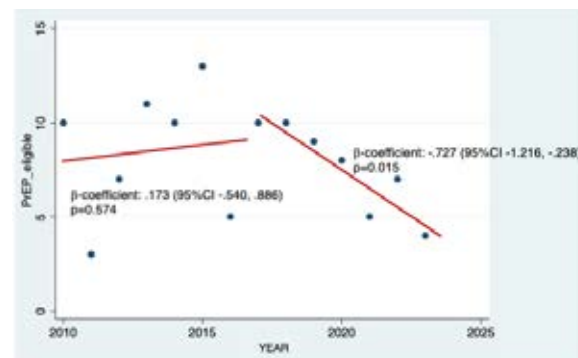


Figure 1. Linear regression analysis to predict trajectory of new HIV infections in MSM eligible to PrEP stratified according to study period (PrEP versus pre-TasP/TasP).

**Conclusions:** The overall number of new HIV diagnoses showed a progressive reduction during the last decade. The trajectory for MSM eligible to PrEP showed a significant downward trend in recent years suggesting that this tool may be effective for HIV transmission even at population level.

## WEPEC225

### "Is CAB-LA the answer to oral PrEP user challenges?" Clients' perceptions towards injectable PrEP scale-up in Malawi: a qualitative study

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**Background:** Despite the introduction of oral PrEP in 2021, new HIV infections remain high especially among key and priority populations due to challenges with oral PrEP, including pill burden, side effects, and stigma. The introduction of injectable PrEP may reduce challenges and improve uptake and persistence.

This study assessed the feasibility, acceptability, and sustainability of introducing injectable PrEP.

**Methods:** 69 in-depth interviews (IDIs) were conducted between May-Dec 2023 with HIV- negative key and priority populations in Malawi as part of a pre-implementation study to assess preferences for injectable PrEP. IDIs explored clients' knowledge and experiences with oral PrEP, and delivery point and service integration, as well as anticipated barriers and facilitators to use. Interviews were translated and transcribed into English, followed by a rapid analysis of interview summaries; data was coded and analyzed using NVivo 1.7.

**Results:** Participants expressed motivation to initiate and continue injectable PrEP, citing its ease, lack of pill burden, long lasting effect, and discreteness as benefits. Many participants had previously taken but discontinued oral PrEP. Preferred injectable PrEP delivery models varied by population type; key populations noted a preference for delivery at drop-in centres, while priority populations indicated a preference for delivery at public health facilities. Respondents expressed that side effects might be a barrier, particularly given that they are irreversible once the injection has been received.

Co-administering and integration with other services was broadly accepted, though combining ART and PrEP delivery points was not accepted by many. Due to privacy concerns, participants preferred to be followed up by phone call or peer educators rather than SMS or home visits. Despite demonstrating motivation to use injectable PrEP, participants expressed some fears including the concern

that ART may be less effective in the event of seroconversion. Common misconceptions about injectable PrEP were that it may lead to sexual dysfunction in men, cause infertility in women, or that it could serve as a contraceptive or HIV vaccine.

**Conclusions:** Injectable PrEP was accepted by most key and priority groups and those using oral PrEP indicated readiness to switch methods. Injectable and oral PrEP communication, delivery, and follow-up should be tailored to population type.

## WEPEC226

### Size matters: a randomized controlled trial to assess the impact of external diameter on preference, adherence and acceptability of three intravaginal rings (IVRs) in 24 US couples

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**Background:** Women need multipurpose prevention technologies (MPTs) for simultaneous prevention of HIV, other sexually transmitted infections, and unintended pregnancy. More than half of the MPTs in development are intravaginal rings (IVRs), however, no empirical data supports the current 54-58mm external diameter as ideal. Understanding the impact of size on preference, adherence, and acceptability is critical for designing products that users will be satisfied with, leading to effective use.

**Methods:** We conducted a 3-month randomized cross-over trial among 24 mutually monogamous couples in Atlanta and the Bronx to compare 3 non-medicated silicone IVRs (46mm, 56mm, 66mm external diameters) each used continuously for ~30 days. Women reported on preference and acceptability (19-item scale) via self-administered questionnaires, and adherence via daily texts.

We used random effects regression models to compare mean acceptability scores (scale of 1-5); adherence (IVR never out >30 minutes in 24h); and odds of removals, expulsions, and the IVR being out of the vagina all day, per day of use.

**Results:** 23/24 couples completed the study (mean age 27). More women preferred the 46mm IVR (59% vs 18% for the 56mm and 66mm IVRs;  $p=0.0045$ ), although, mean acceptability scores were identical for the 46mm and 56mm IVRs (4.54), and significantly higher than for the 66mm IVR (3.94;  $p<0.001$ ). There was no difference in overall adherence by IVR (46mm, 78%; 56mm, 75%; 66mm, 59%;  $p=0.30$ ), however, expulsions were more likely with the 46mm and



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66mm IVRs than the 56mm IVR (OR 5.72, 95% CI: 1.25-26.1 and OR 25.9, 95% CI: 6.11-109, respectively); and the 66mm IVR was more likely to have been out all day than the 56mm IVR (OR 6.50, 95% CI 3.46-12.2).

**Conclusions:** Our findings demonstrate the impact of external diameter on preference, adherence, and acceptability of non-medicated IVRs. Although most women preferred the smaller 46mm IVR, the 56mm IVR was equally acceptable and yielded the fewest expulsions or removals, indicating that diameters ranging from 46mm-56mm are likely to be acceptable to most women. Additional research is needed to explore how compressibility affects acceptability and adherence.

## WEPEC227

**Uptake and continuation of daily oral pre-exposure prophylaxis among population representative adolescents and young adults enrolled in a factorial randomised controlled trial: findings from rural KwaZulu-Natal, South Africa**

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**Background:** Adolescents and young people in South Africa are at substantial risk of acquiring HIV with approximately 56,000 new HIV acquisitions occurring among those aged 15-24 years in 2022. Daily oral pre-exposure prophylaxis (PrEP) is highly effective in preventing HIV acquisition, if taken as prescribed.

We describe PrEP uptake and early continuation in a 2x2 factorial randomised controlled trial (Isisekelo Sempilo) that aimed to assess the effectiveness of HIV prevention embedded in sexual health with or without peer navigator support to reduce prevalence of transmissible HIV.

**Methods:** The Isisekelo Sempilo trial, conducted from 2020-2022, enrolled 1743 adolescents and young adults aged 16-29 years randomly selected from a demographic health surveillance site in rural KwaZulu-Natal, South Africa. Follow-up was 12 months. Those living without HIV and eligible for PrEP according to country guidelines were offered PrEP and followed at month 1, 2, 6, 9 and 12. Participants had to link to a clinic following enrolment to initiate PrEP. Data were analysed descriptively and disaggregated by sex.

**Results:** Of the 1743 enrolled, 16% (n=161) were eligible for PrEP and 151 (94%) initiated PrEP. The most frequent reason for not being eligible for PrEP was not wanting to take

a daily pill, 45% of males and 33% of females respectively. PrEP continuation overall was 48% at month-1 and 28% at month-2.

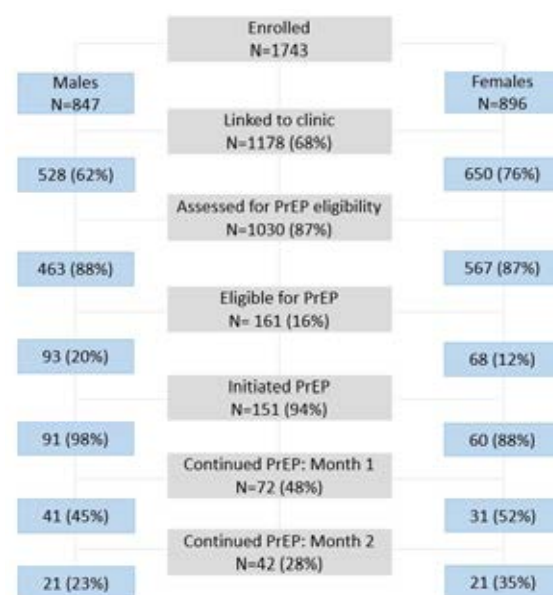


Figure 1. PrEP cascade in the Isisekelo Sempilo study.

Reason for not being eligible for PrEP	Males n (%)	Females n (%)
Not wanting to take a pill everyday	167 (45)	167 (33)
On ART	20 (5)	123 (25)
Not sexually active	76 (21)	76 (15)
Not willing to test for HIV	29 (8)	48 (10)
Not ready/wants to think about it	36 (10)	29 (6)
Not interested in PrEP	27 (7)	40 (8)
Prefer condom use	9 (2)	2 (<1)
Other	6 (2)	14 (3)
Total	370 (100)	499 (100)

**Conclusions:** While PrEP uptake was high among males and females, half discontinued PrEP early. Daily pill taking is a barrier, and choice of PrEP including long-acting drugs and event driven PrEP are needed.

## WEPEC228

**Access, adherence, and acute HIV infections: a characterization of seroconversion with PrEP in Eswatini**

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**Background:** Eswatini is one of the first countries in Africa to introduce the dapivirine vaginal ring alongside oral Tenofovir disoproxil fumarate/Lamivudine to provide Pre-exposure prophylaxis (PrEP) choice and expand HIV



prevention options. Monitoring for seroconversion and understanding adherence in PrEP programs is crucial to inform ongoing scale-up and guide interventions to increase effective PrEP use. We evaluated product interruption and self-reported adherence in individuals who acquired HIV in the Eswatini PEPFAR/USAID-supported Maximizing Options to Advance Informed Choice for HIV Prevention (MOSAIC) project.

**Methods:** The Eswatini PrEP HIV drug-resistance study is an ongoing national assessment in current or recent PrEP users (collected PrEP and/or self-reported PrEP use in the last three months) who acquire HIV as diagnosed per national algorithm using sequential third-generation rapid tests.

We analyzed the demographic data as well as self-reported PrEP use to characterize individuals who seroconverted from study start in May 2023 through January 2024.

**Results:** Of approximately 15,000 PrEP initiations, 10 clients tested HIV positive during a PrEP follow-up visit. All were female, with a median age of 28.1 years (IQR 22.7–31.9); 5 were pregnant or breastfeeding. At the time seroconversion was identified, 7 were using oral PrEP and 3 were using the PrEP ring. Seroconversion was identified within 45 days of oral PrEP (re-)initiation in 1/7 oral PrEP users and all ring users. One ring user reported a product interruption of 13 days before returning to the facility to get more product; 6 of 7 oral PrEP clients reported product interruption, including 2 reporting an interruption of 3–7 days and 4 reporting an interruption of 20–84 days. Reported reasons for ineffective PrEP use included missing doses, delays in obtaining services, or unavailability of their PrEP product.

**Conclusions:** Seroconversions remain rare in the Eswatini PrEP program. Causes of seroconversion in individuals using PrEP monitored in this study may be initiating PrEP during acute HIV infection and interruption of PrEP availability and/or product use.

This study highlights the importance of monitoring seroconversions and product effective use to inform and best support PrEP programs for long-term success in reducing HIV incidence.

## WEPEC229

Factors condemning condom uptake among adolescent girls and young women (AGYW) in strongly cultural communities: insights from the girls act program in Uganda

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**Background:** AGYW in Uganda continue to face barriers that hinder optimal condom usage, exposing them to risks of unintended pregnancies and sexually transmitted infections (STIs), including HIV/AIDS. This abstract reveals

challenges hampering condom use among Adolescent Girls and Young Women (AGYW) in strongly cultural communities in Uganda, drawing lessons from the innovative Girls Act program.

**Description:** The Girls Act program, is a global girl-led HIV primary prevention program designed by AIDS Health-Care Foundation, a global HIVAIDS organization providing HIV care and treatment in 45 countries including Uganda. The intervention was designed to reduce vulnerabilities of adolescent girls and young women by adopting a comprehensive approach, integrating education, empowerment, and effective community engagement, increasing access of AGYW to HIVAIDS services and empowerment goals. 75% of the beneficiaries are AGYW living with HIV due to higher vulnerability.

Qualitative studies conducted in deeply cultural communities using community focus group discussions in three regions where Girls Act in Uganda exists led to discovery of the following factors influencing poor condom uptake.

**Lessons learned: Sociocultural norms and conservative religious beliefs** deeply rooted in the Ugandan context have associated condoms with immorality, fornication, stigmatizing discussions around condom use and pressured AGYW to deprioritize their own sexual health due to sociocultural demands.

**Fear of relationship consequences.** Females in relationships carrying condoms in the Ugandan context reported being associated with promiscuity and often led to conflict or even rejection. Unequal power dynamics and fear of losing partner led to poor negotiation of AGYW for safer sex practices and therefore poor condom use.

**Limited Comprehensive Sexuality Education** in schools and communities and from parents who reportedly resisted conversations on sexual health has left AGYW uninformed about the importance of condom use, proper usage, and the associated risk of unprotected sex.

**Conclusions/Next steps:** Girls Act program in Uganda has revealed the need for a holistic approach to engage community and religious leaders, parents, families in breaking down societal barriers stigmatizing condom use.

The need for comprehensive, age appropriate CSE dispelling myths around condoms should be prioritized as well as further empowerment of the girl-child to strengthen her negotiation for safer sex practices.



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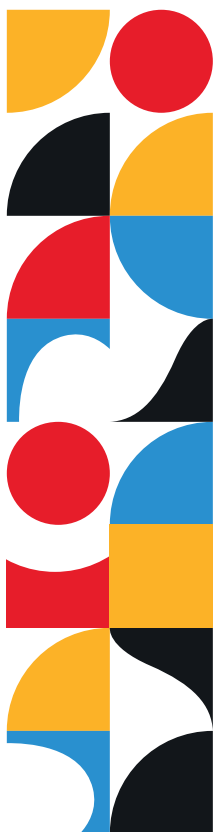
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## WEPEC230

Baseline preferences and acceptability ratings for long-acting pre-exposure prophylaxis (LA-PrEP) implants and injections: evidence for choice in HIV prevention among South African men

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**Background:** Gender-specific end-user input on the design of new biomedical HIV prevention is critical to yielding products that overcome adherence challenges. Assessing acceptability of and preferences for LA-PrEP delivery modalities among men is an important step in broadening uptake of HIV prevention.

We examined baseline preferences and acceptability of two placebo LA-PrEP delivery formulations - injections and implants - among South African cis-gender heterosexual and men who have sex with men (MSM).

**Methods:** SAMURAI is an ongoing (July 2022-June 2024) randomized clinical cross-over study of placebo implant and intramuscular injection use among 184 men aged 18-35 residing in Johannesburg or Cape Town.

This baseline analysis examines men's stated preferences between the two formulations after viewing an educational video, including preferences relative to condoms and oral PrEP; and anticipated acceptability (10-point satisfaction rating, 10=high).

We examined differences in acceptability and preference between MSM (N=84) and MSW (N=100) and by age using paired t-tests and contingency table analysis.

**Results:** Median age was 22 (IQR: 21-27), median number of recent sexual partners was 3 (IQR: 2-5), 73% reported a primary partner, and 12% were diagnosed with an STI and treated prior to enrollment. More MSM than MSW reported ever use of oral PrEP (39% vs 9%,  $p<0.0005$ ), with 9%, overall, using currently.

At enrollment, most men preferred the option of an injection (67%) over the implant (25%); 8% reported no preference, predominantly MSM. Younger men (ages 18-21) reported a higher preference for injections (80% vs 60%,  $p=0.015$ ).

Anticipated satisfaction for study use of both placebo formulations was high, though higher for injections than implants (injections: 7.7; implants: 6.8,  $p<0.001$ ), with no differences between MSM and MSW. LA-PrEP formulations

were more often selected as the most preferred option for future use relative to condoms or oral PrEP (injection: 35.9%, implant: 27.7%, condom: 18.5%, oral PrEP: 17.9%).

**Conclusions:** Men indicated interest in both LA-PrEP formulations, with high anticipated satisfaction ratings. Future work will examine preferences and satisfaction after use, comparing results with baseline acceptability. Product rankings of the LA-PrEP formulations alongside condoms and oral PrEP indicated that offering men choices will be important to achieving HIV prevention goals.

## WEPEC231

The intravaginal ring acceptability scale (IVR-AS): a new tool to improve and standardize vaginal ring acceptability measurement among end-users

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**Background:** Several intravaginal rings (IVRs) are marketed for HIV prevention, contraception, and other indications. More are in development, with IVRs the most common delivery type for multipurpose prevention technologies.

We sought to develop and validate a multi-dimensional scale - the IVR Acceptability Scale (IVR-AS) - in response to calls for a comprehensive, standardized tool for assessing IVR acceptability among end-users.

**Methods:** Scale items reflect specific aspects of IVR acceptability for women and men. Response options range from 1 (not at all acceptable) to 5 (highly acceptable). We evaluated the IVR-AS within a randomized, crossover clinical trial of 3 non-medicated silicone IVRs of differing external diameters (46mm, 56mm, 66mm) in 24 heterosexual couples in Atlanta, GA and Bronx, NY who used each of the 3 IVRs for ~30 days. After each IVR use period, women and men responded to a self-administered survey with the IVR-AS.

We conducted exploratory factor analysis and multivariable regression to assess convergent validity. Qualitative follow-up in-depth interviews with all participants helped gauge relevance of IVR-AS sub-dimensions.

**Results:** 24 couples participated in the study (mean age 27, both sexes); 23 completed surveys after all three IVRs. The final 19-item women's scale ( $\alpha=0.93$ ) included 4 sub-dimensions: ease of use (5 items); experience and sensation (7 items); effect on sexual desire/engagement (3 items), and effect on vaginal sex (4 items) (all  $\alpha>0.78$ ). The final 8-item men's scale comprised 2 sub-dimensions: effect on sexual desire/engagement and effect on vagi-

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nal sex (3 and 5 items, respectively) (all alphas>0.89). IVR-AS scores demonstrated good variability (e.g., women's overall mean=4.3, std=0.64, range=1.4-5.0). For both sexes, higher overall/subdimension scores were consistently associated (most  $p<0.001$ ) with other study assessments, e.g., reported difficulty inserting or removing the IVR, feeling it during sex, and adherence.

The 46/56mm IVRs had higher overall ( $p<0.001$ ) and sub-dimension ( $p<0.001$ - $p<0.05$ ) scores than the 66mm IVR. Qualitative data further reinforced the salience of the IVR-AS overall and its sub-dimensions.

**Conclusions:** The IVR-AS captures multiple dimensions of IVR acceptability among women and their partners. The scale demonstrated excellent reliability and convergent validity. Further validation is warranted in future studies. 46mm and 56mm IVR diameters were more acceptable than 66mm.

## Integration of HIV services with other services, including sexual and reproductive health

### WEPEC232

Progress toward triple elimination of mother-to-child-transmission of HIV, HBV, and syphilis: a 12-months retrospective analysis of testing coverage in antenatal care clinics in Cameroon

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**Background:** As Cameroon engages in the triple elimination initiative, there is scarcity of data on prevention of mother-to-child transmission (PMTCT) of HIV, HBV, and syphilis. We assessed testing coverage and the PMTCT cascade for HIV, HBV, and syphilis and associated factors among pregnant women.

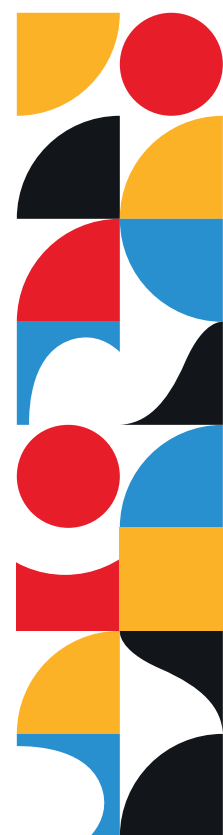
**Description:** We conducted a retrospective cohort analysis of pregnant women attending their first antenatal care visit in 15 PEPFAR-supported health facilities between October 2020 and September 2021. We abstracted mothers' demographic and clinical characteristics, HIV, HBsAg, syphilis testing results and child diagnosis status.

A multivariable logistic regression was used to determine factors associated with testing and with positivity to HBV and syphilis.

**Lessons learned:** Overall, 21,419 pregnant women were enrolled, with a median age of 27 (IQR: 23-31). Among these women, 807 (3.9%) were HIV positive (592 known HIV positive, 215 newly diagnosed). Of the 11,086 (51.8%) women tested for HBV, 406 (3.7%) were HBsAg positive, including 18 receiving tenofovir as part of their HIV treatment. Of 12,534 (58.5%) women tested for syphilis, 126 (1.0%) tested positive and were prescribed treatment.

In total, 21 women were HIV/HBV co-infected, 6 were HIV/syphilis co-infected, and 8 were HBV/syphilis co-infected. Of the 21,419 women, 8,799 (41.1%) completed their pregnancy follow-up in the same facility and gave birth to 8,903 children. Among them, 446 infants were HIV exposed, of whom 12/264 (4.5%) tested positive after 24 months; 197 infants were HBV-exposed including 4 (2.0%) who received HBV-immunoglobulin and 15 (7.6%) who received vaccine at birth; 61 infants were syphilis-exposed with no documentation of maternal treatment uptake or child diagnosis. In multivariable analysis, being a woman living with HIV (WLHIV) was significantly associated with lower odds of being tested for HBV (aOR:0.78, 95%CI:0.67-0.92) and syphilis (aOR:0.74, 95%CI:0.64-0.87). Adjusting for age, marital status, and presence of a pregnancy complication, being a WLHIV (aOR:1.68, 95%CI:1.02-2.61) was significantly associated with a higher risk of HBV.

**Conclusions/Next steps:** Despite considerable progress made with PMTCT of HIV, gaps remain for PMTCT of HBV and syphilis, particularly for infants. Integration and documentation of HBV and syphilis testing and treatment for mother-baby pairs is critical for child survival.





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## WEPEC233

Prevalence of HCV and HIV/HCV Co-infection among people who inject drugs in six sites in Kyrgyz Republic in 2021 – findings from respondent-driven sampling surveys

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**Background:** Kyrgyz Republic (KR) has high prevalence of hepatitis C virus (HCV) in the general population with increased risk among persons who inject drugs (PWID). The 2022-2026 National Blood-borne Viral Hepatitis and HIV Strategy includes scaling-up direct acting antivirals treatment for HCV. In 2021, we conducted a survey to assess HIV and HCV acquisition among PWID in the KR.

**Methods:** We recruited PWID from six sites in KR: Bishkek, Tokmok, Sokuluk, Kara-Balta, Osh, and Karasu using respondent-driven sampling (RDS). Inclusion criteria included ≥18 years old, self-reported injecting drugs in past 60 days, and residing in survey area. Participants self-reported demographics and risk behaviors and were offered HIV and HCV rapid testing (RT).

Those with reactive HCV RT were tested for HCV RNA. In an aggregated model containing all sites, we calculated adjusted prevalence ratios (aPR) using Poisson regression to identify factors associated with HCV while adjusting for location, age, and sex and accounting for RDS design.

**Results:** A total of 985 PWID were recruited from August-December 2021. The prevalence of HIV and HCV RNA combination ranged from 5.3% in Bishkek to 10.1% in Tokmok.

The anti-HCV prevalence ranged from 49.4% in Tokmok to 71.3% in Bishkek, while HCV RNA prevalence ranged from 32.1% in Osh to 41.9% in Tokmok. HCV RNA positive PWID were more likely to be older (≥30 vs. 18-29 aPR 1.3, 95% CI: 1.2-1.4), male (aPR 1.2, 95% CI: 1.1-1.3), with history of incarceration (aPR 1.2, 95% CI: 1.1-1.2), injected drugs >5 years (aPR 1.2, 95% CI: 1.1-1.3), and tried unsuccessfully to access opioid substitution treatment (OST) (aPR 1.1, 95% CI: 1.0-1.1).

**Conclusions:** A substantial proportion of PWID had exposure to HCV and had viremic HCV; burden was significant among older males experiencing incarceration, long-term injection drug use (IDU), and challenges accessing OST.

Implementing client-centric approaches focusing on older PWID with long-term IDU experience and prisoners can improve access to prevention services. To reduce the high burden of HCV among PWID, screening, testing,

and access to medication should be expanded. Harm-reduction efforts, including needle-syringe exchange and low-threshold OST, with HIV and HCV services, are needed.

## WEPEC234

Pay-it-forward gonorrhea and chlamydia testing among men who have sex with men and male STD patients in China: interim findings from the PIONEER pragmatic, cluster randomized controlled trial

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**Background:** Sexual health services are closing or being restricted in many jurisdictions because of limited funds. Pay-it-forward (PIF) interventions, where individuals receive a free healthcare service (test) accompanied by personalized messages and an opportunity to support others through donations, may increase STD test uptake and generate funds.

We report interim results from a PIONEER trial in China, which evaluates PIF strategies that encourage gonorrhea/chlamydia testing among men compared to the standard-of-care.

**Methods:** The PIONEER study (NCT05723263) is a cluster RCT comparing PIF implementation strategies for promoting dual gonorrhea/chlamydia testing in 12 clusters (six MSM-led and six public STD clinics) in six cities in Guangdong Province, China. Men were recruited 2:1 into pay-it-forward compared to standard-of-care (self-pay). Men over 17 years old and not tested for CT/NG in the last six months who were seeking STD care services at an MSM-led or public STD clinic were recruited.

The primary outcome was gonorrhea/chlamydia testing. Pre-specified subanalyses focused on MSM compared to non-MSM participants, clinic type (MSM-led or not), and PrEP eligibility (based on number of sexual partners, engagement in unprotected sex, and HIV testing). The uptake between PIF and standard-of-care was compared using Chi-square and GEE analyses.

**Results:** By December 18, 2023, 617 men, with an average age of 34 years (SD=11.2), were recruited into the standard-of-care (n=177) and PIF arms (n=440). Overall, 63.9% (n=395) reported sex with other men, 72.6% (n=442) had ever tested for HIV, and 34.4% (n=212) were PrEP-eligible. Gonor-

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rhea/chlamydia testing uptake was 71.3% (n=440) in the PIF arm and 3.4% (6/177) in the standard-of-care arm. 25.2% (n=111) of PIF participants donated 267 USD. Testing uptake was significantly higher in the PIF than in the control arm (proportional difference: 70.0%; 95%CI=63.60%–76.90%). In subgroup analysis, more MSM than non-MSM participants (proportional difference: 24.3%; 95%CI=0.21–0.29) tested for gonorrhea and chlamydia.

Testing was also higher among MSM-led clinic participants than public STD clinic participants (proportional difference: 22.4%; 95%CI=0.19–0.26) and PrEP-eligible participants than non-eligible participants (proportional difference: 8.9%; 95%CI=6.70–11.60).

**Conclusions:** The PIF intervention increased gonorrhea/chlamydia testing among men in diverse settings. Hence, scaling up PIF could potentially promote other STD services uptake and improve financial support for differentiated HIV prevention services.

## WEPEC235

High prevalence of curable sexually transmitted infections among young adults in rural South Africa: baseline data from Thetha Nami Ngithethe Nawe cluster randomised trial of HIV prevention

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**Background:** Sexually Transmitted Infections (STIs) are a major public health concern and increase HIV acquisition among adolescents and young adults (AYA). STI services provide a gateway into HIV prevention for AYA at greatest risk of HIV in rural South Africa (SA).

We estimate the STI prevalence among AYA from an ongoing stepped-wedge cluster randomised trial, *Thetha nami ngithethe nawe*, investigating the effectiveness, implementation, and cost-effectiveness of peer-led social mobilisation into decentralised, integrated HIV and sexual and reproductive health (SRH) services amongst AYA in rural KwaZulu-Natal, SA.

**Methods:** Between May–December 2022, we conducted a baseline survey among a random sample of 15–30-years-olds, assessed the prevalence of curable STIs (Chlamydia, Gonorrhoea, Trichomoniasis) using GeneXpert on home-based, self-sampled urine and vaginal swab specimens,

and collected dried blood spots for HIV and viral load (VL) testing. We fitted logistic regression models using generalised estimating equations to assess sociodemographic, behavioural, and clinical factors associated with STI diagnosis. All analyses were disaggregated by sex.

**Results:** A total of 2090 AYA participated in the baseline survey, with 1452 (69.5%) consenting to STI testing and 1345/1452 (92.6%) providing specimens. Median age was 22 years; 55.4% female. HIV prevalence was 15.2%, higher in women (22.2%) than men (6.4%). Sexually transmissible HIV (VL≥400 copies/ml) was 6.5%, higher in women (9.1% vs. 3.1%). HIV pre-exposure prophylaxis (PrEP) use was low (0.9%) despite 40.9% PrEP knowledge.

The overall STI prevalence was 22.7% (95%CI: 20.1%–25.0%), significantly higher among women (28.9%, 95%CI: 25.6%–32.3%) than men (15.0%, 95%CI: 12.2%–18.1%). Factors associated with higher odds of having any STI included age 20–24 years compared to 15–19 years in men (aOR=2.59, 95%CI: 1.09–6.19) and women (aOR=2.00, 95%CI: 1.15–3.48), living with HIV in women (aOR=1.67, 95%CI: 1.17–2.40), and contraception use in women (aOR=1.47, 95%CI: 1.06–2.03). There was some evidence of an association for transmissible HIV in women (aOR=1.69, 95%CI: 0.97–2.94, p=0.062).

**Conclusions:** Prevalence of curable STIs and sexually transmissible HIV remains high among AYA in rural SA. SRH services including STI self-sampling provide an opportunity to deliver effective HIV prevention and may reduce the morbidity associated with curable STIs.

## WEPEC236

Integrated HIV prevention and sexual and reproductive health services among adolescents and young people in sub-Saharan Africa: a systematic review of current approaches

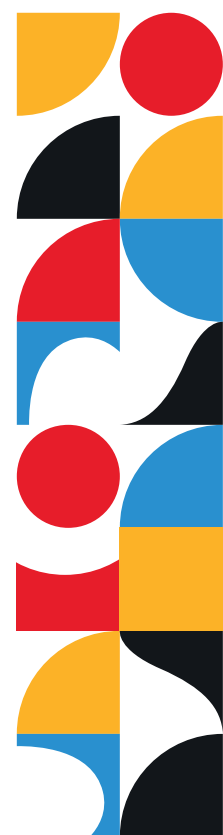
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**Background:** Integrating HIV and sexual and reproductive health (SRH) services is a recognised strategy for reaching adolescents and young people (AYP) at highest HIV risk. However, much remains unknown about which integrated service delivery models have the greatest impact on HIV and SRH outcomes among AYP, particularly those that include delivery beyond health facilities.

A systematic review was conducted to identify the range of integration models being implemented and their effectiveness in meeting the HIV prevention and SRH needs of AYP in sub-Saharan Africa (SSA).

**Methods:** Seven databases were searched for peer-reviewed articles reporting on the integration of HIV prevention and SRH services in SSA. Articles published in English between 2010 and 2022 were included. We reviewed the strategies used for HIV prevention and SRH service integration for AYP to identify delivery models, and sum-







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marised evidence of effectiveness for non-facility-based models (those including community, home, mobile, on-line, or self-care services).

**Results:** Of 1931 records screened, 72 met the inclusion criteria. Of those, 31 records (17 different models) reported on strategies that integrated HIV prevention and SRH services within health facilities, and 41 records (24 different models) reported on service delivery strategies beyond health facilities. Non-facility-based implementation models (n=24) varied considerably, however, four prominent strategies for integrating HIV prevention and SRH services for AYP were identified:

- Services delivered by peers in non-facility-based venues (1);
- Services delivered by community health workers in non-facility-based venues (5);
- Services delivered by providers in non-facility-based venues (8); and,
- Education/curriculum-based programmes delivered in schools and services provided on-site and through referrals to facilities (10).

Data analysis aims to summarise effects of each integration model on HIV-related outcomes (e.g., HIV status knowledge) and SRH-related outcomes (e.g., pregnancy testing uptake).

**Conclusions:** This review identifies new strategies being employed to integrate HIV prevention and SRH services outside of health facilities. They reflect active and diverse efforts to reach AYP with integrated services through peers, schools, and community spaces.

Findings can optimise future design of integrated service delivery models for AYP – a group with unique HIV and SRH needs which, for many, can be met through non-clinical settings.

## WEPEC237

[Integrating STI and cervical cancer screening into mobile HIV testing and counseling services: a holistic, client-centered model of care](#)

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**Background:** In conflict-affected border regions between Myanmar and China in Northern Shan State, specifically in Laukkaing township, migrant young female sex workers encounter multiple barriers in accessing basic health-care due to the absence of legal protection, making them highly vulnerable to HIV and STIs transmission, and gender-based violence.

For 6 years, Asian Harm Reduction Network (AHRN)-Myanmar has been providing outreach testing services in brothel houses and KTVs in Laukkaing, including serology testing for HIV, Hepatitis B and C, condom distribution, counselling services and linkage to care.

**Description:** Since 2022, AHRN Myanmar has strategically expanded to provide services in a holistic fashion, with an initially focusing on integration of SRHR services into HIV testing and counselling (HTC) program. This initiative introduced a cost-efficient outreach model featuring on-site cervical cancer screening using the VIA (Visual Inspection with Acetic Acid) method.

Procedure is performed by nurse counsellors after obtaining informed consent with rights-based approach. Eligible individuals undergo abdominal, bimanual, and vaginal speculum examination before VIA screening.

Results are disclosed within minutes, and a referral support system is established for the treatment of precancerous lesions identified in positive cases.

**Lessons learned:** This strategy minimizes the necessity for clients, particularly sex workers, to visit the healthcare facility, thereby preventing unfair pay deductions by brothel owners.

Moreover, performing vaginal speculum examination before the VIA procedure not only effectively screens for STIs but also enables ad hoc syndromic management. Statistically, from Jan-Nov 2023, 86% (344 out of 398) of female sex workers who received mobile HTC service were also screened for STIs. Among them, 68 received ad hoc syndromic treatment.

Additionally, 26 sex workers received on-site VIA screening and none tested positive, indicating successful early prevention of cervical cancer without incurring costs or delays in obtaining results.

**Conclusions/Next steps:** This innovative, client-centered intervention not only addresses immediate health needs of the community but also contributes to the project's cost efficiency by integrating SRHR services into existing harm reduction activities.

Despite the unanticipated political unrest in the project area, the comprehensive one-stop approach has demonstrated promising outcomes, potentially serving as a model for other projects in similar contexts.

## WEPEC238

### Leveraging well-child visits to deliver HIV services to children and adolescent mothers: a community-based mixed-methods study in South Africa

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**Background:** Young maternal age is a predictor for disengagement in prevention of mother-to-child transmission services. All children should regularly attend scheduled well-child visits for prevention and health promotion services. Well-child services could be integral to delivering HIV services for mothers living with HIV and their children. This study examined well-child visit attendance up to 18 months among HIV-exposed and unexposed children of adolescent mothers in South Africa.

**Methods:** Data were obtained from a cohort of adolescent mothers (n=1144) and their children (n=1045) in South Africa (2017-2019). Well-child visit records were available for 453 children aged ≥18 months, including 170 children of adolescent mothers living with HIV (37.5%). Records were analysed using descriptive statistics and disaggregated by maternal HIV-status.

Semi-structured interviews (n=16) with adolescent mothers in 2022 explored factors influencing well-child visit attendance, aligning with the capability, opportunity, and motivation model of behaviour change (COM-B).

**Results:** Attendance declined from 85.9% (95%CI: 82.3-88.9) at 6 weeks old to 49.7% (95%CI: 45.0-54.4%) at 18 months old. Attendance was higher during visits that coincided with the childhood vaccination schedule. There was no evidence of a difference in attendance by maternal HIV-status. Themes influencing attendance were mapped to the COM-B model. Capability: Adolescent mothers were indifferent to harsh attitudes from nurses; mothers' organisational and financial acumen enabled their child's attendance. Opportunity: Lack of childcare support, poor weather, and barriers to access (cost and distance) interfered with attendance; financial and in-kind support from other caregivers and information in the child health booklet facilitated attendance. Motivation: few mothers felt that their own health benefited from well-child visits but were motivated to attend visits to gain knowledge and fulfil their parental role.

**Conclusions:** Suboptimal well-child visit attendance represents a missed opportunity to provide HIV prevention and treatment services to adolescent girls and their chil-

dren. Nurses should maximise contact with both children and their adolescent mothers so that mothers see a benefit for their own health in attending well-child visits. Identifying opportunities to integrate HIV services with well-child and childhood vaccination services may support mothers to stay engaged in care.

## WEPEC239

### Addressing the growing burden of non-communicable diseases in the context of a mature HIV epidemic in Kenya: a modeling study

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**Background:** As the burden of non-communicable diseases (NCDs) continues to grow among the general population in Kenya, questions remain about the optimal models for integrating NCD and HIV services.

**Methods:** Using national estimates of HIV and NCD epidemiology in Kenya (from UNAIDS and the STEPwise Survey for NCD Risk Factors, respectively), we developed a hybrid simulation approach to forecast the population-level burden of HIV and NCDs through 2040. We considered six scenarios consisting of three levels of NCD/HIV services and two implementation approaches (HIV clinics and community-wide; see Table).

Scenario	Setting	NCD services	HIV services	Rationale
1 No intervention	None	None	No change from current baseline	Status quo for comparison
2 Basic NCD screening/treatment	HIV clinic	10% of HIV engaged persons screened annually 60% successful treatment initiation	No change from current baseline	Representing a basic NCD screening/treatment program offered at the HIV clinics with minimum resource requirements
3 Basic NCD screening/treatment + HIV retention/suppression		10% treatment discontinuation annually	90% of engaged population retained 90% of unsuppressed population gain suppression annually 90% of suppressed population maintain suppression annually	Integrating basic NCD screening/treatment with additional HIV services to improve retention and suppression
4 Intensive NCD screening/treatment + HIV retention/suppression		10% of HIV engaged persons screened annually 80% successful treatment initiation 5% treatment discontinuation annually		Assuming that collocating HIV/NCD services improves NCD treatment uptake and retention
5 Basic NCD screening/treatment	Community	10% of general population screened annually 60% successful treatment initiation 10% treatment discontinuation annually	No change from current baseline	Representing a basic NCD screening/treatment program offered at the community level to the general population
6 Basic NCD screening/treatment + HIV testing/engagement			75% of all population tested annually for HIV 90% of unengaged population engage annually	Integrating basic NCD screening/treatment with an HIV testing/engagement program at the community level
7 Intensive NCD screening/treatment + comprehensive HIV care		10% of general population screened annually 80% successful treatment initiation 5% treatment discontinuation annually	75% of all population tested annually for HIV 90% of unengaged population engage annually 90% of engaged population retained 90% of unsuppressed population gain suppression annually 90% of suppressed population maintain suppression annually	Offering a comprehensive HIV program accompanied by intensive NCD services



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**Results:** Basic NCD screening and treatment (10% screened annually, 60% treatment initiation, 10% annual discontinuation) resulted in 23% of the target population on NCD treatment in year 2030. When offered to people living with HIV at HIV clinics, this led to a 0.5% reduction in CVD deaths, while the same scenario offered to the general community resulted in a 4.3% reduction in CVD deaths (Figure, panel A). Including HIV testing and engagement services at a community-level resulted in a 48.5% reduction in HIV deaths; comprehensive HIV care (testing, engagement retention, and suppression) resulted in a 53.2% reduction in HIV deaths (Figure, panel B). Per 1,000 persons treated, the impact of NCD services offered at HIV clinics was greater (20-22 deaths averted) than the impact of community-based programs (13 deaths averted; Figure, panel C).

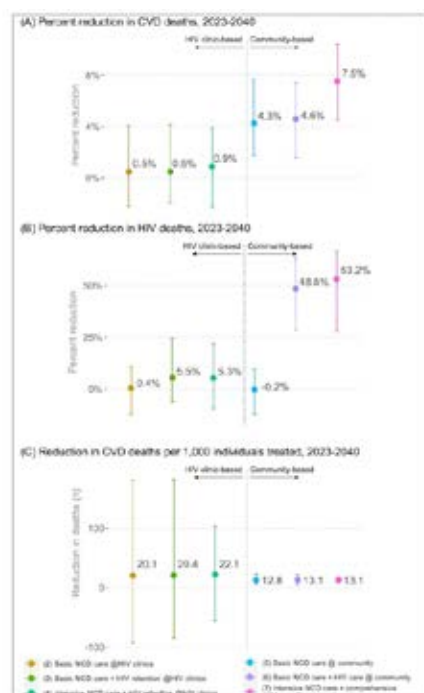


Figure: Forecasted population-level impact of intervention scenarios. Panel A represents the percent reduction in total CVD deaths by scenario relative to no intervention over the study period. Panel B represents the percent reduction in total HIV deaths by scenario relative to no intervention over the study period. Panel C represents the reduction in total CVD deaths per 1,000 individuals treated for one or more NCDs. Abbreviations: non-communicable disease (NCD), cardiovascular disease (CVD).

**Conclusions:** Implementation of NCD services in HIV clinics is effective in reducing future CVD events and deaths, but its impact is constrained to the population living with HIV. Achieving consistent improvements in CVD outcomes at a country level requires comprehensive, community-wide interventions.

## WEPEC240

### Doxy-PEP proliferates among PrEP users in San Francisco, but inequities in awareness are present

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**Background:** Doxycycline post-exposure prophylaxis (doxy-PEP) is effective at preventing bacterial sexually transmitted infections (STIs) and is well-tolerated. In 2022, the San Francisco Department of Public Health implemented doxy-PEP prescription guidelines. We measured community levels of doxy-PEP awareness, use, and associated factors among men who have sex with men (MSM) in San Francisco in 2023.

**Methods:** Data were from the San Francisco MSM cycle of the CDC-led National HIV Behavioral Surveillance (NHBS). MSM were recruited using time-location sampling (TLS) through outreach intercepts at randomly chosen venues, dates, and times. Interviewer-administered questionnaires collected demographics, sexual risk and preventive behaviors, sexual health history, healthcare access, and doxy-PEP awareness and use.

**Results:** Of 533 MSM respondents, 66.6% were aware of doxy-PEP, 29.0% discussed it with a healthcare provider (HCP), and 19.3% used doxy-PEP in the last year. Low doxy-PEP awareness was associated with age 50 years old and older (54.7%,  $p<0.001$ ), Black/African American race (54.3%,  $p=0.007$ ), and less than high school education (51.0%,  $p=0.012$ ). Latino/e participants had the highest awareness of doxy-PEP (77.0%). The odds of doxy-PEP awareness increased 5.78-fold among MSM who self-reported having any STI ( $p<0.001$ , 95%CI 3.31-10.09) and 6.66-fold among MSM who had tested for an STI ( $p<0.001$ , 95%CI 4.38-10.12) in the past year. Respondents who took PrEP were more likely to use doxy-PEP (33.9% vs 1.2%,  $p<0.001$ ), more likely to not use condoms (89.8% vs 51.2%,  $p<0.001$ ), and also have had a bacterial STI in the past year (40.4% vs 10.6%,  $p<0.001$ ).

**Conclusions:** Doxy-PEP appears to be reaching PrEP users who do not use condoms, which is a group of MSM for whom this intervention is well suited and already engaged in HIV prevention. While awareness was high among MSM overall, efforts are needed to increase doxy-PEP awareness for older MSM, Black/African-American MSM, and those with lower education in order to achieve equitable reach and benefits of this new prevention strategy.

## WEPEC241

### Prevalence, Risk factors and care of hypertension among people living with HIV in Zambia: results from a national survey

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**Background:** The control of non-communicable disease (NCDs) among people living with HIV (PLHIV) is integral for HIV epidemic control. Understanding the NCDs burden, risk factors and care among PLHIV improves outcomes. We report the prevalence, risk factors and care of Hypertension among PLHIV from a Zambian nationwide survey conducted in 2023.

**Methods:** This was a two-stage stratified cross-sectional survey of 5,775 PLHIV adults sampled from 165 health facilities selected using proportional to size approach.

An adapted WHO STEPS survey questionnaire was used, and Anthropometric measurements and biological samples testing were performed.

Hypertension was defined as a systolic blood pressure (SBP)  $\geq 140$ mmHg and/or diastolic blood pressure (DBP)  $\geq 90$ mmHg the average of the last two of three measurements measured with a two-minute interval rest.

Analyses were adjusted for survey clustering, sampling weight and stratification. Multivariate logistic regression was used for predictors.

**Results:** We enrolled 5,204 participants. Women were 67.2%. The median ages were 41 years and 45 years for females and males respectively.

The mean SBP was 122.2mmHg and mean DBP was 78 mmHg. The prevalence of hypertension was 23.9% (25.1% males and females 23.3%).

Among those with hypertension, 44.8% were unaware. The prevalence of hypertension was 10.1%, 18.7%, 31.2%, and 45%, for the age bands 18-29, 30-44, 45-59, and 60+ years respectively. Only 31.6% of those with known hypertension were on antihypertensives and only 43.6% of these had a normal blood pressure.

About 22.7% were overweight (BMI $>25$ -29.9kg/m<sup>2</sup>) with 26.4% among women and 15.2% among men. Prevalence of Obese (BMI $>30$ kg/m<sup>2</sup>) was 10.8% (females 13.9% and men 4.5%).

High sodium intake was 36% and 74.8% consumed less than the recommended 5 servings of fruit and/or vegetable per day.

In the multivariate analysis, age greater than 60yrs (aPR,2.33;95%CI=2.03-2.69; p<0.001), College/University education (aPR,1.24;95%CI=1.07-1.44;p<0.001), Rural dwelling (aPR,0.88;95%CI=0.79-0.99;p<0.031), alcohol consumption (aPR,1.18;95%CI=1.07-1.31;p<0.001) and BMI of  $>30$ kg/m<sup>2</sup> (aPR,1.73;95%CI=1.52-1.96;p=0.001) were predictors of hypertension. Dolutegravir use was not a predictor of hypertension (cPR,0.68;95%CI=0.42-1.13;p=0.135).

**Conclusions:** This large nation-wide survey showed a high prevalence of hypertension in PLHIV (24%) with high rate of un-diagnosis, poor treatment linkages and poor control. Traditional risk factors for hypertension were predictors. We recommend integration of NCD care in HIV services.

## WEPEC242

### Same-day treatment of sexually transmitted infections among people living with HIV: an opportunity to apply lessons learned from community-led clinics in Bangkok, Thailand

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**Background:** Community-led clinics are successful in providing same-day antiretroviral treatment (SDART). However, a gap in management of other sexually transmitted infections (STIs) among key populations with HIV remains unaddressed, including treatment of chlamydia trachomatis (CT), Neisseria gonorrhoeae (NG), syphilis, hepatitis B virus (HBV), and confirmatory testing and treatment for hepatitis C virus (HCV).

**Methods:** We implemented SDART at two community-led clinics in Bangkok, Thailand. Thai nationals who tested HIV positive, were at least 13 years old, and had never received ART were eligible for SDART. During the baseline visit, STI, HBV, and HCV testing were conducted. Descriptive analyses were performed.

**Results:** From October 2021-September 2023, 609 people tested HIV-positive, and 595 (97.7%) initiated SDART. Of those, 542/595 (91.1%), 44/595 (7.4%), and 9/595 (1.5%) were men who have sex with men, transgender women, and cisgender women, respectively.

Among people initiating SDART, 120/595 (20.2%), 60/595 (10.1%), and 182/595 (30.5%) tested positive for CT, NG, and syphilis, respectively, 51/595 (8.6%) had CT-NG co-infection. HBV and anti-HCV positivity were 31/595 (5.2%) and 38/595



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(6.4%), respectively. HCV-RNA confirmatory testing rate was 22/38 (57.9%), with 15/595 (2.5%) testing positive. All clients with positive STI or HCV were referred for treatment, of those 114/171 (66.7%) initiated treatment for CT, 85/111 (76.6%) for NG, 154/182 (84.6%) for syphilis, and 8/15 (53.3%) for HCV. All clients initiated a tenofovir-based SDART regimen, including those with HBV.

The median (min-max) times to treatment after diagnosis were 1 day (0-90) for CT, 3 days (0-118) for NG, 3 days (0-124) for syphilis, and 0 days (0-286) for HCV. The median (min-max) time to confirmation after screening for HCV was 5 days (0-112). Overall, for 33.15% of clients with STI or HCV, treatment was initiated after more than 5 days.

**Conclusions:** Key populations with HIV initiating SDART at community-led clinics have high STI prevalence. While community-led clinics are successful in providing HIV treatment services, linkage to timely STI management remains a challenge. Using lessons from SDART implementation, same-day STI test and treat should be integrated at community-led clinics, as another promising strategy in order to eliminate HIV and STI co-infections.

## WEPEC243

Knowledge of sexual and reproductive health and rights (SRHR) and its determinants among female sex workers (FSW) in Jashore, Bangladesh

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**Background:** Sexual and reproductive health and rights (SRHR), despite its importance for promoting overall well-being, is challenging to achieve for FSW due to difficulties in reaching them. Global evidence indicates that FSW lack accurate information about STI prevention and are frequently excluded from reproductive health services despite their unique SRHR needs. Educating FSW about their SRH-related rights can positively influence their behavior and general health.

This analysis aims to describe the knowledge of SRHR and its determinants among FSW in Jashore, Bangladesh.

**Methods:** A cross-sectional survey was conducted utilizing a two-stage probability sampling design in Jashore city in 2023 among 327 FSW. Face-to-face interviews were used to collect data on socio-demographics, sexual risk behaviors and information related to SRHR. A composite score of SRHR knowledge was calculated using 30 questions containing "Yes=1" and "No=0" on STI/HIV/SRHR/

condoms/family planning. Participants having less than the median value of the composite score was classified as inadequate knowledge of SRHR. Descriptive statistics were used to describe the population. Multiple logistic regression was used to measure the net association of inadequate knowledge and different factors.

**Results:** Among 327 FSW, 48.9% (95%CI: 41.5-56.4) had inadequate knowledge of SRHR. FSW those who had inadequate knowledge of SRHR were selling sex since <1 year (14.4%, 95%CI: 8.4-23.5) and had lower income <91USD per month (75.6%, 95%CI: 62.1-85.5). The odds of inadequate knowledge of SRHR were significantly higher among those who had been selling sex for <1-year (AOR: 4.9, 95%CI: 2.4-10.1, p<0.001), living alone (AOR: 5.4, 95% CI: 2.0-14.6, p=0.001) or with husband (AOR: 3.4, 95%CI: 1.5-8.0, p=0.006) or with family/relatives (AOR: 4.3, 95%CI: 2.1-9.0, p<0.001), and had an income of <91 USD (AOR: 3.5, 95% CI: 1.9-6.4, p<0.001), respectively.

**Conclusions:** Half of the FSW possessed inadequate knowledge of SRHR. They were newcomers in sex trade and had lower income. Inadequate knowledge of SRHR was significantly associated with duration of selling sex, living arrangement and monthly income. Targeted intervention, under the implementation science framework, is need to enhance the knowledge of SRHR among FSW to improve situation of SRHR and social well-being.

## WEPEC244

Silent struggles unveiled: high prevalence of depression, suicidal behavior, and substance abuse among adolescents and young adults living with HIV in select facilities in Malawi

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**Background:** The impact of mental health disorders on adolescents and young people living with HIV (AYLHIV) is a critical concern, significantly affecting their well-being and health outcomes. Despite the underdiagnosis and lack of treatment, particularly in low-income settings, the Elizabeth Glaser Pediatric AIDS Foundation took a pioneering step in 2023: they integrated mental health screening into HIV care for high-risk groups, such as adolescents, utilizing the Patient Health Questionnaire-9 (PHQ-9) and alcohol/substance use questionnaires. This study examines the prevalence and factors associated with depression among AYLHIV receiving antiretroviral therapy (ART) within this program setting.

**Methods:** This cross-sectional analysis utilized routinely collected data from mental health screening registers across 11 EGPAF-supported healthcare facilities in Malawi. We included all ART clients aged 10-24 years who underwent mental health screening during ARV-refill clinic visits



between March and June 2023. Demographic and clinical characteristics were summarized, and depression prevalence (PHQ-9 score  $\geq 5$ ), suicidal thoughts, and substance abuse estimated via descriptive statistics. Logistic regression, adjusting for sex, age, and reason for screening, was employed to assess factors linked to depression among AYLHIV.

**Results:** Among 561 participants, 61.3% (n=344) were female, with a median age of 17 years. Approximately 24.5% (n=137) screened positive for depression, while 5.2% (n=29) reported suicidal thoughts and 4.9% (n=27) were at risk of alcohol/substance abuse. Severe depression was more prevalent in females (15.4% vs. 3.4%,  $p=0.04$ ), while suicidal thoughts were higher in males (7.8% vs. 3.5%,  $p=0.02$ ). Moreover, older clients showed a significantly higher likelihood of depression than their younger counterparts (10-14 years): Adjusted ORs for 15-19 and 20-24 years 1.86 (95% CI 1.12-3.09) and 2.33 (95% CI 1.36-3.98), respectively.

**Conclusions:** Nearly a quarter of the participants experienced depression, particularly older adolescents. Integrating mental health screening into HIV services is a pivotal strategy for timely identification and treatment of depression among AYLHIV, which ultimately should enhance their quality of life.

## WEPEC245

Using community-based gender-based violence first-line responders to provide ongoing psychosocial support to GBV survivors among AGYW aged 10 to 24 years enrolled in the DREAMS program in Zambia

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**Background:** In Zambia, adolescents continue to face gender-based violence (GBV), with adolescent girls and young women (AGYW) disproportionately affected compared to boys. However, GBV cases among AGYW continue to be underreported, contributing to gaps or delays in care. The Listen, Inquire, Validate, Enhance safety, and Support (LIVES) package is a WHO-supported curriculum that uses a person-centered approach for open communication, enhanced support, and validation of AGYW. We integrated LIVES into the DREAMS program in three Zambian provinces, and used community-based first-line responders trained in LIVES to provide psychosocial support for survivors of GBV.

**Description:** AGYW aged 10-24 years who enrolled in DREAMS were screened for GBV using the national standardized Risk Assessment Form, which gathered baseline information on experiencing any form of GBV, including physical, sexual, or emotional GBV. AGYW reporting any GBV were provided post-GBV care and ongoing psychosocial support by first-line responders using LIVES, including healthcare workers, DREAMS site coordinators, mentors, and connectors. All first-line responders were trained on LIVES via a training-of-trainers (TOT) model. We examined routinely collected and aggregated client-level data on GBV among AGYW enrolled in DREAMS from October 2021 to June 2022. Data were analyzed using R Studio and STATA.

**Lessons learned:** CIRKUIITS trained six DREAMS Coordinators as TOT trainers, who then cascaded the LIVES training to 98 mentors and 19 connectors. A total of 31,486 AGYW were enrolled in DREAMS; 28,618 were screened for GBV at enrollment, with 12,299 (45%) reporting experiencing GBV (9,491 physical and emotional GBV and 2,808 sexual GBV). All AGYW presenting for GBV services received counselling and referrals from staff trained in LIVES. Of the 2,808 experiencing sexual GBV, 154 (5.5%) presented to GBV care within 72 hours; 117 (76%) accepted post-GBV care and received additional clinical prevention services including HIV testing, emergency contraception, and post-exposure prophylaxis.

**Conclusions/Next steps:** Upon enrollment in DREAMS, almost half of all AGYW reported experiencing GBV throughout their lives, indicating a dire need for support. The LIVES package was effective in scaling-up GBV services for DREAMS AGYW in Zambia. Further equipping front-line responders with necessary skills and resources, such as LIVES, will help AGYW cope with the GBV they experience.

## WEPEC246

Evaluating progress towards triple elimination of HIV, Syphilis and Hepatitis B in Uganda, Tanzania, Eswatini, Kenya and Cameroon

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**Background:** In 2022 WHO launched the Triple Elimination Initiative that focuses on prevention of vertical transmission of HIV, syphilis and hepatitis B virus (HBV). While much progress has been made to support routine screening and treatment of HIV in antenatal care (ANC), testing and treatment for syphilis and HBV has lagged behind. We de-



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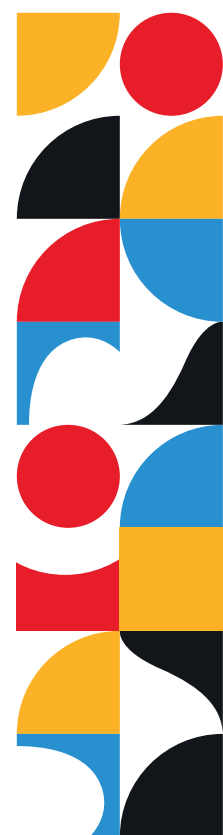
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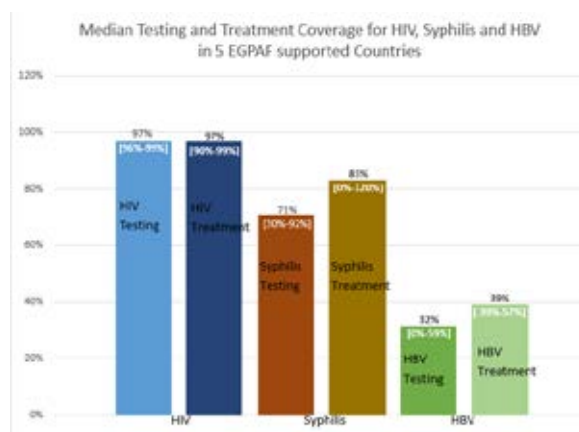
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scribe progress made towards triple elimination at sites supported by the Elizabeth Glaser Pediatric AIDS Foundation (EGPAF) in Uganda, Eswatini, Cameroon, Kenya and Tanzania.

**Methods:** Retrospective routinely collected ANC program data for 12 consecutive months between October 2021 – September 2023 were reviewed for EGPAF supported sites in each of the five countries. Aggregate cross-sectional data on testing and treatment of HIV, syphilis and HBV was abstracted from the national health management information systems.

**Results:** A total of 1.2 million ANC Clients enrolled in ANC over a 12-month period at 3,049 health facilities across the five countries. HIV testing coverage was quite high (96-99%) with variability in HIV prevalence in pregnant women ranging from 2.3% in Tanzania to 28% in Eswatini. Treatment coverage for HIV positive women (newly identified and known HIV positive) ranged from 89.6% in Cameroon to 99.3% in Kenya. Suboptimal testing for syphilis was reported in Cameroon and Eswatini (52% and 30% respectively).

However, treatment coverage for women testing positive for syphilis was notably high in Tanzania and Kenya (>100%). HBV testing was not routinely done in Tanzania or Kenya; however testing coverage in Cameroon, Eswatini and Uganda ranged from 14% - 59%.



**Conclusions:** To achieve the ambitious triple elimination initiative efforts by 2030, countries need to leverage the HIV platform to support further integration of routine testing and treatment of syphilis and HBV. Efforts focused on integrated models of care to expand access and overcome existing public health barriers need to be prioritized.

## WEPEC247

### DREAMS community quality improvement intervention improves the uptake of PrEP among adolescent girls and young women in the Acholi Sub-region

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**Background:** Adolescent Girls and Young Women (AGYW) 10-24 years are disproportionately affected by the HIV burden in Uganda and globally. Every week, more than 570 AGYW 15-24 years are infected with HIV (UNAIDS 2020). HIV prevalence are three times higher in AGYW compared to boys of the same age. Pre-Exposure Prophylaxis (PrEP) is a safe and effective HIV prevention option. Expanding PrEP and its uptake for AGYW at substantial risk of HIV acquisition is a key COP priority.

However, in the Acholi sub-region, PrEP uptake among AGYW enrolled in the DREAMS program was only 8% among those eligible (Uganda DREAMS Tracking system, October 2022), a missed opportunity for HIV Prevention among this at-risk population.

We, therefore, implemented a community quality improvement intervention with specific focus on improving uptake of PrEP among AGYW in the region.

**Methods:** The USAID LPHS Ankole and Acholi Activity used DREAMS and OVC Tracking system (UDOTS) data to select ten parishes with low PrEP uptake, establishing a community CQI team in each. A QI coach aided the committee in identifying root causes for low AGYW PrEP uptake. These included need for more information on PrEP, reliance on health workers for at-risk AGYW identification, no PrEP integration at safe places, and poor tracking of clients not ready for PrEP initiation.

A PrEP Ambassador was identified in each parish and trained on the adapted Ambassadors toolkit to boost demand, screen for risk, and track eligible clients yet to initiate using a developed PrEP Parish Log. During integrated outreaches, the Activity ensured the availability of a PrEP provider to reduce missed opportunities while AGYW were paired to improve safe-space attendance. Offered monthly coaching visits and updated data in the CQI dashboard.

**Results:** Improved initiation of eligible AGYWs on the DREAMS program on PrEP from 9% in October 2022 to 88% in July 2023. Currently 1,327 AGYW have accessed PrEP.

**Conclusions:** PrEP Ambassadors played a pivotal role in generating demand and demystifying PrEP, leading to readiness among eligible AGYW to initiate PrEP. Decentralizing QI committees substantially improved PrEP uptake and creation of PrEP clubs for AGYWs at safe spaces enhances demand creation and adherence.

## WEPEC248

### Development of a first interim guideline to support breastfeeding in women living with HIV in Argentina

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**Background:** In Argentina and Latin American countries, breastfeeding is contraindicated for women and transgender men living with HIV. Furthermore, there is unclear evidence to guide on issues like virologic criteria to allow breastfeeding, neonatal prophylaxis, and the timing of mother-child pair control. We describe the process undertaken in Argentina for the development of the first breastfeeding recommendations to optimize vertical transmission prevention programmes within an HIV national policy framework.

**Description:** Considering the impact of the AIDS 2022 "Breast is Best" session and to provide a response to community requests and guidance to healthcare providers (HCP), the HIV Vertical Transmission Group Prevention of the Argentinian Infectious Diseases Society (SADI) drafted during November 2022–May 2023 the first recommendations based on current literature and international guidelines. The Ministry of Health HIV Program (MHHP) organized an "Interdisciplinary Meeting on Breastfeeding and HIV" in May 2023 to review such recommendations with UNAIDS, ethic committees, other scientific societies, and stakeholders from civil society and representatives of HIV programs all over the country.

#### Lessons learned:

Consensus was obtained to promote informed decisions on infant feeding for parents living with HIV and to change the "contraindication" label to "not recommendation" for mothers with undetectable viral load throughout pregnancy. Recommendations were made to provide breastfeeding support and follow-up by HCP for mothers who choose to breastfeed. A summary of key points of the guideline is shown in Table 1.

Key points of a national HIV breastfeeding guideline endorsed by the Argentinian Infectious Diseases Society (SADI) and the Ministry of Health HIV Program, Argentina.

- Infant feeding options should be addressed prior to conception or as soon as possible during pregnancy.
- Family centered approach must be provided.
- There is no evidence that "U" = "U" is applicable to breastfeeding
- Breastfeeding labels change from "contraindicated" to "not recommended" for low risk mothers (those with undetectable viral loads throughout pregnancy).
- For women/transgender men with detectable viremia during pregnancy or antiretroviral therapy (ART) adherence gaps, breastfeeding remains contraindicated.
- A multidisciplinary team should take care of the mother-child pair follow-up. The follow-up plan should be agreed upon with the family before delivery.
- Unless extremely necessary, no changes in maternal effective ART should be made during the breastfeeding period.
- Maternal viral load should be monitored monthly during breastfeeding
- The newborn/child virologic control should be as follows: within the first 3 days of life, 14–21 days, between 6–8 weeks, between 12–16 weeks, and 5–6 months. Finally, at 4–6 weeks, 3 months, and 6 months after weaning.
- It is not recommended to extend breastfeeding beyond 6 months. Mixed feeding should be avoided.
- Neonatal prophylaxis: zidovudine for no more than 6 weeks. The use of additional drugs or prophylaxis extensions is not recommended unless in the context of a clinical trial.
- Breastfeeding should be stopped in cases of maternal detectable viral load, ART adherence issues, nipple lesions, or mastitis. In the presence of diarrhea or systemic diseases in the mother, or newborn/child, case by case decisions should be considered.

**Conclusions/Next steps:** Argentina addressed breastfeeding in women living with HIV in a programmatic framework established by MHHP and including scientific societies, policymakers, and community representatives, promoting informed decisions for parents and standards for HCP. Implementation, follow-up, and registry of cases are the next steps to be evaluated.

## WEPEC249

### PrEP-eligible behaviors and condom use among sexually active older adults in China: findings from the sexual well-being (SWELL) Study

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**Background:** Older adults remain sexually active and at risk of sexually transmitted infections (STIs). However, data on Pre-exposure prophylaxis (PrEP) eligible behaviors and consistent condom use among sexually active older adults in China are scarce.

**Methods:** Data were collected from a multi-center cross-sectional survey in China between June 2020 and December 2022. Eligibility criteria were community-dwelling older adults aged 50 years and above who have had oral, vaginal, or anal sex in the past year (sexually active). In-person questionnaire interviews included demographic characteristics, general health, and sexual health information.



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**Results:** 1332 sexually active older adults were recruited in our study. 33.7% (449/1332) of older adults consistently used a condom in the past year. 7.9% (105/1332) of participants reported PrEP-eligible behaviors. Age (only for women 50–59 years: aOR=0.60, 95%CI: 0.36–0.98; 60–69 years: 0.27, 0.10–0.71), living alone (men: 0.40, 0.20–0.79; women: 0.27, 0.10–0.72), body-mass index (men: 1.59, 1.18–2.14; women: 1.76, 1.13–2.73), general health status (men: 0.62, 0.39–0.97; women: 0.39, 0.16–0.96), talking about sex (men: 1.67, 1.23–2.26), knowledge of condom use to prevent STIs (men: 1.52, 1.06–2.18) were significantly associated with consistent condom use. Individuals who were male (1.76, 1.08–2.90), not in a stable relationship (4.80, 2.41–9.54), and lived alone (2.02, 1.07–3.82) were more likely to have PrEP-eligible behaviors.

**Conclusions:** Consistent condom use was relatively low among sexually active older adults in China. More than one in five older adults who were living alone reported PrEP-eligible behaviors. Comprehensive intervention measures should be combined with the characteristics and health needs of community-dwelling older adults.

## WEPEC250

### Myanmar's experience on PWID centric PrEP access in harm reduction initiatives

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**Background:** In 2023, the Asian Harm Reduction Network (AHRN) launched a PrEP demonstration project among people who inject drugs (PWID) with a differentiated service delivery (DSD) approach in Waingmaw and Lashio, Myanmar. These areas face high HIV prevalence among PWID, with 35% in Lashio and 56% in Waingmaw. Responding to this urgent need, the project focuses on enhancing PrEP accessibility and acceptability among PWID by tailoring service delivery to their unique needs.

**Description:** AHRN integrated PrEP services into the Lashio and Waingmaw Key Population Service Centers (KPSC)- part of comprehensive harm reduction interventions. Acknowledging heterogeneity among PWID, AHRN employed a DSD model. An innovative interpersonal approach for PrEP demand generation was implemented, recognizing the digital divide among PWID.

Community-based outreach, peer educators, and face-to-face interactions were prioritized over online platforms for information dissemination and PrEP awareness. Group therapeutic education sessions, preferred by PWID,

reduced time spent on healthcare services ensuring flexibility and convenience. Mobile HIV testing and decentralized PrEP service at KPSC further facilitated easy access to PrEP services. AHRN's multi-month PrEP dispensing minimizes unnecessary follow-ups, enhancing convenience for PWID.

**Lessons learned:** AHRN initiated PrEP screening and initiation in August 2023, addressing social determinants and enhancing uptake within harm reduction settings. Out of 235 screened, 222 were deemed eligible, and 195 accepted PrEP offers, with 160 successfully initiating PrEP. Noteworthy referral patterns included 90 from the community and 70 from the KPSC.

Among the 27 who declined, reasons varied: 30% did not perceive PrEP as necessary, 19% expressed reluctance toward daily medication, 15% deferred decision-making, 11% expressed concerns about the time required for clinic follow-up, and 26% cited diverse reasons (e.g., future planning, work-related issues). These outcomes underscore the importance of tailored community engagement, addressing misconceptions, and adapting service delivery models to enhance PrEP acceptance among PWID.

**Conclusions/Next steps:** AHRN's innovative PrEP approach in Waingmaw and Lashio demonstrated promising outcomes with a 72% initiation rate. While success is evident, diverse reasons for non-acceptance underscore the need for ongoing community engagement and tailored education.

These findings emphasize the importance of flexible service delivery models, adapted to the unique needs of PWID, in optimizing PrEP accessibility and acceptance.

## WEPEC251

### HIV service delivery improvements as a result of public health cluster response in Can Tho City, Vietnam, 2022–2023

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**Background:** Despite progress towards HIV epidemic control in Vietnam, HIV transmission persists, especially among key and mobile populations. In November 2022, Vietnam introduced interim guidelines that established district-level thresholds of HIV recency (zone recent (Recency Infection Testing Algorithm, RITA) case/month) and case surveillance (new cases/month >2SD above 36-month



mean) to initiate a public health cluster response (PHCR). Can Tho City, in the Mekong Delta region of Vietnam, had three districts that met PHCR criteria, and activated a response in January 2023.

**Description:** Investigations from Can Tho Department of Health identified the population of concern was men who have sex with men (MSM), especially <25y, students, and migrant workers, prompting engagement with these communities. Intensified review of health facility services and data identified gaps in standards of care for case finding, partner notification services, linkage to treatment, PrEP enrollment and retention, and MSM-appropriate services. Health authorities leveraged national HIV program and PEPFAR technical assistance to respond to these gaps. Key program indicators were monitored on a quarterly basis.

**Lessons learned:** Compared with 9 months prior to PHCR activation, in the subsequent 9 months:

1. HIV cases identified among index partners increased from 6 to 33;
2. linkage to treatment increased from 77% to 89%;
3. same-day antiretroviral treatment initiation increased from 49% to 54%;
4. PrEP enrollment increased from 945 to 1,258; and,
5. PrEP 3-month retention increased from 65% to 76%.

Community engagement was enhanced through coordinated community-facility service provision, HIV self-test distribution, community testing, demand generation, and health promotion.

**Conclusions/Next steps:** Using recency testing and case surveillance as alerts of an increase in recent HIV acquisition to identify and respond to gaps in standards of care for HIV prevention including PrEP and antiretroviral treatment led to rapidly improved service quality and uptake. Lessons from Can Tho demonstrate a promising strategy to control HIV transmission and have informed Vietnam's 5-year national HIV PHCR implementation plan to help achieve its National Strategic Plan by 2030.

## WEPEC252

Attaining elimination of Mother-to-Child transmission of HIV towards reaching global coalition strategies-HIV retesting for pregnant and breast-feeding women from 8 regions in Tanzania

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**Background:** Tanzania aimed for 90% re-testing for pregnant mothers who initially tested negative during the first test. However, re-testing among expectant women

remains low due to health care workers' limited knowledge. At their first antenatal care visit, all pregnant women are offered HIV testing on an "opt out" basis. Amref implemented a strategy of providing mentorship to health care workers with objectives of enhancing their capabilities to offer re-testing during maternal care.

We aimed to build capacity of health care workers on HIV retesting among pregnant and breastfeeding women.

**Description:** We identified two members of regional and council health management teams, paired with health care providers and mentor mothers from identified 170 health facilities. They reviewed antenatal register and mother-child cohort registers and monthly summary forms to identify data on HIV retesting. They found that, health care workers were not doing maternal retesting for pregnant women during 32- 36 weeks, Labour and delivery. A one-week mentorship was provided at the to all providers at the antenatal care. All the data collected were filled in the checklist and descriptive analysis conducted.

**Lessons learned:** From January and December 2023, total of 12,679 pregnant women attended first Antenatal Care (ANC) visit. Among them, 132 (1%) were already known HIV. Out of 11,649 pregnant women tested for HIV during initial ANC visit, 121 (1%) were identified as new positives.

Among them 5,544 women attending ANC between the 32-36 week of pregnancy, 77 (1.3%) were known persons living with HIV, and only 2,291 (41.3%) underwent maternal retesting, diagnosed 14 (0.61%).

During labor and delivery, 5,544 pregnant women were in attendance, and 84 were known women living with HIV. However, only 1,225 (22%) underwent maternal retesting, leading to 17 (1.3%) positive diagnosis.

During postnatal (1-40 days after delivery), 5,040 women attended clinics, and 43 were known positive. Among them, 2,179 (43.2%) underwent maternal retesting, and 8 (0.36%) women diagnosed.

**Conclusions/Next steps:** Maternal retesting during ANC, labour and delivery and postnatal is highly recommended toward elimination of mother to child transmission.

Frequent coaching and mentorship of health care workers is high very important to attain elimination of mother to child HIV transmission.



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## WEPEC253

The children of female sex workers (CFSWs):  
a "new" key, vulnerable and underserved  
population

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**Background:** In the past decades, interventions to end HIV/AIDS have been concentrated on FSWs, with minimal attention paid to the risks faced by their children. Due to their exposure to a wide range of social and economic vulnerabilities, these children are a vulnerable group. They live in extreme poverty, experience food insecurity, poor access to paediatric health, and are at increased risk of HIV exposure, as well as physical, emotional, and sexual violence, lack of family support and school dropout. Many of these risks are the result of stigma, discrimination, and social exclusion due to their mothers' sex work. For female children, to FSWs, they are likely to become FSWs when they come of age and further worsening their vulnerabilities.

**Methods:** The USAID CHEKUP II Activity, implemented by John Snow Health Zambia employed a bi-directional linkage model to strengthen referral pathways for FSWs and their children. We utilized KP community structures to reach FSWs by surging index case testing, screened and elicited for CFSWs. To optimize 'know your child health status' (KYCS+), we introduced bidirectional linkage for the CFSWs. The elicited CFSWs received free health and high impact HIV testing services with additional OVC, economic strengthening and mental health services. The model involved strengthening referral pathways between community cadres, OVC implementing partners, 11 Wellness Centres and health facilities to create a platform for CFSWs to access a comprehensive paediatric health services package.

**Results:** In fiscal year 2023, we reached out to 13,149 FSWs. 564 biological and non-biological hard-to-reach CFSWs were elicited and tested for HIV testing services, 3% (16/564) were identified HIV positive. We managed to link 100% (16/16) to optimal ART treatment and provided them with interventions tailored to their needs such nutritional support and OVC services without social exclusion.

**Conclusions:** Forecasting innovative ideas and strategies of reaching out to this "New" key population in HIV prevention using bi-directional linkage models is critical to ending HIV by 2030. Strengthening bi-directional linkage pathways to reach CFSW is an opportunity for the USAID CHEKUP II Activity to add value to community structures within the marginalized KPs in Zambia.

## WEPEC254

High STI incidence among women who initiated  
PrEP during pregnancy in Kenya

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**Background:** Incidence of sexually transmitted infections (STIs) is high among women on PrEP. Yet, limited data exist on STIs among women who initiate PrEP during pregnancy, a period when STIs pose risks to both women and infants.

**Methods:** We analyzed data from an ongoing RCT that enrolled pregnant women initiating PrEP at 5 clinics in Western Kenya (NCT04472884). All women were HIV-negative, ≥18 years, between 24-32 weeks gestation, initiating PrEP that day within routine antenatal care, and had high empiric HIV risk scores. A subset of women were offered *Chlamydia Trachomatis* (CT) and *Neisseria gonorrhoeae* (NG) testing using Xpert CT/NG® assays with same-day results in pregnancy, at 6- and 9-months post-delivery. Women with CT or NG were offered immediate directly observed treatment (DOT) and expedited partner therapy (EPT) per national guidelines. Incident cases were defined as CT/NG detected following a prior negative test.

**Results:** As of January 2024, 223 pregnant women initiating PrEP were offered CT/NG testing—all accepted. The median age of women was 26 years (IQR: 22-30) and median gestational age was 27 weeks (IQR: 25-29). Most women were married (77%), 36% were primigravida, 2% had syphilis, and 95% had partners of unknown HIV status. Prevalence of CT and/or NG during pregnancy was 19/223 (9%): 4% CT, 4% NG, and 1% CT/NG co-infection. Women <24 years were twice as likely to have prevalent CT and/or NG as older women (13% versus 5%, prevalence ratio=2.5, 95% CI: 1.04-6.19, p=0.042). Overall, 18 incident cases of CT and/or NG infections occurred in 144.6 total person-years of follow-up (median follow-up 0.8 years, IQR: 0.7-1.0), yielding an incidence of 12.4 per 100 person-years (95% CI: 7.8-19.8). Incidence of CT and/or NG was 5-fold higher among women <24 years (hazards ratio=5.0, 95% CI: 1.8-14.1, p=0.002). Same-day DOT and EPT acceptance was high (94%); at subsequent visits, 62% reported offering EPT to partners, of whom 94% said partners completed EPT.

**Conclusions:** We found high CT/NG incidence among women initiating PrEP during pregnancy, especially younger women. Our results indicate that primary STI prevention would be a high-yield strategy in this population, in addition to expanding STI testing and EPT programs.

## WEPEC255

### Gains in PrEP uptake among at-risk adolescents and youth across six African countries, but is it equitable?

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**Background:** Adolescents and youth (AY) are at increased risk of HIV acquisition. Global efforts focus on increasing awareness and uptake of pre-exposure prophylaxis (PrEP) among this population, alongside other biomedical HIV prevention interventions. The Elizabeth Glaser Pediatric AIDS Foundation (EGPAF) implements comprehensive prevention programming, including initiatives focused on AY and PrEP.

**Methods:** Routinely-reported aggregated PEPFAR-program data from October 2021–September 2023 from EGPAF-supported facilities in six countries (Cote d'Ivoire, Democratic Republic of Congo, Eswatini, Lesotho, Malawi, Tanzania) were analyzed. We collected and analyzed data on eligible individuals newly enrolled on PrEP. Data was disaggregated by age, sex, and country.

**Results:** Across the six countries, 18,150 adolescents (15-19 years) and 29,835 young adults (20-24 years) were newly enrolled on PrEP between October 2021–September 2023. AY (10-24) constitute 47% (47,985/103,127) of all individuals newly enrolled over this period. Females accounted for 85% (n= 15,391) of all adolescents, 76% (n=22,818) of all young adults, and 60% (n=32,973) of total adults enrolling on PrEP. Young females consistently represented the majority of individuals initiating PrEP across countries with the exception of DRC and Tanzania, where the proportion of young men was either equal to or greater than females at 51% (n=1,379) and 62% (n=1,289), respectively. Malawi and Lesotho experienced sharper inclines compared to other countries concerning PrEP uptake among 15-24-year-olds. In Malawi, new enrollments increased from 29 AY between January–March 2021 to 3,097 AY between July–September 2023. In Lesotho, new enrollments increased from 332 to 1,819 AY over the same period. AY constituted an increasing proportion of all newly-initiated individuals on PrEP, increasing from 33% (803/2,450) between October–December 2021 to 53% (7,667/14,568) in July–September 2023 across countries.

**Conclusions:** The proportion of newly enrolled AY generally increased over the time period of interest. Females constitute a larger proportion of PrEP enrollees across age groups and most countries. Young women (20-24) repre-

sented the largest cohort of new PrEP enrollees among adolescents and youth, with boys and young men generally less represented among those initiating PrEP. Deliberate efforts to understand how to adequately engage adolescent boys and young men to improve their uptake of PrEP are needed.

## WEPEC256

### HIV transmission risks among men who experience violence and poverty – an often neglected group

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**Background:** Men are inadequately engaged in HIV-prevention and-treatment interventions in generalised HIV-epidemics, negatively impacting their health and the health of their sexual partners (female and male). This may be because of unresponsive health systems, poverty, poor mental health, or gender inequitable masculinities shaping men's unwillingness to engage in care. We explore factors which shape transmissible HIV among men in rural South Africa.

**Methods:** Between 2018-2019, a representative cohort N=3580 males 13-35 years were randomly selected from a rural South African surveillance site.

The primary outcome of sexually transmissible HIV was estimated through Dried Blood Spot and viral load (VL) at baseline (defined as living with HIV, and a detectable VL > 400 copies/ml). Detailed demographics (age, education, employment) and measures of poverty, violence, mental health, alcohol use, life chances and gender attitudes were assessed using validated scales.

Descriptive statistics and SEM (lavaan, in R) explored pathways through which food insecurity and violence affect transmissible-HIV.

**Results:** Of the N=2082 participants (mean age 21.2 years) 69% had secondary education, 23.5% unemployed, 12.1% poor mental health, 23.6% binge drinking, 27% reported violence experience. 8.1% had transmissible HIV (11% living with HIV, of which 77.7% detectable viral loads).

Descriptively, sexually transmissible HIV was associated with greater age, out of school, poorer mental health, past month binge drinking and fewer life chances. The relationships between food insecurity and violence experience and transmissible-HIV (Fig. 1), were mediated by poor mental health, limited life chances, alcohol use,



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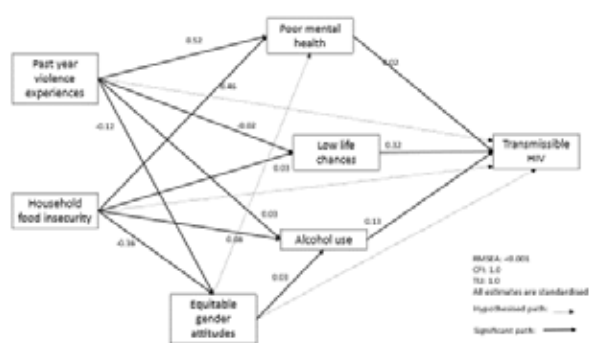


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where greater hunger and violence experience was associated with increases in these, and they in turn were associated with transmissible-HIV.



**Conclusions:** We show that to effectively reduce sexually transmissible-HIV among young men in a rural context, we need to address not only the proximate 'drivers', poor mental health and substance misuse, and the structural drivers of these, namely food insecurity and experiences of violence, additionally how these manifest in perceptions of limited life chances.

## WEPEC257

Reducing new HIV acquisition among men who have sex with men (MSM) and transgender people (TG) living in rural areas of Benin

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**Background:** The aim was to:

- raise awareness among men who have sex with men (MSM) and transgender people (TG) living in rural areas of Benin through group educational sessions on HIV/AIDS and STIs,
- promote condom use
- provide community-based HIV screening
- refer reactive cases to appropriate health centers for confirmation and treatment

**Description:** To this end, for a 3-year period from January 2021 to December 2023, 30 MSM Peer Educators (PEs), 08 TG PEs, 15 MSM Community HIV Testing Agents (ACDs), 04 TG ACDs and 04 Animators were recruited and worked in 11 rural areas nationwide.

Each MSM PE had 7 new people to reach during the month, and 5 for the TG PEs. The role of the ACDs was to provide community HIV testing to peers during awareness-raising sessions.

Participants were aged 15 to 25 and over. Each participant was entitled to 16 Male Condoms (MC) and 32 Gel Lubricants (GL) plus 02 Female Condoms (FP) (for TG).

**Lessons learned:** 9,000 people attended the HIV/AIDS and STI awareness sessions, including 7,560 (84%) MSM and 1,440 (16%) TG. Data were collected by age group: 160 (2.11%) MSM aged 15-17, 4,540 (60%) MSM aged 18-24, 2,860 (37.89%) MSM aged 25 and over, 40 (2.77%) TG aged 15-17,

860 (59.72%) TG aged 18-24, 540 (37.5%) TG aged 25 and over. All also benefited from pre-test counseling, screening and post-test counseling.

63 Détermine HIV-reactive cases, 23 (36.5%) of MSM and 40 (63.5%) of TG detected by ACD and not previously on treatment were referred to partner health centers for confirmation and management.

Data were collected by age group: 3 (13.04%) MSM aged 15-17, 13 (56.52%) MSM aged 18-24, 7 (30.43%) MSM aged 25 and over, 5 (12.5%) TG aged 15-17, 20 (50%) TG aged 18-24, 15 (37.5%) TG aged 25 and over.

144,000 PM, 288,000 GL, 18,000 PF were distributed during the period.

**Conclusions/Next steps:** The next steps are to intensify HIV prevention in Benin's LGBTQI community in order to achieve the UNAIDS 95-95-95 targets.

## WEPEC258

Innovative approaches to implementing HIV programs in war conditions: experience of NGO Convictus Ukraine in the regions of Kyiv city, Kyiv and Chernihiv region

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**Background:** Russia's full-scale invasion of Ukraine has had a devastating impact on all systems of our country. Two years of war, the destruction of infrastructure, and the displacement of people have put a critical strain on the national healthcare system. Vulnerable, underprivileged categories of the population found themselves struggling to survive. Ensuring that Ukraine's results in engaging key populations in HIV prevention, testing, and treatment programs were sustained required new approaches.

**Description:** In wartime, Convictus Ukraine introduced new approaches to engaging and retaining key populations - PWID, SW, and TG - in HIV prevention, testing, and treatment programs. In particular, an integrated care center was created on the basis of Convictus, where a multidisciplinary team works and key populations can receive prevention, testing, ART services, as well as testing for Hepatitis C, TB, restoration of lost documents, psychological support, humanitarian assistance, SMT referrals and support. We have also introduced community-based ART delivery and transportation of seriously ill patients to diagnostic services. With the support of international donors, we introduced payment for expensive treatment and strengthened communication with state health facilities.

**Lessons learned:** These integrated services and flexible approaches helped us retain key populations in our programs and attract new clients in 2023, during wartime. Compared to 2022, the number of new clients in the or-

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ganization's programs increased by 32 %. In particular, in 2023, 45 558 people used prevention, support, assistance, and diagnostics services, 897 new HIV cases were detected, and 657 received ART and support services. In the integrated care center, 126 people (PWID) receive continued support. Support services in the SMT program were provided to 420 people

**Conclusions/Next steps:** The outcomes demonstrate the importance of further implementation of broad services for key populations, including HIV, humanitarian, medical, and psychological assistance; scaling up of integrated care centers and introduction of innovations that are responsive to the challenges of war.

This helps to attract and retain clients in HIV programs. We have also identified the need to develop gender-sensitive services and introduce support services for survivors of violence.

## WEPEC259

### Antiretroviral therapy and male circumcision uptake among family heads and household members in Uganda

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**Background:** Antiretroviral therapy (ART) and male circumcision (MC) are critical for HIV epidemic control in high HIV prevalence regions. The family head's role may be pivotal in shaping household health decisions, influencing co-resident family members' engagement in services like ART or MC.

Understanding the association between family head's engagement in HIV services and co-resident household members engagement could inform family-centered strategies for HIV care and prevention.

**Methods:** We utilized data from the Rakai Community Cohort Study, a population-based HIV surveillance cohort in Uganda, collected between December 2020 and March 2023 across 39 rural agrarian, semi-urban trading, and Lake Victoria fishing communities.

The objective was to assess the relationship between family head engagement in uptake of HIV services and the uptake of these services by other co-resident family members.

The outcomes examined included MC among non-Muslim men in male-headed households, ART utilization, and HIV viral suppression in households where the family head (FH) was living with HIV.

Potential confounding factors included sex, age, marital status, family head's service utilization, and family head's sex. Modified Poisson regression was used to estimate associations and potential correlation within families was accounted.

**Results:** Out of 13,824 individuals, 60.6% (8,372) assumed the role of FH while 39.4% (5,451) were co-resident household members. Among co-resident household members, 14.2% were reported to be living with HIV and 22.2% among FHs. ART use among individuals living with HIV was significantly higher when FH were on ART compared to when FH were not on ART (Adjusted PR=1.50, 95% CI: 1.16-1.95).

Viral suppression was significantly more prevalent among members with FH who achieved suppression compared to those without suppression (Adjusted PR=1.52, 95% CI: 1.21-1.90). Circumcision prevalence was also significantly higher among non-Muslim male members with circumcised FH compared to those with FHs not circumcised (Adjusted PR=1.14, 95% CI: 1.05-1.25).

**Conclusions:** Higher ART and MC uptake was observed in HH members with FH who also utilized these services. These findings highlight the potential impact of FH's on household health outcomes.

Incorporating family-centered strategies in public health programs, recognizing FHs' influential role, may be one approach to enhancing HIV care and prevention services.





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## WEPEC260

Advancing HIV response among pediatrics and adolescents through AP3 approach and consolidated data-driven interventions for improved service delivery in Ondo State, Nigeria

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**Background:** Globally, Human Immuno-Deficiency Virus (HIV) has remained an imperative public health threat in the last three decades, in achieving epidemic control. Although there is significant progress made with unprecedented efforts on HIV, persistent gaps still exist among pediatrics, adolescents, and pregnant and breastfeeding women. According to the United Nations Programme on HIV/AIDS (2021), there are 2.8 million children (0-19 years) living with HIV (CLHIV) worldwide.

Accelerating Progress in Pediatrics and Prevention of Mothers to Child Transmission (PMTCT) (AP3) is an integrative model of care approach implementing a high degree of collaboration and communication among PMTCT/Pediatrics/Orphans and Vulnerable Children service points and providers to close the pediatric treatment gaps.

This study assessed the program performance improvements made in HIV response for P&A through AP3 and consolidated data-driven interventions in Ondo State.

**Description:** AP3 was implemented across 30 supported facilities and 18 Local Government Areas (LGAs) in Ondo State, with dedicated P&A testers. Recency surveillance, ART Treatment, and State population data were used to identify and prioritize LGAs for a focused pediatrics testing and linkage to ART. Consolidated data-driven interventions including Family Index Testing (FIT), Peer to peer testing and support, Operation Triple Zero (OTZ) activities, and comprehensive OVC program support, among others were integrated for improved retention and viral suppression among P&A. Program data trends for Fiscal year (FY22) (October 2021 to September 2022) and FY 23 (October 2022 – February 2023) were analyzed using Microsoft excel and presented in charts and tables.

**Lessons learned:** By the end of FY 22 and FY 23 Quarter two (Q2), 434 and 245 P&A were successfully linked to ART, compared with 98 P&A linked to ART in FY 21 (October 2020 – September 2021). This led to an increase in treatment

growth for P&A across age bands (0-19 years). Pediatrics and Adolescents' Interruption in Treatment (IIT) reduced from 5.0% in FY 21 to 1.1% and 0.8% in FY 22 and FY23 Q2 respectively.

**Conclusions/Next steps:** Overall, AP3 and other consolidated data-driven interventions have been shown to enhance HIV case finding for P&A as well as improve retention and viral suppression among the sub-populations for advancing HIV response in Ondo State.

## WEPEC261

Informing differentiated prevention services using HIV vulnerability profiles among adolescent girls and young women in Lesotho: a population based cross-sectional latent class analysis

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**Background:** In Lesotho, adolescent girls and young women (AGYW ages 15-29 years) experience high HIV incidence; yet person-specific HIV vulnerability profiles, which can inform differentiated HIV programming, are less known. We describe age-specific HIV vulnerability groups for AGYW.

**Methods:** We used Lesotho Population-based HIV Impact Assessment survey data, a cross-sectional nationally representative dataset (collected from 2019-2020). We conducted a weighted three-step latent class analysis for three age groups (15-19 years, 20-24 years, 25-29 years) to identify groups of AGYW most vulnerable to HIV acquisition based on self-reported sexual behaviors. We then identified associations between HIV vulnerability group and HIV diagnosis.

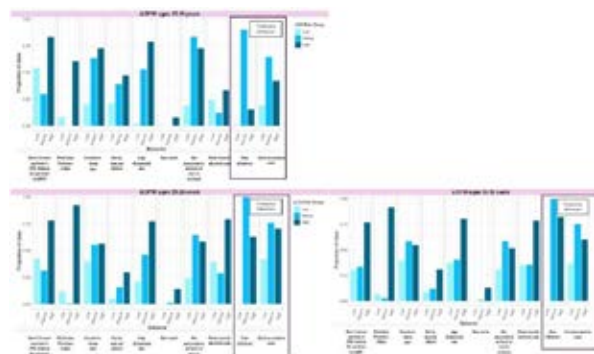
**Results:** We included 3,464 AGYW in the analysis of whom 14% were living with HIV (15-19 years=3.7%; 20-24 years=13.2%; 25-29 years=28.0%). The three-class LCA fit each age group best.

Across age groups, those in the low vulnerability group were enrolled in school or had completed secondary education and had lower conditional probabilities of engaging in multiple partnership, condomless sex, having an early sexual debut or age-disparate sex.

Those in the medium vulnerability group were defined by having children, using contraception, and not having multiple partnerships.

Those in the high vulnerability group engaged in sex with partners they do not know the status of or who are living with HIV in addition to risk behaviors that those in the

low vulnerability group did not. The magnitude of AGYW engaging in risk behaviors increased by age and HIV prevalence was highest among women ages 25-29 in the high-vulnerability group: 53% were living with HIV. AGYW in the high-vulnerability groups had increased odds ratio of positive HIV serostatus relative to the low-vulnerability groups.



**Conclusions:** Programming to curb AGYW HIV acquisition in Lesotho should address high risk sexual behaviors. Given the steep increase in HIV prevalence as AGYW age, programming will be most effective for AGYW ages 15-19.

## WEPEC262

Bridging gaps in PrEP awareness regarding SUD treatment and incarceration

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**Background:** Recent data emphasizes the heightened vulnerability of individuals with Substance Use Disorder (SUD) and those transitioning from incarceration to HIV contraction. Our extensive outreach, particularly with individuals recently released from detox, treatment, and incarceration, underscores the urgent need for harm reduction tools like Narcan. These interactions reveal a lack of proactive information sharing about Pre-Exposure Prophylaxis (PrEP) even when in contact with medical professionals, highlighting a broader issue of insufficient emphasis on HIV prevention and a critical gap in preventive care.

**Description:** This proposal advocates for integrating Pre-Exposure Prophylaxis (PrEP) into post-Substance Use Disorder (SUD) treatment and incarceration healthcare, emphasizing comprehensive education for providers. It addresses the heightened HIV risk among the SUD population, especially men who have sex with men (MSM) in chemsex or survival sex.

Despite national harm reduction efforts, achieving PrEP goals remains challenging. The proposal aims to bridge gaps for vulnerable populations post-SUD treatment or incarceration through a local survey, informed by Las Vegas tunnel outreach experiences, aiming to engage the

community, enhance healthcare provider education, and establish a network dedicated to reducing HIV transmission in this population.

### Lessons learned:

1. Recognize the community need for more PrEP awareness and education in incarceration and SUD healthcare, where individuals are most vulnerable.
2. Highlight the effectiveness of PrEP integration in the healthcare continuum of SUD treatment and incarceration for clients who have highest potential exposure to HIV.
3. Become familiar with how exactly PrEP can be promoted more heavily in these areas, and what methods can be utilized to heighten the awareness of pre-exposure medication for those vulnerable.

**Conclusions/Next steps:** This session emphasizes the crucial need for accessible Pre-Exposure Prophylaxis (PrEP) in vulnerable populations, particularly incarcerated individuals and people who use drugs (PWUD).

Drawing from extensive frontline experience and outreach efforts in the Las Vegas tunnels, where individuals transitioning from treatment and penal systems lack access to PrEP, the facilitators will present a case for community mobilization.

The session aims to motivate HIV advocates and healthcare providers to address gaps in residential treatment and lock-up facilities, offering actionable responses and practical insights based on a first-hand case study from Las Vegas.

## WEPEC263

HIV risk profiling among adolescent girls and young women aged 15- 24: a resource efficiency innovation for tracking HIV vulnerability in DREAMS Centers in Zambia

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**Background:** Adolescent girls and young women (AGYW) continue to play a critical role in reaching HIV epidemic control in Zambia. To identify and track unreached AGYW with new HIV prevention approaches, innovative techniques that make efficient use of limited time, staffing, supplies, and other resources are required. The USAID CHEKUP II Activity, implemented by JSH, developed a model of HIV risk profiling to identify and track the risks of all AGYW screened and enrolled in the DREAMS program, and, based on the overall HIV vulnerability of the individual AGYW, immediately introduced HIV prevention services within 48 hours of risk identification.

**Methods:** From October 2022 to September 2023, the HIV risk profiling model was rolled out to 16 DREAMS centers supported by USAID CHEKUP II. A line list of 30,188 DREAMS



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center AGYW was created and a risk profile for each AGYW was created. 84 DREAMS staff were trained and equipped with data management tools for risk profile analysis, along with HIV test kits, condoms, and PrEP commodities for service provision.

**Results:** A total of 30,188 AGYW aged 15-24 years were enrolled based on the standard DREAMS risk profile. Of those enrolled, 10,119 AGYW were at substantial risk of HIV and received HIV counseling and testing.

Of this number 115 (1.1%) tested positive for HIV and were linked for ART. Of the AGYW who tested negative, 10,004, were offered PrEP within the DREAMS centers, and 6,920 (69%) were eligible and accepted to be initiated on oral PrEP.

The remaining 3,084 (31%) were not eligible for PrEP, however, were offered other HIV prevention measures such as condoms.

**Conclusions:** HIV risk profiling is critical in identifying and tracking unreached AGYW at substantial risk of HIV acquisition. This innovative technique has the potential to support Zambia's goal of reaching HIV epidemic control and through better serving AGYW. By making more efficient use of time, staffing, supplies, and other resources required to identify and link enrollees with HIV prevention methods and prevent new HIV under the DREAMS program in Zambia. The Activity recommends the use of this HIV risk profiling model for HIV prevention among AGYW.

## WEPEC264

Improving HIV pre-exposure prophylaxis uptake within status-neutral testing: the United States Agency for International Development (USAID) Zambia Integrated Health project experience

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**Background:** Oral pre-exposure prophylaxis had high initial uptake with select populations in Zambia following introduction in 2018. However, achieving PrEP uptake at progressively greater scale remains challenging. The USAID Zambia Integrated Health project aims to improve PrEP use through status-neutral testing approaches across priority populations.

**Description:** We assessed factors contributing to low PrEP uptake and current use, which were limited provider knowledge leading to hesitancy to provide services and limited PrEP integration with activities that include HIV testing services (HTS), and collaboratively developed microplans with Ministry of Health (MOH) district health

officers and facility managers in Central and North-Western provinces. Microplans included technical mentorship of facility and community providers, promotion targeting facilities and communities, and strengthened linkages for rapid PrEP start.

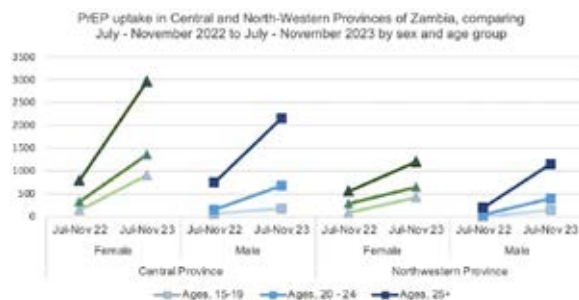
We compared program data between July to November for 2022 and for 2023 to assess change while considering potential PrEP seasonality.

**Lessons learned:** PrEP uptake markedly increased, largely attributed to increased promotion among pregnant and breastfeeding women and, for men, via voluntary medical male circumcision (VMMC) between years. We attribute these increases to three factors.

First, mentorship improved provider confidence for PrEP counseling, prescribing, and management, particularly within antenatal and postnatal care and for generating HTS and PrEP demand within communities.

Next, PrEP services were newly integrated with other prevention activities, particularly VMMC, with direct or facilitated referral for rapid PrEP start. MOH guidance to integrate PrEP with other services acted synergistically with mentorship to motivate providers.

Last, the project supported strengthened PrEP documentation for relevant facility staff. During implementation, the PrEP and HTS commodity supply chain was stable with no stock-outs.



**Conclusions/Next steps:** Expanded provider and community-based volunteer mentorship and HIV prevention service integration have successfully increased PrEP uptake in two predominantly rural Zambian provinces across five months. The project will explore further adaptations and improve documentation to expand uptake and prevention-effective use.

## WEPEC265

Reducing the incidence of HIV by scaling up interventions for women who use drugs and partners of people who use drugs

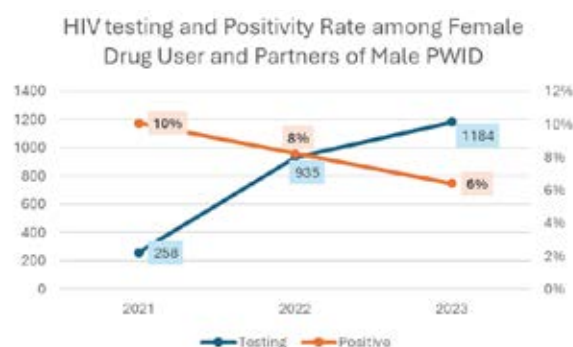
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**Background:** Since 2000, Médecins du Monde (MdM) has been implementing harm reduction activities related to drug use through three services centre) in Kachin State, where HIV prevalence is around 47%. MdM provides prevention services, testing and treatment of HIV, hepatitis and STIs, needles and syringes, primary health care, psychosocial support and operates drop-in centres. The political and social situation has been tensed after the military coup that occurred in February 2021, and amid the conflicts between armed groups and police crackdowns, female drug users and partners of people who inject drugs (PWID) are the most vulnerable, discriminated and commonly marginalized.

**Description:** Although male PWIDs are a high-risk group of HIV transmission, their partners and female users have an inequal access to prevention and care services. Hence, since 2021 MdM adopted a gender sensitive model: recruiting female staff from the community, organizing women mobile clinics and women awareness day, which focus on offering specific health information to women especially in remote villages.

**Lessons learned:** After 2 years, MdM reached out around one-third of female users and partners from the coverage area and the HIV positivity rate among female clients has dramatically decreased as the outreach strategy with tailored activities scaled up.



**Conclusions/Next steps:** To increase accessibility of health services to women, MdM has been including in a meaningful way women in the planning, delivery, and evaluation of the services, to adapt the activities to their real needs amidst the tense political context and cultural disturbances.

## WEPEC266

For key populations by key populations: empowering key population civil society organizations to lead delivery of HIV services to key populations: lessons from the USAID CHEKUP I Project

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**Background:** Due to a restrictive legal and socially conservative environment that prohibits same-sex relations and stigmatizes sex work, identifying and mobilizing key populations (KP) – men who have sex with men (MSM), female sex workers (FSW), transgender persons (TG) and people who inject drugs (PWID) – to access HIV services is always a challenge.

**Description:** The USAID-funded Controlling HIV Epidemic for Key and Underserved Populations (CHEKUP) I is implementing a key populations (KP) program in seven (7) districts of two (2) provinces of Zambia, targeting FSW, MSM, TG and PWID. In May 2023, the project partnered with 4 KP CSOs to lead the implementation of KP activities.

The KP CSOs recruited all the field and district staff, including health care providers and peer promoters, and took responsibility for day-to-day management of the KP wellness centers and planning and implementation of HIV services.

To further strengthen the operational capacity of the KP CSOs, appropriate skills training in relevant domains including organizational and financial management, biomedical service provision, and data management and reporting were provided to all the KP CSOs.

**Lessons learned:** Due to legal and social constraints, KP CSOs play a vital role in mobilizing and reaching KP for HIV services. Between May and September 2023 when USAID CHEKUP partnered with KP CSOs, 8,774 KPs were reached: 5,293 FSW, 2,524 MSM, 957 TG, out of whom 1,211 (32%) tested HIV-positive. Out of 2,532 (68%) who tested HIV-negative, 1,380 (55%) were initiated on pre-exposure prophylaxis. 81,244 condoms and 56,391 lubricants were distributed both at the KP Wellness Center and during community outreach activities. By September 2023, viral load coverage and viral suppression stood at 73% and 93%, respectively.

**Conclusions/Next steps:** A restrictive legal and socially conservative environment makes it hard for KP to easily be reached with HIV services, due to social stigma and



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concerns about safety and security. However, these barriers are mitigated by the engagement and involvement of KP CSOs, who use their social networks to build trust, and mobilize KP to receive HIV services. However, to effectively lead implementation, KP CSOs need organizational capacity building and on-site technical mentorship.

## WEPEC267

Pre-exposure prophylaxis uptake and progress towards 95-95-95 goals among serodifferent couples in Zambia: findings from the 2016 and 2021 Zambia Population-based HIV Impact Assessment Surveys

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**Background:** Serodifferent partnerships require both prevention and treatment strategies to prevent HIV transmission to the HIV-negative partner and ensure the HIV-positive partner adheres to treatment and is virally suppressed. We assessed serodifferent couples in Zambia for Pre-exposure prophylaxis (PrEP) knowledge and uptake among HIV-negative partners, and progress towards UNAIDS 95-95-95 targets among HIV-positive partners.

**Methods:** Nationally representative household-based Zambia Population-based HIV Impact Assessment (ZAMPHIA) surveys were conducted in 2016 and 2021. Analysis included couples residing in the same household who identified as married or living together as married and had a valid blood draw.

Questions related to PrEP knowledge and uptake were only included in the 2021 survey. Self-reported awareness of HIV and treatment status were adjusted for detection of antiretrovirals.

Viral load suppression was defined as viral load <1000 copies/ml. To account for complex survey design, analyses were weighted, and confidence intervals were computed using Jackknife estimation.

**Results:** In ZAMPHIA 2016, 3,315 couples were identified, of which 7.6% were serodifferent; in 2021, 3,519 couples were identified, and 6.9% were serodifferent. The female was the HIV-positive partner in 45.5% and 53.7% of serodifferent couples in 2016 and 2021, respectively.

Among serodifferent couples in 2016, 66.3% of HIV-positive partners were aware of their status, 91.1% of those aware of their status were on ART; and 90.5% of those on ART were virally suppressed. Among serodifferent couples in 2021, 83.5% of HIV-positive partners were aware of

their status; 99.2% of those aware of their status were on ART, and 98.2% of those on ART were virally suppressed. In 2021, at least one partner had ever heard of PrEP in 55.8% of serodifferent couples, and in 5.6% of serodifferent the HIV-negative partner was currently on PrEP.

**Conclusions:** Progress towards 95-95-95 targets among HIV-positive partners improved between 2016 and 2021, with HIV-positive partners reaching the overall viral suppression target in 2021. However, knowledge of PrEP was limited, and uptake among HIV-negative partners was low in 2021.

Further research is needed to understand interest and need for PrEP among serodifferent couples. Serodifferent couples may also benefit from targeted PrEP education and service delivery.

## WEPEC268

24-hour PrEP in the city of São Paulo, from in-person to online service

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**Background:** The provision of HIV pre-exposure prophylaxis (PrEP) in the city of São Paulo began in 2018, through 5 services of the Municipal Network Specialized in STI/Aids (RME). In 2021, the 27 RME services and another 28 units of the Sampa Trans Network were already offering PrEP and, in the following year, the STI/Aids Coordination implemented the PrEP on the Street (PrEP na Rua) project to provide this technology to a community environment.

**Description:** In 2023, the São Paulo STI/Aids Coordination opened two services to expand access to PrEP, as well as HIV post-exposure prophylaxis (PEP), at alternative hours in comparison to traditional units and intensified the *PrEP na Rua* project. On June 7th, 2023, the Prevention Station – Jorge Beloqui was opened, operating from Tuesday to Saturday, from 5pm to 11pm. That same day, the online service SPREP – Online PrEP and PEP began its activities, offering assistance every day, including on holidays and weekends, from 6pm to 10pm, via online appointments and allowing people to collect PrEP and PEP at 24-hour units. This increased the number of extramural activities by 451%.

**Lessons learned:** From January 2018 to December 2023, municipal health services registered 36,455 people on PrEP, with 12,838 new registrations last year. The new services created, Prevention Station and SPREP, included 12.3% of total new registrations, even though they only operated for 7 months of the year. Extramural activities with the PrEP na Rua project were equivalent to 11.9% in the same period. Therefore, the new units created and the increase of PrEP supply in a community environment, together, ex-

panded the number of new people using PrEP by almost 25%. Regarding post-exposure prophylaxis, these initiatives together corresponded to 4% (1,072) of PEP distributed in 2023 (26,029).

**Conclusions/Next steps:** The diversification of PrEP access points has proven to be an assertive guideline for public prevention policy in the city of São Paulo, which indicates an inclination to open new services that work on week-ends and holidays and/or evening hours.

## WEPEC269

Location preferences for accessing long-acting injectable pre-exposure prophylaxis (LA-PrEP) among men who have sex with men (MSM) in the U.S currently using daily-oral PrEP

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**Background:** Men who have sex with men (MSM) are disproportionately impacted by HIV. Long-acting injectable pre-exposure prophylaxis (LA-PrEP), FDA approved in December 2021, could expand PrEP coverage. Providing PrEP services at pharmacies or at-home, in addition to healthcare provider (HCP) settings, may improve PrEP utilization. We sought to investigate MSM location preferences for accessing LA-PrEP.

**Methods:** MSM participating in the 2021 online American Men's Internet Survey (AMIS) currently prescribed daily-oral PrEP who expressed interest in switching to LA-PrEP were asked where they would prefer to receive LA-PrEP injections. Response options were categorized as HCP settings, pharmacy, or at-home.

We used bivariate and multivariable multinomial regression models to estimate adjusted prevalence ratios (aPR) between various socio-demographic, mental health/substance use, sexual behavior, stigma, and HCP-communication variables and location preference.

**Results:** Among 1,076 participants, 60% preferred HCP settings for LA-PrEP services; 26% preferred home; 14% preferred a pharmacy. High-level healthcare stigma (experienced by 52%) was associated with less preference for HCP settings vs. pharmacy (aPR=0.50; 95%CI=0.33-0.78) and vs. at-home (aPR=0.68; 95%CI=0.48-0.94). High-level friends/family stigma (experienced by 45%) was associated with preferring HCP settings vs. pharmacy (aPR=1.90; 95%CI=1.22-2.95).

Prior at-home HIV testing (experienced by 29%) was associated with less preference for HCP settings vs. home (aPR=0.59; 95%CI=0.42-0.84). Being 25-29 (9%; aPR=1.89; 95%CI=1.05-3.42) or 30-39 (31%; aPR=1.51; 95%CI=1.03-2.19) vs.

40+ (56%) was associated with preferring HCP vs. home. Having private health insurance (82%) was associated with preferring HCP settings vs. home (aPR=1.49; 95%CI=0.99-2.24) and less preference for HCP settings vs. pharmacy (aPR=0.40; 95%CI=0.20-0.79).

	HCP vs. pharmacy		HCP vs. Home		Home vs. pharmacy	
	aPR (95% CI)	aPR (95% CI)	aPR (95% CI)	aPR (95% CI)	aPR (95% CI)	aPR (95% CI)
<b>Socio-demographics</b>						
Age						
25-29	2.09 (1.75-2.51)*	2.09 (1.75-2.51)*	0.89 (0.63-1.24)*	0.89 (0.63-1.24)*	1.90 (1.22-2.95)*	1.90 (1.22-2.95)*
30-39	1.52 (1.06-2.18)*	1.52 (1.06-2.18)*	0.89 (0.63-1.24)*	0.89 (0.63-1.24)*	1.06 (0.48-2.35)	0.87 (0.48-1.58)
40+	0.87 (0.68-1.11)*	0.87 (0.68-1.11)*	0.87 (0.68-1.11)*	0.87 (0.68-1.11)*	1.00 (0.61-1.65)	0.75 (0.58-1.02)
Race						
White	Ref	Ref	Ref	Ref	Ref	Ref
Hispanic	0.58 (0.29-1.15)*	0.58 (0.29-1.15)*	0.98 (0.54-1.78)	0.98 (0.54-1.78)	0.58 (0.29-1.15)*	0.67 (0.32-1.40)*
Non-Hispanic white	0.59 (0.27-1.28)*	0.59 (0.27-1.28)*	0.79 (0.40-1.57)*	0.79 (0.40-1.57)*	0.73 (0.35-1.55)	0.69 (0.35-1.38)
Other/race/ethnicity unknown	0.64 (0.23-1.80)*	0.64 (0.23-1.80)*	0.87 (0.40-1.88)	0.87 (0.40-1.88)	0.58 (0.27-1.26)	0.60 (0.31-1.17)*
<b>Substance use</b>						
Used non-sterile/injectable drugs past 12m	0.65 (0.37-1.13)*	0.65 (0.37-1.13)*	0.79 (0.40-1.57)*	0.79 (0.40-1.57)*	1.14 (0.75-1.74)	1.14 (0.75-1.74)
Used injectable drugs past 12m	0.65 (0.37-1.13)*	0.65 (0.37-1.13)*	0.65 (0.37-1.13)*	0.65 (0.37-1.13)*	0.65 (0.37-1.13)*	0.65 (0.37-1.13)*
<b>Healthcare Access &amp; Communication</b>						
Private health insurance	0.59 (0.36-0.94)*	0.59 (0.36-0.94)*	0.75 (0.40-1.21)*	0.75 (0.40-1.21)*	0.60 (0.35-1.00)*	0.60 (0.35-1.00)*
Ever taken at-home HIV test	0.65 (0.37-1.13)*	0.65 (0.37-1.13)*	0.65 (0.37-1.13)*	0.65 (0.37-1.13)*	1.98 (1.00-3.93)*	1.98 (1.00-3.93)*
Got PrEP via HCP, clinic, or health dept. past 12 months	0.59 (0.36-0.94)*	0.59 (0.36-0.94)*	0.65 (0.37-1.13)*	0.65 (0.37-1.13)*	0.65 (0.37-1.13)*	0.65 (0.37-1.13)*
Got PrEP via pharmacy, clinic, or health dept. past 12 months	0.59 (0.36-0.94)*	0.59 (0.36-0.94)*	0.65 (0.37-1.13)*	0.65 (0.37-1.13)*	0.65 (0.37-1.13)*	0.65 (0.37-1.13)*
Got PrEP via pharmacy, clinic, or health dept. past 12 months	0.59 (0.36-0.94)*	0.59 (0.36-0.94)*	0.65 (0.37-1.13)*	0.65 (0.37-1.13)*	0.65 (0.37-1.13)*	0.65 (0.37-1.13)*
<b>Stigma</b>						
High healthcare stigma score	0.65 (0.37-1.13)*	0.65 (0.37-1.13)*	0.79 (0.40-1.57)*	0.79 (0.40-1.57)*	0.67 (0.32-1.40)*	0.75 (0.47-1.22)
High friends/family stigma score	0.65 (0.37-1.13)*	0.65 (0.37-1.13)*	0.65 (0.37-1.13)*	0.65 (0.37-1.13)*	0.65 (0.37-1.13)*	0.65 (0.37-1.13)*

Table. Crude and adjusted prevalence ratios for LA-PrEP location preference based on multinomial logistic regression (N=1076).

**Conclusions:** LA-PrEP location preferences among PrEP-experienced MSM are influenced by complex factors including stigma, past healthcare experiences, resources, and age. LA-PrEP service provision at multiple locations may most effectively reach diverse MSM wanting to transition from oral to LA-PrEP. HCP settings should address access issues for MSM without private insurance and healthcare stigma exposure.

## WEPEC270

Gaps in access to PrEP in Mexico: a counterfactual analysis to evaluate access bias

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**Background:** In theory, Mexico extends PrEP access to key populations, including MSM, through public health institutions. However, treatment access bias, influenced by individual, social, and structural barriers, may hinder equitable coverage. Employing the counterfactual prediction approach, this study aims to assess such bias.

**Methods:** Utilizing a hypothetical quasi-experimental design, the treatment group comprises MSM initiating PrEP in the MiPrEP, while the counterfactual group is drawn from a national sample of MSM identified in The National Survey on Sexual and Gender Diversity (ENDISEG) 2021. Employing age, education, employment, gender, and number of recent sexual partners, we compared groups using statistical methods to test for treatment access bias. A propensity score matching approach identified those less likely to access PrEP, assessed by unmatched individuals in



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the control group. Further demographic characteristics of matched and unmatched individuals in the control group were evaluated. Logistic models gauged the hypothetical population probability of accessing PrEP.

**Results:** The treatment group (n=685) and control group (n=479) exhibited significant differences ( $P<0.05$ ) in age, education, employment, and sexual partner composition. Chi-squared balancing test revealed disproportions, with the intervention group skewed towards 25 to 34-year-olds (54% vs. 27%), higher education (78% vs. 25%), multiple sexual partners (90% vs. 42%), and fewer employed individuals (75% vs. 87%) with a Rubin's B of 199.6 and Rubin's R of 0.23.

The matching algorithm optimized the quality of the matches with NN-matching of 2 neighbors, resulting in 80 matched individuals, with a Rubin's B of 7.7 and Rubin's R of 1.34. Logistic models indicated a higher likelihood of PrEP access for those with advanced education (OR=8.31) and reporting partners of both sexes (OR=9.28).

**Conclusions:** Our findings unveil potential barriers influencing PrEP access, particularly among individuals with basic or lower education levels who might be overlooked by the current PrEP program. Addressing these disparities is critical for optimizing the impact and reach of HIV prevention efforts in Mexico.

## WEPEC271

PrEP uptake and retention amongst sex workers in 13 South African districts

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**Background:** Estimated 150 029 sex workers (SW) in South Africa; 91% are female with a 59,6% HIV prevalence rate and 5.5% HIV incidence. Sex between SW and clients contributes to 6.9% of new HIV acquisitions. With sex work criminalized, SWs hesitant to approach public health facilities for PrEP.

**Description:** NACOSA managed Sex Work programme funded by Global Fund in thirteen districts: Amathole, Buffalo City, Bojanala, Capricorn, King Cetshwayo, Mopani, Nelson Mandela Bay, Sedibeng, Sekhukhune, Thabo Mofutsanyana, Ugu, West Rand and Zululand.

In 2022, an external evaluation assessed the implementing Sub-recipients' (SRs) PrEP initiation and adherence innovations by referring to its three modalities: Modality 1- Provision from the SR staff only, through both mobile and fixed clinics; Modality 2- Provision from the SR staff in partnership with the Department of Health (DoH) staff, from both mobile and fixed clinics and Modality 3- Provision from the SR staff in partnership with DoH staff, from fixed clinics but NO mobile clinic.

A mixed-methods evaluation design assessed the successes and challenges of PrEP provision; using April

2019-March 2022 programmatic data analysis with 400 interview participants, and 546 mobile surveys with PrEP and non-PrEP users.

**Lessons learned:** High PrEP availability and accessibility in all districts. 3% struggled with access. 96% preferred services from SR mobile clinics to public health facilities. Only 7% of sex workers cycled on and off PrEP, with most PrEP refusals cited as SW 'feeling well' and refusing daily medication. Whilst PrEP accessibility and availability were unaffected by modality, uptake and retention was affected. Highest uptake rates in Modality 1 sites with mobile clinics while SR fixed clinics seldom used.

In Modality 2 sites, fair usage of both fixed sites (42%) and the mobile (36%), however DoH clinics without SR staff seldom used. PrEP uptake and knowledge lowest in Modality 3, reflecting the importance of mobile outreach.

**Conclusions/Next steps:** SR support enabled PrEP uptake and adherence, but these resource-intensive programs by civil society are not sustainable. Key population sensitization at public health facilities is critical to increasing SW's access, uptake, and adherence to PrEP; and in supporting key population programme transitioning from civil society to public health.

## WEPEC272

ART in the Shadows: understanding its use among HIV/TB co-infected persons deprived of liberty in Rio de Janeiro, Brazil

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**Background:** The intersection of tuberculosis (TB) and HIV presents a significant public health challenge, particularly among populations deprived of liberty. In this study, conducted in Rio de Janeiro, Brazil, from 2019 to 2023, we analyzed the incidence of TB and evaluated the proportion of TB/HIV co-infection and antiretroviral therapy (ART) utilization in this vulnerable group.

**Methods:** A retrospective analysis was performed on TB cases reported to the National Disease Notification System in Rio de Janeiro, involving data from 9 municipalities and 51 prison units. The study focused on calculating TB incidence per 1,000 people rate. We also calculated the proportion of TB/HIV co-infections and access to antiretroviral therapy (ART). R software was used for descriptive statistical analysis.

**Results:** Among the 10,263 cases of TB identified within the population deprived of liberty from 2019 to 2023, a total of 393 cases (3.82%) were confirmed as HIV/TB co-infections. The incidence rate of TB declined from 42.73 per 1,000 individuals in 2019 to 32.53 per 1,000 individuals by 2023. The proportion of TB/HIV co-infection exhibited variability

ity, reaching its peak at 4.25% of all confirmed TB cases in 2021. Notably, adherence to antiretroviral therapy (ART) among those with co-infections demonstrated significant oscillation, falling to its lowest point in 2021 at 37.07%, and rising to its highest in 2023 at 71.71% (Figure).

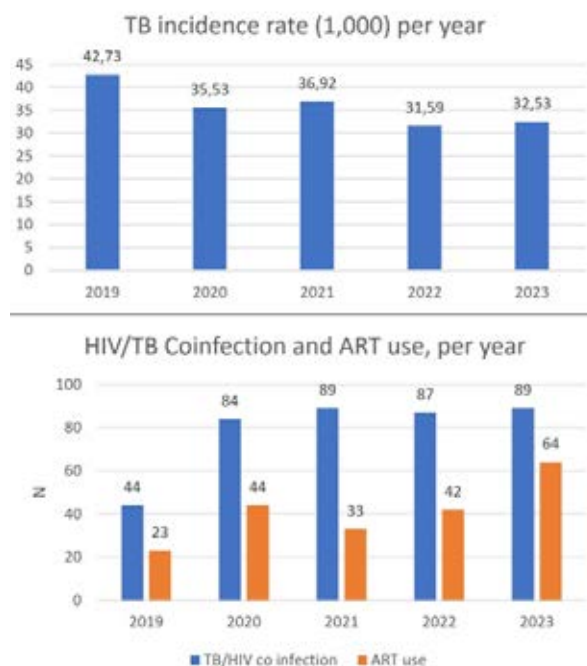


Figure. Incidence rate of tuberculosis (TB) per 1,000 individuals, by year of notification, along with the number of TB/HIV co-infections and the utilization of antiretroviral therapy (ART), among the population deprived of liberty in Rio de Janeiro, Brazil, from 2019 to 2023.

**Conclusions:** This study underscores a critical health issue: the high incidence of TB/HIV co-infection and inconsistent ART adherence among people deprived of liberty. It highlights the urgent need for targeted interventions to improve access to and adherence to ART, as well as the integration of TB and HIV services in correctional facilities to reduce mortality associated with TB/HIV co-infection in this at-risk population.

## HIV testing

### WEPEC273

Reducing the risk of HIV exposure vulnerability through peer- to -peer sessions among adolescent girls and young women: a case study from 5 regions of Tanzania Mainland

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**Background:** Adolescent girls and young women (AGYW) face disproportionately high risk of contracting HIV acquisition. In Tanzania, 28,000 new HIV acquisition among youth aged 15-24 are recorded annually, AGYW accounting for 80% of all new acquisition. Beyond the biological factors, the burden of HIV among AGYW are driven by behavioral, social and structural factors that operate together to shape individual vulnerability.

Records shows AGYW are more reluctant to the traditional method of health seeking behavior and direct opening up to health care providers on sensitive matters hence increases in HIV risk vulnerability.

**Description:** Amref Health Africa in Collaboration with Tanzania Youth Alliance under Global Fund implement Timiza Malengo program in Singida, Dodoma, Tanga, Geita and Morogoro regions of Tanzania targeting In and out of school AGYW aged 10-24. The program trained 1,377 out of school peer educators whom their main role was to identify AGYW from door -to-door, assess for vulnerability and enroll them into a program.

The program designed safe spaces (village office, church or schools premises) for a peer educator to deliver the comprehensive HIV prevention education to program beneficiaries on monthly basis.

AGYW identified to be HIV vulnerable were referred to HTS counselor for HIV testing services at the nearby facility, AGYW tested HIV positive were enrolled to care, initiated on ART and linked back to peer educators for monitoring and continuity of health education services.

**Lessons learned:** In a period of January,2021 to September,2023, the program reached 350,458 AGYW with comprehensive HIV prevention education, among identified HIV vulnerable 84% were tested for HIV and 2,860 (0.98%) were tested HIV positive and 99% enrolled to care and treatment and initiated on ART. We observed the reduction in positivity rate among newly HIV tested AGYW from 1.80% in 2021 to 0.98% in 2023.

**Conclusions/Next steps:** Programs should make peer-led programs sustainable to ensure continuity of HIV prevention services delivery at community level. Therefore, it is important to fund, scale up and strengthen peer led



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programs as an integral part of primary health care that meet comprehensive HIV prevention needs of AGYW beyond health sector and address structural challenges to reduce new HIV acquisition.

## WEPEC274

### Calling for reflection: a ten-year analysis of CD4 count trends at HIV diagnosis in Guatemala (2013–2023)

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**Background:** Delayed HIV diagnoses pose multiple threats, compromising the potential benefits of early ART initiation, escalating morbidity rates, and increasing economic implications, among other challenges. This study explores the landscape of HIV diagnosis over the past decade, analyzing trends in the median CD4 count.

**Methods:** We analyzed data from people living with HIV (PLWH) who received care at "Clínica Familiar Luis Angel Garcia" (CFLAG), a major HIV center in Guatemala City. The study focused on individuals who were HIV diagnosed between 2013 and 2023 with a documented baseline CD4 count. Our primary target was to examine trends in CD4 counts and assess six-month mortality.

**Results:** Between January 2013 to October 2023, CFLAG diagnosed a total of 4,486 HIV-positive individuals, averaging 408 diagnoses annually. The highest number of diagnoses occurred in 2021, totaling 524 cases. Out of these cases, 4,377 (97.5%) had a documented baseline CD4 cell count. The median CD4 cell count showed an increasing trend from 165 in 2013 to 278 in 2023. Although the median CD4 count demonstrated a relative increase over time, the proportion of individuals with Advanced HIV Disease (AHD) (<200 cells/mm<sup>3</sup>) remained high at 37% in 2023. Additionally, when classifying PLWH based on their risk category, we observed a notable improvement among men who have sex with men (MSM), the median CD4 cell count within this group rose from 258 in 2013 to 340 in 2023. ( $p < 0.0001$ ), whereas median CD4 cell count in heterosexual individuals remained almost stable, from 139 in 2013 to 101 in 2023 ( $P = 0.814$ ). In this group, the proportion of ADH has stayed consistently high and it does not change over time from 63% in 2013 to 65% in 2023. Additionally, at 6 months, mortality was significantly higher among individuals with AHD (17.1% vs 1.1%,  $p < 0.0001$ ).

**Conclusions:** While commendable efforts are evident in the early identification of HIV in at-risk populations, it is imperative to implement strategies for the early identification of HIV cases among the heterosexual population in Guatemala, this approach is essential in ensuring that no one is left behind.

## WEPEC275

### Social network strategy for HIV testing and linkage to PrEP/ART services among key populations in Hai Phong City, Vietnam, 2021–2023

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**Background:** The HIV epidemic in Vietnam is concentrated among key populations (KP), with HIV prevalence estimated at 12.5%, 12%, and 3.1% among men who have sex with men (MSM), people who inject drugs (PWID), and female sex workers (FSW), respectively (HSS+, 2012–2022). In response, a social network-based strategy (SNS) was introduced in Hai Phong City, an urban center with high HIV burden, in 2021. People living with HIV (PLHIV) or HIV-negative individuals at risk of HIV, were enrolled as SNS recruiters and trained to refer network associates to HIV testing using referral coupons, and subsequently to HIV pre-exposure prophylaxis (PrEP) or anti-retroviral treatment (ART) based on HIV status.

We aimed to assess the feasibility and outcomes of SNS implementation to inform program scale-up and improvement.

**Methods:** SNS client registers between June 2021 – November 2023 from 12 sites in Hai Phong were analyzed. We described the feasibility and effects of SNS through assessing coupon distribution, characteristics of SNS recruiters and network associates, uptake of HIV testing, HIV positivity, use of ART and PrEP among SNS-recruited network associates.

**Results:** Of 988 participants who agreed to be SNS recruiters [median age: 32 (IQR: 25–42), 851 (86%) were male, 509 (52.5%) MSM, 191 (19.3%) PWID, 160 (16.2%) sex partners of PLHIV, 85 (8.6%) other groups, and 33 (3.3%) FSW. 988 recruiters received 2,643 referral coupons; 751 (76%) received two or three coupons. Of 1,624 network associates (62% of distributed coupons) tested for HIV, 109 (6.8%) tested positive. HIV positivity was 4.9% (25/509), 14.4% (50/347), 2.9% (13/442), 3.3% (5/150) and 9.0% (16/178) among MSM, sex partners of KP, and other groups, respectively. Of those who tested positive, 93.5% (102/109) received ART, and 29.3% (444/1,515) of those who tested negative received PrEP. 176 network associates (10.8%) agreed to be new SNS recruiters.

**Conclusions:** SNS is feasible and effective in engaging a variety of KP groups, improving HIV case finding and linkage to ART service, with high HIV test positivity. The SNS strategy can be further strengthened by improving efforts to encourage network associates to participate as SNS recruiters and by improving linkage to PrEP among clients testing negative for HIV.

## WEPEC276

Data for impact: optimizing recency testing data to improve HIV case identification in Eastern Uganda

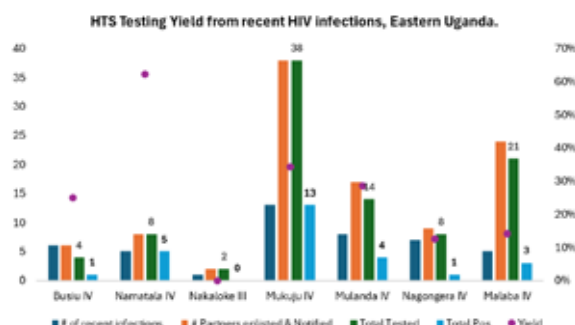
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**Background:** In 2021, Uganda's ministry of Health (MoH) rolled out recency testing for all newly identified HIV positive clients. In Sept 2022, HIV case identification in Mbale and Tororo districts were suboptimal for example 4.7% and 5.2% for Mukuju and Namatala Health Centres (HCs) respectively.

We describe how we utilized HIV Recency data to improve HIV case identification among individuals 15years and above in seven HCs in mid-eastern Uganda.

**Description:** With support from USAID, the Local Partner Health Services Eastern project (implemented by Baylor-Uganda) in collaboration with MoH, implemented a multi-site quality improvement collaborative project in May 2023 in seven purposively selected high volume HCs within Mbale and Tororo districts. These sites were among the first to be activated for recency testing in the region. The collaborative involved mentoring of healthcare providers (Clinicians, Laboratory teams and Counsellors), bi-weekly review of HIV testing services (HTS) data, collaborative learning across HCs and targeted community-based HTS activities including targeted risk-based mobilization and assisted partner notification. We present descriptive statistics to show HIV case finding performance in the seven HCs.

**Lessons learned:** Of the 45 recent infections identified in May 2023, 94 sexual partners were notified and tested for HIV, 27 (27.6%) were HIV positive, 18 being females. Of the 27 new positive clients identified, the majority (96%) were between 20 and 49 years, 8 (29.6%) were recent infections and 23 (85.1%) were identified from the community. HTS yield improved from 4.7% to 41.6% (Mukuju HCIV) and 5.2% to 25% (Namatala HCIII) and illustrated in figure1 below.



**Conclusions/Next steps:** Use of HIV Recency data to focus HTS interventions is effective and scale-up to other facilities is recommended to sustain HIV epidemic control.

## WEPEC277

Comparing facility-based and outreach testing strategies for migrant communities: insights from the Crossing Countries, Crossing Communities (4C) Project in Greece and the Netherlands

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**Background:** STIs including HIV and viral hepatitis, disproportionately affect migrant communities in Europe. Despite comprising only 12% of the European Union's population, migrants represent a substantial 44% of documented HIV cases. To address this health disparity, our project, funded by the European Commission, was launched in 2023. The initiative focuses on implementing facility-based and outreach testing services in Greece and the Netherlands.

**Description:** The project "Crossing Countries, Crossing Communities" (4C) initiated testing interventions in Greece and the Netherlands, specifically targeting MSM, transgender people, and migrants. Interventions were tailored to the unique context and demographics of the migrant population in each region, considering resource availability. This included low-threshold clinical testing and mobile services strategically deployed at refugee camps and other locations frequented by the target groups. Project data, including the number of STI and HIV tests, demographic information, testing history, and test results, was collected. We conducted a comparison between the data of individuals tested at clinics and those reached through outreach efforts.

**Lessons learned:** Through December 2023, facility-based services conducted 15,294 tests for STIs and HIV, while outreach events contributed 8,314 tests. The outreach group exhibited a higher proportion of individuals in the 50+ age category (11.4%) compared to those tested at clinics (7%). Additionally, outreach efforts resulted in reaching a greater percentage of individuals identifying as female and are non-MSM. The STI positive rate was notably higher among the population reached through outreach services (6.6% compared to 2.7%). (Table 1)

	Facility based testing	Outreach
Total number of HIV & STI tests	15,294	8,314
Male	68.7%	56.6%
Female	29.7%	41.2%
Non-binary	0.97%	0.74%
MSM	40.3%	17.4%
STI rate	2.7%	6.6%
Confirmed HIV rate	0.86%	1%

Table 1.



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**Conclusions/Next steps:** Outreach testing at migrant-populated sites has demonstrated promising outcomes, reaching a diverse demographic, including non-MSM individuals, females, and those aged 50 and above. Preliminary findings from the first year indicate the potential effectiveness of outreach in detecting previously undiagnosed STIs compared to clinic testing. In the forthcoming phase, we aim to connect this group with tailored prevention strategies and document best practices and lessons learned.

## WEPEC278

Do people prefer digitally facilitated HIV self-sampling or self-testing? An analysis of national HIV testing week data from an online SRH service in the UK

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### Background:

National HIV Testing Week in England aims to encourage HIV testing, SH24 offers HIV tests ordered online and posted to a user's home. In 2023, users were given a choice between a self-sampling or self-testing HIV test (see Figure 1).

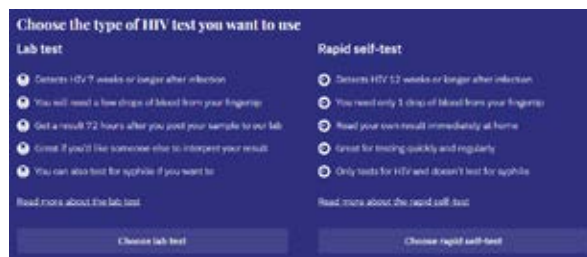


Figure 1 - HIV Test Decision Screen

**Methods:** Routinely collected data from users who ordered a test over National HIV Testing Week 2023, including user feedback, was anonymised and exported from a secure data warehouse for analysis in Excel.

### Results:

Most users chose a self-test kit (n=10305, 68.55%) over a self-sample kit (n=4727, 31.45%). Trends in age were similar across groups. Both self-samplers and self-testers were mostly men, with 67.76% (n=3203) and 68.08% (n=7016) men in each group respectively. A large proportion of users were heterosexual for both self-samplers (n=2022, 42.78%) and self-testers (n=4743, 46.03%), and a significant proportion were gay men, for self-samplers (n=1751, 37.04%) and self-testers (n=3618, 35.11%). Most users were White British, for self-samples (n=2909, 61.54%) and self-tests (n=6510, 63.17%). A higher proportion of those of African ethnicities were self-testers (n=984, 9.55%) compared to self-samplers (n=330, 6.98%). Thirty-one-percent of self-testers (n=3182) had never tested for HIV, compared

to 25.07% (n=1185) of self-samplers (see Table 1). Two HIV positive results were identified through self-sample testing and 1 through self-testing. Ninety-seven-percent (n=524) of self-testers who completed a user feedback survey (n=539) rated the service over 4 stars out of 5.

Last HIV Test	Self-Sample Users	Self-Test Users
Never	1185 (25.07%)	3182 (30.88%)
Over 1 Year Ago	1872 (39.60%)	4129 (40.07%)
Within the Last Year	1337 (28.28%)	2194 (21.29%)
Unknown	333 (7.04%)	800 (7.76%)
Total	4727 (100.00%)	10305 (100.00%)

Table 1: HIV Testing Behaviour

**Conclusions:** HIV self-testing appears more acceptable than self-sampling in this population. Demographic trends were similar in both groups with some important differences, with more self-testers who had never tested for HIV before and of African ethnicities.

## WEPEC279

Sex differences in reported HIV positive tests and changes between 2019-2022: analyses of Global AIDS Monitoring data from 16 countries in sub-Saharan Africa

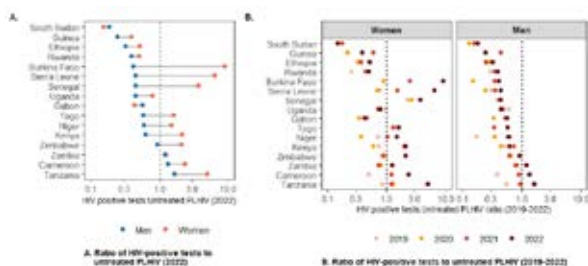
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**Background:** Fewer men than women are tested for HIV in sub-Saharan Africa. Men also have lower HIV prevalence but make-up a higher proportion of people living with HIV not on antiretroviral therapy (untreated PLHIV). Efforts to increase HIV testing and treatment have reduced the prevalence of undiagnosed and untreated PLHIV. We compared national data on HIV-positive tests and estimates of untreated PLHIV by sex to assess differences in the HIV-positive 'diagnoses gaps' and how these have changed over time.

**Methods:** We analysed sex-stratified estimates of numbers of untreated PLHIV from 2023 UNAIDS-published country estimates and numbers of HIV-positive tests (including retests) reported through Global AIDS Monitoring for adults (aged 15+) from 16 countries in sub-Saharan Africa between 2019-2022. We calculated sex-specific ratios of reported HIV-positive tests to estimated untreated PLHIV and compared across countries and between 2019-2022.



**Results:** From 2019–2022, across the 16 countries, the estimated percent of PLHIV untreated decreased from 28% to 15% in men, and from 20% to 8% in women. In 2022, the median ratio of positive tests to untreated PLHIV was 0.51 (interquartile range: 0.41–0.70) in men and 1.56 (0.51–2.70) among women. Across 13 countries reporting positive tests between 2019–2022, the median ratio of positive tests to untreated PLHIV increased from 0.39 (0.31–0.58) to 0.57 (0.44–0.93) in men and from 0.74 (0.45–0.85) to 1.50 (0.52–2.36) in women. In both men and women, this ratio fell temporarily in 2020 compared to 2019, to 0.34 (0.21–0.49) in men, and 0.66 (0.34–0.90) in women.



**Conclusions:** Diagnosis gaps among men and women have reduced between 2019–2022 in sub-Saharan Africa. HIV-positive men remain less likely to know their HIV status and be treated than women annually. Innovative HIV testing strategies and focused efforts are needed to engage men with testing services.

## WEPEC280

HIV testing among female partners following a peer-education HIV prevention intervention for Tajik male migrant workers

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**Background:** The "Migrants' Approached Self-Learning Intervention in HIV/AIDS for Tajiks (MASLIHAT)" recruits and trains male Tajik migrants who inject drugs as peer educators (PEs) in delivering HIV prevention information and encouragement to adopt risk-reduction norms within their diaspora social networks while reducing their own HIV risk. Reduced rates of syringe sharing and condomless sex among MASLIHAT participants were reported previously. This analysis examines the effect of the intervention on HIV testing among the participants' female sex partners.

**Methods:** The MASLIHAT intervention was tested in Moscow in a cluster-randomized controlled trial with 12 recruitment sites assigned to either the MASLIHAT intervention or comparison health education training (TANSIHAT). Tajik male migrants who inject drugs (N=140) were recruited to attend the 5-session MASLIHAT or TANSIHAT train-

ing and to recruit two network members (NMs) who inject drugs with the intent of sharing the information and positive strategies for change they learned (n=280). All 420 participants were interviewed at baseline and referred to HIV counseling and testing.

Follow-up interviews were conducted at 3-month intervals for 1 year. Modified mixed effects Poisson regression analyses adjusted for participant type and network clustering compared the proportions of participants with a regular female sex partner in each condition who reported that their partner had been tested for HIV.

**Results:** Of the 420 participants, 108 (26%) reported sex with a primary female partner during the study. Prior to the intervention, 4 (4%) indicated that their partner had been tested for HIV. At 3-month follow-up, 70% of MASLIHAT and 28% of TANSIHAT participants with a regular female partner reported their partner had been tested for HIV. At 12-month follow-up, testing increased to 94% for MASLIHAT and 59% for TANSIHAT.

Regression analyses indicated that MASLIHAT participants were significantly more likely to report partner HIV testing at the 3-month follow-up (IRR=2.60, 95% CI 1.41–4.78) and testing increased significantly over the follow-up period in both conditions (Chi2(3)=26.69, p<0.0001).

**Conclusions:** The MASLIHAT intervention for male Tajik migrants who inject drugs doubled the rate of female partner HIV testing compared to participation in HIV counseling and testing paired with a non-HIV focused health education intervention.

## WEPEC281

HIV, hepatitis, and syphilis self-testing among adolescents and young people: a systematic review and meta-analysis

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**Background:** Adolescents and young people make up a disproportionate share of the world's HIV and sexually transmitted infection (STI). Self-testing can increase testing coverage and strengthen the uptake of HIV/STI prevention and treatment services. We aimed to critically appraise the literature regarding HIV, hepatitis, and syphilis self-testing among adolescents and young people (age 10–24 years, based on WHO definition), and assess its acceptability, feasibility, usability, and cost-effectiveness.



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**Methods:** We conducted a systematic review and meta-analysis, searching six databases between January 2010 and October 2023. We included all studies with primary data on HIV, hepatitis and syphilis self-testing in adolescents and young people. A random-effects meta-analysis was used to summarise the uptake, proportion of first-time testers and linkage to care. Qualitative data were narratively synthesised.

**Results:** We identified 104 relevant studies, of which 98 were on HIV, four on hepatitis, and two on syphilis self-testing. Among these, six studies focused on adolescents aged 10-14, 96 studies included adolescents aged 15-19, and 96 studies involved young people aged 20-24.\* A total of 46 studies were included in the meta-analysis. Most studies were conducted in the African region (n=33/46, 72%) and lower-middle-income countries (n=17/46, 37%).

Approximately 90% (95%CI: 82-96%,  $I^2=99\%$ ) of adolescents who were offered any of the three types of self-test completed the test. Around 78% (95%CI: 26-100%,  $I^2=98\%$ ) of adolescent self-testers reporting reactive results subsequently linked to further testing and onward care as needed. In general, adolescents and young people had high acceptability and usability towards self-testing. Adolescents aged 10-14 preferred receiving a self-test kit with pre-test counselling or assisted video/audio instructions from a healthcare worker to guide them on self-testing. Most individuals aged 15-24 liked the confidentiality, convenience and non-invasiveness of self-testing compared to conventional facility-based testing. They found self-testing easy to perform without assistance and were confident in interpreting the results themselves.

**Conclusions:** Self-testing is a safe, effective and accessible way to increase HIV, hepatitis and syphilis testing and treatment in adolescents and young people. Efforts to ensure access to self-testing for this population should be prioritized across disease areas to maximise public health impact.

\*Some studies were from >1 age group.

## WEPEC282

### Effectiveness of web-based HIV self-test distribution and linkage to HIV treatment and PrEP among key populations in Viet Nam: a mixed methods analysis of implementation from pilot to scale-up

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**Background:** In Vietnam, key populations (KPs) continue to face barriers accessing HIV services. Virtual HIV self-testing platforms are recommended and can increase KP testing access. We investigated the effectiveness of a web-based HIVST program in facilitating linkage to ART and PrEP initiation or continuation.

**Methods:** A mixed-methods study used cross-sectional and qualitative programme data from a web-based HIVST program. Initial piloting started in November 2020 and completed in April-2022. Scale-up delivery and evaluation was completed in 23 provinces from April to December 2022.

After risk assessment, participants registered on the web-site, receiving HIV oral fluid self-test (OraQuick®) by courier, peer educator, or self-collection.

Primary outcomes were proportion differences between pilot and scale-up on HIVST uptake, result reporting, and demographics. Positivity, case finding, incidence risk, and PrEP-use were compared. Thematic content analysis was conducted on responses from client satisfaction survey.

**Results:** 17,589 participants registered for HIVST; 11,332 individuals ordered 13,334 tests. Participants were generally young, a third <25 years old (4,309/11,332, 38.0%), male (9,418/11,332, 83.1%), and MSM (6,437/ 11,332, 56.8%). Nearly half were first-time testers (5,069/11,332, 44.9%).

Two-thirds of test-results were reported, with fewer results reported in scale-up (pilot: 3129/4140, 75.6%, scale-up: 5811/9194, 63.2%,  $p<0.001$ ). 6.3% of tests were reactive (561/8,940). Most initiated ART (509/522, 97.5%).

Case finding was 7.6% (95% CI: 7.0% to 8.3%, 494/6,492); incidence risk of those known negative at their second test was 3.8% (95% CI: 2.9% to 4.9%, 58/1535). One fifth with a negative test, initiated or continued PrEP (pilot: 19.8%,

scale-up; 18.5%,  $p=0.124$ ), with greater absolute positive tests, and PrEP-use in scale-up. Qualitative results demonstrated high- acceptability and minimal challenges.

**Conclusions:** Web-based HIV self-testing in Viet Nam reached people at elevated risk of HIV, facilitating uptake of ART and PrEP initiation and continuation. Web-based programs can expand testing access, supporting global HIV prevention and treatment targets.

## WEPEC283

### HIV testing frequency and predictors for testing among trans and/or non-binary people in Germany

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**Background:** Trans and non-binary people face barriers to HIV testing and quantitative studies are scarce. We investigated self-reported HIV testing and predictors for testing among trans and/or non-binary people in Germany.

**Methods:** We analysed data from the TASG-study, a participatory cross-sectional study for trans and/or non-binary people in Germany between 01 March and 01 July 2022. The investigated outcome in this analysis was self-reported HIV testing.

Predictors were identified using a bootstrap stepwise selection procedure and determining inclusion frequencies into logistic regression models after 500 bootstrap replications with a cut-off p-value of 0.1.

**Results:** We included 2,328/3,077 trans and/or non-binary participants reporting information on HIV testing and 22.9% reported obtaining HIV testing within the last 5 years. HIV testing sites last used were the doctor's office (43.1%), community-based testing (24.3%), public health office (18.5%), self-collection testing (6.4%), or self-testing (2.2%) (other: 6.4%, missing: 0.7%).

479/2,328 (20.6%) participants had a potential need for HIV testing, e.g. due to indicating multiple sexual partners with penetrative sex, sexualized drug use, or paying or being paid for sex.

Among those, 44.5% obtained HIV testing within the last 5 years. Testing differed by gender identity (female spectrum: 35.0%, male spectrum: 47.2%, non-binary spectrum: 49.0%, non-binary/female spectrum: 48.5%, non-binary/male spectrum: 45.7%) and was higher among participants being older (30+ years: 60.4%, 18-29: 33.8%), living in large cities (1+million: 61.9%, <1 million: 41.1%, <100.000:

31.6%), having higher education (high: 59.8%, middle: 41.0%, low: 25.9%), and being content with own body (yes: 54.1%, partly: 49.0%, no: 31.3%). Obtaining HIV testing varied by experiencing discrimination in daily life (never: 34.0%, sometimes: 50.6%, often: 44.8%, always: 26.3%).

Two predictors for HIV testing were included in >80% of bootstrapped multivariable models: city size (included in 500/500 multivariable models) and age (498/500). Being content with own body (187/500), experiencing discrimination (183/500), education status (142/500), and gender identity (137/500) were less often included.

**Conclusions:** Even among trans and/or non-binary people in Germany with a potential need for HIV testing, less than half were tested within the last 5 years. Testing opportunities outside larger cities and community-tailored information campaigns might help overcome some barriers to testing.

## WEPEC284

### Universal HIV detection strategies in emergency services in Venezuela

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**Background:** In Venezuela, where public HIV testing is virtually non-existent and a private HIV test costs around \$40 in a country with a minimum wage of less than \$5, the reported HIV prevalence was 0.4% to 0.6% in the adult population for 2021 and 2023.

Addressing this gap, a prospective, cross-sectional, descriptive, multicenter, non-experimental study offered free, voluntary, and confidential rapid HIV tests in emergency services of 13 health centers to establish non-directed or 'universal' HIV detection.

**Methods:** Universal screening was conducted for all individuals aged 15 to 70 attending emergency services, without discrimination. Tests were administered free of charge, confidentially, and voluntarily, maintaining confidentiality of results. All positive cases were immediately linked to local health services for antiretroviral treatment initiation. The screening was performed by resident doctors with expertise in administering and analyzing tests, and a second confirmatory test of a different brand was conducted following protocol.

**Results:** A total of 24,098 diagnostic tests were conducted between January 2021 and December 2023, with 469 tests returning positive (1.95%). The majority of these cases were men (72%), totaling 338 male cases, while women accounted for 28%, totaling 131 cases. The average age of positive cases was 36.7 years.

Key populations included MSM (11.6%), FSWs (0.53%), PWID (1.6%), those in poverty (27.2%), and a significant 46.4% were not associated with any high-risk activities.



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**Conclusions:** The implementation of universal HIV testing in emergency rooms revealed crucial findings: 46.4% of positive cases did not belong to any high-risk groups, and the prevalence rate found in this study (1.95%) was significantly higher than the official reported rates (0.4% to 0.6%). This suggests that the actual prevalence of HIV in Venezuela could be considerably higher than previously thought, emphasizing the importance of universal testing strategies in HIV detection and public health policy.

## WEPEC285

Improving access to HIV-testing services (HTS) for at risk hard-to-reach male through regional male-friendly clinics' outreach: lessons learned and Implications for Haitian National AIDS Control Program

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**Background:** In Haiti, over half of individuals identified as male have never been tested for HIV. The Institute for Health, Population and Development (ISPD) has implemented male-friendly clinics in an effort to address disparities in accessing HIV testing services (HTS) and contribute to reaching 95% of people living with HIV. We present here the results of an outreach intervention led by regional male-friendly clinics in Haiti that aimed to increase the proportion of at risk hard-to-reach male accessing HTS in a stigma-free environment.

**Description:** We implemented a customized outreach intervention where trained providers and community health workers conduct sensitization sessions targeting male public-transportation drivers, homeless, mobile individuals. We also identified hot spots and hard-to-reach males at high risk of exposure to HIV. Through these sessions, males are sensitized on health prevention measures and benefits of timely access to health services. Males are accompanied to clinics where a comprehensive package of services is available with strong emphasis on confidentiality including general outpatient care, urologic care, STI screening, HTS, PrEP, HIV care and treatment, etc. We reviewed HTS data weekly to monitor progress and address challenges timely.

**Lessons learned:** Initially, during FY\_20 Q2&Q3, of the 2373 people tested for HIV 376 (16%) were male of which 15 (4%) were diagnosed HIV positive. Following our intervention, in FY20\_Q4&FY21Q1, 3781 people received an HIV test, 1207 (32%) were male and 83 (7%; n=83/1207) of them were tested HIV positive. During FY21\_Q2&Q3, data reported a significant increase in access to HTS, a total of 5878 people were tested for HIV, 1786 (30%) were male and 166 (9%) of them were found to be living with HIV. The data showed

that targeted outreach linked to male-friendly clinics led to an increased proportion of male accessing HTS and a significant increase in the seropositivity rate for HIV.

**Conclusions/Next steps:** Male-driven outreach interventions have increased access to health services notably HTS for male, expanding such strategy may help achieve the 95-95-95. We believe that implementing culturally-sensitive interventions represents one of the best practices to reach people left out by the system for a better control of the pandemic globally.

## WEPEC286

Enhancing HIV and hepatitis C screening in a vulnerable population through emergency department interventions

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**Background:** The University of Washington is an academic health system with 3 emergency departments (EDs) in Seattle, Washington (King County), averaging 127,000 annual visits. Many patients have complex social needs including housing instability, substance use, and poverty. King County was the first major metropolitan area in the United States to achieve the UNAIDS 90/90/90 goals. This descriptive analysis explores a screening program aiming to identify undiagnosed or disengaged people with HIV (PWH) individuals. Through a public-private partnership, the program bundles HIV and Hepatitis C (HCV) testing and treatment, and treatment for opioid use disorder.

**Methods:** A screening and opt-in testing process for patients over age 18 not tested for HIV and HCV in the past year was implemented. Provider education and electronic medical alerts facilitated screening. Positive cases were contacted by linkage to care coordinators for treatment and addressing barriers to care. Unreachable PWH were located by county staff. Social workers provided assistance with housing and transportation, and drug treatment on-demand was offered through a 24/7 hotline.

**Results:** Pre-program, HIV screening was done in 1.3% and HCV screening was performed in 0.8% of eligible patients. Education and passive electronic alerts raised the rates to 5.5% for HIV and 5.0% for HCV. Ongoing process improvement measures increased rates to 6.8% for HIV and 11.6% for HCV. Since October 2021, 10,279 patients were screened for HIV and 8,663 for HCV, identifying 129 HIV+ cases (1.4%) and 492 HCV cases (5.7%). 66% of PWH were previously diagnosed but out of care, 97% were linked to care within 6 months. UW ED patients accounted for 12% of the HIV diagnoses in the county.



**Conclusions:** The ED serves as a crucial point for screening a vulnerable and hard-to-reach population, employing a syndemic approach to address multiple issues concurrently.

Public-private partnerships are vital for follow-up and linkage to care. Consideration of opt-out universal screening in the ED could enhance identification and service delivery for this population.

## WEPEC287

Complementing community interventions with technology to maximize tracking of HIV-exposed infants (HEI) final outcome: lessons from a community HIV program in Zimbabwe

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**Background:** In 2020, Zimbabwe Mother to Child Transmission (MTCT) rate stood at 8.7% which is above the WHO target of 5% (Zimbabwe HIV Estimates Report, 2021). This is attributable to numerous factors that include manual tracking of HEI resulting in missed clinical appointment dates, poor follow-up of PMTCT mothers with high viral load, delayed final PMTCT outcome testing, and high Nucleic Acid Test (NAT) result turnaround time of more than 6 to 8 weeks.

In helping bridge the gap, FACT Zimbabwe through US-AID/PEPFAR funding is implementing an Orphans and Vulnerable Children (OVC) project in 9 districts in Manicaland and Masvingo.

**Description:** The project utilizes trained mentor mothers through a community case management approach to prevent HEI from seroconversion. The mentors are responsible for bi-weekly home visits to support PMTCT adherence, facilitate for EID testing, regularly check developmental milestones, and provide PMTCT sessions.

In April 2023, the project adopted the DHIS2 tracker capture application with an embedded Early Infant Diagnosis (EID) module to identify HEIs due for EID testing, and record dates and results for completed tests throughout the PMTCT algorithm up to outcome. The application flags pending results while signaling to project staff and

mentors the priority needs for HEIs being case managed, allowing timely follow-up on pending results with the laboratories.

**Lessons learned:** In 2023, 289 HEI enrolled in the project due for the final test were identified through the DHIS2 tracker capture app. 100% (289) were tested for their final PMTCT outcome by September 2023 and 281(97%) received results within two weeks reducing the turnaround time by 50%. Of those tested, 98.6% (277) were negative and 1.4% (4) were positive, achieving an MTCT rate within the national target of <5%.

**Conclusions/Next steps:** Digital longitudinal tracking of HEI is comprehensive, timely, and reliable. Coupled with individual-level case management, these approaches have contributed to high outcome testing among HEI and a low MTC rate. The next phase of the project is scaling the strategy to future cohorts due for their PMTCT outcome test.

## WEPEC288

HIV Self-Testing uptake and its contribution in a Female Sex Work (FSW) program in Ethiopia

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**Background:** Innovations in last mile HIV case finding become even more critical as unmet need for HIV testing declines. This is particularly so for Key and Priority populations (KP/PP) who inherently face stigma in most countries. HIV self-test (HIVST) bridges this gap by removing barriers to conventional testing. In 2017, PSI pioneered a pilot initiative for HIVST among FSWs in Ethiopia, resulting in adoption of HIVST by Federal Ministry of Health in 2018.

**Methods:** To determine HIVST contribution and trends in uptake, we extracted HIVST data for the period, October 2022 to June 2023. For confirmatory testing following a reactive HIVST, clients in unassisted HIVST distribution arm were offered alternative options to report back reactive tests, while in assisted distribution, provider was on-hand for confirmatory testing.

We compared overall HIV positivity rate at FSW Drop-in-centers (DICs) during the HIVST kit distribution periods, with periods of no distribution (stock-out phase) in Quarter-4 of FY 2023. Yield from proactive testing modalities such as Index testing and Social Network testing which are only indirectly impacted by HIVST distribution were excluded in analysis.

**Results:** A total of 36,946 HIV self-test kits were distributed, of which 19,906 kits (54%) were through "assisted", and 17,028 (46%) "unassisted" HIV self-test approach.



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The assisted arm yielded 459 (2.3%) new positives 368 KPs and 91 PPs, with 100% concordance on confirmatory testing. From 10% (1,734/17,028) kit returns, the unassisted approach yielded 0.7% (12/1,734 of whom 11 were FSWs, and 1 PP). HIVST contributed 33% (471/1,422) of all newly identified positives over the review period, whose overall program case yield was 2.6% (1,422/54,048) excluding excluding Index and Social Network testing.

When compared to Q4 of FY 2023 when no HIVST kits were available, HIV case yield for modalities declined to 1.8% (172/9,691 tested) representing 31% decrease in case identification. Indirect impact of HIVST on yield not quantified.

**Conclusions:** HIVST kit distribution plays a significant role in last mile HIV case finding. Countries need to prioritize and scale HIVST integration in HIV programming.

## WEPEC289

### Confirmation of HIV self testing positive results, Mozambique, 2023

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**Background:** The World Health Organization recommends HIV self-testing (HIVST) as an additional approach for testing. Actually, in Mozambique HIV testing is offered in health facilities and communities. To reach high risk population who are often not offered testing, and to fill the gaps and challenges in HIV testing services (HTS), HIV Self Testing approach began to be implemented as a community distribution to increase testing coverage and strengthen uptake of HIV prevention and treatment services.

**Description:** In 2022, the Mozambique MOH began to implement nationally the distribution of HIVST in the community areas to ensure HIV diagnosis for all key and vulnerable population. The HIVST is considered an approach to screen the probability of person being leaving with HIV, and create demand for HTS. The HTS providers, lay counselors and other communities' actors were trained for HIVST community distribution, including counseling all clients with HIVST positive results, to confirm their results in HTS sites, using conventional tests.

We analyzed aggregated HIVST program data from January to December 2023 to better understand about confirmation of positive HIVST results.

**Lessons learned:** Nationally, 683.112 HIVST kits was distributed during the evaluation period, 51% was to men, 20% to adolescent 15-19 yo, 28% to young people 20-24 yo and 52% to 25+ yo.

Additionally, 30% who received the kits reported having tested for HIV more than 12 months ago and 14% never been tested for HIV. Data shows that 3,772 clients with positive diagnosis using HIVST and presented themselves at the HTS services to confirm their result, using conventional tests (61% was done at the community).

**Conclusions/Next steps:** Mozambique is one of the high HIV prevalence countries which implements HIVST to ensure the eligibility for HTS of people at risk of being with HIV. HIVST contributed greatly to increasing population testing coverage across the country. Data confirms that the implementation of HIVST create demand for HTS services and allows the rapid access for HIV diagnosis, and identification of PLHIV. Further research is needed to improve the linkage strategies between HIVST and HTS services, and to understand to measure the impact of this HIVST positive confirmation in ART new initiation.

## WEPEC290

### Women comes first: need of the hour – Its unequivocal

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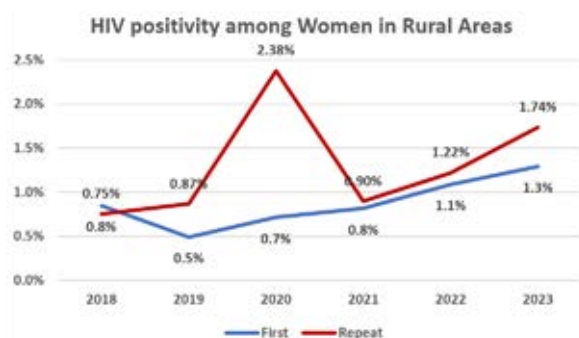
**Background:** AIDS Healthcare Foundation (AHF) - India implements HIV community based rapid HIV testing across nine states. The objective of the program is early detection and treatment across all ages among the community. The adult HIV prevalence of India among the population of 15-49 years is estimated at 0.20% (0.17-0.25%) and among women 0.19% in 2023.

**Description:** The operational study was intended to track the HIV positivity among Women of all ages in the sub urban and rural communities in 9 states of India from 2018 to 2023. The testing team would travel to these locations and conduct community-based HIV screening in rural locations.

A total of 703,207 tests were conducted in semi urban and rural areas of which 675,813 women were tested for the first time and 27,394 women were tested for the second time based on their risk profile.

**Lessons learned:** The study clearly indicates a steady rise in the HIV positivity rate among rural women from 2018 to 2023 from 0.8% to 1.3% among the first-time testers which many times than the National Prevalence among women (0.19%).

The women who are followed up from first time testers who are at high risk and were negative during the first-time test were tested the second time after 3 months have the positivity range from 0.75% to 1.74% from 2018 through 2023 respectively.



**Conclusions/Next steps:** It may be observed that the HIV prevalence among women in semi urban and rural areas is showing an increasing trend. These women are married at a young age to a migrant worker /truck driver. Mostly these women are uneducated/ dropouts and are financially dependent. After Child birth these women never return to a health care facility and so these women are detected late. It is crucial to strategize and implement HIV program keeping in mind Women First.

## WEPEC291

### Leveraging existing data systems to identify repeat HIV testers in South Africa

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**Background:** HIV Testing Services (HTS) remains a crucial element for accessing HIV prevention and treatment services. In South Africa, a subset of people living with HIV (PLHIV) continue to seek HTS for re-engagement to care without disclosing their known status to healthcare providers. As South Africa progresses toward achieving the global UNAIDS 95-95-95 targets, tailored case management approaches to align with clients needs, including approaches designed to support clients who received a new diagnosis compared to those with a known HIV-positive status, will be important.

**Description:** To identify previously diagnosed individuals presenting for HTS in primary healthcare facilities in 5 of 7 sub-districts in Johannesburg and all sub-districts in Sedibeng district, we reviewed records from existing data systems-Tier.net and LabTrack-for all clients who received an HIV-positive diagnosis from July to September 2023. History of HIV baseline blood assessments were verified on both systems and all individuals with a prior HIV-positive test were considered known positives.

In Johannesburg, there was heterogeneity in proportions with a known HIV-positive status; 8% (113/1376) of clients who received an HIV-positive result were known positive in sub-district A; 3% (15/486) in sub-district B; 12% (111/917) in sub-district C, 10% (55/524) in sub-district F; and 6%

(89/1445) in sub-district G. In Sedibeng district, 1624 clients tested HIV-positive, of which 5% (82/1624) were identified as known positives.

**Lessons learned:** Verification of HTS client records on Tier .NET or Lab Track is important to identify clients who repeat HIV testing without disclosing their known status to healthcare providers and can facilitate tailored counseling to support (re) engagement in treatment and care. This is especially critical in contexts without a unique patient identifier like South Africa.

**Conclusions/Next steps:** Findings from both districts demonstrate that some clients repeat testing without disclosing their status though magnitude and scope of this phenomenon varies by geography and may be difficult to quantify in the absence of a unique identifier.

Future considerations to leverage existing data systems as part of a standardized approach to identify repeat testers, including development of standard operating procedures, implementation scale-up, and further exploration of repeat testers by disaggregates are warranted.

## WEPEC292

### Enhancing the provision of index testing using near-peer mentors or young people living with HIV in rural Zambia: northern province

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**Background:** Grassroot Soccer Zambia (GRS) is a sub-implementing partner to Right to Care Zambia (RTCZ) on the USAID Action HIV project with a goal to reduce HIV mortality, morbidity, and transmission by achieving the 95/95/95 goals, improving HIV treatment coverage, and providing comprehensive HIV prevention, care and treatment maintenance services in Northern province. GRS's role is to create demand and linkages to health services.

**Description:** GRS places trained near-peer mentor 'Coaches' in 11 health facilities in Kasama and Mbala Districts, Northern Province, to provide strategic link between young people and critical health services, as well as deliver SKILLZ Plus, a curriculum-based program for adolescents and youth living with HIV (AYLHIV).

Coaches, who are living with HIV themselves, work closely with health facility HTS department which provides index client lists, contacts, and locators to facilitate home visits and community tracking. Coaches first locate clients in the community, and if the client accepts testing, the Coach will either conduct an escorted referral to health facility or arrange for the client to be tested within the community.



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## Lessons learned:

- GRS noted increased positivity yield among adolescents and young people (AYP) from 5% (42/911) in FY22 reported in four districts to 7% (32/464) from two districts in FY23 through uptake of index testing. Among different testing modalities, index testing has the highest positivity yield which could be prioritised for HIV case finding among AYP.
- Utilizing near-peer mentor Coaches who are living with HIV in case finding has been effective due to experience in dealing with stigma and discrimination, adherence, and disclosure. Communities report that the mentors have shown great empathy and compassion working with peers, especially clients who test HIV positive.
- The implementation of SKILLZ Plus Interventions has provided a safe space for AYP, also allowing Coaches to further probe for index elicitation and conduct partner notification services.

**Conclusions/Next steps:** Utilizing near-peer mentor Coaches in case finding for index testing has been effective as AYP feel safe to interact with young adults like themselves. This is evidenced by the number of successful referrals in Mbala and Kasama.

## WEPEC293

Individual- and community-level factors contributing towards not knowing one's HIV status: findings following a youth-friendly, integrated HIV and SRH testing service in Zimbabwe

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**Background:** Young people remain the group with the highest proportion of undiagnosed HIV despite contributing only 10% of new infections. This study evaluated the population-level prevalence of and factors associated with undiagnosed HIV among young people in communities in Zimbabwe.

**Methods:** A prevalence survey among youth aged 18-24 years was conducted to determine population-level HIV prevalence and HIV viral load (VL) in 24 communities in

three provinces (Harare, Bulawayo, and Mashonaland East) in Zimbabwe. A person who was living with HIV was considered diagnosed if they reported knowing their status or if their VL was < 1,000 copies/mL. Factors associated with undiagnosed HIV were assessed, including the relative contribution of individual- and community-based factors using variance partition coefficients (VPC), derived from a random effects logistic regression model.

**Results:** Overall, 17,550/17,682 (99%) of people recruited had HIV antibody and VL results. Overall HIV prevalence was 7% (n=1,224), of which 529 (43%) were undiagnosed. Individual-level factors associated with being undiagnosed were sex (38% male among undiagnosed vs. 24% among diagnosed) and lack of previous testing (36% never tested among undiagnosed vs. 13% among diagnosed). The VPC among clusters was 25%, indicating that a considerable amount of variability is due to community-level factors. Community-level factors showing a relationship with undiagnosed HIV were contraception use (proxy for service availability), proportion ever tested for HIV, attitudes towards violence against women and socio-economic status (Figure 1).

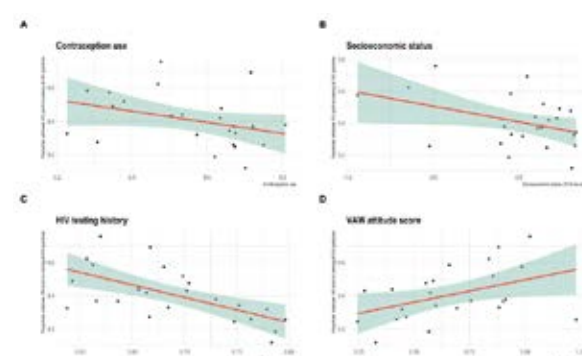


Figure 1: Linear relationship between various community-level characteristics and proportion undiagnosed among those who were HIV positive.

**Conclusions:** Decreasing the proportion of undiagnosed HIV (the first UNAIDS 95-95-95 target) does not solely rely on addressing individual level barriers. Programmes must address structural factors such as community-level attitudes and availability of services. As exemplified by this study, socio-economic inequity drives inequity in health.

## WEPEC294

### Leveraging social networks to increase HIV testing in Tanzania: qualitative findings from the Confidential Social Network Referrals for HIV Testing (CONSORT) study from Moshi, Tanzania

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**Background:** The Confidential Social Network Referrals for HIV Testing (CONSORT) intervention proposes to use confidential SMS messaging to promote HIV testing among social network contacts of people living with or at risk of acquiring HIV (Figure 1).

To ensure the acceptability and feasibility of CONSORT, we aimed to identify desirable provider- and client-side characteristics.



Nomenclature: **inviter (A)**: a consented inviter selects message content to be sent to network contacts (B); **invitee (C)**: a network contact identified by the inviter to extend an invitation to test for HIV; **invitee tester (D)**: an invitee presenting for HIV testing; **Consenting invitee**: an invitee tester consenting to become an inviter (A)

Note: Figure was reprinted from Ostermann et al. Manuscript submitted for publication. Abbreviations: CONSORT: Confidential social network referrals for HIV testing; mParis: mobile phone assisted appointment reminder and incentive system

Figure 1. The confidential social network referrals for HIV testing (CONSORT) process.

**Methods:** We conducted seven in-depth interviews (IDIs) and eight focus group discussions (FGDs) in Moshi, Tanzania, between September and October 2023. Participants included clients presenting for HIV testing or HIV care, their social network contacts, and HIV care and testing providers. Participants were asked questions related to CONSORT message content and processes. IDIs and FGDs were conducted in Kiswahili. IDI recordings were tran-

scribed and translated to English. FGD notes and IDI transcripts were analyzed using a rapid analysis approach by two independent coders.

**Results:** Out of 78 participants, 28 were male and 50 were female. Qualitative data indicated that CONSORT is perceived as acceptable and familiar owing to other SMS-based health promotion programs. IDIs and FGDs revealed important design considerations to support the confidentiality of inviters and invitees (e.g., sending messages from a short code, not indicating that the message was initiated by an individual).

Participants recommended selecting messages from a menu of concise, but differently themed messages that convey the importance of HIV testing for the invitee's health and the greater good, while avoiding phrases such as "someone you know" to mitigate confidentiality concerns. Recommendations regarding the process of sending messages included sending reminder SMS, offering incentives for testing, and having inclusive phone requirements.

**Conclusions:** Qualitative research identified important information to support the feasibility, acceptability, and inclusiveness of diverse populations in CONSORT. Findings will guide ethical considerations and inform protocol adaptations to increase implementation and effectiveness outcomes of CONSORT and its goal to increase HIV testing and diagnosis.

## WEPEC295

### Mobile intervention to promote HIV self-testing and linkage to services for high-risk MSM in China: six-month evaluation findings from the WeTest intervention

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**Background:** We developed and tested a mobile intervention program to promote HIV self-testing and linkage to prevention services for MSM in China with high HIV risk.

**Methods:** Participants were recruited from three large cities in China (Chengdu, Suzhou, Wuhan) into a randomized controlled trials of the "WeTest" intervention, which uses the WeChat mobile app platform to offer a user-centered menu of engaging digital content on HIV



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self-testing (HST) uptake, behavioral risk reduction, stigma coping strategies, and self-efficacy to link to HIV care. Eligible participants were assigned male sex at birth, were  $\geq 18$  years of age, had a confirmed HIV negative status, reported condomless anal sex with another man in the past 6 months, and reported having a smartphone. At enrollment, participants were randomized 1:1 to receive the WeTest intervention or passive education about HST and linkage to care. We estimated the proportion of participants who uploaded HST results in both arms after six months of follow-up. We also describe engagement in the WeTest intervention.

**Results:** A total of 1800 MSM were enrolled into the WeTest study equally across Suzhou, Wuhan, and Chengdu cities. Participants were a median of 29 years of age, almost half (48%) completed a bachelor's degree or higher, and most (76%) were unmarried without a girlfriend. At six months, 98% (878/900) of participants in the intervention arm and 99% (889/900) of participants in the control arm were retained in the study.

Among these participants, 92% (805/878) in the intervention and 16% (144/889) in the control uploaded HST results, of whom 3 participants in the intervention and 6 in the control had positive results. Among participants in the intervention, almost all (99.5%; 874/878) were WeTest followers.

Further, there were 50 WeChat posts, with each post viewed an average of 151 times, and 71% (625/878) of participants consulted WeTest services, with services being consulted a total of 3,638 times.

**Conclusions:** Findings from this 6-month follow-up assessment show strong overall retention, and substantially higher rates of HIV self-testing results in the WeTest intervention group compared with control. Findings also showed promising levels of engagement with this digital platform.

## Cascades of HIV care and treatment

### WEPEC296

#### Viral rebound among HIV positive children and adolescents on antiretroviral therapy: a longitudinal study in Tanzania

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**Background:** Although achieving viral load suppression (VLS) remains the primary objective of HIV treatment, a challenge persists in sustaining it over the course of patients' lives for their well-being. This study evaluated the extent of viral rebound and their associated factors among orphaned and vulnerable children (OVC) aged 0-17 years receiving antiretroviral therapy (ART) in Tanzania.

**Methods:** The study is based on data from a community-based USAID-funded Adolescents and Children HIV Incidence Reduction, Empowerment, and Virus Elimination (ACHIEVE) project in Tanzania. Focusing on HIV positive OVC, on ART, and receiving community-based complementary support from the ACHIEVE project, OVC with at least two clinically confirmed viral load tests spaced at least 6 months apart between 2021 and 2023 with the first test indicating that they were virally undetectable (viral load  $< 50$  copies/mL) were included in the analysis. Viral rebound was defined as viral load  $\geq 50$  copies/mL at the second test. Data analysis involved multivariable mixed-effects logistic regression.

**Results:** Out of 21,448 CLHIV (52.4% female) aged 10.8 years on average and virally undetectable at baseline, 86.9% ( $n = 18,643$ ) maintained their undetectable status at the follow-up (second test), and 13.1% ( $n = 2,805$ ) experienced viral rebound. In the regression analysis, various project interventions were associated with lower risk of viral rebound among the OVC, and the significant ones were teen club attendance ( $aOR = 0.60$ , 95% CI 0.51-0.70), and health insurance ( $aOR = 0.76$ , 95% CI 0.69-0.84). On the other hand, viral rebound was higher among OVC on regimens other than DTG ( $aOR = 1.37$ , 95% CI 1.10-1.70), attending school ( $aOR = 1.14$ , 95% CI 1.03-1.27), residing in urban areas ( $aOR = 1.20$ , 95% CI 1.10-1.31), and had caregivers with primary education ( $aOR = 1.19$ , 95% CI 1.06-1.34) and secondary education ( $aOR = 1.33$ , 95% CI 1.06-1.65).

**Conclusions:** Although 13.1% of the OVC experienced viral rebound at the follow-up, the ACHIEVE project interventions showed promise to reduce the problem. Additional support is needed especially by those at an elevated risk of rebound, including those on regimens different from DTG, attending school, residing in urban areas, and having caregivers with primary, secondary, or higher education levels.

## WEPEC297

### HIV prevalence and engagement in HIV care and treatment among female sex workers living with HIV in Rwanda "Progress towards reaching the second 95 of UNAIDs 95-95-95 targets by 2030"

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**Background:** In sub-Saharan Africa, the engagement of female sex workers (FSWs) in HIV care and treatment is relatively low. Understanding the HIV care and treatment engagement experiences among FSWs has important implications for interventions to enhance treatment outcomes.

We conducted an integrated biological and behavior survey to determine HIV prevalence and engagement in HIV care and treatment among FSWs and sexually exploited minors aged 15+ in Rwanda.

**Methods:** A cross-sectional biological and behavior survey was conducted among FSWs and sexually exploited minors aged 15+ in Rwanda. Respondent-driven sampling was used to recruit participants aged 15 years and who resided in the country for at least 3 months before the survey, 2489 was the expected sample size. The study was conducted from 9th May to 25th June 2023, consented participants were interviewed and tested for HIV per Rwandan national HIV testing guidelines. Tablets were used to collect data and transfer daily to the central server for storage.

Descriptive analysis was done, and a multivariable logistic regression model was performed using STATA 17 to analyze factors associated with not taking anti-retroviral treatment (ART).

**Results:** A total of 2,541 FSWs participated in the survey, their mean was 31.8 years (SD:8.1) and the oldest FSW was aged 67 years. Overall, 854 were infected with HIV, yielding a prevalence of 35.2% [31.8,38.7]. Of 698 aware of their HIV-positive status, only 580 (89.8%) [85.7 - 92.9] were taking ART. In the multivariable logistic regression model, not taking ART was significantly associated with FSW's age and residence. Those aged 35 years and above (aOR: 5, C.I: 1.4-17.0), and FSWs living in Eastern Province (aOR: 13.9, C.I: 4.0-47.8), Western Province (aOR:8.6, C.I: 2.6-28.5) and Kigali city (aOR: 3.9, C.I: 1.1-13.3).

**Conclusions:** According to the findings of this survey, HIV prevalence among FSWs in Rwanda is high, and their engagement in treatment and care is inadequate. Intensifying HIV-friendly services for FSWs has the potential to significantly lower the treatment gap and achieve the UNAIDs 95-95-95 targets by 2030.

## WEPEC298

### Retention in care and viral suppression in pregnancy and postpartum among women with HIV in Denmark: a nationwide cohort study

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**Background:** Adherence to antiretroviral therapy (ART) in pregnancy and postpartum is essential for prevention of perinatal HIV transmission and optimal maternal and child health.

This nationwide study aimed to investigate retention in HIV care and viral suppression in pregnancy and postpartum in women with HIV in Denmark. Factors associated with these outcomes were also evaluated.

**Methods:** In a nationwide register-based study, all women with HIV who had delivered one or more children in Denmark in year 2000 - 2019 were included. Retention in care (two HIV RNA viral load or CD4 measurements,  $\geq 90$  days apart), virological suppression (HIV RNA  $< 200$  copies/mL), and virological failure (two consecutive HIV RNA measurements  $> 50$  copies/mL or one HIV RNA measurement  $> 1000$  copies/mL) was assessed in pregnancy, one and two years postpartum, respectively. Factors associated with outcomes were assessed using logistic regression models.

**Results:** In total, 564 pregnancies were included. Overall, 65% (366/564) were in retention in care in pregnancy, 83% (450/542) in the first postpartum year, and 71% (366/517) in the second postpartum year. The proportion of women with virological suppression decreased from 85% (478/564) in pregnancy to 80% (431/541) in the first postpartum year and 75% (387/514) in the second postpartum year.

The proportion of women with virological failure decreased from 32% (181/564) in pregnancy to 18% (96/541) in the first postpartum year and 15% (76/514) in the second postpartum year. All HIV care outcomes varied over time per changing ART guidelines. Women who initiated ART late in pregnancy were less likely to be retained in care (aOR 0.02 (95% CI: 0.01 - 0.14)) and virologically suppressed (0.15 (95% CI: 0.06 - 0.40)) in pregnancy, and more likely to



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experience virological failure in both pregnancy and postpartum (aOR 3.07 (95% CI 1.07 -8.80) and 3.65 (1.27 - 10.45), respectively). Year of delivery  $\geq 2014$  was associated with decreased odds of virological failure in pregnancy (aOR 0.40 (95% CI: 0.23 - 0.71)) and postpartum (aOR 0.18 (95% CI: 0.07-0.44)).

**Conclusions:** Retention in HIV care and viral suppression in pregnant and postpartum women with HIV may still be challenging, despite improvements over time, especially among women initiating ART in pregnancy.

## WEPEC299

### A randomized trial of messages to encourage post-HIV self-test linkage to HIV services among men who purchase sex: a behavioral economics approach

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**Background:** Men who pay for sex (MPS) have low engagement in HIV services and are twice as likely to be HIV-infected as other men. HIV self-testing (HIVST) can increase testing coverage among MPS, but promoting post-test linkage to services remains a challenge. Since behavioral economics (BE) research suggests framing health messages can influence decision-making, we conducted a randomized trial to determine the optimal messages to include with HIVST kits to promote linkage to services.

**Methods:** Two themes were identified from prior research as most likely to encourage confirmatory testing:

(1) benefits/availability of PrEP;

(2) the concept of Undetectable=Untransmissible.

Utilizing the EAST framework, we developed three messages per theme. We recruited 800 MPS from June-October 2023 in Siaya and Kisumu counties, Kenya. Participants were randomized to view one message per theme or a control message. The primary outcomes proxied for message effectiveness, representing financial and opportunity costs: willingness to

1. contribute money towards a campaign promoting the message;

2. give 20 minutes to learn more about HIV services. Mixed-effect logistic regression was used to compare responses by message.

**Results:** Mean age was 31 years (range 19-68) and 57% were married. Participants had mean 4.7 sexual and 3.3 transactional partners in the past month, and 64% reported hazardous drinking. Contributions of money and time were high across all messages; 64% agreed to both. Messages with highest effect on contributions of mon-

ey and time were PrEP message-1 and ART message-1 (both 83%; Table). Willingness to contribute was statistically greater with the PrEP-message-1 ( $p=0.001$ ) but not ART-message-1 ( $p=0.89$ ) compared to control.

Message	Would you like to donate money (N=800)		Would you like to spend time (N=800)	
	Yes N(%)	No N(%)	Yes N(%)	No N(%)
PrEP messages	1. PrEP is a pill that protects you from getting HIV [Image of man saying:] I don't always use condoms, so I use PrEP to protect myself instead Information on local health centers where you can START PrEP as soon as possible is on the back of this page			
	162 (81)	39 (19)	172 (86)	29 (14)
	2. PrEP is a pill that protects you from getting HIV Some people think PrEP is only for female sex workers, but that is not true. Over 18,000 men in Kenya are already using it. Information on local health centers where you can START PrEP as soon as possible is on the back of this page			
	162 (79)	42 (21)	177 (87)	27 (13)
ART Messages	3. PrEP is a pill that protects you from getting HIV Stay HIV-negative -- Protect yourself and your partner by using PrEP. Information on local health centers where you can START PrEP as soon as possible is on the back of this page			
	142 (76)	46 (25)	153 (81)	35 (19)
	[CONTROL] Information on local health centers where you can START PrEP as soon as possible is on the back of this page			
	139 (67)	68 (33)	159 (77)	48 (23)
ART Messages	1. U=U Undetectable = Untransmissible U=U means if you take ARVs as directed, you will not transmit HIV to your sexual partner. Care for yourself, protect your sexual partner! If you test HIV-positive, start ARVs as soon as possible. If you take as directed, you will maintain your good health, and you will NOT pass HIV to your sexual partner. Information on local health centers where you can START ARVs as soon as possible is on the back of this page.			
	166 (83)	33 (17)	165 (83)	34 (17)
	2. U=U Undetectable = Untransmissible U=U means if you take ARVs as directed, you will not transmit HIV to your sexual partner. 95% of Kenyan men who know they are HIV-positive are currently taking ARVs. If you test HIV-positive, start ARVs as soon as possible. Information on local health centers where you can START ARVs as soon as possible is on the back of this page.			
	161 (81)	37 (19)	161 (81)	37 (19)
ART Messages	3. U=U Undetectable = Untransmissible U=U means if you take ARVs as directed, you will not transmit HIV to your sexual partner. ARVs can help you live a long life and be there for your family. If you test HIV-positive, start ARVs as soon as possible. Information on local health centers where you can START ARVs as soon as possible is on the back of this page.			
	168 (81)	39 (19)	175 (85)	32 (16)
	[CONTROL] Information on local health centers where you can START ARVs as soon as possible is on the back of this page.			
	145 (74)	51 (26)	152 (78)	44 (22)

**Conclusions:** Framing PrEP as a safeguard when condoms are not used and emphasizing treatment as prevention are messages that should be included with HIVST. Findings from this trial will inform the messages included with HIVST kits distributed to MPS in the Pamoja trial evaluating the impact on post-test linkage to HIV services.

## WEPEC300

### The effectiveness of the state programs of the care and support of people living with HIV in Ukraine during wartime in 2022-2023

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**Background:** Ukraine remains a region with a high level of HIV prevalence. Russia's full-scale invasion of Ukraine, which began on 24 February 2022, led to significant adjustments in HIV prevention and treatment services. The number of injured among the civilian population is increasing, almost 200 healthcare facilities have been destroyed, and more than 1,600 have been damaged. As of October 2023, the number of internally displaced persons reached 5.09 million, and the number of refugees in other countries reached 5.8 million.

The number of people in government-controlled areas receiving ART fell by 7% from 130,000 in 2021 to 121,000 in 2023. The proportion of people living with HIV receiving ART decreased from 83% in 2022 to 77% in 2023.

**Description:** Since 2019, Ukraine has been the only country in the EECA region where the government has financed a basic package of HIV care and treatment services for people living with HIV from the state budget. Nearly 30,000 people benefit each year from services, provided by community-based organizations contracted by the government.

The services are provided to build adherence to ART and receive HIV-related medical services. HIV-positive persons who are preparing to start ART (newly diagnosed or clients who were under medical supervision) are involved in the service for building adherence to HIV treatment and staying under medical supervision; interrupted ART and/or were lost from medical supervision; are on ART, but have risks of interruption of ART.

#### Lessons learned:

	2021	2022
People received care and support services	33 633	34 255
Newly clients received care and support services in the selected year	19 050	12 121
of them receiving ART as of December 2023	11 603	7 703
%	61%	64%
Newly clients who were engaged under medical supervision in the selected year and received care and support services	5 105	4 315
of them receiving ART as of December 2023	3 372	3 187
%	66%	74%

**Conclusions/Next steps:** State coordination of care and support services ensured the stability of the HIV response system even in conditions of armed conflict. Changes in approaches to the provision of care and support services for people living with HIV, with the involvement of non-governmental organizations, become more relevant in crisis conditions or conditions of uncertainty.

This approach will ensure the sustainability of services in the cascade of HIV-related services and the achievement of the UNAIDS goals of 95%-95%-95%.

## WEPEC301

### Poverty, social and socio-economic vulnerability among people living with HIV in Rwanda

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**Background:** In 2022, Rwanda Biomedical Center (RBC), with support from the World Food Programme (WFP) and the Rwanda Network of People Living with HIV (RRP+) conducted a comprehensive study (2021) to determine the nutrition, food security, and vulnerability status of people living with HIV (PLHIV).

**Methods:** A cross-sectional study employing a face-to-face survey was conducted, utilizing a cluster sampling technique. The targeted population was stratified into 30 subgroups corresponding to the country's 30 districts. Health centres, served as the primary sampling units, were chosen randomly, with two selected per district. A total of 2,488 adult respondents, representing an equal number of households, were sampled and 1,079 children aged 2-19 years were included, with the objective of obtaining anthropometric measurements and assessing their nutritional status. Data analysis was conducted using SPSS v.24.

**Results:** In 55.2% of households, adults had only one meal the day before the survey. Half of children under 15 had two meals, but in 27.8% of households, children had just one meal.

While the overall food consumption score is generally acceptable, 30.83% and 15.6% of households have borderline and poor caloric availability, respectively.

Participants in the lowest wealth quantile (Ubudehe 1) had the highest reduced coping strategy index (rCSI) at 20.7, indicating more extensive use of negative coping strategies and heightened food insecurity compared to Ubudehe 2 and 3 (rCSI 18.2 and 15.9, respectively). High malnutrition rates are observed in all participant groups, excluding pregnant and breastfeeding women.

Approximately 10.93% of patients missed antiretroviral therapy (ART) doses in the 30 days preceding the survey, and 21.1% cited financial constraints and lack of food as the main reasons for non-adherence.

**Conclusions:** The study reveals prevalent nutritional and food security challenges among the PLHIV, with sub-optimal meal frequency and poor or borderline access to a caloric-sufficient diet. High rates of malnutrition persist across diverse participant groups, necessitating targeted interventions.

The higher rCSI in the Ubudehe category 1 underscores the vulnerability of economically disadvantaged groups to food insecurity and sustained ART adherence. These



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findings highlight the interconnected nature of health, socio-economic factors, and nutrition, emphasizing the need for comprehensive strategies to address these multifaceted challenges.

## WEPEC302

### Acceptability of long-acting injectable antiretroviral treatment (LAI-ART) among young Black sexual minority men (SMM) living with HIV in the Southern United States

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**Background:** Young Black sexual minority men (YBSMM) are more affected by HIV than any other group in the United States. Additionally, YBSMM have poor outcomes across the HIV care continuum (diagnosis, linkage to care, retention in care, and HIV viral load suppression). In 2021, the U.S. Food and Drug Administration approved the first long-acting antiretroviral (LAI-ART) medication. The current study investigated the predictors of LAI-ART acceptability among a sample of YBSMM living with HIV in the Southern U.S.

**Methods:** In 2022, YBSMM (N=138) in Dallas and Houston Texas participated in the 4th wave of a community-based longitudinal survey of men living with HIV. We investigated the relationship between sociodemographic characteristics, experiences of stigma and discrimination, healthcare experiences, mental health and substance use, HIV care continuum outcomes, and LAI-ART acceptability. Bivariate and multivariable logistic regression were used to examine factors associated with willingness to use LAI-ART.

**Results:** Two-thirds of the sample reported being very willing to utilize LAI-ART monthly. In the bivariate model, factors associated with increased odds of being willing to utilize LAI-ART included: higher healthcare empowerment ( $r=0.21$ ,  $p=0.01$ ), higher perceived provider competency ( $r=0.19$ ,  $p=0.05$ ), and higher social support ( $r=0.18$ ,  $p=0.04$ ). Recent cocaine use was associated with decreased odds of LAI-ART willingness ( $r=0.18$ ,  $p=0.04$ ). In the multivariable model, higher trust in the healthcare system was significantly associated with slightly decreased odds of reported willingness to utilize LAI-ART.

**Conclusions:** We found high acceptability of LAI-ART among a sample of YBSMM. YBSMM living with HIV, especially those who have suboptimal adherence to daily

pill regimens, should be a priority population for LAI-ART uptake. Our findings highlight the critical role healthcare systems and providers play in the effective rollout of LAI-ART.

Consequently, it is important that healthcare systems:

- 1, Develop and implement promotional materials for LAI-ART that are both culturally relevant and evidence-based, and
- 2, Train HIV care providers on the clinical indications for LAI-ART and potential barriers to client adoption and adherence.

Lastly, it is important that interventions aimed at increasing LAI-ART uptake consider potential barriers specific to individuals who engage in stimulant use and implement strategies to address these barriers.

## WEPEC303

### Trends in infant HIV positivity and linkage to ART among HIV-exposed infants aged <12 months in CDC-PEPFAR programs, FY2018-FY2023

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**Background:** With funding from the U.S. President's Emergency Plan for AIDS Relief (PEPFAR), the U.S. Centers for Disease Control and Prevention (CDC) and Ministries of Health implement comprehensive prevention of mother-to-child (PMTCT) services to reduce vertical transmission and provide timely linkage to antiretroviral treatment (ART) for infants living with HIV. This analysis describes recent trends in infant HIV diagnoses and linkage to ART in PEPFAR-supported countries.

**Methods:** We analyzed aggregate data from Monitoring, Evaluation, and Reporting (MER) indicators across CDC-supported sites in 17 African countries with complete reporting on new HIV diagnoses among HIV-exposed infants (HEI) aged <12 months from U.S. Government Fiscal Years (FY) 2018 to 2023 (October 2017 to September 2023). We reviewed annual trends in the number of HEI with at least one early infant diagnosis (EID) sample collected, the number of HEI diagnosed with HIV, percent of HEI diagnosed with HIV among those with EID samples collected (infant HIV positivity), and percent of infants diagnosed with HIV linked to ART (ART linkage) within the same quarter as diagnosis. We calculated percent and absolute percent change.

**Results:** HEI with EID sample collection increased from 370,478 in FY2018 to 418,927 in FY2023 (percent change: +13%) (Table). HEI diagnosed with HIV steadily decreased from 9,053 to 5,492 (percent change: -39%); eight (47%) countries decreased by ≥50%. Infant HIV positivity by 12 months steadily decreased from 2.4% to 1.3% (absolute percent change: -1.1%). ART linkage increased from 81% to 87% (absolute percent change: +6%). Four (24%) countries achieved ≥95% ART linkage in FY23.

	FY2018	FY2019	FY2020	FY2021	FY2022	FY2023	% Change	Absolute % Change
First EID sample collected	370,478	405,062	406,823	450,220	441,700	418,927	13%	
HEI diagnosed with HIV	9,053	8,554	7,339	6,606	5,928	5,492	-39%	
HEI diagnosed with HIV linked to ART	7,325	7,506	6,125	5,668	5,112	4,794	-53%	
Infant HIV positivity	2.4%	2.1%	1.8%	1.5%	1.3%	1.3%		-1.1%
ART linkage	81%	88%	83%	86%	86%	87%		6%

**Conclusions:** Between FY2018 and FY2023, infant HIV positivity declined in CDC-PEPFAR-supported sites, likely due to efforts to strengthen PMTCT services. Overall, ART linkage remains below the target of 95% in many countries. As countries approach elimination of mother-to-child transmission, they may need to adapt programs to support provision of high-quality prevention, diagnostic, treatment, and retention services to ensure that all HEI living with HIV are identified and linked to services.

## WEPEC304

### Racial, economic, and mental health disparities persist in viral suppression among people with HIV in high resourced settings

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**Background:** Despite significant resources having been invested in efforts to control and ultimately eradicate HIV (e.g., the 90-90-90 goals and the Ending the HIV Epidemic initiative), a subset of people with HIV (PWH) have not fully benefitted from treatment and care advances, even in resource-rich settings.

To better understand the factors impeding optimal engagement in care in Massachusetts (where almost all clients have health insurance), we conducted an analysis of the demographic, diagnostic, and mental health screening characteristics associated with being virologically unsuppressed among PWH in high resource settings.

**Methods:** We conducted bivariate comparisons and multivariable regression models using electronic medical record (EMR) data from 2,843 PWH at Fenway Health, a federally qualified community health center in Boston, Massachusetts providing affirmative and culturally tailored care for SGM and PWH from 2012-2022 to assess factors associated with virological suppression.

**Results:** The majority (96.2%) were virally suppressed at their last HIV RNA assessment. Those who were unsuppressed were significantly younger (median age 37 [IQR=29-46] vs. 45 [33-52];  $p<.001$ ), had been in medical care less time (36 months [12-75] vs. 81 [34-114];  $p<.001$ ), and had fewer appointments (12 [4-23] vs. 26 [13-44];  $p<.001$ ). Additionally, those who were unsuppressed were more likely to live under the federal poverty level (59.6% vs. 48.2%;  $p=.03$ ), be Black (22.1% vs. 14.6%) or multi-racial (15.8% vs. 7.6%) compared to White or another race ( $p=.002$ ), and have a psychotic disorder (8.4% vs. 3.5%;  $p=.008$ ), but were less likely to have an alcohol use disorder (5.6% vs. 13.6%;  $p=.02$ ). In a multivariable model, multi-racial PWH had 3.6 greater odds than White PWH of being unsuppressed and those with a psychotic disorder had 5.8 greater odds of being unsuppressed.

**Conclusions:** Over 40 years into the HIV epidemic, in high resource settings with SGM expertise, PWH in poverty, who are Black or multi-racial, and those with serious mental illness (e.g., psychosis) still need additional intervention to achieve viral suppression, including economic interventions, systemic interventions to reduce racial inequities (e.g., efforts to reduce medical mistrust and increase the number of providers of color), and increased access to mental healthcare.



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## WEPEC305

HIV continuum among key populations through the Universal Health Coverage program in Thailand in the era of treat all

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**Background:** HIV testing among key populations in Thailand has increased since 2015 corresponding to the establishment of the "key population-led health services" (KPLHS). We assessed the cascade of HIV care among key populations and identified predictors of accessing ART and viral suppression (VS) using national database which records HIV test results, antiretroviral therapy (ART) status, and viral load (VL) under Thailand Universal Health Coverage (UHC) system.

**Methods:** We included individuals diagnosed with HIV at age  $\geq 15$  years who were enrolled to start ART between 2015-2022. Individuals were recorded HIV risk group as men who have sex with men (MSM), people who inject drugs (PWID), female sex workers or transgender women. ART initiation at any CD4 count and VL testing were offered to all per national guidelines.

Estimates were calculated as proportion of participants:

- Linked to care/starting ART,
- with VL testing within 6 to 12 months of ART initiation, and;
- with VS (VL  $< 200$  copies/mL). We used logistic regression to investigate characteristics associated with accessing ART and VS.

**Results:** A total of 6,110 individuals were diagnosed with HIV and enrolled in care, comprising 5,587 (91%) MSM, 203 (3%) PWID, 193 (3%) female sex workers and 127 (2%) transgender women. Of those, 5,601 (92%) started ART. Among participants who started treatment, 4,420 (79%) had a VL test within 6 to 12 months of starting ART, with 3,985 (90%) of those tested (71% of the original cohort after starting ART) achieving VS.

MSM (adjusted odds ratio (aOR) 1.88 (95% confidence interval (CI) 1.18-3.01; versus PWID), age 15-24 years (aOR 1.71, 95%CI 1.27-2.33; versus age 34-49 years) and CD4  $\geq 500$  cells/mm<sup>3</sup> (OR=5.34, 95%CI 3.77-7.57; versus CD4  $< 200$  cells/mm<sup>3</sup>) were associated with higher odds of starting ART after HIV diagnosis.

MSM with high pre-ART CD4 and no HIV symptoms at diagnosis were more likely to achieve VS within one year of ART initiation.

**Conclusions:** HIV care cascades varied by key populations in Thailand. Interventions need to be tailored by population and sub-population contexts. Earlier diagnosis at higher CD4 count could benefit both ART initiation and VS among key populations.

## WEPEC306

Effective strategies for operating support groups of adolescents living with HIV: case of Mangochi and Chikwawa districts of Malawi

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**Background:** Young people face challenges to adhere to treatment and that support groups are known as effective measure to support young people's treatment adherence. However, it is challenging to implement support groups of young people especially to retain young people in support groups.

As such, COWLHA established youth support groups in 2019 to create safe space for offering psychosocial support to young people for better treatment outcomes.

**Description:** COWLHA devised these strategies:

- COWLHA mobilized such young people to form their own youth support groups as it was easier for their parents/guardians to give them permission to become members of youth support groups. Generally, parents/guardians who are not members of support groups do not allow their children to patronize support groups for fear of stigma;
- COWLHA let the youth support groups select their leaders and later trained them to facilitate treatment literacy in the support groups.
- COWLHA made the support groups attractive by incorporating sport activities and procuring equipment such as footballs, netballs, chess, snakes and ladders with diversified support groups activities ranging from treatment literacy lessons, sports and income generating activities;
- COWLHA linked the support groups with institutions of professional support such as health facilities and teen clubs.

**Lessons learned:**

- Increased number of young people in the support groups. In 2019, COWLHA started with 218 young people and this number rose to 2871 in 2022;
- Reduced number of ART defaulters among young people as shown during external evaluation of 2023 (default rate reduced with an average of 40%);
- Increased enrolment of young people in the ART program by 30% for 10 health facilities in Chikwawa and Mangochi districts;

- Sustainability and ownership of the support groups as evidenced by their continued existence even after the project phased out in 2022.
- The support groups are active and innovative as they got engaged in Income Generating Activities (IGAs) like gardening and small scale businesses.

**Conclusions/Next steps:** Setting up youth support groups has proved to be successful with increased membership over the years and better treatment outcomes. If this approach is scaled up to other districts, it will likely improve ART retention among youth living with HIV.

## WEPEC307

### Effect of high-risk mobility on treatment interruption among men in Malawi: secondary analysis of two randomized controlled trials

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**Background:** Temporary mobility is associated with treatment interruption (TI) and viremia in men living with HIV (MLHIV), but it is unclear what characteristics of mobility confer greatest risk.

We conducted a secondary analysis to define and predict characteristics of mobility most strongly associated with repeat TI among MLHIV in Malawi.

**Methods:** The IDEaL and ENGAGE trials (ClinicalTrials.gov-#NCT04858243; #NCT05137210) tested interventions designed to improve 6-month ART engagement among MLHIV  $\geq 15$  years old not in care (never initiated ART or missed refill by  $\geq 28$  days). Baseline and endline (4-7 months after enrollment) surveys and medical chart reviews were conducted. For this secondary analysis, we excluded men who did not engage in care during the trial. Our primary outcome was repeat TI ( $\geq 28$  days late for any ART appointment during 6-month trial period) using confirmed medical records.

We used logistic regressions with mixed effects and receiver operator characteristic (ROC) curves to identify aspects of mobility most strongly associated with repeat TI (high-risk mobility) and identify baseline characteristics associated with high-risk mobility.

**Results:** 1,309 men were enrolled in the trial at 28 facilities in Malawi. Of 1,190 who initiated ART and were included in this analysis, 498 (41.9%) experienced repeat TI; 679 (57.0%) spent  $\geq 3$  total nights away from home during the 6-month trial period. Trip length, purpose, destination, and ability to plan were associated with repeat TI (Table).

By ROC analysis, trips  $\geq 30$  nights (aOR 2.26, 95%CI 1.41-3.62, AUC 0.6703) or unplanned trips ( $< 2$  days to plan; aOR 1.83, 95%CI 1.23-2.73, AUC 0.6622) best defined high-risk mobility. Among baseline characteristics, prior mobility (OR 2.02, 95%CI 1.46-2.80), but no sociodemographic variables, was associated with high-risk mobility during the trial period.

	n (%)	Odds ratio	Area under the curve	Adjusted odds ratio†
Experienced repeat TI	498 (41.9%)			
<b>Mobility - quantitative</b>				
Trip $\geq 3$ nights	335 (39.3%)	1.77 (1.32-2.39) ***	0.6595	
Trip $\geq 7$ nights	248 (20.8%)	1.79 (1.33-2.40) ***	0.6562	
Trip $\geq 14$ nights	189 (15.9%)	1.71 (1.24-2.36) ***	0.6577	
Trip $\geq 30$ nights	99 (8.3%)	2.26 (1.77-4.50) ***	<b>0.6703</b>	2.26 (1.41-3.62) ***
Trip $\geq 90$ nights	37 (3.1%)	3.31 (1.59-6.87) ***	0.6570	
<b>Mobility - qualitative</b>				
Traveled for work	199 (16.7%)	1.51 (1.11-2.07) **	0.6527	
Traveled across borders	72 (6.1%)	2.02 (1.22-3.33) ***	0.6566	
Any unplanned travel ( $\leq 2$ days notice)	133 (11.2%)	2.11 (1.45-3.07) ***	<b>0.6622</b>	1.83 (1.23-2.73) **

\* p<0.10; \*\* p<0.05; \*\*\* p<0.01

† Controlled for sociodemographic characteristics (age, marital status, wealth/asset ownership, alcohol consumption) and trial arm.

Table 1. Defining high-risk mobility by association with repeat TI among men in Malawi (n=1190).

**Conclusions:** Trips  $\geq 30$  days or unplanned trips were high-risk for repeat TI among MLHIV in Malawi. Previous mobility was the best predictor of high-risk mobility. Further research is needed to reduce mobility-associated TI.

## WEPEC308

### Clinical outcomes in the era of test and treat among children living with HIV: a cohort study in Zambia

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**Background:** Initiating antiretroviral therapy (ART) immediately after diagnosis of HIV infection may reduce morbidity and mortality in children living with HIV (CLWH) especially when they are retained in HIV care. However, there is limited data on retention and other clinical outcomes among CLWH in sub-Saharan Africa. We aimed to determine the retention rate before and after implementing a test and treat program among children with HIV.

**Methods:** We conducted a retrospective cohort study in 42 health facilities in 12 districts of the southern region of Zambia. We reviewed 984 files. The cohorts were divided into two groups, 405 (41.2%) before-test and treat (BTT) and 579 (58.8%) after-test and treat (ATT) policy. We collected demographic, laboratory and clinical data using a structured data collection form in REDCap. Descriptive statistics and logistic regression (xtlogit) were the statistical methods employed.



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**Results:** The median age (interquartile range (IQR)) of children abstracted was 60 months (22, 100) and 52.3% (n=515) were females. Overall retention rate (24 months) and viral suppression (at 12 months) were 82.0% (n= 807; 95% confidence interval (CI) 79.5, 84.4) and 81.5% (538/660; 95%CI 78.3-84.4), respectively. A higher proportion of children ATT were retained in care (91.0% vs. 69.1%) and virally suppressed (83.7% vs. 78.7%) compared to BTT. Most of the children BTT were transferred out (19.0% vs. 4.8%), lost to follow (11.1% vs. 3.8%) and died (0.7% vs. 0.2%) as compared to ATT cohort.

In multivariable analysis, the factors positively associated with retention were ATT cohort (odds ratio (OR) 4.98; 95%CI 4.06, 6.11) and use of DTG-based regimen (OR 2.66; 95%CI 1.05, 6.72); while female sex (OR 0.80; 95%CI 0.67, 0.95), increasing number of days from the time of HIV diagnosis to ART initiation (OR 0.99; 95%CI 0.99, 0.99), and being in world health organization (WHO) stages 3 (OR 0.68; 95%CI 0.52, 0.90) and 4 (OR 0.30; 95%CI 0.19, 0.48) were inversely associated.

**Conclusions:** The retention and viral suppression among children were suboptimal. Notably, clinical outcomes improved ATT compared to BTT. There is a need to enhance interventions aimed at improving ART retention and viral suppression among children living with HIV in resource-limited settings.

## WEPEC309

### Time to DAA initiation among persons with HIV-HCV co-infection after HIV virological suppression

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**Background:** International guidelines recommend initiating first antiretroviral therapy (ART), then direct-acting antivirals (DAA) in persons with HIV/HCV co-infection. Delayed DAA initiation can increase the risk of HCV-related complications due to liver disease progression, but also have public health consequences, with HCV transmission to others. We estimated the time to DAA initiation after HIV virological suppression in persons with HIV/HCV coinfection in HepCAUSAL, a collaboration of cohorts in Europe and North America.

**Methods:** We included ART-naïve and DAA-naïve persons with HIV/HCV co-infection, who initiated ART and achieved HIV virological suppression between 2014 and 2020 while meeting the criteria for DAA initiation in their country. For each individual, follow-up started at HIV virological suppression and ended at the earliest date of DAA initiation, loss to follow-up, spontaneous HCV clearance, or 3 years. We estimated the cumulative incidence of DAA initiation after achieving HIV virological suppression overall and by sex, CD4 count, and history of injection drug use (IDU).

**Results:** We included 805 individuals. The median time (interquartile range [IQR]) from ART initiation to HIV-virologic suppression was 2.8 months (1.0-6.8). The median age was 46 years (36-56), median CD4 count was 462 cells/mm<sup>3</sup> (252-668), and 354 individuals (44%) had a history of IDU. Forty-two (5%) individuals died, and 100 (12%) had spontaneous HCV clearance.

The median time to DAA initiation was 9 months (95% CI 8-11). Three years after HIV virological suppression, 75.7% (71.9-79.4) of individuals had initiated DAA.

The 3-year proportion of DAA initiators was 76.6% (72.6-80.5) in males and 69.3% (58.2-79.8) in females, 71.9% (65.7-77.7) in persons with IDU history, and 78.9% (74.0-83.3) in persons without.

The proportions were 67.3% (58.0-76.3), 81.5% (75.6-86.7), and 74.2% (68.2-79.8) in individuals with CD4 count <200, 200-500, and ≥500 cells/mm<sup>3</sup>, respectively.

**Conclusions:** While over half of persons with HIV/HCV co-infection initiated DAA treatment within one year after HIV-virologic suppression, a quarter did not receive DAAs by the third year.

This suboptimal DAA uptake highlights the need for better access to HCV treatment for persons with HIV/HCV coinfection to reach WHO HCV elimination targets and reduce liver disease progression and the risk of HCV transmission.

## WEPEC310

### Monitoring HIV drug resistance early warning indicators among children living with HIV attending care and treatment centres in Tanzania

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**Background:** In response to the rising challenges posed by the growing number of People Living with HIV/AIDS (PLWHA) and the escalating HIV Drug Resistance (HIVDR), Tanzania has embraced the World Health Organization (WHO) strategy to enhance the quality of the Antiretroviral Therapy (ART) program. This involves the systematic measurement of Early Warning Indicators (EWI) for HIV Drug Resistance. This study is designed to evaluate the monitoring of children early warning indicators for HIV drug resistance in Tanzania.



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**Methods:** A retrospective study was conducted among children aged below 15 years between January 2020 and December 2022 in 3,784 clinics across Tanzania to evaluate WHO recommended EWI (EWI1-ART prescribing practices, EWI2-lost to follow-up during the first 12 month of ART, EWI3 retention on first-line ART at 12 month, EWI4-On-time ARV drug pick-up) and optional EWI8-Viral load suppression following 12 months of first-line ART).

We abstracted data from the CTC3 database of routinely collected anonymized data on children who are taking ART. All analyses were conducted using STATA version 15 software.

**Results:** A total of 15496 children were initiated on ART, with majority (52.5%) being females. The majority 97.6% children were appropriately prescribed first-line ART, of these (98.6%) continue taking first-line ART regime 12 month after ART initiation. About 37.1% of children ART regime was stopped or modified, with 43.1% changed to different drug classes. Over 32% children living with HIV delayed in picking up their ARV on time, and approximately, 5.8% of children were lost to follow up 12 months after ART initiation. Viral suppression (HVL<1000 copies) was 64.3% at 12 months after ART initiation.

Overall, results revealed unmet targets of 3/5 of assessed EWI including EWI2: -lost to follow up (33% versus <15%), EWI4: on-time pill pickup (68% versus >90%) and viral suppression (84.4% versus >90%).

**Conclusions:** Taken together, our results revealed the poor performance of HIV drug resistance early warning indicators among children living with HIV attending care and treatment centres in Tanzania.

A call for tailored children based care and treatment plans to improve the quality of ART program and aid in reducing the possibility of occurrence of drug resistance among children.

## WEPEC311

Enhancing HIV outcomes among Brazilian young men and non-binary persons who have sex with men: results from a technology-based intervention study

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**Background:** Tailored interventions for young (18-24 years) men and non-binary individuals who have sex with men (YMSM/NB) are scarce, despite a disproportionately high HIV burden. Limited data exist on HIV prevention

and care continuum among these populations. This study evaluated HIV care/prevention outcomes before and after a technology-based intervention among Brazilian YMSM/NB.

**Methods:** Conectad@s, an intervention study conducted in Rio de Janeiro, Brazil (November/2021-September/2023), assessed HIV prevention and care outcomes among YMSM/NB over 48 weeks, recruited by respondent-driven sampling.

Participants received quarterly visits and were offered weekly technology-based messages from Week 0. Same-day oral pre-/post-exposure prophylaxis (PrEP/PEP) and antiretroviral therapy (ART) were provided as applicable.

**Results:** Among 409 participants (90.5% cis-MSM, 7.3% NB, 2.2% trans-MSM), 70.6% were Black/*Pardo*, median age 21 years (IQR:20-23), with 369 HIV-negative and 40 living with HIV (LWH), and 50.0% unaware of their HIV status; all accepted the intervention. Six (1.6%) seroconverted during the study.

Study retention at W48 was 83.4% (303 HIV-negative, 38 LWH), with 16.6% (68) lost to follow-up. Comparing W0-W48, there was an increase in linkage to HIV care (50.0% - 97.4%), ART use (50.0% - 97.4%), and viral suppression (40.0% - 81.6%).

Among HIV-negative participants, 0.9% were on PrEP at W0, increasing to 68.7% at W48 (88.0% daily, 12.0% on-demand). Reasons for not using PrEP included difficulties in taking a daily pill (34.1%), not perceiving themselves at HIV risk (28.9%), and not willing to take a daily pill (27.0%). If available, injectable PrEP was the preferred option (35.5% at W0 and 66.1% at W48).

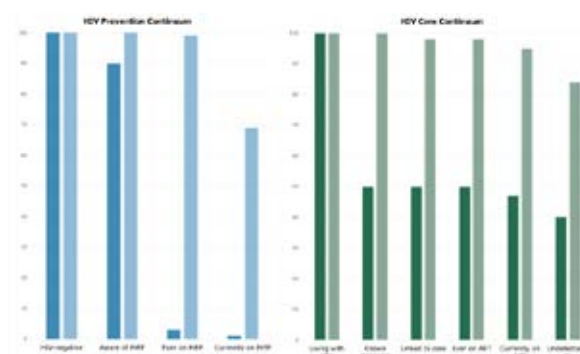


Figure 1. HIV prevention and care continuum among YMSM/NB enrolled in the Conectad@s Project, Brazil, 2021-2023.

**Conclusions:** The Conectad@s study successfully engaged and retained YMSM/NB over 48 weeks, showing substantial improvement in HIV outcomes, particularly in viral suppression and PrEP use. Simple interventions, adapted to the youth's reality, combined with expanding PrEP options, may significantly contribute to enhancing HIV outcomes among YMSM/NB.





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## WEPEC312

### Trajectories of HIV care engagement in the perinatal period among women in Lilongwe, Malawi

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**Background:** Engagement in HIV care is critical for perinatal women with HIV (WHIV). We employed group-based trajectory modeling to:

1. Describe trajectories of HIV care engagement among WHIV during the perinatal period; and,
2. Identify predictors of membership in suboptimal care trajectories.

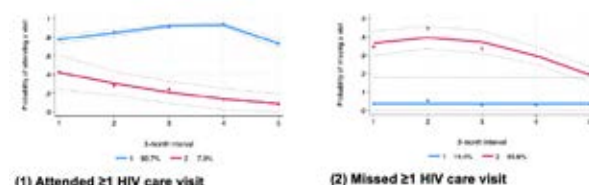
**Methods:** Data came from a prospective cohort study across five urban clinics in Lilongwe, Malawi from February 2020- August 2022. Eligible participants were living with HIV, ≥18 years, and planning to remain in Lilongwe. Participants were followed from entry into antenatal care (ANC) through 9 months postpartum.

Trajectories were defined based on whether

1. ≥1 HIV care visit was attended; or,
2. ≥1 HIV care visit was missed for a given participant during a given three-month interval during follow-up. Potential predictors were included in a multivariable group-based trajectory model.

**Results:** Among 375 participants, 22% were aged <25 years, the median gestational age at first ANC visit was 20 weeks, and the majority (77%) were enrolled after the start of the COVID-19 pandemic. We identified two optimal trajectory groups for each care engagement outcome (Figure 1).

Women who were <25 years and had >1 hour of travel time to the clinic were more likely to be in the "lower" probability of attending a visit trajectory group (OR=3.82, 1.25-11.73 & OR=3.54, 1.44-8.69). Enrollment after the start of the COVID-19 pandemic and older gestational age, however, were protective against suboptimal membership in the "lower" probability of attending a visit (OR=0.23, 0.07-0.74) and the "higher" probability of missing a visit (OR=0.28, 0.09-0.86) trajectory groups.



**Figure 1.** Plot of unadjusted trajectory groups and confidence intervals for (1) attending an HIV care visit and (2) missing an HIV care visit for 375 pregnant and postpartum women living with HIV in Malawi in 2020-2022. For the "attending an HIV care visit" trajectories, the "consistently high" probability of attending an HIV care visit group (group 1) was modeled using a cubic term, and the "lower" probability of attending a visit group (group 2) was modeled using a linear term. For the "missing an HIV care visit" trajectories, the "consistently low" probability of missing a visit group (group 1) was modeled using the intercept term, and the "higher" probability of missing a visit group (group 2) was modeled using a quadratic term.

**Conclusions:** Younger women and those who had longer travel to the clinic were at greater risk for suboptimal care engagement, and risk differed for trajectories defined by attending vs. missing a visit. Future research should leverage richer covariate information and consider time-varying factors for a more complete and nuanced assessment of predictors.

## WEPEC313

### Closing the gap of access to HIV services for Venezuelan migrants in public health system in Peru

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**Background:** More than one and a half million Venezuelan migrants (VM) currently reside in Peru. Public health services for the prevention and comprehensive care of HIV in migrants, especially those that are undocumented, present gaps in access, even though the delivery of prevention and treatment programs are free in Ministry of Health (MoH) facilities.

Since 2021, the following PEPFAR funded project aimed to support access of Venezuelan migrants to HIV prevention, diagnosis and comprehensive care services.

**Methods:** The President's Emergency Plan for AIDS Relief (PEPFAR) supports HIV programming for VM in the two cities with the largest VM populations: Lima and Trujillo (support began 2021 and 2023 respectively). Community outreach services include the delivery of an HIV prevention package: condoms, lubricants, HIV and syphilis testing, and linkage to MoH facilities for treatment, where antiretrovirals are provided free of cost. The project supports initial costs for additional laboratory and X-ray test requested prior to starting treatment.

Peer navigators support linkage and early retention to care, ensuring enrolment in the public health system and providing emotional and nutritional support. Services were captured using routine program monitoring systems for Venezuelan migrants in Peru and aggregated for PEPFAR reporting.

**Results:** A total of 14,013 VM received an HIV prevention package between January 2021 and September 2023, 97% were tested for HIV with 623 new diagnoses (4.5% yield), all of whom were linked to antiretroviral therapy (ART). The project supported 1,752 VM living with HIV (VMLHIV) on ART (89% are male and 90% are between 20 and 44



years of age), maintaining a high level of viral suppression (97%), with 82% of viral load coverage annual. Of those on ART, 68% receive multi-month dispensing beyond three months.

**Conclusions:** Community outreach and support, combined with quality services at MoH, has been pivotal to success in HIV programs reaching VM in Peru. Support and monitoring for ART adherence achieved sustained suppression among VMLHIV. Sustaining ongoing collaboration with the national and subnational levels of the Ministry of Health remains essential for early access to comprehensive HIV care services for Venezuelan migrants.

## WEPEC314

### Decentralization and demedicalization of antiretroviral services to improve client experience in care: lessons from Southern Nigeria

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**Background:** Socioeconomic challenges including stigma, discrimination, and long distances to health facilities are prominent barriers limiting access to antiretroviral therapy (ART) in Sub-Saharan Africa.

This paper describes the approach to decentralized and de-medicalized ART services implemented with support from PEPFAR/USAID in Akwa Ibom and Cross River States, Southern Nigeria.

**Description:** Decentralized ART services were provided to PLHIV receiving ART in Akwa Ibom and Cross River States in line with national policies from October 2015 to December 2023. The who, what, where and when framework was used to guide the development of models that best fit client needs. Between 2015 and 2017 ART decentralization was provided only through community pharmacies due to a need to keep clients within the health system. By 2017, healthcare worker-led Community ART refill Group model was created in a further shift to community-based decentralized care. By 2020, evolving client needs and the rapid increase in the treatment cohort necessitated a shift to demedicalised community-based refill models that were client-led and provided ART pickup services at routine community structures, such as schools, council halls, churches, patent medicine vendors, etc, where psychosocial support was provided by peers. The scale-up

of home refills due to the COVID-19 pandemic further decentralized services to the community. In 2021, decentralization spoke facilities were introduced as an option for clients who were able to achieve self-care.

**Lessons learned:** Over the eight-year period, ART services were decentralized to a total of 3, 230 community structures (122 pharmacies, 280 Decentralization Spokes, 663 Client-led Community ART refill Groups, and 2,165 Healthcare worker-led Community ART refill Groups).

However, structures were inactivated based on evolving needs. At present, 1,489 community structures are serving 49,336 clients. Engagement with healthcare workers, community stakeholders and the PLHIV community was crucial for ensuring the acceptability of the approaches. Client retention was 99% across the different models. Data use from implementation was essential to the continuous improvement of the interventions.

**Conclusions/Next steps:** The implementation of decentralized, demedicalised ART services enhances accessibility, acceptability, affordability, and quality of HIV care, and empowers clients to take an active role in their health management.

## WEPEC315

### Evaluation of upskilling of healthcare workers on digital tools for improved data management reducing interruptions in treatment and increasing VL coverage in rural health facilities in Zambia

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**Background:** In 2022, the Government of Zambia through the Southern Provincial Health Office, and CDC partnered with a local NGO, Avencion to implement an intervention to strengthen capacity for data utilization to reduce interruption in treatment (IIT) and improve viral load (VL) monitoring in Itezhi-tezhi (ITT) district of Southern Province.

**Objective:** To improve VL coverage and reduce IIT in 14 facilities receiving the intervention.

**Description:** Methodology

The intervention supported the district with:

- Harmonization of appointment systems by day and time (for viral load, Pharmacy Pickup and Clinical appointment)
- Routine mentorship to facility staff in M&E indicators/targets
- ART outreach activities.
- Transitioned facilities from paper-based to an electronic medical records system.



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f. Capacity building activities ranging from classrooms training, data quality audits, technical supportive supervision (TSS), granular site monitoring (GSM)

g. Training on utilization of electronic medical records, advance HIV disease and continuous quality improvement (CQI)

The intervention was designed, managed, led and implemented 100% by Zambian youth.

**Lessons learned:** The district improved from 56% VL coverage in October 2022 to 97% by the end of September 2023 (source DHIS2) and most of the key indicators were above 100%. IIT also reduced from 396 in December 2022 to 189 in December 2023 giving us 53% reduction.

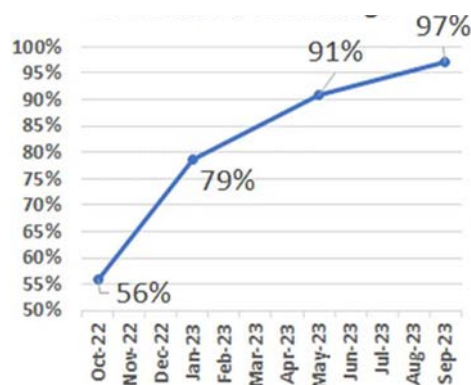


Figure. ITT district % VL coverage.



Figure. Reduction of interruption in treatment (IIT) for ART clients receiving intervention (2022-2023).

**Conclusions/Next steps:** Evidence supports that utilization of data to identify and provide longitudinal monitoring of recipients of care is a cost effective and sustainable approach to improving quality of care, reducing interruptions in treatment, and improving viral load coverage.

## Monitoring the spread, impact and prevention of new or resurgent pathogens

### WEPEC316

Assessing validity and reliability of three brief mental health screening instruments among adolescents and young adults living in areas of high HIV prevalence

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**Background:** Adolescents and young adults are at high risk of acquiring HIV and face an increased burden of mental health problems. The shortage of mental health specialists further aggravates the mental health burden in the most affected countries to diagnose mental health disorders. Brief and reliable mental health screening instruments administered by non-specialists are crucial to detecting and monitoring mental health distress.

However, limited evidence on the reliability and validity of such instruments has impeded the effective detection of distress, prevented conclusions about prevalence across populations, and impacted effective monitoring of mental health disorders, particularly in resource-constrained settings highly impacted by HIV.

**Methods:** Leveraging the NIH-funded PATC<sup>3</sup>H network, a consortium of collaborating research projects designed to improve health outcomes among adolescents and young adults affected by HIV across resource-constrained settings, we assessed the internal consistency (Cronbach's  $\alpha$ ) and construct validity of three commonly used mental health measures: the Patient Health Questionnaire (PHQ-9), Generalized Anxiety Disorder (GAD-7), and Primary Care Post Traumatic Stress Disorder (PC-PTSD-5) among adolescents and young adults living in Nigeria, Mozambique, Brazil, and South Africa.

**Results:** A total of 978 participants completed the PHQ-9 (n=812), GAD-7 (n=271), and PC-PTSD (n=225). All instruments showed adequate internal consistency (Cronbach's  $\alpha > 0.7$ ). In Confirmatory Factor Analysis, the model fit indices revealed acceptable to good fit, with high factor loadings across items (loadings  $> 0.4$ ) strongly supporting a one-factor model for the PHQ-9, GAD-9, and PC-PTSD-5. A country-wide analysis showed inadequate fit for PC-PTSD-5 among South African youth and young adults, although sample size (n=59) may have impacted the analyses.

**Conclusions:** Our data indicate that three commonly administered mental health screening tools reliably identified depression, anxiety, and trauma in youth from resource-constrained settings and affected by HIV.



This study is critical in supporting our understanding of the broad-scale monitoring of mental health disorders among AYLHIV in resource-constrained environments.

## WEPEC317

### Postacute sequelae of SARS-CoV-2 among people with HIV: a systematic review and meta-analysis

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**Background:** Postacute sequelae of SARS-CoV-2 (PASC) is the persistence of related symptoms or the development of sequelae after four weeks of SARS-CoV-2 infection. People with HIV (PWH) might be at increased risk of PASC due to their immune dysfunction, chronic inflammation, and alteration in the immunological response against COVID-19.

This systematic review and meta-analysis aim to synthesize the findings in global literature regarding the prevalence, characteristics, and risk factors associated with PACS among PWH.

**Methods:** Multiple databases, including Embase, PubMed, PsycINFO, Web of Science, and Sociological Abstracts, were searched to identify articles published through June 2023. Search terms relevant to HIV (e.g., "HIV infection" and "AIDS"), COVID-19 (e.g., "COVID-19" and "SARS-CoV-2"), and post-acute sequelae (e.g., "enduring" and "haul") were used. Published articles were included if they presented at least one PASC outcome measure among PWH and used quantitative or mixed methods study designs. For effects reported in three or more studies, meta-analyses using random-effects model were performed using R software. This study was pre-registered (PROSPERO-ID: CRD42023445493).

**Results:** We were able to pool 34,976 COVID-19 patients in 16 eligible studies out of 6,158 publications in all the databases. Most of the studies were conducted in the United States (7), China (3), and South Africa (3). It was estimated that 47% of PWH with SARS-CoV-2 infection developed at least one PASC symptoms. Results from random-effects model showed that HIV infection was associated with an increased risk of PASC (OR = 2.98, 95%CI: 1.64-5.42). The most common PASC symptoms among PWH were fatigue, vision problem, Asthenia and sleep disturbance. Risk factors associated with PACS among PWH included history of moderate-severe COVID-19 illness, a CD4 cell count < 200 cells/ $\mu$ L, and increased IP-10 or TNFa level.

**Conclusions:** COVID-19 pandemic continues exacerbating health inequities among PWH due to their higher risk of developing PASC. Our review is informative for public health and clinical communities to develop tailored strategies to prevent aggravated PASC among PWH. Future

research is needed to validate the findings in the current study which is limited by the small number of eligible studies, heterogeneous study design, and varied measurement methods.

## WEPEC318

### The role of multi-site testing for mpox diagnosis: findings from a prospective cohort in Brazil

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**Background:** By October-2023, 91,788 mpox cases have been reported worldwide. It is still controversial whether detection of monkeypoxvirus (MPXV) in routine mucosal swabs (anal and oropharyngeal) yields higher diagnostic accuracy. We aimed to explore the role of multi-site testing in a cohort of individuals with mpox in Brazil.

**Methods:** Prospective cohort of individuals with confirmed mpox (detectable MPXV PCR at any site), followed at a major referral center in Rio de Janeiro, Brazil. Baseline lesion and mucosal (anal/oropharyngeal) swabs for MPXV PCR were collected. Baseline characteristics, behavioral and clinical aspects of participants, according to MPXV detection in mucosal swabs are described using Chi-squared/Fisher's or Moods tests.

**Results:** Between June-2022 and October-2023, 478 participants with confirmed mpox were enrolled. Median age was 33 years (IQR 28,40); most were cisgender men (90%,n=429/478) who have sex with men (MSM) (90%,n=371/408), self-declared as Black/Pardo (60%,n=139/397), and with lower than secondary education (58%,n=237/408). Overall, MPXV PCR yielded positive in 96% of lesion swabs (n=453/464), 59% of oropharyngeal swabs (n=251/422), and 70% of anal swabs (n=260/369). MPXV detection in anal swabs was more frequent among MSM, PLWHA or with active syphilis and those reporting fever or with proctitis (Table).

Table. Behavioral and clinical characteristics of enrolled participants according to MPXV detection in mucosal sites

	PCR MPXV in Anal Swab (N=369)			PCR MPXV in Oropharyngeal Swab (N=422)		
	Detectable n = 260	Not Detectable n = 109	p-value	Detectable n = 251	Not Detectable n = 171	p-value
MSM	216/226 (94.7%)	78/83 (93.9%)	0.803	201/221 (90.9%)	132/146 (90.4%)	0.46
Reported sex in the last 30 days	221/247 (89%)	95/106 (89%)	0.97	212/237 (89%)	149/167 (89%)	0.94
Reported Anal Sex in the last 30 days	112/158 (72%)	45/71 (63%)	0.20	102/151 (68%)	79/116 (68%)	0.92
HIV infection	155/258 (60%)	41/108 (38%)	<0.001	131/246 (53%)	81/170 (48%)	0.26
Active syphilis (VDRL>1:8)	64/249 (26%)	17/105 (16%)	0.05	54/235 (23%)	32/181 (18%)	0.46
Anorectal gonorrhea	17/188 (9%)	9/70 (13%)	0.37	16/180 (9%)	7/112 (6.3%)	0.27
Anorectal chlamydia	22/158 (12%)	6/70 (8.6%)	0.47	20/180 (11%)	8/112 (7.1%)	0.26
Fever	176/259 (68%)	54/104 (52%)	0.004	163/250 (65%)	95/166 (58%)	0.13
Oropharyngeal discomfort	71/255 (28%)	25/104 (24%)	0.46	85/246 (35%)	31/185 (17%)	<0.001
Clinical Signs or Symptoms of Proctitis	77/258 (30%)	16/107 (15%)	0.003	58/249 (24%)	37/170 (22%)	0.64



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## WEPEC320

### Human papillomavirus in women living with and without HIV from Southern Province, Zambia

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**Background:** Cervical cancer is the leading cause of cancer death in women in Zambia and the fourth leading cause of cancer death in women worldwide. Human papillomavirus (HPV) is strongly associated with cervical cancer in women. However, there is a dearth of knowledge on the prevalence and factors associated with HPV testing outcomes in Zambia.

Therefore, this study aimed to determine the prevalence and factors associated with cervicovaginal HPV in women living with and without HIV in the Southern province of Zambia.

**Methods:** Cross-sectional study conducted at Livingstone University Teaching Hospital using programmatic data. 3,013 women were screened for cervicovaginal HPV using the APTIMA HPV kit for the qualitative detection of E6/E7 mRNA transcripts for 14 high-risk HPV types (14, 18, 31, 33, 35, 39, 45, 51, 52, 56, 58, 59, 66, and 68) on Hologic Panther platform from September 2021 to August 2022. Factors associated with HPV were determined using a logistic regression in STATA version 15.

**Results:** Participants had a median age of 38 [interquartile range (IQR) 30, 46]. The majority, 90.8% (2737/3013) were women living with HIV (WLWHIV). Overall HPV prevalence among participants was 35% (1,057/3013). HPV prevalence among the WLWHIV was 36% (986/2734) and 25% (71/279) among women without HIV. Living with HIV, sample collection method, and age were associated with HPV. WLWHIV had increased odds of having a positive HPV result (OR 1.82; 95% CI 1.36-2.45; p. value<0.001) compared to women without HIV. Samples collected by providers were more likely to have a positive result (OR 2.12; 95% 1.65 - 2.73; p. value <0.001) when compared to self-collected samples. Older women had reduced odds of having a positive result compared to younger women (OR .98; 95% CI 0.98 -.99, p. value 0.001).

**Conclusions:** WLWHIV had nearly a twofold increased risk of having cervicovaginal HPV. Regular cervical cancer screening is recommended to reduce the risk in this population. The higher positivity rate in women with provider-collected samples may suggest a need for proper education of women on self-sample collection, with client education, self-collected samples can increase access for WLWHIV to HPV and cervical cancer screening.

## WEPEC321

### Factors associated with hypertension and diabetes mellitus among people living with HIV in the Littoral and South Regions of Cameroon: experience from the non-communicable disease/HIV integration approach

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**Background:** The life expectancy of people living with HIV (PLHIV) has been increasing with the wide use of antiretroviral therapy (ART). The aging cohort of PLHIV are exposed to other health threats such as non-communicable diseases. Exploring risk factors of hypertension and diabetes mellitus (DM) in HIV clinics is important for improving holistic care for PLHIV.

**Methods:** We conducted a cross-sectional analysis of routine program data collected from April to September 2023 following screening of hypertension and DM among adult PLHIV receiving care in seven high-volume hospitals in Littoral and South Cameroon. Hypertension was defined as having two consecutive abnormal measures of blood pressure ( $\geq 140/90$ mmHg) and DM reflected glycaemia ( $\geq 1.26$ g/dl fasting or  $\geq 200$ mg/dl otherwise).

We used binomial logistic regression to assess the associations of hypertension and DM with age, sex, smoking status, alcohol consumption, physical activity, and type and duration on ART.

**Results:** Among 18,220 PLHIV, 8,990 were screened for hypertension and DM, with median age 45 years (IQR 37-53); 3,273 (36.4%) were aged  $>50$  years, 6,581 (73.2%) were female, and 5,625 (62.6%) were receiving ARV for  $>5$  years. Among the PLHIV screened, 6,047 (67.3%) reported alcohol consumption, 7,956 (88.5%) reported never smoking, 633 (7.0%) had hypertension only, 98 (1.1%) had diabetes only, and 63 (0.7%) had both. In multivariable analysis, males had lower odds of hypertension compared to females (aOR:0.77; 95%CI [0.6-0.9]).

The odds of hypertension were greater among those aged 31-49 years (aOR: 5.1; 95%CI [2.6-10.8]) and  $>50$  years (aOR: 13.4; 95%CI [7.3-28.4]) compared to those 15-30 years. PLHIV who reported past or current alcohol consumption had 27% greater odds of hypertension (aOR: 1.27; 95%CI [1.1-1.5]). PLHIV aged  $>50$  years had five-fold increase in



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their odds of having diabetes compared to those aged 15-30 years (aOR: 5.3; 95%CI[2.5-13.7]). No association was found between hypertension or DM and duration and type of ART regimen.

**Conclusions:** The odds of hypertension and diabetes increased with age among PLHIV, and past or current alcohol consumption was most strongly associated with hypertension. Our study emphasizes the need for hypertension and DM screening among PLHIV, to inform context-specific improvements in prevention, detection, and treatment strategies.

## WEPEC322

### Perceptions on frailty and frailty screening of people living with HIV and their healthcare professionals in Ethiopia: a qualitative study

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**Background:** People living with HIV (PLWH) are an ageing population with an increased risk of comorbidities and accelerated onset of geriatric syndromes, including frailty. Nearly two thirds of PLWH globally reside in sub-Saharan Africa (SSA) and it is predicted that, by 2040, 25% of PLWH in SSA will be over 50 years old. New challenges are emerging for healthcare systems in this region with a growing role supporting ageing PLWH affected by difficulties, such as frailty.

The aim of this study was to identify perceptions of frailty and explore frailty-related priorities for PLWH and their healthcare professionals (HCPs) in Ethiopia.

**Methods:** In-depth interviews (IDIs) and focus groups (FGs) were conducted with PLWH and HCPs, recruited from three hospitals in Ethiopia. IDIs took place in person in November 2022; they were originally conducted in Amharic and then translated into English. Pseudonymised transcripts were analysed with thematic analysis using NVivo.

**Results:** 38 participants were recruited for this study across the IDIs and FGs: 26 PLWH (14 male, 11 female, 1 no data) and 12 HCPs (3 male, 9 female). Two main themes were identified: (i) understanding frailty; (ii) talking about frailty: expectations and considerations each containing a number of sub themes (Table 1).

PLWH viewed frailty as an unavoidable consequence of ageing and both PLWH and HCPs considered its causes to be multi-factorial, including socioeconomic challenges. HCPs were concerned that discussing frailty may offend clients. Both felt increased awareness of and practical solutions for frailty were needed.

Themes	Quotes from IDIs and FGs
1. Understanding frailty	
1.1 An unavoidable consequence of ageing and a blessing.	"Frailty is a normal condition that can happen on anyone. It is not like leprosy.... I think living until I become old is a blessing." (PLWH)
1.2 A state of physical and mental deterioration and hopelessness	"Frailty is one indicator of weakness of one's body, brain and movements or activities of the body" (PLWH) "When I think about frailty... he will develop a feeling of hopelessness" (PLWH)
1.3 Product of socioeconomic challenges, malnutrition, and substance use.	"So if one is addicted and uses harmful things, it can faster the rate of frailty." (PLWH) "Basically, mostly frailty caused by is somebody has poor economic status..." (PLWH)
2. Talking about frailty	
2.1. Important to share experience and raise awareness	"We can share the experience of others... It will really will help us." (PLWH) "It's very good to have discussion... and improve their awareness. There are many people who don't know about frailty." (PLWH)
2.2. Provide coping skills and mitigate further deterioration	"If I know more about the causes and means of prevention, I can take care of myself." (PLWH) "They can show significant improvements if we discuss [frailty] during the first contacts." (HCP)
2.3. It may offend clients, so practical solutions are needed in discussion.	"Whatever comes out of my mouth then it is reality to them. Hence, I should take care not to offend my client." (HCP) "If there is no solution, then they will be discouraged" (HCP)

Table 1.

**Conclusions:** This study highlights the importance of both increasing frailty awareness and using a holistic approach to frailty screenings and discussions for PLWH in Ethiopia. Future service development work, focussed on healthy ageing for PLWH in Ethiopia, should incorporate cultural and social factors, as well as the physical and psychological.

## WEPEC323

### Time-varying concordance of self-reported and point-of-care biomarkers of alcohol and substance use measures among older adults with HIV from low- and middle-income countries, the Sentinel Research Network of leDEA

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**Background:** Despite the adverse effects of substance use on HIV virological suppression, objective substance use measures and screening remain rare in clinical settings.

**Methods:** We assessed time-varying concordance (percent agreement) between self-reported unhealthy use and urine biomarkers for alcohol and other drugs among the International epidemiology Databases to Evaluate AIDS (leDEA) Sentinel Research Network (SRN) cohort of people with HIV aged ≥40 at enrollment, 6-, and 12-months. Urine tests included urine ethyl glucuronide (uETG) for alcohol [detectable < prior 5 days] and a 5-panel urine test for opioids, cocaine, cannabis, amphetamines, and benzodiazepines.

Unhealthy use was defined as Alcohol Use Disorder Identification Test (AUDIT)-C score ≥3 (women) or ≥4 (men) and as Alcohol, Smoking and Substance Involvement Screening Test (ASSIST) score ≥4. Concordance was estimated overall and by sex.

**Results:** Of the 2,132 participants, 57% were female, 56% reported drinking alcohol, and 20% reported any drug use at enrollment; cannabis use (12%), cocaine (5%), sedatives or sleeping pills (5%), amphetamines (2%), hallucinogens (1.5%), and opioids (0.1%). Prevalence of unhealthy

alcohol use was 20%, 17% and 17% at enrollment, 6-, and 12-months, respectively, while positive uETG was 12%, 14% and 14% at enrollment, 6-, and 12-months, respectively. The prevalence of unhealthy cannabis use was 2%, 1% and 2% at enrollment, 6-, and 12-months, respectively, while positive urine test was 2%, 3%, and 4% at enrollment, 6-, and 12-months, respectively.

Concordance between self-reported unhealthy alcohol use and uETG and unhealthy cannabis use and urine test was high, varied overtime, and differed by sex, with lower concordance among males than females.

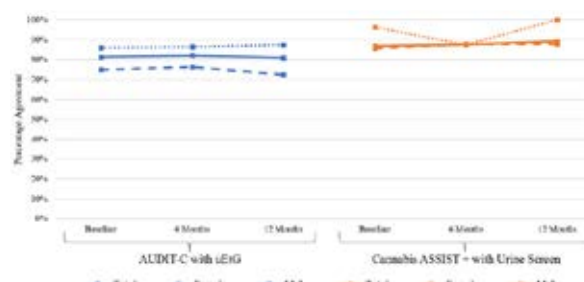


Figure. Percentage agreement with urine screen.

**Conclusions:** Over time concordance was moderate to high between self-reported substance use and urine tests and lower among males than females. Approaches for integrating biomarkers with longer detection periods and quantifiable levels of consumption should be explored for monitoring in real-world clinical settings.

## WEPEC324

### Interaction between SARS-CoV-2 and maternal HIV infection in pregnancy and risk of adverse birth outcomes in the era of antiretroviral therapy in Malawi

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**Background:** SARS-CoV-2 infection in pregnancy is associated with adverse birth outcomes including hospitalization preterm birth, and low birth weight. The effect of SARS-CoV-2 on birth outcomes in pregnant women living with HIV (PWLWH) is not well established.

**Methods:** We enrolled pregnant women attending their first ANC visit at gestational age of 20-36 weeks in rural and urban sites in Malawi. Participants were recruited in three cohorts: 1) HIV unacquired (HU), 2) PWLWH who initiated ART ≥ 6 months before conception with non-detectable (<400 copies/ml) VL (HIV-lo), 3) PWLWH who initiated ART ≥20 weeks gestation with high (>10,000 copies/ml) VL (HIV-hi). Serum was collected at enrollment and delivery. Exposure to SARS-CoV-2 was assessed using S1 RBD protein



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Human IgG ELISA (quantitative) and IgM ELISA (qualitative) and women were considered ever positive for SARS-CoV-2 if they were either IgM positive or seroconverted by IgG between enrollment and delivery.

We assessed the interaction between SARS-CoV-2 and cohort on adverse birth outcomes using log-binomial regression models.

**Results:** We enrolled 1207 pregnant women from March 2018 to 30 June 2022. This analysis includes 422 women screened after December 2019 with 36 HIV-hi, 177 HIV-lo, and 209 HU. Among completed samples, 113/422 (26.8%) were ever positive for SARS-CoV-2 (IgM+ (n=49), IgG seroconversion (n=64)) and 72/113 (63.7%) positives were among HU.

HU women were more likely to be positive for SARS-CoV-2 than PWLWH ( $p<0.001$ ). Among included pregnancies, 98/422 (23%) pregnancies had adverse outcomes, including low birth weight (n=41), death (n=6), hospitalization due to pregnancy complications (n=31), or preterm birth (n=44).

After adjusting for site and maternal education as a surrogate for socio-economic status, there was no association between SARS-CoV-2 and adverse outcomes, however, there was significant interaction between SARS-CoV-2 and HIV positivity ( $p<0.05$ ). PWLWH with SARS-CoV-2 coinfections had increased risk of adverse pregnancy outcomes compared to those with SARS-CoV-2 only (Rate Ratio (RtR) =2.49(95%CI: 1.03, 4.63)) and compared to those with HIV only (RtR=1.74(95%CI: 1.07, 2.68)).

**Conclusions:** In Malawi, PWLWH had lower rates of SARS-CoV-2 during pregnancy than HU women, likely due to decreased seroconversion. Despite this, PWLWH with detected SARS-CoV-2 coinfections were at increased risk for adverse birth outcomes.

## WEPEC325

The prevalence of hepatitis B virus infection among five military populations in sub-Saharan Africa

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**Background:** Hepatitis B virus (HBV) infection remains an important public health priority. In 2019, an estimated 820,000 deaths were attributed to HBV infection. While infection is vaccine-preventable, HBV disproportionately impacts specific populations and countries in sub-Saharan Africa (SSA). HBV and HIV share similar transmis-

sion patterns; military personnel can be at higher risk to both due to the unique culture and exposures of service. HBV prevalence estimates among service members are scarce. This study describes the burden of HBV in five military populations in SSA.

**Methods:** Data from seroprevalence and behavioral epidemiology risk surveys (SABERS) conducted in Burkina Faso (2018; n=1511), Cote D'Ivoire (2021; n=1271), Liberia (2018; n=1583), Malawi (2018; n=1251), and Mozambique (2022; n=1836) were analyzed. SABERS were cross sectional studies that included active-duty military members 18 years or older.

The presence of Hepatitis B surface antigen was determined with Advanced Quality One Step (InTec Products), Alere Determine (Abbott), AllTest (Hangzhou Alltest Biotech Co.), or SD Bioline (Abbott). HBV prevalence estimates and 95% confidence intervals (CIs) were calculated. Statistical differences in HBV prevalence by sex and age group were examined with Pearson's Chi-Square tests.

**Results:** The prevalence of HBV was 5.6% (95% CI: 4.3-6.9) in Malawi, 6.0% (95% CI: 4.9-7.1) in Mozambique, 9.2% (95% CI: 7.6-10.8) in Cote D'Ivoire, 10.1% (95% CI: 8.6-11.6) in Liberia, and 12.2% (95% CI: 10.5-13.8) in Burkina Faso. HBV prevalence was found to be significantly higher in men compared to women in Burkina Faso (12.9% vs. 7.2%;  $p=0.02$ ), Cote D'Ivoire (9.6% vs. 0.0%;  $p=0.01$ ), and Liberia (10.6% vs. 2.8%;  $p=0.01$ ). In Malawi and Mozambique, HBV prevalence was significantly higher in the 25-49 year age group compared to those 18-24 or 50+ ( $p=0.03$  and  $p=0.02$ , respectively).

**Conclusions:** Our findings add to limited data on HBV prevalence among a unique population, military personnel, and can be used to inform mitigation strategies. HIV-negative service members with chronic HBV infection may derive dual benefit from pre-exposure prophylaxis (PrEP) to prevent HIV acquisition and HBV disease progression. Furthermore, HIV-positive individuals should be tested for HBV, and appropriate services provided based on status to prevent adverse health outcomes.

## WEPEC326

Stigma in healthcare and sexual violence as root causes of HIV risk for young trans women in Brazil

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**Background:** The violence epidemic towards adult trans women in Brazil is well documented and known to severely impact, their mental health, engagement in HIV prevention and care and their risk of HIV infection. Less is known

about the experiences of youth. We assessed experience of violence and discrimination for young trans women in Brazil and co-morbidities related to mental health.

**Methods:** Data are from the baseline assessment for an HIV status-neutral intervention that enrolled YTW (18-24 years of age) between February to July of 2022 in Rio de Janeiro, Brazil. Participants answered structured surveys that assessed experiences of violence and discrimination related to gender identity in general, in healthcare, and from sexual partners, and healthcare avoidance due to fear of discrimination.

**Results:** Almost all young trans women in our study (N=164) experienced discrimination due to their gender identity (99%). More than one third (37%) experienced physical violence related to their gender identity and 83% experienced verbal violence. About one fifth experienced sexual violence from a partner (21%), and 43% were worried about violence from a sexual partner.

Many (18%) were treated poorly by healthcare professionals due to their gender identity and 44% avoided healthcare for fear of experiencing discrimination.

**Conclusions:** Young trans women in Brazil face extraordinary societal, systems and interpersonal violence and discrimination. Discrimination from healthcare providers resulted in healthcare avoidance, which is a major barrier to HIV prevention and care engagement in Brazil where universal healthcare is available.

Healthcare avoidance paired with high rates of sexual violence from partners presents extreme HIV risk for young trans women in Brazil who likely lack access to HIV prevention along with bodily autonomy to protect themselves from HIV. Interventions with YTW must address their risk for physical and sexual violence along with stigma in healthcare settings to effectively address HIV risk.

## Methodology to support epidemiological studies

### WEPEC327

A phylogenetic investigation of the determinants of HIV transmission among adolescent girls and young women enrolled in the DREAMS HIV prevention program in KwaZulu-Natal, South Africa

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**Background:** The phylogenetic analysis of viral genomes can support real-time monitoring, understanding and control of HIV epidemics. We explored the use of phylogenetics in understanding the outcomes of the DREAMS (Determined, Resilient, Empowered, AIDS-free, Mentored, and Safe) HIV prevention program.

**Methods:** Randomly selected population-based cohorts of 13-35-year-old men and women from rural KwaZulu-Natal, where DREAMS was delivered, were followed up annually between 2017-2019. DREAMS exposure was determined by self-reported receipt of an invitation to or participation in DREAMS HIV prevention activities. HIV status was ascertained through Dried Blood Spot collection at each time point.

The subtype C *pol* sequence of viruses infecting 45 participants living with HIV was compared to 3,602 HIV-1 subtype C *pol* sequences from diverse studies conducted in KwaZulu-Natal region between 2000-2020 and 72 closely related, publicly available sequences by maximum likelihood phylogenetic inference.

Putative transmission clusters were identified and chi-square tests compared characteristics of individuals within and outside clusters to identify risk factors driving local transmission.

Multivariable logistic regression assessed a potential association between DREAMS program exposure and the odds of belonging to a recent transmission cluster accounting for sex and age group.

**Results:** A total of 691 transmission clusters comprising 1,554 individuals were identified. Twelve clusters (1.74%) included at least one DREAMS participant, totaling 15 participants. A large local cluster, spanning the three-year implementation period 2016-2018, involving 31 adolescents and young adults (AYAs) was identified.

No significant differences in demographic, clinical, and behavioral characteristics were observed between DREAMS participants within and outside transmission



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clusters, though study power was low for these comparisons. Evidence was weak for an association between DREAMS exposure and the odds of being in a transmission cluster (adjusted OR=0.53, 95%CI 0.24–1.16, P=0.112).

**Conclusions:** Phylogenetic inference confirmed that most HIV infections were local, and that DREAMS exposure did not have a measurable impact on HIV transmission in the study setting. The ongoing transmission amongst AYAs in this rural community underscores the imperative need for interventions targeting AYAs, including antiretroviral-based prevention.

## WEPEC328

### Development of first-ever subnational HIV-related 95-95-95 targets, gaps, and action plans in Honduras, 2022

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**Background:** The Ministry of Health (MoH) of Honduras annually calculates estimates of people living with HIV (PLHIV) using UNAIDS' Spectrum software. Previously, these were conducted at the national level, hindering their use to guide measurable HIV case-finding efforts at the subnational level.

With PEPFAR support, the MoH developed a methodology to distribute the estimation of PLHIV among the country's 20 health regions to develop subnational targets, gaps, and action plans to reach the 95-95-95 targets.

**Description:** PLHIV estimations for each of Honduras' 20 health regions were calculated by proportionally distributing the 2022 national PLHIV estimate (22,000) based on the percentage contribution to overall case notification by health region from 2012-2021.

This was multiplied by 95% to obtain the subnational target for the first 95%, i.e., an estimate of the number of PLHIV aware of their status. Subnational targets for the conditional second and third 95%, estimated PLHIV on treatment and virally suppressed respectively, were subsequently obtained.

Gaps to reach the 95-95-95 targets in each health region were calculated using programmatic data from MoH information systems including case notification, PLHIV on antiretroviral treatment (ART) and virally suppressed.

The gap to reach the first 95% was distributed among populations based on the estimated contribution of each group to new HIV infections in the latest Spectrum estimations, as follows: men who have sex with men (44%), clients of male and female sex workers (22%),

transgender women (6%), female sex workers (3%), people who inject drugs (1%). The remaining gap was assigned to general population males and females. Estimates were used to develop plans to reach 95-95-95 targets by health region.

**Lessons learned:** This exercise provided the MoH with an estimate of total PLHIV by health region and, by extension, of the gaps to reach each 95-95-95 target by 2030. The integration of local programmatic data into the calculation increased the acceptability of both the PLHIV estimates and the 95-95-95 targets by local health authorities.

**Conclusions/Next steps:** Subnational PLHIV estimates provide a framework for local health authorities to determine the scope of their HIV epidemic and to develop tailored plans to reach the 95-95-95% targets by 2030.

## WEPEC329

### My Personal Health Guide: an innovative digital health approach to supplementing clinical care HIV education using a relational agent in the stigma-free private space of one's mobile phone

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**Background:** As part of the effort of ending the HIV epidemic, we iteratively developed My Personal Health Guide, an innovative theory-informed app featuring a slow talking plain speaking realistic relational agent. Among its features are content about HIV that could supplement clinical care education by providing a stigma-free private learning and motivational space in one's own mobile phone.

We report preliminary findings from a randomized multi-state clinical trial in the US and hypothesized that the app would increase HIV knowledge.

**Methods:** YBMSM (18-34 years) living with HIV were recruited throughout the United States and randomized 1:1 to either My Personal Health Guide or a food safety attention control app. Participants had either nonoptimal adherence or retention in care problems (self-reported or provider referred) or recent viral nonsuppression.

We assessed health literacy with a modified REALM-SF. Nine HIV knowledge questions that corresponded to education offered by the avatar were asked at baseline and 6 months. App usage was voluntary.

**Results:** Among the 254 YBMSM from 23 states (57% Southern) who downloaded the app (n=125 intervention vs. n=129 control), 149 were retained and followed for 6 months at the time of analysis. Fifty-six participants (37.6%) had nonoptimal literacy and 23 (15.4%) reported

being homeless during the RCT. Median years since HIV diagnosis = 6. The average knowledge score changed from 64.7% to 71.0% in the intervention group and 64.1% to 64.2% in controls. Average change in knowledge was 6.2 points higher in the intervention group compared to the control group (95% CI: 0.67, 11.69).

Among knowledge questions, the most improvement was observed for defining HIV resistance (39.2% of intervention group participants improved their answer versus 12.9% of controls).

**Conclusions:** We developed an intervention that may enhance care for a population underrepresented in clinical trials who experience many barriers to antiretroviral adherence and retention.

Despite high loss to follow-up, long duration interval between baseline and follow-up, nonoptimal literacy, homelessness, and passive delivery, the direction of change in knowledge was favorable suggesting that this relational agent digital health approach may be promising.

Future study should include other populations and require active engagement to better assess potential impact.



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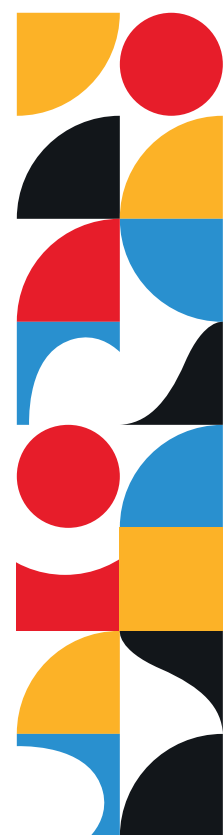
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## Social science theories, concepts and methods

### WEPED330

Mapping PrEP use cascades in the Netherlands under the internalised homonegativity "storm" and sexual self-efficacy "sunshine": where do MSM need an umbrella and where do they need sunglasses?

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**Background:** Oral PrEP is pivotal in curbing new HIV infections and linking individuals to PrEP-related care/services. However, PrEP use can be influenced by psycho-social factors like internalised homonegativity (IH) and sexual self-efficacy (SSE, e.g. confidence to say no to sex). This study mapped the nationwide PrEP use cascade (uptake, suboptimal adherence, discontinuation) among MSM and explored their ecological associations with IH and SSE in the Netherlands.

**Methods:** Data from a Dutch subsample (n=1,102) of PROTECT, an online cross-sectional survey among MSM obtained from October-December 2023 were included. PrEP use cascades, IH, and SSE (measured on a 1-5 Likert scale) were aggregated at the regional level using postcode data I.

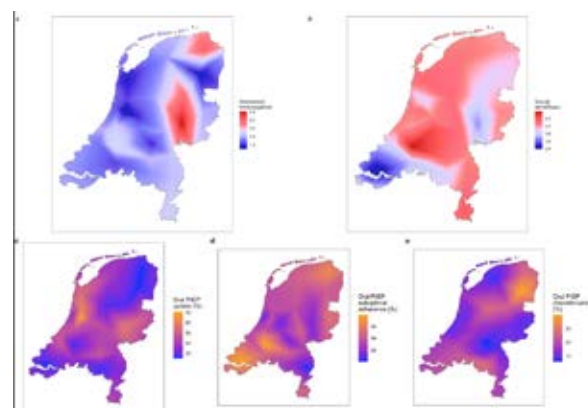
Using a stochastic partial differential equation approach based on Gaussian random field, we mapped the prevalence of each PrEP use cascade, IH "storm" and SSE "sunshine". Ecological regression was then employed to explore the potential spatial associations of IH/SSE on each PrEP use cascade.

**Results:** Figure below illustrates the estimated geostatistical PrEP use cascades, IH (range 1.7-2.6), and SSE (3.4-4.4) in the Netherlands. Nationally, PrEP use cascades vary consistently and heterogeneously: uptake (25.0%-70.9%), suboptimal adherence (10.4%-49.7%), and discontinuation (5.7%-39.8%).

Higher PrEP uptake, lower PrEP suboptimal adherence and lower PrEP discontinuation concentrate around more urban areas, while the opposite cascades concentrate around more rural areas.

Ecologically, higher geostatistical IH was found to be associated with lower uptake ( $B=-1.21$ ), higher suboptimal adherence ( $B=0.54$ ), and higher discontinuation ( $B=1.17$ ) of PrEP.

Conversely, higher geostatistical SSE was found to be associated with higher uptake ( $B=0.36$ ), lower suboptimal adherence ( $B=-0.10$ ), and lower discontinuation ( $B=-0.427$ ) of PrEP.



**Conclusions:** Optimal PrEP use cascades are identified in urban areas of the Netherlands, characterized by lower local IH and higher local SSE.

To promote PrEP use and maximise its public health benefits, interventions/actions should also consider the psycho-social "climate" of MSM, umbrellaing the IH "storm".

### WEPED331

Tuning into transgender realities: analyzing minority stress through the *Purple Royale* podcast in Zimbabwe

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**Background:** This research explores the lived experiences of the transgender community in Zimbabwe. Applying Meyer's minority stress theory (MST), the study aims to understand the proximal and distal minority stress processes, coping and social support mechanisms, and mental and physical health outcomes affecting this community.

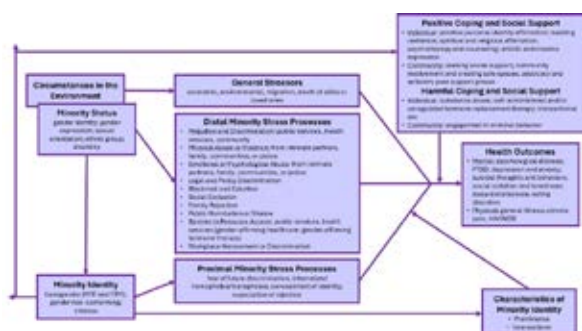
**Methods:** We conducted a qualitative, directed content analysis of 19 episodes of the *Purple Royale* podcast produced in 2022 and 2023. Each episode describes the first-hand lived realities of sexual and gender minority (SGM) populations, totaling 28 unique narratives. Using Dovetail software, we transcribed the podcast recordings.

Focusing on the personal narratives in each episode, two trained coders analyzed the transcriptions alongside the audio recordings, developing a comprehensive codebook grounded in MST.

Within each episode, we coded every distinct mention of minority stress processes, coping mechanisms, and health outcomes, in addition to the demographic details provided by each narrator.

This approach, emphasizing the individuality of experiences, ensured a rigorous analysis with an intercoder reliability of 93%.

**Results:** The analysis highlighted prominent distal minority stress factors, including community prejudice and discrimination (n=34), family rejection (n=31), community-instigated psychological abuse (n=17), and public humiliation (n=16). Proximal stressors included fear of future discrimination (n=15), internalized homophobia/transphobia (n=14), and identity concealment (n=13). Mental health outcomes were alarmingly prevalent, with psychological distress (n=34), PTSD (n=32), depression and anxiety (n=23), and suicidal thoughts (n=9) being most common. However, we documented more positive than harmful coping mechanisms, such as positive identity affirmation (n=21), resilience building (n=13), and community involvement (n=12).



**Conclusions:** The findings underscore the profound impact of minority stress and the harsh realities faced by transgender Zimbabweans. These insights highlight urgent needs for mental health support, gender-affirming healthcare, and accessible HIV services. Understanding and addressing minority stress processes, particularly in the context of HIV, is critical to improving the health of SGM communities in Zimbabwe.

## WEPED332

Examining the relationship between psychological wellbeing, self-efficacy, resilience, and depression among people with HIV

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**Background:** Depression is more prevalent in people with HIV (PWH) compared to people without HIV (PWoH). While prior research has identified HIV-related biomarkers of depression among PWH, this study examines the relationship between depression and intervenable psychological factors such as Psychological Wellbeing, Self-Efficacy, and Resilience in PWH.

**Methods:** Data were derived from participants at the HIV Neurobehavioral Research Program between 2015-2022. PWH and PWoH were included if they completed both the

Beck Depression Inventory-II (BDI-II) and the NIH Toolbox Emotion Battery Psychological Wellbeing and Self-Efficacy scales at two separate visits and the Connor-Davidson Resilience Scale and demographic, medical, psychiatric, and substance use measures on at least one visit. We used mixed-effects models with subject-specific random intercepts or linear regression to examine bivariate relationships between variables of interest.

All variables having a bivariate association with BDI-II at  $p \leq 0.15$  were then included in a multivariable analysis and retained in the mixed-effects model if the association with BDI-II remained at  $p < 0.15$ .

**Results:** 235 participants (n=172 PWH; n=63 PWoH) met inclusion criteria. PWH had higher (worse) BDI-II scores (coefficient: 0.209; 95% CI: [0.088, 0.331]) and lower Psychological Wellbeing (coefficient: -3.103; 95% CI: [-5.704, -0.503]) as compared to PWoH, but were comparable on Self-Efficacy and Resilience. Multivariable analysis demonstrated that lower Psychological Wellbeing, lower Self-Efficacy, antidepressant prescription, and lifetime unipolar mood disorder were associated with higher BDI-II scores (Figure).

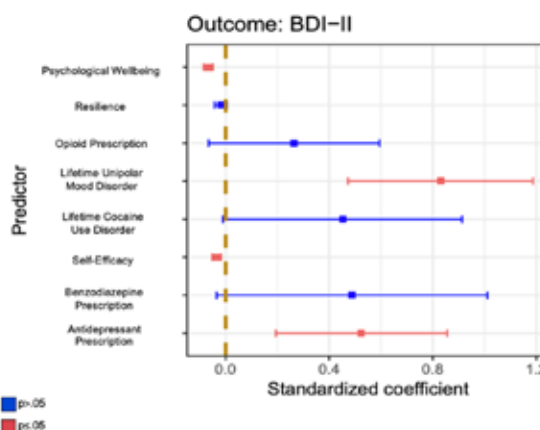


Figure. Results of multivariable model examining relationship between BDI-II and predictors with  $p < 0.15$ .

**Conclusions:** PWH, compared to PWoH, had greater depressive symptom severity and lower Psychological Wellbeing. However, lower Psychological Wellbeing, but not HIV, was associated with greater depressive symptom severity in the multivariable model.

This suggests that psychosocial conditions differentially affecting PWH might help to explain the higher burden of depression among PWH. Future studies of depression among PWH should measure Psychological Wellbeing and examine if and how targeting Psychological Wellbeing reduces depressive symptom severity among PWH.



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## WEPEP333

Methodological innovations to understand, say-do' gaps in acceptability studies: generating end-user insights on HIV broadly neutralizing antibodies in India through gamified behavioral experiments

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<sup>5</sup>C-SHaRP, Chennai, India

**Background:** Broadly neutralizing antibodies (bNAbs) represent a new class of HIV prevention products that have shown promise in early-phase clinical trials. To understand drivers of acceptance and uptake of bNAb-based HIV prevention products, especially in comparison to other HIV biomedical prevention options on the horizon, IAVI conducted a study with Humsafar Trust, C-SHaRP, YRGCARE and FinalMile among HIV key populations across three cities in India. However, an important challenge was to preemptively identify decision pathways where stated preferences could potentially diverge from observed behavior, leading to the dreaded "say-do" gap (Strauss et al., 2018).

**Methods:** To address this challenge, we conducted simulated behavioral experiments (n=94) leveraging a conundrum game (Sgaier et al., 2017) across Chennai, Delhi and Mumbai with men who have sex with men, trans-gender women, female sex workers, people who use injectable drugs, and youth.

The experiments engaged participants in a sequence of immersive scenarios mimicking real-life scenarios and asked them to make rapid choices on product use decisions. The emotional appraisal framework (Scherer, 2018) was employed to guide analysis on identifying decision levers, critical inflection points and preference reversal pathways.

**Results:** The conundrum games identified four stable drivers of product choice:

1. Intrinsic product pleasantness and appeal;
  2. Safety and minimal side-effects;
  3. Privacy and opportunity for discreet use; and,
  4. Avoiding stigma resulting from association with HIV.
- They also noted compromises and reversals in stated preferences around pain tolerance and dosing, especially when confronted with trade-offs in more stable preferences.

**Conclusions:** Gamified experiments offer significant advantages in behavioral evidence-generation around product acceptability by:

- a. Making questions around hypothetical product choices more tangible and relatable through simulation and immersion;
- b. Facilitating depersonalization by taking the spotlight away from the participant and minimizing social bias through role-play; and,

c. Identifying non-conscious drivers of choice associated with preference reversal through in-game incentives and rapid response times that limit opportunity for conscious consideration.

Product developers can benefit greatly by studying end-user preferences through such gamified and simulated experiments to develop a better understanding of factors that can potentially enhance or impede the uptake of vaccines and biomedical products in real-world settings.

## WEPEP334

Novel patient reported experience measure shows organizational trauma resilience mediates effect of complex post-traumatic stress disorder on antiretroviral therapy adherence

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**Background:** Post-Traumatic Stress Disorder is highly prevalent among people with HIV (PWH) in the United States (~50%) and associated with reduced Antiretroviral Therapy (ART) adherence. Unknowns are effects of the more chronic Complex PTSD (C-PTSD) and the potentially mediating role of Organizational Trauma Resilience (OTR)—extent care is perceived as safe, stable, and nurturing. Exploration of these novel measures could uncover modifiable factors for HIV care organizations (HCOs).

**Methods:** During summer 2023, PWH receiving services from a community-based HCO in urban Tennessee completed a REDCap survey assessing C-PTSD from the International Trauma Questionnaire, five items from the AIDS Clinical Trials Group Adherence Questionnaire on reasons for missed doses, responses from a novel instrument, and the Organizational Trauma Resilience-Patient Reported Experience Measure (OTR-PREM). The Baron & Kenny approach was used to determine if OTR mediated the relationship of C-PTSD with ART adherence (ordinal outcome), when adjusting for demographic factors (race, sexual orientation, education, age, and receipt of mental health care in previous two years), using ordinal logistic regression. R/RStudio version 3.6.0 was used for all analyses and graphical representations of data in conjunction with the R packages haven, lavaan, openxlsx, and tidyverse.

**Results:** Among 114 participants, 75 (66%) were cisgender male, 73 (64%) same gender-loving, 56 (49%) White, and 49 (43%) Black, with a mean age of ~50 (SD=11.38); 27 (24%) met C-PTSD criteria. The OTR-PREM had excellent reliability.


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ity and validity (Cronbach's alpha coefficient=.960; mean of the total item correlation=.920), and adjusted models showed three sub-dimensions—Collaboration and Empowerment (CE), Trauma Responsive Services (TRS), and Impact of Provider Training (IPT)—were found to mediate the effects between C-PTSD and reduced ART adherence. See Table 1.

Item	Predictor	Mediator	Direct	95% CI	Indirect	95% CI	Total	95% CI
Missed because fell asleep	C-PTSD	CE	0.148	(-0.56, 0.86)	0.556	(0.13, 0.98)	0.705	(0.09, 1.32)
	C-PTSD	TRS	0.175	(-0.56, 0.91)	0.529	(0.11, 0.95)	0.705	(0.09, 1.32)
	C-PTSD	IPT	0.496	(0.15, 1.15)	0.209	(0.02, 0.40)	0.705	(0.09, 1.32)

Note: Results are from adjusted models, with direct effect indicating effect of exposure on the outcome absent the mediator; the indirect effect as the effect of the exposure on the outcome explained by the mediator; and the total effect as the combination of the direct and indirect effects, indicating the mean difference between exposed/unexposed groups for outcome measure, without regard to mediation. Mediator dimensions are from the Organizational Trauma Resilience—Patient Reported Experience Measure: IPT= Impact of provider training; TRS= Trauma responsive services; and CE= Collaboration and empowerment.

Table 1. Effects between ART adherence, OTR dimensions, and C-PTSD.

**Conclusions:** OTR mediated the effects of C-PTSD on ART adherence, underscoring the urgency of fostering OTR culture in HCO's to improve HIV outcomes.

## Social and behavioural aspects and approaches to HIV and living with HIV

### WEPED335

The interaction between HIV-related stigma and social support on antiretroviral therapy (ART) adherence self-efficacy among adult PLHIV in South Africa

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**Background:** People living with HIV (PLHIV) grapple with distinct challenges, including HIV stigma which affect their antiretroviral therapy (ART) adherence self-efficacy. This study investigated the interaction of HIV stigma and perceived social support on ART adherence self - efficacy among adult PLHIV in South Africa.

**Methods:** Utilizing quantitative cross-sectional survey design 201 male and female participants were recruited using time location sampling (TLS) at a tertiary healthcare facility in Durban, South Africa.

**Results:** HIV stigma was significantly associated with self-efficacy ( $\beta = -7.860$ ,  $t = -4.654$ ,  $p = 0.001$ ), with variations across different stigma levels ( $\beta = -5.844$ ,  $t = -4.003$ ,  $p = 0.001$ ). Social support was significantly associated with

self-efficacy at lower HIV stigma levels ( $\beta = 7.440$ ,  $t = 3.887$ ,  $p = 0.001$ ), in contrast to higher levels ( $\beta = -2.825$ ,  $t = 1.400$ ,  $p = 0.163$ ).

**Conclusions:** Social support significantly influenced self-efficacy, particularly at lower levels of HIV stigma, but the effect of support weakens as stigma intensifies.



Figure 1.

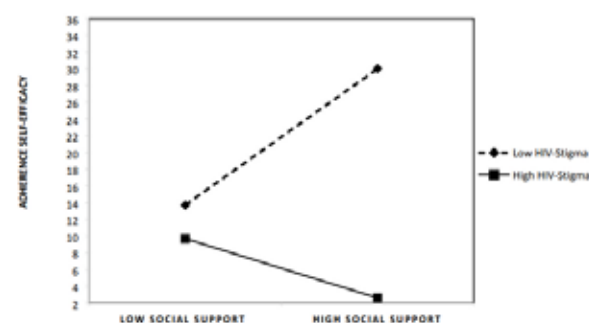


Figure 2. Simple slopes plot graph.

### WEPED336

Experiences of stigma and discrimination encountered by men who have sex with men on HIV service uptake in Nasarawa state, North Central, Nigeria

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**Background:** Stigma and discrimination pose significant barriers to healthcare access for PLHIV. In Nigeria, MSM faces substantial obstacles to utilizing HIV services, with 43% opting not to seek care due to pervasive stigma. Alarming trends indicate that HIV prevalence among MSM in Nasarawa state, Nigeria has not decreased, setting the stage for this study.

Therefore, this study looks at the experiences of stigma and discrimination encountered by MSM regarding service uptake.

**Methods:** This research conducted secondary data analysis of the 2020 Integrated Biological and Behavioral Surveillance Surveys (IBBSS). The study focused on MSM, FSW, PWID typology, selecting states based on specific criteria.





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For the MSM category, males aged 15+ who engaged in anal sex with another male in the past 12 months were included, utilizing a multistage probability sampling approach. In Nasarawa State, 372 MSM participants were targeted.

**Results:** The study's results unveiled various forms of stigma and discrimination experienced by MSM. A significant percentage reported negative comments from health workers (30.9%), unauthorized disclosure of their HIV status by health workers (24.2%), and being subjected to disparaging comments (70.2%), 70.8% expressed loss of respect, 43.8% endured verbal insults, harassment, and threats, and 76.1% disclosed that their HIV status was sometimes revealed without their permission by people. Consequently, 16.4% refrained from seeking HIV-related services due to the fear of stigma and discrimination.

**Conclusions:** This study reveals stigma and discrimination experienced by MSM, including negative comments from health workers, unauthorized disclosure of their HIV status, verbal abuse, and the reluctance to access services due to stigma.

These findings underscore the need to address this menace, ensuring that individuals, regardless of their sexual orientation, can access HIV services without the burden of prejudice. Combating stigma is essential for equitable healthcare access; immediate interventions are vital for addressing these problems in Nasarawa, Nigeria.

## WEPED337

Stigma and discrimination among elderly women living with HIV: a qualitative study in a peri-urban setting in Uganda

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**Background:** Although Uganda has achieved notable progress in HIV/AIDS prevention and treatment, the specific challenges faced by elderly women living with HIV remain poorly understood. This study explored the experiences of stigma and discrimination among elderly women living with HIV, including former sex workers. The study also explored strategies they employ to navigate the complex landscape of stigma and discrimination and foster resilience.

**Methods:** Employing semi-structured interviews in a peri-urban area near Kampala in Uganda, we interviewed 40 elderly women living with HIV. In-depth interviews were held with ten elderly women who were formerly sex workers while focus group discussions were held with other elderly women with HIV. Thematic analysis was used to analyze the data.

**Results:** Our findings revealed a landscape saturated with stigma. Elderly women living with HIV encounter societal ostracization within the communities. They report-

ed experiencing neglect and abuse at health facilities. For former sex workers, the burden of past social marginalization compounds their present struggles, hindering access to services and support in the community.

Despite these hardships, the women displayed remarkable resilience. They forge informal support groups and find solace in faith and religious practices.

**Conclusions:** This research highlights the multifaceted experiences of elderly women living with HIV including those who were formerly sex workers in a Ugandan peri-urban setting. It urges healthcare providers, policymakers, and community leaders to develop age-inclusive and inter-sectional interventions that address the unique needs of this often-overlooked population.

## WEPED338

If you make it simpler, they will use it! Applying behavioural principles to improve adoption of data management guidelines: insights from South Africa's MMC Programme

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**Background:** South Africa's medical male circumcision (MMC) programme has achieved great scale, with over five million men circumcised since 2010. However, the availability of accurate, complete data for decision-making is compromised by low compliance with the country's data management standards, especially among Department of Health officials. MMC SUSTAIN is a technical assistance programme that empowers government officials to lead a locally coordinated and implemented MMC programme in eight high HIV-burden South African districts.

**Description:** We conducted key informant interviews with officials at the National Department and target districts to understand their behavioural barriers to MMC data management. A major obstacle uncovered was the sheer volume and scope of related policies, guidelines, and tasks.

This resulted in cognitive overload, forcing officials to rely on present bias and focus on familiar and simple tasks, such as data reporting, instead of those they deemed difficult or tedious, such as data analysis and verification. Next, we extracted and validated the most relevant information from diverse sources and packaged them into user-friendly materials, including infographics, automated tools, and checklists.

We socialised users on the materials using a peer-led approach to boost social desirability and through targeted communications, such as newsletters and orientations. To institutionalise their use, we incorporated the mate-

rials into the programme induction pack for new staff and made materials available through the national MMC Knowledge Hub.

**Lessons learned:** An independent programme review conducted in 2021 demonstrated that our interventions effectively improved government officials' compliance with MMC data management standards. Respondents reported that our interventions "made life easier" and "strengthened oversight". More encouragingly, there has been an observed improvement in programme management and governance, as evidenced by the institutionalisation of routine data verification exercises in all eight districts.

**Conclusions/Next steps:** Our experience demonstrates the potential for using simple behavioural interventions in institutionalising desired tasks in low-resource settings. As global efforts towards sustainability and local capacity building gain momentum, our experience can serve as an example for implementing partners seeking evidence-based methods to inform their transition planning.

## WEPED339

"I don't know how to handle my relationship with getting this treatment"- life on antiretroviral therapy. A mix methods study on people's journeys to obtain ART in South Africa

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**Background:** In the post apartheid era, South Africa remains a highly mobile society with people constantly moving for work and family obligations. While this requires that people with HIV can transfer from one clinic to another, the system remains complex.

We investigated people's journeys navigating the challenges of transferring between HIV clinics in the public sector.

**Methods:** Data were collected from March to October 2023. We used an HIV electronic register in KwaZulu-Natal to compile information on people's journeys between public sector clinics for antiretroviral therapy (ART). Quantitative data were collected from 62 people found to be virally suppressed at treatment initiation at 2 clinics.

We then conducted in depth qualitative interviews with 18/62 people collecting ART from clinics. Interviews were conducted in isiZulu, transcribed and translated into English. Thematic and deductive analysis were conducted.

**Results:** From the HIV electronic register, 17/62 (27%) had previous ART records from other clinics and 14/62 (23%) had previous records from the same clinics, suggesting re-entry into care. We illustrate this finding with two case studies: a 37 year old female farm worker who moved around for work and a 47 year old male construction worker who moved between work sites.

The individuals used multiple strategies to obtain ART after moving to new areas. In both cases, when they presented to their new clinic, they were told they could not access care until they obtained transfer letters from prior clinics. Unable to return to prior centres, they presented to a third clinic stating they were ART naïve, retested and opened new files.

To avoid detection about their status, they changed their names when registering. They also engaged social supporters by asking them for ART. They paid between US \$5-8 for a 28 pill packet to these supporters. Finally, they asked for pills from partners, relatives and community members.

**Conclusions:** People living with HIV who move for work have developed strategies to address the barriers they encounter to obtain ART. Desensitization of clinic staff about challenges faced by migrants could help facilitate transfers between clinics. A linked electronic system could also allow transfers without physical letters.

## WEPED340

Socio-economic vulnerability, isolation, violence, and discrimination: depression severity and associated factors among transgender women living with HIV (ANRS-Trans&VIH, France)

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**Background:** Women, transgender individuals, and people living with HIV are at higher risk of depression—a factor associated with HIV-treatment adherence. Transgender women living with HIV (TGWLWH) face intersecting social positions, putting them at risk for higher rates of



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depression; data is scarce regarding their mental health. This analysis aims to describe depression severity among TGWLWH and identify associated factors.

**Methods:** ANRS-Trans&VIH (2020-2022) is the first comprehensive, French, cross-sectional study of TGWLWH accessing HIV treatment, with longitudinal, retrospective data. Community-based interviewers administered a face-to-face standardized life-event history, sociodemographic and medical questionnaire to 536 participants in 36 HIV-care units. Depression was measured using the PHQ-9 instrument. Bivariate analyses were conducted and multivariate associations were estimated using multinomial logistic regression.

**Results:** 489 participants completed the PHQ-9, and were included. Median age was 43 (IQR:36-50), 14% had French nationality, 84% were born in Latin America, and median years since HIV diagnosis was 13 (IQR:7-20). Prevalence of mild (MD) and moderate-to-severe depression (MSD) was 32% and 25%, respectively. Lifetime physical violence was 65%, lifetime sexual abuse was 45%, and recent mistreatment on the street was 42%.

In multivariate analyses, precarious health insurance, recent medical discrimination, lifetime sexual abuse, and social isolation were associated with MD and MSD. Lifetime physical violence and at-risk alcohol consumption were associated with MD. Recent mistreatment on the street, and having had a psychiatrist consultation in the context of gender-affirmative-care under French protocol were associated with MSD.

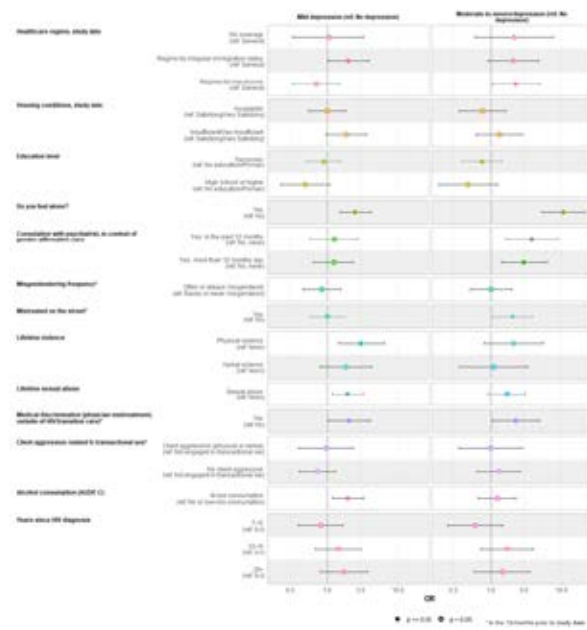


Table 1. Multivariate associations with depression severity, ANRS-Trans & VIH (2020-2022).

**Conclusions:** Results indicate a higher prevalence of depression compared to the general population. As expected, depression among TGWLWH seems to be driven by discrimination. However, socio-economic vulnerability, structural violence, and isolation seem to weigh as heavily on their mental health. Further research is needed regarding access to gender-affirmative-care services, and

the identification of appropriate interventions at the clinical level. Interventions addressing structural vulnerability and systemic transphobia should be prioritized.

## WEPE341

Public awareness towards the U=U statement: a multi-country survey (Austria, Greece, and Switzerland)

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**Background:** People with HIV (PWH) on effective antiretroviral therapy who achieve and maintain undetectable viral load cannot sexually transmit the virus. This message known as U=U (Undetectable equals Untransmittable) has the power to reduce HIV-associated stigma. Stigma is a significant barrier impacting early diagnosis, retention in care or access to specialized services, and negatively impacts quality of life for PWH.

This study aimed to evaluate public awareness, understanding and acceptance of U=U in three European countries: Austria (AT), Greece (GR) and Switzerland (CH).

**Methods:** We conducted three HIV public opinion surveys, using a questionnaire with closed-ended questions, to understand public opinion towards HIV transmission, PWH and U=U in 2021 (GR) and 2023 (AT, CH). Participants (age ≥18 years) were randomly selected and representative quota sampling across demographic variables such as age, gender, educational level, and geographic location within each country was ensured. Participants were recruited by a panel institute able to provide representative population surveys in each country.

**Results:** A total of 3969 individuals (AT:1000, CH:1015, GR:1954) participated in the surveys (49.0% male, 50.8% female, 0.2% diverse). On average, 64% of participants (AT:69%, CH:76%, GR:55%) stated that they were informed about HIV and 77% (AT:77%, CH:75%, GR:78%) agreed that, due to modern ART, HIV is no longer a deadly but a manageable chronic condition. Approximately 22% (AT:26%, CH:22%, GR:20%) understood the U=U message.

In contrast, 21% (AT), 20% (CH) and 29% (GR) believed that PWH are "a danger to society" and 8% (AT), 5% (CH) and 28% (GR) "not able to work at regular jobs", and 14% (AT, CH) and 25% (GR) would not start a friendship with PWH. Results were similar across gender, age, and education level groups. Knowledge about U=U was slightly greater among people living in urban areas.

**Conclusions:** U=U is a message with limited recognition that is not well understood by the public across 3 European countries. This lack of knowledge is accompanied by HIV-associated stigma. Effective awareness campaigns are needed to spread the U=U message and help foster a more informed and supportive public stance towards PWH.

## WEPEP342

'They think when you go for HIV testing you are a prostitute and suspected to have HIV': client perspectives of HIV treatment services from community-led monitoring in South Sudan

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**Background:** Adherence to ART is a major challenge in resource limited settings. Communities emerging from recent conflict bear the brunt of low-quality services partly attributed to limitations of conventional, top-down models of design and implementation characterized with no engagement and involvement of affected persons. Community-led monitoring (CLM) models have shown promise in improving quality of services in resource limited settings. It is important to determine the influence of CLM on quality of services from clients' perspectives.

This qualitative study examined the perspectives of ART patients attending 22 PEPFAR funded HIV treatment facilities in 4 states of South Sudan undertaking CLM of quality of services.

**Methods:** Between January – October 2023, utilizing a CLM Citizen Social Science design, and following informed consent, client, health worker and community member interviews (n=1323); and facility observations (n=53) were conducted to understand the perspectives of clients at a total of 22 sites across 11 counties in South Sudan. Thematic content analysis of the interview transcripts was undertaken with the aid of Atlas ti software.

**Results:** Half the participants (50.1%, n=663) were females with a median age of 35 years, reflective of the young population as majority in South Sudan. 48.1% (n=637) had attained primary level or no education. Clients with previous negative experiences with ART services prior to CLM

implementation reported improved quality of services including shorter time spent at the clinics (48.4%, n=640), improved ambience and general cleanliness (60.2%, n=796), greater sense of security at the facility (62.8%, n=831), availability of drugs and supplies and improved health care providers' attitudes and practices towards patients.

These experiences potentially improved their adherence to treatment. Participants' perceived reduction in stigma and discrimination revealed positive perspectives about the CLM model.

**Conclusions:** With the inevitable scale-up of HIV treatment in conflict settings like South Sudan, focusing on efforts to improve quality HIV care services will positively impact patient advocacy and adherence to treatment. The CLM model appears to strength efforts to influence adherence to ART and in turn further reduce new infections in the region.

## WEPEP343

Implementation of a hybrid online-offline intervention to address HIV stigma and gender disparity for women living with HIV in Vietnam

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**Background:** Women Living with HIV/AIDS (WLHA) encounter significant challenges due to HIV stigma and gender disparities. Moreover, in Vietnam's patriarchal society, WLHA often face additional stigmatization for being perceived as not adhering to traditional female virtues and/or unable to fulfill expected family caregiving roles.

This multifaceted stigma and the associated vulnerabilities significantly impede WLHA from seeking necessary HIV treatment and comprehensive healthcare services.

**Methods:** During 2021-2022, the study team developed an intervention combining three modalities: in-person, Zoom, and Zalo (the most popular Vietnamese social media platform) and piloted it with 91 WLHA in Hanoi, Vietnam. The intervention included two in-person sessions, "EMPOWER SELF" and "ENGAGE SUPPORT," focusing on reducing internalized stigma, active coping, effective communication for service-seeking and disclosure, and enhancing family relationships. The "LIVE WELL" Zoom session emphasized health service utilization and overall well-being.

Additionally, a 15-week Zalo curriculum was designed for weekly check-ins to monitor participants' health, reinforce in-person/Zoom session contents, and facilitate resource sharing and support among WLHA participants.

**Results:** There were varying levels of engagement by intervention modalities and participant characteristics. The in-person groups saw higher attendance among those who were unmarried (82% of unmarried WLHA at-



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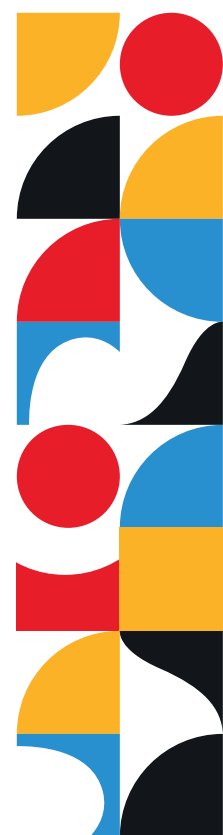
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tending both sessions, compared to 48% of their married counterparts;  $p=0.0021$ ) and unemployed (79% vs. 52%;  $p=0.0184$ ). There were temporal fluctuations in in-person session attendance, and the attendance dipped before major lunar holidays.

Only 35 of the participants attended the Zoom session, with work schedule conflicts (19 participants), family responsibilities (9 participants), and technical issues (7 participants) being the main barriers.

The Zalo groups were highly engaging, with 9,307 messages exchanged over six months, featuring spontaneous sharing of employment/health resources and coping strategies.

**Conclusions:** These findings underscore the importance of tailored approaches that consider the WLHA's social/familial responsibilities and digital literacy when implementing an online-offline hybrid intervention.

The employment of mobile technologies, such as widely used social media platforms like Zalo, has a high potential to offer accessible and convenient support to WLHA in Vietnam.

However, additional technical assistance and support are warranted for Zoom to be an effective intervention delivery platform.

## WEPED344

### Understanding experiences of depression amongst adolescents living with HIV in Malawi

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**Background:** Sub-Saharan Africa has the world's largest population of adolescents living with HIV (ALWH). Compared to adults in the region, ALWH have lower rates of viral suppression and greater rates of lost loss to follow-up. ALWH are at risk of depression, which in turn affects adherence to medication and engagement in HIV care.

This study explored the experiences of adolescents living with HIV and experiencing depression in Malawi to inform intervention development.

**Methods:** We conducted in-depth interviews, focus group discussions, and social support mapping with 25 adolescents living with HIV (ALWH), 13-19 years, diagnosed with depression to understand their experiences living with HIV and experiencing depression. ALWH were screened with the Beck's Depression Inventory II (BDI-II). The interviews were transcribed and thematically coded using Dedoose.

**Results:** Most participants attributed their depression to stigma and poor relationships with family and peers as a result of their HIV status. They described feeling unwanted and less important when people discovered they were HIV positive and were on ART. Self-isolation, sadness, and anger about how they acquired HIV were common, as were feelings of worthlessness and suicidal thoughts. ALWH stated that depression affects their social lives, academic commitments, relationships with family members, and HIV care, which leads to poor ART adherence and poor health. With their HIV status, some adolescents expressed uncertainty about achieving their goals. In addition to taking away their confidence, this uncertainty increases their sadness. There was good knowledge of the burden of depression but participants were not aware of the available treatment options and where to access care.

**Conclusions:** Addressing depression among adolescents is essential for addressing their mental and HIV-related health. Mental health interventions should be tailored to the needs of this population, including providing education and access to mental health services. The findings will inform the development of an intervention that can be implemented in countries with unmet needs for psychosocial counseling and support.

## WEPED345

### Acceptability of point-of-care urine tenofovir testing for ART adherence monitoring in South Africa

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**Background:** Point-of-care urine tenofovir (POC TFV) testing may detect adherence issues more accurately than self-report and earlier than viral load testing. We aimed to assess the acceptability of monthly POC TFV testing among people living with HIV (PLWH) initiating ART and healthcare workers (HCWs) in KwaZulu-Natal, South Africa.

**Methods:** We conducted semi-structured in-depth interviews (IDIs) with eight HCWs and 20 PLWH who were enrolled in STREAM HIV (NCT04341779), a randomized controlled trial evaluating the effects of a monthly POC TFV



testing intervention to monitor ART adherence in the first five months of treatment. Participants were actively engaged in the testing process and results interpretation. We purposively sampled intervention participants for IDIs at their six-month follow-up visit, aiming to achieve a diverse sample by sex, age, and POC TTV test results.

We coded and analyzed IDI transcripts to identify themes and assess the overall acceptability, preferred form of adherence monitoring among PLWH, and willingness to use the intervention among HCWs.

**Results:** All PLWH and HCWs were highly accepting of monthly POC TTV testing over the first five months of treatment. All PLWH preferred POC TTV testing over self-reporting their adherence, and all HCWs were willing to use POC TTV testing to monitor ART adherence. Generally, POC TTV testing was perceived to be low-burden, have few opportunity costs, and have several positive effects.

The most common reasons for liking the intervention included motivation for improving adherence, accountability for adherence, facilitated adherence counseling, recognition for good adherence, and being included in the testing process. Positive effects mentioned included consistent ART adherence, strong client-provider relationship and communications, and accurate self-reporting of adherence.

Negative perceptions included fear and anxiety about test results, discomfort with providing urine, and concern about the test's utility for PLWH with consistent adherence; but these concerns did not affect their overall acceptability of the intervention.

**Conclusions:** Among HCWs and PLWH initiating ART in South Africa, monthly POC TTV testing was highly acceptable, preferred over self-report, and perceived to have many benefits. POC TTV testing holds promise as an acceptable and beneficial tool for motivating optimal ART adherence, improving adherence monitoring, and improving client-provider relations.

## WEPED346

### Removing socio-economic and structural barriers for the return of interrupting treatment clients

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**Background:** Adherence continues to be a major barrier to successful treatment of highly active antiretroviral for People Living with HIV. Non-adherence to ART medications result in the multiplication of HIV and this increases the risk of drug resistance and HIV treatment failure. Poor adherence also leads to the destruction of the immune system thereby making it difficult for the body to fight off diseases. Factors affecting non-adherence are related to PLHIV, the medication and the system of care. In this study, we have chosen to examine factors that are related to client care among interrupting treatment clients.

**Description:** Quarterly data quality assurance exercises are carried out at 84 ART health facilities in the Western, Western North and Ahafo regions in Ghana to assure quality data reporting. Review of programmatic data revealed that 43% of individuals had interrupted treatment. A meeting was held with ART staffs, case managers and PLHIV to identify the causes of skipping treatment. Factors identified included stigma and discrimination, long distances to ART sites and poor transportation networks.

These findings were discussed to the Regional and District Health authorities in the operational sites. Stakeholders' meeting was convened to discuss the social and structural barriers identified. There was a consensus from the meeting to train 54 midwives at Community Health Planning and Services Compounds (CHPS) as medication pick-up points. The training was based on national curricula in line with differentiated service delivery strategies. CHPS are widely located in almost every community. This allows clients choices in deciding where to go for re-fill.

**Lessons learned:** The trained 54 midwives at the 27 pick-up points are sustaining the provision of improved HIV services.

Overall, 225 PLHIV who had previously interrupted treatment were offered enhanced adherence counselling and given the opportunity to decide where to go for re-fill. One hundred and twenty-one (121) out of the 225 (53.77%) PLHIV go for re-fill from CHPS of their choice thereby minimizing transportation costs and avoiding stigma.

**Conclusions/Next steps:** Service providers and Program Mangers should solicit client feedback to help remove remove social and structural barriers impeding access to and retention in care.

## WEPED347

### Motivating HIV-positive sex workers for ARV adherence: a success story from Manthan Foundation

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**Background:** Established in 2010, Manthan Foundation actively supports around 3000 Female Sex Workers (FSWs) in Pune's Budhwar Peth red light area. It has recently introduced the Annapurna program (2022-23) in which a dry nutrition kits were distributed to 90 HIV positive FSWs for one-year. This was also supported by other strategies. The foundation's observation revealed that not all FSWs were undergoing regular viral load testing.

This study identifies key barriers to adherence, such as fears related to ARV side effects and concerns about taking medications without proper nutrition. The program aims to address challenges in Antiretroviral (ARV) adherence among FSWs.



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**Description:** In support of the U=U (Undetectable = Untransmittable) campaign, the Manthan Foundation has considered three approaches, including dry nutrition food kits. They've been doing regular counselling, visiting on-site, and organizing support group meetings to encourage FSWs to stick to their ARV medication schedule. They decided to do these extra things because some FSWs lacked confidence due to not being able to read and not knowing much about medicines.

**Lessons learned:** All the strategies have produced significant results, as evidenced by the successful suppression of viral loads among all HIV-positive female sex workers after one year. Out of 90 FSWs tested, 8.88% exhibited viral unsuppression before the study.

After applying four strategies they become virally suppressed. 92% FSWs remain suppressed after one year. Food kit helped in maintaining the health of FSW. Counselling improved mental health whereas sight visits created a sense and belief among FSWs that someone cares for them.

The success of this program for formation of Community ART Refill Group (CARG) as per the National Guidelines for HIV care and treatment, by National Aids Control Organization, Ministry of Health, Government of India.

**Conclusions/Next steps:** The Manthan Foundation will attempt to replicate its success story among transgender individuals and truck drivers. Significant efforts include leveraging technology to enhance ARV literacy. Serving as a community center, Manthan will establish a digital learning facility accessible via mobile phones, ensuring inclusivity for FSWs without smartphones.

Acknowledging information vulnerability arising from information illiteracy, the foundation emphasizes the importance of addressing this for the well-being of this high-risk group.

## WEPED348

Determinants and evolution of quality of life in people living with HIV: analysis of client-reported outcome data in the HIV clinic of Antwerp, Belgium, 2016-2023

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**Background:** With HIV evolving into a chronic disease, attention is shifting to the '4<sup>th</sup> 90': improving quality of life (QoL) beyond viral load suppression. Little is known, however, about determinants of QoL and how it evolves over time.

**Methods:** We analyzed routine data on QoL of people living with HIV (PLWH) followed-up at the HIV clinic of Antwerp between 2016-2023. We measured QoL through the WHO-QOL-HIV BREF (31 items) and assessed relevant psychosocial characteristics, including the Health Monitor (health control and acceptance). Using logistic regression we analyzed associations of QoL, adjusting for co-variables. Evolution of QoL across repeated measurements was calculated for a standardized time period (mean evolution score per year).

**Results:** We used data from N=1068 PLWH at baseline and n=470 at follow-up. The majority, 873 (82,6%) had a European and 183 (17,3%) a non-European nationality. Overall, 76,0% had a (very) good QoL, but those with non-European nationalities and heterosexual people scored significantly lower compared to those with European nationalities (68,9% vs 77,4%, p=.01) and homo- or bisexual people (72,0% vs 77,9%, p=.04), respectively. The lowest ranking items were anxiety and depression, satisfaction with sex life, and sleep quality. Acceptance of HIV status, nationality, sexual orientation, relationship status, subjective health, medication adherence, comorbidities and perceived control were positively associated with QoL after controlling for co-variables. Those with high acceptance were 8,2 (CI: 4,9 – 14,1) times more likely to have a good QoL. The longitudinal analyses revealed a significant, but limited improvement in QoL over time: a mean increase per year of 1,18 (CI: 0,8 – 1,6) on the WHO-QOL-BREF score. After controlling for co-variables, perceived control was negatively associated with evolution in QoL.

**Conclusions:** 76% of PLWH in our sample had a good QoL. While this is an important achievement, it is below a potential target of 90%. PLWH with a non-European nationality had a lower QoL and may benefit from a targeted approach. Acceptance of HIV status was the strongest determinant of QoL and may thus be an important focus of interventions. The limited progress in QoL over time indicates the need for tailored interventions to improve QoL.

## WEPED349

Substance use, adolescent pregnancy and adverse social factors among young adults living with perinatally-acquired HIV in Argentina

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**Background:** Adults living with perinatally-acquired HIV (paHIV) face a high burden of HIV-related and non HIV-related complications. In Latin America, there is no available data regarding the social and behavioral aspects of

this population and their potential impact on HIV-related outcomes. This study aims to describe the prevalence of substance use, adolescent pregnancy, psychotropic medication prescription, incarceration and housing instability in a cohort of adults living with paHIV in Buenos Aires, Argentina.

**Methods:** Retrospective cohort study. PLpaHIV aged >16 linked to care in an HIV clinic in Buenos Aires, Argentina between Oct-2008 and Sep-2023 were included. Data was collected from clinical records and surveillance systems.

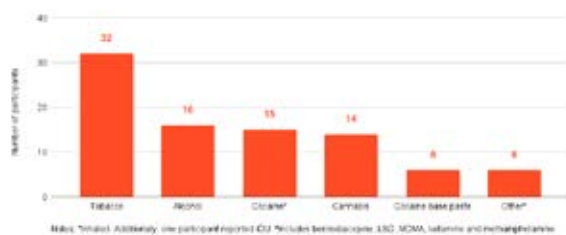
**Results:** A total of 169 PLpaHIV were included, characteristics of the study population are shown in table 1. Prevalences of substance use and tobacco smoking were 18% and 19%, respectively (Graphic 1).

There were 107 pregnancies in 54 women. Exact pregnancy dates could be ascertained in 95 cases, and 45% (43/95) were adolescent pregnancies. Prevalence of psychotropic medication prescription was 16%. At least one incarceration was experienced by 3% of the participants and 4% met unstable housing criteria.

	n/median (%/Q1-Q3)
Gender Cis women	101 (59.8)
Trans women	1 (0.6)
Cis men	67 (39.6)
Age at start of follow-up (years)	19 (18-21)
Individual follow-up (years)	5.7 (3.2-9.4)
Prevalence of advanced HIV disease (ever) <sup>1</sup>	109 (64.4)
Viral suppression <sup>2</sup> Participants with undetectable viral load in >90% of determinations	43 (25.4)
Participants without any undetectable viral load determination	38 (22.5)

Notes: <sup>1</sup>Defined as CD4 cell count <200 cel/uL and/or a WHO clinical stage 3/4. <sup>2</sup>Plasma viral load data was missing in 9 participants. Due to changes in the limit of quantification of the available assays, undetectable viral load was defined as <400 copies/mL until 2011 and as <50 copies/mL afterwards.

Table 1 - Cohort characteristics (n=169)



Graphic 1. Frequency of substances used (n=89).

**Conclusions:** In our cohort, adults living with paHIV have a high prevalence of substance use, adolescent pregnancy and adverse social factors. These results highlight the importance of an interdisciplinary approach in the HIV services offered to this population. To our knowledge, this is the first non-biomedical description of adults living with paHIV in Latin America. Further research is needed to explore the potential association between our findings and HIV-related outcomes.

## WEPED350

### Using a behavioral change communication intervention to create demand and enhance PrEP uptake in South Sudan

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**Background:** Pre-exposure prophylaxis (PrEP) was first rolled out in South Sudan by the Ministry of Health, with PEPFAR support through USAID's Advancing HIV Epidemic Control Activity (AHEC), implemented by IntraHealth International with local partners. Implementation commenced in September 2022, focusing primarily on key populations. By September 2023, South Sudan had enrolled only 2,416 clients compared to a national target of 4000. This low uptake was attributed to the communities' lack of PrEP information, fear of medication burden, stigma and myths about PrEP being medication only for HIV-positive youth, men, and women.

**Description:** In January 2023, IntraHealth developed communication strategies focused on behavioral change and integrated the intervention into primary health care initiatives and the communities. This included raising PrEP awareness using flyers, community sensitization, health education to improve clients' HIV knowledge, and encouraged behavioral change using socially acceptable modalities. IntraHealth published PrEP success stories and collaborated with Jhpiego to enroll eligible adolescent girls and young women on PrEP.

**Lessons learned:** Structured communication, delivered through multi-media, interpersonal and group-level methods, can facilitate development of PrEP awareness and demand creation for marginalized populations by influencing policy, changing community attitudes, and raising awareness on the impacts of stigma and discrimination to break barriers to HIV service access, increase awareness of service availability and benefits, relieving clients' fear and anxiety. PrEP uptake in South Sudan has increased by 100 percent in a year, from zero in September 2022 to 2,416, in September 2023, following IntraHealth International's initiation of the behavioral change communication strategy in January 2023. Juba recorded the highest PrEP uptake, increasing from zero in September 2022 to 1,450 in September 2023, comprising 60% of the national total, increasing PrEP initiation by 100 percent. This behavioral change adoption resulted from the national commitment to scale-up HIV prevention interventions and strategies designed for key and priority populations.

**Conclusions/Next steps:** Development and implementation of a structured communications strategy is critical for creating demand for new HIV interventions to reduce



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the rate of new HIV acquisitions in South Sudan. Intra-Health International will support the Ministry of Health to develop national behavioral change communication strategies for HIV prevention in 2024.

## WEPED351

### Enhancing treatment literacy for people living with HIV: insights from a multi-country qualitative study

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**Background:** Research is needed to better investigate the gaps and challenges in treatment literacy among PLHIV in Malawi, South Africa and Zimbabwe to provide guidance for ways to improve communication and information sharing between healthcare providers and clients, particularly among key and vulnerable populations.

**Methods:** A diverse group of PLHIV including men having sex with men, transgender individuals, and female sex workers, were recruited from the community. Local research teams conducted 60-minute in-depth interviews with a total of 64 participants across the three countries.

**Results:** Interviews were conducted with 62 PLHIV (Malawi n=25, South Africa n=21, and Zimbabwe n=16). Thematic analysis revealed that PLHIV had good understanding of how to take their medication and messaging around compliance and consistency was clear. They had some understanding of why it was important to take ART and how it works, but there was room to strengthen their understanding particularly around U=U. Language used by HCPs was often overly clinical and difficult to understand or perceived as very and negative and critical.

A significant number of PLHIV also reported insufficient information about the potential side effects of their medication, leading to unrealistic expectations and inadequate management of side effects. Respondents generally had a low level of HIV literacy to start with, and persistent misinformation and rumours about ART in the community also belied a need for an ongoing dialogue with their providers about ART.

It was also revealed that information about HIV and ART was typically provided in a one-off engagement (at the point of diagnosis), while the reality of living with a chronic illness means that information about different issues will be required at multiple points along the way.

**Conclusions:** This study identified several ways in which communication about HIV and ART could be improved. Providing more information about how ART works and the long-term benefits of ART, providing information about side-effects so that clients know what to expect and how to manage them, and fostering a supportive

environment are crucial in improving treatment literacy to ensuring better health outcomes for PLHIV. Moreover, building treatment literacy should be viewed as ongoing process, rather than a one-off conversation.

## WEPED352

### Harmonizing faith and health: collaborative strategies for effective HIV interventions – Lessons from Malawi

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**Background:** Religious beliefs may sometimes deter access to health care of its members including HIV/AIDS services. PROPEL Health, Malawi has leveraged its partnership with Ministry of Health (MoH) and Faith Based Organizations (FBOs) and coordinated HIV/AIDS activities, data capturing, and planning. The eight FBOs have been provided with grants to reach men and boys with HIV services. Working at the decentralized level, FBOs work with the government team to mobilize faith community members for HIV testing, facilitating linkages to HIV care and supporting treatment adherence.

**Description:** FBOs have gone beyond demand creation through main church or mosque services. They have worked with government to provide HIV services at the places of worship and referred congregants to HIV care. At project design, FBOs workplans are co-created and align with government priorities. HIV messaging package development and HIV trainings are conducted by the Ministry of Health and faith leaders to ensure compliance to national guidelines.

The implementation includes a robust referral system, linking faith leaders/FBOs to health facilities, ensuring eligible clients receive HIV testing, treatment, and care. Referral slips are used in the process. Standardized reporting tools facilitate data sharing between FBOs and the Ministry of Health and provides audit trail for simplified supply chain reconciliation.

#### Lessons learned:

- Strong collaboration established between FBOs and Ministry of Health at all levels is a pivotal factor in ensuring alignment with national health strategies, priorities, and guidelines and being reported from the decentralised level to the national level.
- Leveraging FBOs' pre-existing structures for women, men, and youth streamlines targeted interventions, fostering efficient outreach and engagement. Use of religious stewards and volunteers optimizes the reach of the community in the human resource constrained public health system thereby ensuring sustainability.
- Standardizing Monitoring and Evaluation (M&E) tools with government tools across all FBOs ensures uniform data collection for data quality and validity thereby enhancing comparability of results.



**Conclusions/Next steps:** The collaboration between FBOs and government has demonstrated the effectiveness of aligning community-focused HIV/AIDS interventions with national health strategies, guidelines, and M&E tools. Moving forward, this model will be sustained, and lessons being learned will continuously be adapted.

## WEPED353

Multiple axes of social-structural marginalization associated with multi-faceted enacted HIV stigma in healthcare among women living with HIV in Metro Vancouver, Canada

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**Background:** Despite evidence suggesting enacted HIV-related stigma is associated with sub-optimal healthcare access and antiretroviral therapy (ART) adherence, limited research has investigated multi-faceted enacted HIV-related stigma within healthcare (i.e., denial of care, HIV status disclosure without consent).

The objectives of this study are therefore to identify the prevalence of, and social-structural factors associated with, enacted HIV-related stigma in healthcare among women living with HIV (WLWH).

**Methods:** Data were drawn from two years (September/20-Aug/22) of the SHAWNA Project (Sexual Health and HIV/AIDS: Women's Longitudinal Needs Assessment)—a longitudinal community-based open cohort with biannual interviews of cis and trans WLWH who live and/or access care in Metro Vancouver, Canada.

Separate multivariable logistic regression models with generalized estimating equations (GEE) were utilized to identify social-structural factors associated with recent (past 6-months) enacted HIV stigma in healthcare. Adjusted odds ratios (AOR) and 95% confidence intervals (95%CI) are presented.

**Results:** The study sample included 200 WLWH with 545 observations. The median age was 50 years (IQR: 42-55 years); 13% reported a minoritized gender; 53% reported being Indigenous, 36% White, 5% Black, and 6% otherwise racialized/women of colour.

Overall, 23% reported ever experiencing enacted HIV-related stigma in healthcare. In a sub-analysis of 52 women who reported perpetrators of enacted HIV stigma in healthcare, the most common were hospital (n=27; 52%) and family physician (n=11; 21%) staff.

In multivariable analyses with GEE, greater odds of reporting enacted HIV-related stigma in healthcare were associated with food and housing insecurity (vs. food and

housing secure) (AOR: 2.88, 95%CI: 1.00-8.30); Indigenous identity (vs. White) (AOR: 3.13, 95%CI: 1.45-6.78), and minoritized sexuality (LGBQ2S) (vs. heterosexual) (AOR: 2.03, 95%CI: 1.09-3.78).

**Conclusions:** Findings suggest WLWH occupying multiple axes of social-structural marginalization (i.e., co-occurring socio-economic insecurities, LGBQ2S, and Indigenous identities) are more likely to experience enacted HIV-related stigma in healthcare. Given ways enacted HIV-related stigma profoundly contributes to sub-optimal healthcare engagement, it remains critical that healthcare provider training and policy guidelines apply evidence-based HIV-related stigma reduction strategies to improve healthcare equity among WLWH. Trauma-informed practices that mitigate effects of HIV-related stigma and intersecting social-structural marginalization must be queer affirming and address anti-Indigenous racism and cultural safety.

## WEPED354

An examination of the cumulative effects of trauma and LGBTQ+-related violence experience on the mental health of Black and Latino sexual minority men at-risk for or living with HIV

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**Background:** Black and Latino sexual minority men (BLSMM) living with or at-risk for HIV experience higher rates of trauma and violence, which are greater than their white counterparts. Sexual identity stigma from society, healthcare providers, and self (internalized) create barriers to seeking mental health support or HIV prevention and treatment services. Missing from the literature is thorough examination of the lived experience around the cumulative effects of trauma and LGBTQ-related violence experienced by BLSMM.

Thus, the purpose of this study is to examine the cumulative effects of trauma and LGBTQ-related violence experience on the mental health of BLSMM, and identity opportunities for treatment and support.

**Methods:** In this qualitative descriptive study, we utilized in-depth, individual, semi-structured interviews as the primary source for data collection. Data were collected between August 2021 and December 2022 from 41 adult participants in California and New York. Interviews were recorded, transcribed verbatim, and analyzed using thematic content analysis.

**Results:** Participants range in age from 19-65 years. Majority described their gender as male (93%) with the remaining identifying as other. Black participants comprised majority of the sample (73%), with Latinos account-



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ing for 25%. Participant narratives described significant struggles with mental health due to the negative impacts of issues related to their intersectional identities (i.e., homophobia, transphobia, gender nonconforming expressions), experience with racism, violence, and other forms of trauma. Perpetrators of such violence included known individuals (i.e. family members and intimate partners) and unknown individuals (i.e., police or anonymous partners).

Participants also experienced barriers to seeking mental health support in order to heal from the violence and trauma they have experienced due to a dearth of available mental health services and a lack of cultural humility from providers.

Additionally, healing was complicated by both internal and external barriers to mental health treatment and support due to the COVID-19 pandemic.

**Conclusions:** These findings highlight how the cumulative effects of trauma and violence negatively impact mental health. The results also highlight how limited access to mental health support and treatment further exacerbate these challenges among BLSMM. Therefore, urgent public health interventions are needed to strengthen mental health support and treatment services among BLSMM.

## WEPED355

Drivers of viral load suppression among HIV-positive people who inject drugs (H+PWID) in Dhaka Metropolitan Area: accessibility, adherence and social context in Bangladesh

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**Background:** Save the Children International (SCI) actively addressed HIV in Bangladesh, spearheading PWID interventions across 13 districts. The SCI consortium started viral load testing among H+PWID in June 2022. Till December 2022, 716 H+PWID were tested where 71% of them were virally suppressed.

This study aims to uncover factors contributing to suppressed and non-suppressed viral load results in this population in addressing the challenges faced by H+PWID.

**Methods:** A mixed method design was applied for data collection during November-December 2023. Quantitative survey was conducted with 261 H+PWID (198 virally suppressed and 63 not suppressed) across eight comprehensive drop-in-centers (CDICs) in Dhaka Metropolitan City. Qualitative information in 8 CDICs was collected from 8 focus group discussions with H+PWIDs.

**Results:** The average age of the sampled H+PWID was 44.37 with a variation across virally suppressed (43.01) and not suppressed (48.36) and more than half of them

cannot read and write. The average distance of the H+PWID from CDICs was 2.83 kilometers (2.2 km for virally suppressed and 3.1 for not suppressed). A total of 56% and 44% of the virally suppressed and not suppressed populations respectively reported that they faced side-effects after taking ARV medicine.

Around 50% of the suppressed and 20% not suppressed H+PWID are receiving ARV by their own initiative. Multi-variable logistic regression analysis adjusted for individual reveals that H+PWID were more likely than virally not suppressed to be young (adjusted odds ratio, AOR: 0.94; 95% confidence interval, CI: .88-1.00;  $p < 0.56$ ), proximity to CDIC (AOR: 1.41; 95% CI: .98-2.04;  $p < 0.064$ ), facing no side-effect after receiving ARV (AOR: 0.19; 95% CI: .05-.73;  $p < 0.015$ ) and received ARV medicine willingly (AOR: 0.06; 95% CI: 0.01-0.36;  $p < 0.002$ ). H+PWID are less likely to be virally suppressed were verbally insulted/threatened by the society (AOR: 0.02; 95% CI: 0.001-0.32;  $p < 0.007$ ).

**Conclusions:** To improve long-term adherence, existing national HIV prevention program should increase the availability of ARV drug distribution facilities closer to PWID communities and explore alternative ARV regimens with fewer side effects with easier dosing schedules. In addition, implementing community-based stigma reduction programs to cater to the specific needs of PWID.

## WEPED356

Health-related quality of life pattern and correlates: a cross sectional assessment of people living with HIV in South Carolina

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**Background:** The World Health Organization's new global health strategy on HIV highlights the importance of the health-related quality of life (QoL) among people living with HIV (PLWH).

To inform interventions of improving QoL of PLWH, the current study aims to examine correlates of QoL among PLWH using data from South Carolina, USA

**Methods:** Cross-sectional survey data were collected from May 2018 to September 2018 from 517 PLWH receiving care at a large, immunology center in South Carolina that provides comprehensive HIV services.

Data were collected on sociodemographic characteristics, HIV risk behaviors, HIV QoL and other clinical information using existing scales including the WHO quality of life scale (WHOQOL-HIV-BREF), Stigma scale, 9-item Patient Health Questionnaire (PHQ-9) Depression scale and Resilience scale (CD RISC).

Descriptive statistics were calculated and simple and multiple linear regression analyses were used to identify factors associated with HIV QoL.

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**Results:** This study included 386 (66.7%) males and 131 (33.7%) females. The mean HIV QoL score for each domain were  $11.7 \pm 2.28$  (Physical),  $14.05 \pm 2.87$  (Physiological),  $14.9 \pm 2.59$  (Independence),  $16.59 \pm 3.41$  (social),  $15.98 \pm 3.16$  (Environmental) and  $8.97 \pm 3.10$  (Spiritual). Females scored significantly higher in the social domain of QoL;  $16.36 \pm 3.63$ ,  $16.83 \pm 3.16$  ( $t$  test = -1.294,  $P$ -value = 0.048).

PLWH with higher levels of resilience reported higher scores in the physical, physiological, independence and social domains of the QoL. Coping, resilience, internalized stigma, social support and support for ART adherence were all positively associated with overall QoL.

However, this finding slightly differed for each of the 6 domains that make up the overall QoL.

**Conclusions:** Since QoL is a subjective evaluation of one's perception of their daily life, social factors play a crucial role on how PLWH perceive their QoL. Intervention efforts should include a multidisciplinary approach to ensure holistic management of risk and protective factors to improve QoL for PLWH.

## WEPED357

"We need to continue the services. Don't cut us off." Women living with HIV call for the return of women-centered services

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**Background:** The reclassification of HIV to a lifelong manageable condition with slowed rates of acquisition for Black and Latina women in the US, has decreased alarm, as well as HIV funding over time.

However, many women of color living with HIV or AIDS continue to struggle with stigma, isolation, and access to care.

These women remain in need of supportive psychosocial service, yet many reside in areas where these types of HIV-related services are minimal or unavailable.

This paper examines the lived experiences of women of color to explore the impact of declining HIV-related funding and the need for psychosocial services to bolster their emotional well-being and HIV treatment engagement.

**Methods:** Fifteen in-depth, semi-structured interviews were conducted with women of color living with HIV or AIDS in a large, urban area of the southwestern US from October to November 2020. These women identified as Black /African American (47%), Latina/o/x (46%), and Asian (7%) and ranged in age from 32 to 77 years.

Participants were asked to identify changes in services impacting them over time. We used thematic analysis and an inductive analytical approach.

**Results:** Participants expressed a high need for nonmedical, HIV-related supportive services. Compounding their HIV diagnoses were their ongoing struggles with food and housing insecurity.

Participants noted the importance of free meals for their families and free childcare during medical visits. For instance, one woman shared, "I needed that lunch, because my kids was hungry because I was homeless."

There was also a strong desire for culturally relevant support groups in their communities and recommendations for safe spaces to discuss their intersectional identities of womanhood, race/ethnicity, and living with HIV or AIDS.

**Conclusions:** This paper recommends increased funding of HIV and AIDS-related, women-centered programs. Although rates have declined, women of color living with HIV or AIDS continue to need culturally-relevant services. Programs offering childcare, peer groups, and mental health are necessary to support the health and well-being of women of color living with HIV or AIDS.

## WEPED358

Decentralization of youth-led community ART adherence clubs to support care and treatment for young people living with HIV in Chipata District, Zambia

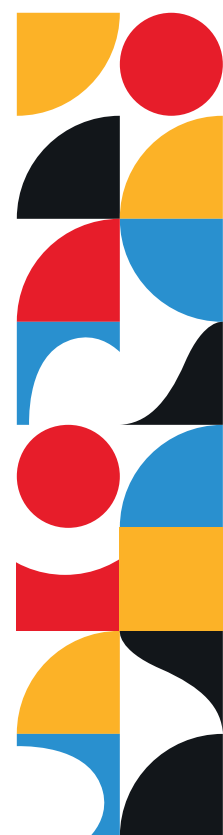
Z. Yamba<sup>1</sup>, R. Tipiseni<sup>1</sup>, C. Manyele<sup>2</sup>, C. Mubanga<sup>3</sup>, J. Mbewe<sup>1</sup>, M. Musonda<sup>2</sup>, K. Bhauti<sup>4</sup>, D. Lee<sup>5</sup>, B. Mkandawire<sup>2</sup>

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**Background:** Young people living with HIV (YPLHIV) in rural areas face long distances to health facilities and a lack of youth-friendly services, challenges that have a negative impact on their ART adherence and retention in care. Grassroot Soccer Zambia (GRSZ) piloted a youth- and community-led adherence support model called 'SKILLZ Plus Clubs,' with the aim of improving ART adherence and retention by establishing decentralized clubs for YPLHIV closer to their homes.

**Description:** Beginning in 2020, decentralized community-based clubs were initiated in partnership with 27 health facilities with support from Neighborhood health committees (NHCs). GRSZ trained young adults living with HIV as 'lead mentors' to facilitate the clubs, holding monthly sessions with fellow YPLHIV in convenient settings in their local communities and allowed for visits to homes of YPLHIV.

Clubs utilize a 10-session curriculum covering ART adherence, disclosure, and healthy behaviors, and lead mentors also follow up on reminders for clinical appointments and make referrals for other HIV-related services.







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## Lessons learned:

- Forty-six lead mentors established community clubs reaching 1,500+ YPLHIV for ongoing maintenance and improved ART adherence.
- Decentralized clubs were convenient for participants to receive adherence support closer to their communities, but participants still expressed a desire for transportation allowances to attend club sessions.
- The clubs fostered community ownership and empowerment, where communities actively engaged in their establishment, operation, and sustainability through collaboration with NHCs. In some communities, weaker community structures negatively impacted the club implementation.
- Training and empowering local lead mentors who are also living with HIV to facilitate club sessions allowed for relatable support: lead mentors established safe spaces and effectively connected with participants, addressing their concerns and promoting adherence through sharing experiences.

## Conclusions/Next steps:

Decentralization of youth-led community-based SKILLZ Plus Clubs is a promising strategy for facilitating ART adherence support for YPLHIV, increasing accessibility to HIV services, and the importance of partnerships for impact where resource constraints exist. GRSZ is expanding this model to more rural communities in Eastern Province, and promoting the sharing of best practices between community clubs and NHCs.

## WEPED359

### Engaging people living with HIV as community monitors to improve HIV services in Lusaka province, Zambia

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**Background:** In order to continue progress toward ending AIDS by 2030, it is imperative that people living with HIV (PLHIV) are engaged in service provision to improve HIV-related service quality and health outcomes. The Community-led Monitoring (CLM) initiative, implemented by Grassroot Soccer Zambia in Lusaka province with support from PEPFAR and the Ministry of Health (MOH), collects and utilizes feedback from PLHIV accessing services at health facilities.

**Description:** GRSZ and health service providers identified PLHIV volunteers to train as Community Monitors (CMs). 350 CMs mobilized 4,894 PLHIV from 30 health facilities between July 2021 and November 2023 in six districts of Lusaka province. This included 991 members of key popu-

lations (318 men who have sex with men, 295 sex workers, 204 transgender persons, 136 prisoners, and 38 persons who inject drugs), 1,263 young people and 143 persons with disabilities. A standardized questionnaire was used to collect feedback from PLHIV on their service experiences and recommendations on HIV treatment and prevention, viral load, tuberculosis, stigma and discrimination.

## Lessons learned:

- CMs built trusted relationships which facilitated a two-way flow of information between PLHIV and health facilities for improved service provision. The proportion of PLHIV who reported receiving adherence counseling increased from 77% (573 /736) in 2021 to 85% (961/1,136) in 2022.
- CMs tapped into their understanding of the local communities and partnerships with community-based organizations to easily reach PLHIV using home visits and phone calls.
- CMs created safe spaces which made PLHIV feel comfortable to share feedback: 71% (3,496) of PLHIV surveyed offered recommendations for improved service delivery.
- Young PLHIV reported insufficient youth-friendly services and recommended additional inclusive differentiated service delivery models.
- Utilizing information and evidence from CM, stakeholders initiated actions to improve provision of HIV services.
- PLHIV from key populations reported experiencing discrimination and stigmatization, recommending additional facility staff training on gender and sexual diversity.

**Conclusions/Next steps:** CMs were empowered as change agents to contribute to improved HIV service delivery. Priority strategies for inclusion of key populations and young people should be considered to amplify their voices in CLM and coordination of the HIV response.

## WEPED360

### Integration of mental health into an ART adherence and support program for young people living with HIV in Lusaka and Chipata districts of Zambia

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## Background:

Young people living with HIV (YPLHIV) face poor mental health outcomes, and few initiatives integrate mental health and HIV treatment for this group. Beginning in



2021, Grassroot Soccer Zambia (GRSZ) started integration of mental health information and support into its programming for YPLHIV, aiming to promote positive mental health and link young people to support services.

**Description:** GRSZ developed a mental health package for YPLHIV, beginning by integrating mental health information into an existing ART adherence support intervention called SKILLZ Plus.

The 'Enhanced SKILLZ Plus' program with 12 sessions including mental health content was rolled out in 40 Ministry of Health facilities starting in 2021. GRSZ additionally trained near-peer mentor 'Coaches,' who are young people living with HIV, as mental health frontline workers. Coaches were trained to administer the Patient Health Questionnaire (PHQ) to screen SKILLZ Plus participants for depression, and then offer Interpersonal Group Therapy (IPTG) therapy to those with at least moderate depression symptoms. GRSZ also developed and distributed a print comic book-style resource to reinforce positive mental health concepts, called MindSKILLZ magazine, which was distributed through home visits.

**Lessons learned:**

- 4,500+ YPLHIV acquired knowledge on mental health information and services from 2021 to 2023, and 80% of participants completed the SKILLZ Plus sessions and received the comic magazines in their homes.
- Mental health support services were made more accessible to YPLHIV, with over 1,200 reached with PHQ9 screening and IPTG services in their communities.
- While 60 SKILLZ Plus Coaches were trained in the mental health package, they required ongoing support due to limited clinical experience, and mentoring support visits were initiated.
- Partnerships with parents and health facilities were useful in supporting mental health-friendly environments, although integration of the SKILLZ Plus Coaches as frontline workers into community health structures was limited.

**Conclusions/Next steps:** Mental health integration into an existing ART adherence and HIV support treatment program for YPLHIV was feasible and created friendly, accessible mental health services for YPLHIV and their communities.

Efforts to ensure ongoing support for non-clinicians should be considered for mental health programs that work with non-clinical staff.

## WEPED361

### Breaking barriers: a comprehensive social media campaign against HIV discrimination

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**Background:** Discrimination against key populations and people living with HIV (PLHIV) remains a significant issue in Myanmar. A 2016 study characterizing HIV-related stigma in Myanmar highlighted the mistreatment of clients in healthcare settings, communities, and within their own households. In response to this challenge, PSI Myanmar conducted an evidence-based zero-discrimination social media campaign on PSI's "Happy Healthy Myanmar" Facebook page.

This initiative utilized the results of PSI's online survey conducted with key populations and PLHIV in 2022, providing a data-driven approach to address and combat discrimination.

**Methods:** PSI conducted an online survey, employing a self-structured questionnaire accompanied by brief qualitative questions on five Facebook pages, frequented by key populations and PLHIV. Based on the survey insights, the campaign featured three comic characters-Zaw, Myo (MSM and TG ART patients), and Rosy (an HIV-negative university student and occasional sex worker) -communicating the insights on discrimination. Key campaign topics included reasons to cease discrimination, the use of discriminatory slangs against LGBT community and PLHIV, and clients' experiences with health care workers. This social media initiative spanned a year, commencing on the Zero Discrimination Day in 2022, providing a sustained effort to address discrimination.

**Results:** A total of 281 participants (55.5% MSM, 3.9% TGW, 19.6% Men, 16.4% Women and 4.6% unspecified) completed the survey. The survey results revealed that 14.3% of respondents indicated healthcare workers exhibited hesitancy to touch them during consultations. Additionally, 8.5% and 4.7% of respondents shared experiences of healthcare workers publicly noting HIV status and confidential personal matters on client record books, respectively. Qualitative data unveiled instances of being called out by name in clinic, color marking of HIV positive clients' medical files, and a disrespect of confidentiality during counseling sessions.

The campaign utilizing these insights, engaged a total of 2.1 million-plus audiences. Post campaign, communities participated in the movement by sharing virtual postcards with motivational message on their Facebook timelines.

**Conclusions:** The study underscored that both key and general populations faced discrimination when seeking health care for HIV related services.



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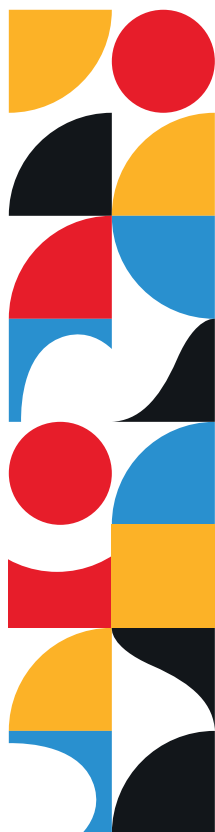
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The findings were invaluable for crafting key messages for a social media campaign aimed at mobilizing the communities to actively combat discrimination.

## WEPED362

Putting a stop to HIV self-stigma through a peer led group cognitive behavioral therapy: a promising model for increasing access to psychosocial services for underserved populations in Uganda

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**Background:** Self-stigma is linked to HIV positive living; yet there is a gap in interventions addressing self-stigma especially in resource limited settings.

With support from VIIV Healthcare Positive Action, Afrislum Uganda is implementing an innovative peer-led group psychosocial therapy model for HIV Self-stigma reduction in Uganda.

**Description:** Afrislum's peer-led cognitive behavioral therapy (CBT) model is being implemented at eight public health facilities serving the urban poor in Mukono and Kampala districts. The model was first tested at four public facilities. The pilot demonstrated that this CBT model had an effect of -1.145 percentage points on HIV self-stigma between baseline and endline, between the intervention and control groups. In 2023, Afrislum scaled up the model to eight facilities in the two districts. At each facility, six HIV expert clients and two health workers were identified and trained to deliver group CBT. The model has 10 different but interrelated topics delivered on a monthly basis. Each expert client was allocated a cohort of 10-12 participants to engage 10 times throughout their EMTCT journey. To-date, 48 expert clients and 16 health workers have been trained to deliver CBT, and over 500 mothers living with HIV engaged in 288 sessions. Beneficiaries are taught cognitive, coping, and assertive skills in order to deal with negative thoughts, interpersonal problems and stigmatizing reactions. The sessions are delivered in the presence of expert psychologists who offer continuous support supervision and assessment of the peers as part of capacity development.

**Lessons learned:** Afrislum's CBT Model has created an opportunity for participants to freely share their HIV-related experiences with peers. This has motivated participants not to miss their clinic days. and improve adherence to treatment. The beneficiaries have also been empowered to manage or control their thought processes-especially the negative thoughts.

Changes in norms and practices have been observed like openness and engaging with others, lessening in worrying about the future and increased selfcare, and self-confidence.

**Conclusions/Next steps:** The use of peer-to-peer group CBT may be a promising approach for increasing access to psychosocial services in resource limited settings, where trained psychologists and mental health counselors are few, and psychosocial interventions are barely present.

## WEPED363

Unveiling the connection: HIV stigma, substance use stigma, and HIV healthcare providers' acceptance of harm reduction

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**Background:** The intertwining stigmas of HIV and substance use impact the adequacy of healthcare service delivery, specifically providers' acceptance and use of evidenced-based harm reduction (HR) strategies to improve health outcomes.

This study aimed to explore HIV healthcare providers' attitudes towards people with HIV (PLWH) and who use substances and identify ways that stigmatizing attitudes are associated with the provision of structural and relational HR.

**Methods:** We disseminated a quantitative cross-sectional survey with key measures from the Harm Reduction Acceptability Scale (HRAS), the Drugs and Drug Problems Perceptions Questionnaire (DDPPQ), and the HIV/AIDS Stigma Scale (HPASS). Data were collected from 128 providers across three HIV clinics in the United States in Birmingham, AL, and Pittsburgh, PA, between April and October 2022.

Multivariable linear regression models were adjusted for confounding variables and used to assess the relationship between provider attitudes and acceptability of HR care.

**Results:** Providers were predominately cisgender women (80%), heterosexual (84%), and non-Hispanic white (59%). Providers had a mean HRAS score of 3.80 (SD=0.56, range=2.5-4.8); DDPPQ score of 2.17 (SD=0.69, range=1.0-3.8); and HPASS score of 1.90 (SD=0.60, range=1.0-4.6).

Regression analyses demonstrated HR acceptance was higher among providers with 6 to 10 years of experience working with PWH ( $b=0.30$ ,  $p<0.01$ ), compared with  $\leq 5$  years of experience.

HR acceptance was lower among providers in Alabama compared to Pennsylvania ( $b=-0.29$ ,  $p<0.01$ ), and among Black providers compared to white providers ( $b=-0.47$ ,

$p < 0.01$ ). Stigmas towards substance use ( $b = -0.18$ ,  $p < 0.01$ ) and HIV/AIDS ( $b = -0.25$ ,  $p < 0.01$ ) were associated with lower HR acceptability.

**Conclusions:** Stigmas towards substance use and HIV/AIDS were associated with lower acceptance of HR, suggesting providers harboring stigma are less inclined to support or engage in HR practices. Provider stigma and lack of acceptance create significant barriers to implementing evidence-based HR and perpetuate health disparities. Stigma in healthcare settings reduces access to HR services and equitable healthcare.

Future research should investigate the relationship between HIV and substance use stigma and how these stigmas interact with attitudes toward HR. Efforts to increase retention in care among PWH who use substances require intersectional stigma-reduction and HR-focused interventions geared toward HIV healthcare providers.

## WEPED364

Household HIV: qualitative accounts of intergenerational stigma and support in Agincourt, South Africa

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**Background:** Households can be the most supportive but the most stigmatising environments for people living with HIV. Understanding where intergenerational households can improve quality of life, access to care and reduce stigma is essential for ending late presentation and preventable HIV-related deaths.

**Methods:** Between July and September 2022, we conducted a formative qualitative study using  $n = 46$  semi-structured interviews with

- Young or middle-aged adults on ART (aged 18-59 years old); and
- Older adults (aged  $\geq 60$  years old) that were embedded in the Agincourt Health and Demographic Surveillance System in rural South Africa.

We analysed data following a reflexive thematic analysis approach.

**Results:** Participants described a context where ART enabled families to – once again – live together intergenerationally and provide more traditional patterns of care where elderly family members are supported by younger generations within the same home.

However, within the space of a household, multiple intergenerational experiences of HIV-related illness, acquisition, loss, loneliness, stigma and love facilitate or hinder household care, relationships, access to ART and ART-adherence.

Fear of abandonment upon HIV disclosure and household finances are described as influencing factors for late presentation and ART-adherence.

**Conclusions:** As a major organising principle of society in this region, intergenerational households can provide safe spaces for people living and ageing with HIV and their families.

Leveraging this intimate intergenerational environment to build supportive family relevant HIV-literacy, will be essential to mitigate discrimination and stigma within peoples homes.

Ensuring household-level in-depth, personalised knowledge sharing, referral to services and person-centred long-term care will be essential for future comprehensive HIV programming.

## WEPED365

The use of influencers and community-driven messaging to increase access to HIV-related health services in the Philippines

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**Background:** According to latest data, the Philippines is far from its 95-95-95 targets, currently registering at 64-66-97 respectively. Diagnosed cases are continually increasing, with 50 Filipinos diagnosed with HIV per day. Numerous barriers still exist in accessing HIV-related health services such as stigma, lack of information, access or untrained medical professionals amongst others.

Here we present evidence of the impact of influencers in increasing access to HIV-related services for a community-based organization in the Philippines.

**Description:** Taking into consideration that the internet penetration rate in the Philippines is 68% and 82.4% of the population use social media, the platforms of Facebook and Instagram were identified to be utilized in collaboration with influencer (Catriona Gray) with a total of 7.7 million and 13.9 million followers on Facebook and Instagram, respectively.

These accounts primarily reach audiences of 18-34 and 25-34 years old which correlate to the primary age of key populations in Philippines as relates to the HIV response. Engaging video content with call to action centric messaging for HIV testing, such as a "Get an HIV test with me" were created and posted, with mindfulness of position, tone and language as guided by Love Yourself, a community-based organization based in the Philippines. The developed content were posted both in LoveYourself social media pages and personal social media accounts of C. Gray.

**Lessons learned:** Engagement from content spanning from 2018 to current day, have resulted in over 4.7 million views on video content alone over the Facebook and In-



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stagram platforms. This is not yet taking into consideration the number of accounts reached or engaged via picture-form content.

When new HIV testers were asked at Love Yourself Philippines centers on where they found out about the testing services, about 60% said that they accessed the information through social media, with C. Gray (the influencer) is often mentioned as the source of information. LoveYourself provided 52,158 HIV tests in 2023 alone.

**Conclusions/Next steps:** Working to collaborate with individuals with large social media platforms (such as influencers), active community led organizations and health service providing clinics has proven to be a powerful tool for building the bridge towards accessing HIV-related health services.

## WEPED366

The relative popularity of three distinct models of differentiated service delivery (DSD) offered to ART clients in Botswana

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**Background:** HIV programs in Sub-Saharan Africa and beyond are scaling up DSD models to increase access, expand reach, reduce costs, and better sustain ART programs. Evidence shows that DSD helps reduce cost and increase adherence, but less is known about the relative popularity of different DSD models PLHIV may choose from.

**Description:** Local NGO Humana People to People Botswana (HPPB) provides community-based HIV health services in eight health districts in Botswana supporting more than 700 ART clients each year. People stable on ART are offered three models of DSD:

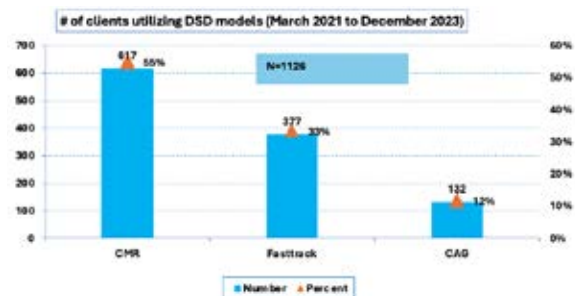
1. **Community Medication Refill (CMR);**
2. **Fast-track queues** at pharmacies for repeat prescriptions, and;
3. **Community Adherence Groups (CAGs).**

The analysis assessed the relative popularity of the three models of DSD among people taking ART in Botswana by reviewing program data retrieved by HPPB Community Health Workers from their data generated over a nearly-three-year period (March 2021 to December 2023).

**Lessons learned:** The chart below shows that HPPB initiated **61.3%** (1,126) clients through DSD models, out of 1,836 people on ART served by the project between March 2021 and December 2023.

The data shows that **approximately half** of the 1,126 clients (55%; 617/1,126) chose to receive ART through the CMR model, while **one-third** (33%; 377/1,126) chose Fast-track queues at pharmacies, and the remaining **one-tenth**

(12%; 132/1,126) chose CAGs. When asked, clients cited several factors influencing their choice of DSD models, including the flexibility of pick up times, transportation costs, and the possibility to access services on weekends.



**Conclusions/Next steps:** DSD reduces burdens on health facilities, enables health facility staff to shift resources towards urgent services, and increases ART clients' ease of access to care.

This study will help us better understand why people chose different DSD options, which will help in further scaling up of DSD, improve client access to medications, and further decongest health facilities.

## WEPED367

Towards attaining the last "95" on children and adolescent living with HIV(C/ALHIV): the efficacy of OVC community clinical model in Manicaland and Masvingo provinces of Zimbabwe

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**Background:** In 2020, Zimbabwe's viral load suppression gap in children ages 0-17 was 28% compared to 10% in adults (Zimbabwe HIV estimates report, 2021). These gaps can be attributed to factors including difficulties in ART adherence among C/ALHIV stemming from challenges like complex treatment regimens, psychosocial barriers, and limited access to pediatric HIV care resources. In response, FACT Zimbabwe is implementing the PEPFAR/US-AID funded OVC program in Manicaland and Masvingo provinces which supports C/ALHIV in achieving durable viral load suppression.

**Description:** During the period October to September 2023, 279 C/ALHIV with unsuppressed viral load (>1000 copies/mL) were identified, enrolled in the program, and received comprehensive OVC service package using a case management approach. The cohort was tracked for

adherence to ART and viral load monitoring by a team of trained community health workers (CHWs) in collaboration with local health facilities. The CHWs conducted twice monthly ART adherence monitoring through home visits to facilitate children Enhanced Adherence Counselling (EAC) sessions, which were then reinforced through case conferences. A trend analysis was conducted at the end of the fiscal year to ascertain the changes, if any, in suppression rate of the cohort across the four quarters.

**Lessons learned:** The number of children with high viral load decreased by 84% during the period under review, with the most notable drop occurring within the first quarter and rates leveling out between the last two quarters. 75% (11F, 29 M) of the children with high VL at the end fiscal year were above 10 years.

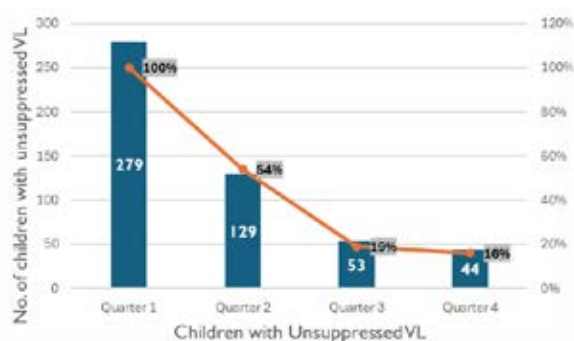


Figure. Trend analysis of children with unsuppressed VL (October 2022 - September 2023)

**Conclusions/Next steps:** Collaboration between local health facilities and community partners has been pivotal in enhancing viral load suppression CLHIV. In the upcoming phase, the project aims to refine and tailor VLS support, focusing on addressing the specific viral load challenges encountered by adolescents 10-17 years, who are struggling to achieve viral load suppression.

## WEPED368

Voices unveiled, CHER trial adolescents' reflections on living with HIV and their journey with FAMCRU shared through six open letters

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**Background:** Growing up in an environment of non-disclosure challenges children in articulating their thoughts and feelings about living with HIV. In the context of a longitudinal study, researchers established a treatment support group to facilitate the journey of acceptance and positive living with HIV for these children.

This summary outlines how a series of six open letters become a valuable tool in establishing pre-adolescents to express their feelings and gain a deeper understanding of their experiences of living with HIV.

**Description:** Participants in the Children with HIV Early anti-retroviral Therapy (CHER trial) engaged with the Family Center for Research with Ubuntu from before the age of 12 weeks, with the cohort extending well beyond 15 years. Around the age of 12 years old, they were fully disclosed to and started raising questions about treatment despite being asymptomatic.

A support group was established to assist and guide them through the process of acceptance and living positively with HIV. Six open letters emerged during therapeutic sessions to explore the participants' feelings towards HIV.

These letters, themed as "Dear HIV", "Dear ART", "Dear HIV-negative child", "Dear Mama", "Dear Doctor" and "Dear teacher" were instrumental in fostering open communication about their experiences. Debriefing sessions highlighted and reinforced coping skills.

**Lessons learned:** Adolescents highlighted the scarcity of safe spaces to voice their challenges and experiences. The letters created an opportunity to anonymously voice their inner thoughts and feelings, leading to open discussions on topics such as stigma, discrimination, loss, adherence, peer pressure, experimenting with substances, and their journey of living with HIV.

**Conclusions/Next steps:** Adolescents living with HIV benefit from support to lead healthy lives. Treatment support groups are ideal for creating opportunities for youth to express themselves, learn about HIV, and decrease sexual risk-taking and substance use behavior. Structured and continuous support contributes to cohort retention, and improved adherence, and assists many in accepting their HIV status. Researchers should consider budgeting for appropriate support when enrolling children in studies.



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## WEPED369

### Assessing triggers for dissatisfaction among persons living with HIV receiving differentiated antiretroviral services in Southern Nigeria: a cross-sectional study

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**Background:** Differentiated Service Delivery (DSD) is recommended for the provision of person-centred antiretroviral therapy (ART) services to improve client satisfaction and treatment continuity among people living with HIV (PLHIV).

This paper assessed satisfaction with ART services and triggers for dissatisfaction among PLHIV enrolled on DSD in southern Nigeria.

**Methods:** This cross-sectional study involved a random sample of 10% of PLHIV aged ≥15 years who received ART for over 12 months across 25 health facilities in Akwa Ibom State. Clients had to be enrolled in a DSD model for at least 12 months to be included in the study. The DSD models analyzed include Community Pharmacy ART-refill (CPAR), Community ART refill group-Healthcare worker-led (CARG-HCW), Community ART refill group-PLHIV-led (CARG-PLHIV), Hub-and-Spoke (HS), Adolescent community ART (ACA), and Fast-track.

Client satisfaction was assessed between June and July 2023 across nine attributes of healthcare service quality domains (privacy, availability of ancillary services, professionalism, confidentiality, flexibility in operating time, staff knowledge and skills, wait time, distance, and convenience) using a validated tool. The cutoff level of satisfaction was determined using a demarcation threshold ( $[(\text{highest} - \text{lowest rating}) / 2] + \text{lowest rating}$ ).

Ratings below the threshold were categorized as "unsatisfied"; and triggers reported by 80% of the respondents were summarized.

**Results:** Of 919 participants enrolled, 64.6% (594) were females, and median age was 35 [IQR: 28-43] years. 450 participants (49.0%) accessed ART through Fast-track, 196 (21.3%) through CARG-HCW, 146 (15.9%) through ACA, 76 (8.3%) through HS, 35 (3.8%) through CARG-PLHIV, and 16

(1.7%) through CPAR. Overall satisfaction score was 95.5% (at a 55% demarcation cutoff), with CPAR (25.0%), and CARG-PLHIV (11.4%) having over 5% respondents below the satisfaction threshold. Triggers reported by respondents in CARG-PLHIV was the perception of the service provider's knowledge and skills to deliver ART services, while confidentiality of client information was added by respondents in CPAR.

**Conclusions:** Clients receiving ART care through peer-led (CARG-PLHIV) model, and fee-paying (CPAR) models have the least satisfaction with service delivery. Interventions to improve satisfaction could prioritize improving the knowledge and skills of service providers.

## WEPED370

### 'myHIV forum' - the importance of an online platform for people living with HIV

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**Background:** Terrence Higgins Trust's (THT) online platform 'myHIV forum' started in 2011. It captures a period of time when online services were still in their infancy. It was set up because PLHIV were experiencing high levels of enacted and internalised stigma around their status and they wanted to share common experiences and support each other. With THT moving to a new digital platform, there was a concern that the information and people's experiences would be lost.

Our goal was to delve into this decade-long collection of personal narratives and identify the trends, medical pathways, and experiences that emerged over time.

We aim to use these insights to inform future client care and enhance the lived experience of PLHIV.

**Methods:** Our analysis stems from a database of 50,821 posts from February 2011 to November 2020, covering 7,046 topics. The forum had 5,067 registered members. Our primary data source is England. We used BERTopic, a Python library, and topic modelling - a statistical NLP technique to unearth the abstract 'topics' within the posts. Our code, which is fully reproducible, is available in Jupyter Notebook.

To ensure the anonymity and confidentiality of forum members, the data was stripped of any identifiers, before being securely moved to an access-restricted NHS server. The Health Economics Unit (HEU) extracted themes using a machine learning algorithm so no analyst directly read the already anonymised data.

**Results:** Results revealed the transformation of discussions over time, from understanding HIV and emotional support (2011), to medication/treatment (2014), to the emotional journey and resource sharing (2016). By 2018,



the emphasis was on testing experiences and emotional support, culminating in 2020 with the high need for emotional help and clinic visit experiences.

**Conclusions:** Our analysis underscored the forum's critical role for PLHIV, particularly in the early days when there was scarce online information. The forum facilitated crucial peer-support and knowledge exchange around treatment aspects.

This peer-to-peer platform fostered a positive shift in living with HIV, emphasising the importance of testing and prevention using PrEP from 2011 to 2022. The findings underline the immense benefits of open online platforms for managing health conditions like HIV.

## WEPED371

### Assessment of stigma experienced by people living with HIV at Mizoram, Northeast India

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**Background:** HIV-related stigma remains the global challenge among people living with HIV (PLHIV). The National AIDS Control Organization and other non-governmental organizations had contributed lots of awareness programs and measures to prevent, reduce stigma and improve Quality of Life among PLHIV in India.

We conducted this study to assess HIV and its related stigma experienced by PLHIV in Mizoram, India.

**Methods:** This prospective observational study was conducted in ART Centres, in Aizawl, Mizoram, among PLHIV between January and December 2023. A pre-tested questionnaire on four domain of HIV Stigma Scale was administered after translating in local language (Mizo). Enacted stigma score was calculated as Yes=1 and No =0, while vicarious, felt-normative, and internalized stigma scores could range from 0-3 with a higher score indicating higher level of stigma respectively. Kruskal Wallis test was used to analyse the statistical significance.

**Results:** A total of 246 participants consisting of 151(61.4%) male and 95(38.6%) female were recruited in the study with a mean age of 35 years. There were 78 (31.7%) unmarried, 102 (41.5%) married and 66 (26.8%) widowed. The mean score for enacted, vicarious, felt-normative, and internalized stigma were 0.13, 2.50, 10.46 and 6.22 respectively.

Stigma Domain	Male, Mean (SD)	Female, Mean (SD)	p-value
Enacted	0.09 (±0.304)	0.21 (±0.524)	0.030
Vicarious	2.32 (±2.604)	2.78 (±2.506)	0.026
Felt Normative	10.07 (±6.211)	11.07 (±7.365)	0.251
Internalized	7.18 (±4.010)	4.68 (±4.611)	<0.05

Table 1. Stigma score among male and female

Stigma Domain	10 and below Mean (SD)	12 and equivalent Mean (SD)	Graduate and above Mean (SD)	p-value
Enacted	0.10 (±0.372)	0.21 (±0.502)	0.10 (±0.307)	0.110
Vicarious	2.00 (±2.165)	3.01 (±2.870)	3.28 (±2.946)	0.003
Felt Normative	9.59 (±6.717)	10.51 (±6.307)	13.33 (±6.591)	0.015
Internalized	5.60 (±4.199)	7.21 (±4.684)	6.51 (±4.376)	0.067

Table 2. Stigma score among different educational qualification.

**Conclusions:** There is lower level of stigma among male participants compared to female except for the internalized stigma. With increase in educational qualification, it was observed that there was statistically significant higher stigma among the PLHIV. Appropriate education and counselling about HIV are still considered necessary to reduce HIV-related stigma among PLHIV.



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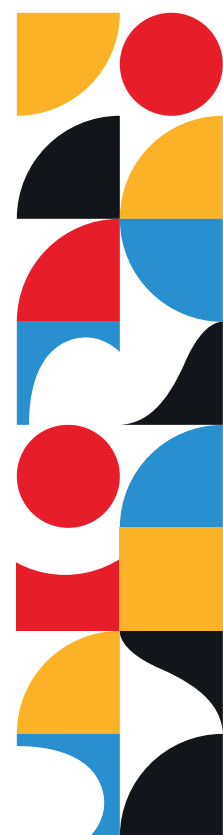
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## WEPED372

### Unraveling the nexus: the impact of depression on virological outcomes among people with HIV in South Africa

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**Background:** Approximately 35% of people with HIV (PWH) in South Africa also experience major depressive disorder. More evidence is needed to understand the dynamics of depression and mental health disorders among PWH in South Africa. Depression is of grave concern given its potential for self-neglect and adherence challenges. This matched case-control study examines the relationship between depression and successful HIV treatment.

**Methods:** This four-year (2014-2018) study, enrolled adult treatment-naïve individuals at two study sites—one rural and one peri-urban. The study involved 98 cases ( $> 1000$  copies/mL) and 199 controls ( $< 1000$  copies/mL) in a 1:2 ratio matched for age, gender, study site, and duration of ART ([EFV/TDF/3TC]).

Both groups participated in a follow-up interview conducted by a blinded research assistant and included a structured questionnaire and the Kessler 10 (K-10) depression scale. We employed conditional logistic regression to explore the relationship between K-10 scores and virologic failure (VF). Additionally, associative modeling using simple linear regression was applied to assess the impact of the total depression score on log TFV levels and medication possession ratio (MPR).

**Results:** Participants who experienced VF exhibited an average depression score of 14.6 (SD 5.4) MPR of 66.7 (SD 39.3), and log TFV level of 5.7<sub>mm/punch</sub> (SD 1.53); however, controls had a depression score of 12.3 (SD 4.4), MPR of 88.6 (SD 22.5), and log TFV of 6.6<sub>mm/punch</sub> (SD 0.64).

Adjusted conditional logistic regression revealed 1.17 times higher odds of viremia associated with a higher depression score ( $p < 0.001$ ). Additionally, a one-unit increase in depression score was associated with a 0.65 decrease in medication possession ratio and a 0.02 mm/punch decrease in log TFV levels.

**Conclusions:** This research underscores the interplay among depression, medication adherence, and VF previously understudied in this population. These findings offer insights for the development of holistic care approaches tailored to the HIV-affected population in South Africa. Emphasis on policies incorporating mental health strategies into the broader framework of the HIV care continuum to enhance overall treatment effectiveness and well-being is essential for continued success for the 95-95-95 goals.

## WEPED373

### Engaging Faith Champions to enhance demand creation of paediatric HIV services

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**Background:** Addressing pediatric HIV requires innovative strategies to enhance demand creation for essential services. This research explores initiatives undertaken in Zambia, Nigeria, and Kenya, highlighting the impact of involving religious leaders and faith-based organizations in identifying and supporting children and adolescents with HIV.

**Description:** In Zambia, an integrated health service delivery approach within places of worship led to a 15% increase in the identification of HIV-positive children compared to non-faith community sites (2018 - 2021).

Nigeria's congregation-based HIV testing during Baby Showers significantly improved testing rates among pregnant women (with a 93% linkage) and their male partners, who were 12 times more likely to know their status (2013 - 2014).

Religious leaders and faith-based organizations across various countries have embraced the role of Faith Paediatric Champions. These champions have played a pivotal role in supporting demand creation for children (2016-2021). In Kenya, religious leaders played a crucial role in the referral system, contributing to 47% of total referrals between August 2016 and May 2017. Faith Paediatric Cham-



pions in the country provided crucial adherence support, psychosocial support, and nutritional assistance to 4517 children and young people aged 0 to 24 years.

**Lessons learned: 1. Impact Integration:** Integrating health services into places of worship can significantly increase the identification of HIV-positive children

**2. Congregation-Based Testing:** These interventions demonstrated a substantial improvement in HIV testing rates among pregnant women and their partners.

**3. Advocacy and Community Engagement:** Faith Paediatric Champions have proven effective in advocating for children's access to HIV care and treatment, fostering collaboration between religious leaders, youth leaders, and community members.

**Conclusions/Next steps:** Engaging faith communities and leaders as champions in pediatric HIV enhances demand creation for essential services. The lessons learned from Zambia, Nigeria, and Kenya underscore the potential of faith-based initiatives in identifying and supporting children and adolescents with HIV. This approach increases access to testing and treatment and fosters community collaboration and advocacy.

Next steps involve faith champions in additional regions. Strengthening partnerships between religious leaders, FBOs, and healthcare providers is critical for sustaining and expanding the impact. Ongoing M&E will guide the refinement of strategies to advance results.

## WEPED374

Comparative analysis of HIV case findings among persons who inject drugs provided services in the fixed and community models of care on the Global Fund Nahi Grant in Nigeria

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**Background:** The Nigeria mode of transmission study in 2020 estimated the incidence of HIV to be 1.7% and 2.1% among male and female PWIDs respectively. Over a 6-year interval, there was a significant rise in the HIV prevalence within the PWID KP typology from 3.4% in 2014 to 11% in 2020[1]. The NAHI implements interventions that provides HTS for PWIDs across 13 states of Nigeria. Services are rendered through the fixed model (One-Stop-Shop) following

a walk-in mostly through social network strategies and the community model through active engagement of PWIDs at hotspots who due to fear of being stigmatized would not easily visit health facilities

**Methods:** A retrospective study of PWIDs provided services in the OSS and Community model in 13 GF-supported states between 2021 and 2023. Data obtained was through District Health Information System (DHIS) disaggregated by testing modalities as either OSS or community (through outreaches) and analyzed using ANOVA and independent t-test statistics at 0.05 alpha level

**Results:** A total of 268,751 (male=207,431(77.1%); female=61,320(22.9%)) PWIDs were provided HTS between 2021-2023. In 2021, (male=20,017, female=4,009) were provided HTS, with 234 (male=138, female=96) positive cases, and 1% positivity rate.

Positivity rate was higher (female=28%) than (male=8%) receiving services at the OSS. The PWIDs receiving services at the Community had lower positivity, female=2%, and male=1% with 855% linkage rate. In 2022, (male=88,947, female=25441) were provided HTS, with 2044 (Male=1918, female=126) positive cases, and 2% positivity rate. Females tested at the OSS had a higher (10%) positivity, than male (5%).

Similarly female tested at the community model had (5%) positivity than male (1%) with 99% linkage rate. In 2023, (Male=98,467, female=31,870) were tested for HIV, with (male=816, female=1,078) positives cases, 1.5% positivity rate.

Female PWIDs tested at the OSS had higher (8%) positivity than male (4%) as against female (3.2%) and male (0.7%) at the community model with 100.5% linkage rate. There was a significant difference between the fixed and community model: positivity  $t(7.58; p=.000)$  and HTS  $t(7.217; p=.000)$ .

**Conclusions:** The bimodal approach on the GF-NAHI grant has increased the reach and access of PWIDs to HTS with corresponding year-on-year improvement in linkage to ART services.

## WEPED376

Village Savings and Loans Associations (VSLA) in Taraba State: catalyst for improved adherence to antiretroviral therapy among children and adolescents living with HIV in Taraba State

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**Background:** HIV/AIDS is known to be one of the diseases of poverty and has affected many households in sub-Saharan Africa including Nigeria. Financial resources resulting in unmet socio-economic needs such as



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food-and-transportation directly affect retention-in-care among children-living-with-HIV. Children have not been devolved to receive ARV-refills through the differentiated service delivery models due to weight-based regimens. As a result, children and their caregivers are expected to attend appointments regularly. The Village-Savings-and-Loans-Association (VSLA) was established to provide economic-empowerment to the caregivers of children-living-with-HIV with the aim of boosting sustenance and enhancing HIV-treatment-retention and sustained viral-suppression.

**Description:** Sixty-indigent-caregivers of children who were not retained in care and with viral loads above 1000-copies/mL were selected from six-health-facilities to participate in a 3-day-intensive-training-programme on VSLA. Of the sixty-caregivers selected, fifty-two were living-with-HIV and twenty-nine had unsuppressed-viral-load-results. A grant of 50,000 Naira (62.5 USD) was given to each-participant to start a business. They meet twice-a-month with savings of 1,000 Naira (1.25 USD) per individual collected into a-savings-pool in a meeting.

A total of sixty-one infants and children (0-14 years) with viral load greater than 1000 copies/mL were enrolled into the study. Viral load test results of the children at baseline were compared with results at 12-months to determine adherence outcomes.

**Lessons learned:** The findings revealed that there was significant increase in retention in care and adherence-to-treatment. At the end of the study, 92% (56) of the children were virally suppressed. A total of 2 children were not suppressed and 3 deaths were recorded among the children due to co-morbidity and non-disclosure resulting in lack of adherence.

Interestingly, all twenty-nine caregivers with unsuppressed viral load reported 100% viral load suppression. Nine months into the intervention, savings were distributed to members to improve their business and another cycle of savings began.

**Conclusions/Next steps:** This study showed that economic empowerment of indigent-people-living-with-HIV through VSLA can improve retention in care and adherence to live-saving antiretroviral therapy. Other factors associated to retention like age-appropriate disclosure and treatment literacy should be included in the training module of VSLA. Expanding the programme to include more beneficiaries will further improve the second and third 95 UNAIDS goal among children.

# Social, political, legal and behavioural determinants of health in different contexts

## WEPE377

What factors influence whether stigmatizing attitudes change over time? An analysis of HIV stigma attitudes and perceptions among community members participating in the HPTN 071 (PopART) trial

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**Background:** People living with HIV (PLHIV) often experience stigma in the communities where they live, often driven by attitudes and perceptions of community members. While HIV stigma is declining slowly over time at the population-level in sub-Saharan Africa, little is known about factors influencing these reductions.

The availability of universal testing and treatment (UTT) was expected to normalize HIV and reduce stigma, yet evidence from UTT trials found no such impact.

**Methods:** Our data were collected as part of the HPTN 071 (PopART) trial, a cluster-randomized trial of UTT conducted from 2013-2018 in 21 communities (12 in Zambia; nine in South Africa). Eleven individual stigma items were assessed over four time-points among randomly-sampled individuals from each community.

Our analysis samples consisted of 12,241 community members not living with HIV who responded once during the trial and 2,113 who responded at least twice.

Using cluster-level data and linear regression, we examined secular trends over time for individual stigma items among the full sample. Using logistic regression, we assessed sociodemographic and sexual behavior characteristics associated with reductions in negative attitudes and anticipated and perceived stigma in unadjusted and adjusted analyses among those with measures at two time points.

The outcome was a binary variable that captured people who changed from a stigmatizing to a non-stigmatizing response, compared to those who did not.

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**Results:** We found significant reductions over time in most individual stigma items (absolute % change per year ranged from -1.2 to -3.1; p-values ranged from 0.2 to <0.01). No reductions were observed in the items assessing shame and fear towards PLHIV, or the item assessing perceptions of verbal abuse towards PLHIV in the community. Only one factor emerged in adjusted analyses: older participants ( $\geq 40$  years) were significantly more likely to change to the non-stigmatizing response about perceived stigma in the community settings (adjusted OR=1.53, 95% CI: 1.05-2.23 compared with those 18-24 years).

**Conclusions:** While anticipated and perceived stigma may reduce slowly over time, to intensify these reductions, and shift underlying drivers of stigma, like shame and fear, it will be important to implement targeted, stigma-reduction interventions at community-level.

## WEPED378

A thematic analysis on the awareness and experiences of Ilonggo GBMSM towards the importance of Anti-Discrimination Ordinance (ICADO) in improving sexual health and HIV services in Iloilo City, Philippines

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**Background:** The Iloilo City Anti-Discrimination Ordinance (ICADO) safeguards Ilonggos from discrimination based on sex, gender identity, and sexual orientation. Yet, there's limited knowledge about how gays, bisexuals and other men who have sex with men (GBMSM) perceive ICADO's impact on sexual health and HIV services quality in Iloilo City.

This study explores GBMSM awareness and experiences regarding ICADO's role in enhancing these services.

**Methods:** Using a qualitative descriptive design, key informant interviews (KIIs) between February 15 and March 2, 2023. The inclusion criteria were GBMSM of legal age and accessing sexual health services in Iloilo City. Transcripts were thematically analyzed using Braun and Clarke's approach.

**Results:** A total of 20 participants were included in the KIIs with age ranging from 18-45 years old. There were four themes identified during analysis:

1. ICADO's role in accessing services—generating mix responses where some GBMSM believed that the ordinance would improve their sense of safety in accessing sexual health services while others claimed that there is much work needed on a city-wide discussion to make sure that GBMSM are fully aware of the ordinance;

2. Stigma and discrimination—while all of the respondents reported favorable experiences with their health facilities, some GBMSM experienced discrimination in public venues, workplaces, and educational institutions but had little idea how to use ICADO for their legal protection;

3. Self-care abilities—most GBMSM claimed that their perceived risk and experiencing some symptoms of HIV/STIs are the main factor for them seeking health services while some verbalized embarrassment and self-stigma while accessing sexual health services.

**Conclusions:** The study reveals diverse perspectives among GBMSM regarding ICADO's impact on accessing services. While some anticipate increased safety, others emphasize the need for widespread awareness. Positive experiences were reported in health facilities but instances of discrimination in public spaces indicate the importance of strengthening legal knowledge among GBMSM. Moreover, the influence of self-care abilities on health-seeking behavior emphasizes the significance of tailoring services to address perceived risks and mitigate self-stigma. These insights have implications for refining ICADO implementation, emphasizing education, and fostering an inclusive environment to promote better health outcomes among GBMSM in Iloilo City.

## WEPED379

Evaluating media portrayals: the impact on HIV/AIDS stigma in Uzbekistan

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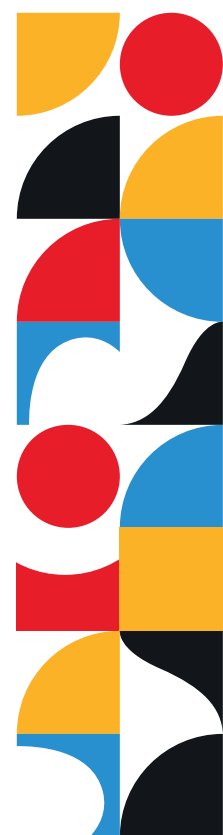
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**Background:** This study investigates the portrayal of HIV/AIDS in Uzbekistan's media, focusing on the accuracy and impact of media representations on public perceptions and stigma.

The research aims to analyse how HIV/AIDS is covered in the press, particularly examining the frequency, nature, and style of coverage, and its implications for public understanding and stigma.

**Methods:** The study analysed publications from the 14 most popular media outlets in Uzbekistan from November 1, 2022, to October 31, 2023. Articles were searched using specific keywords in Russian and Uzbek, and 78 relevant articles were identified and categorized based on their content: stigmatizing, anti-stigmatizing, neutral, informative on HIV prophylaxis, or demonstrating incorrect usage of HIV/AIDS terms.

**Results:** The analysis revealed a significant presence of stigmatizing content, with approximately 45% of the articles portraying HIV/AIDS in a negative light, particularly targeting women and sex workers. In contrast, only 5.1% of the articles offered anti-stigmatizing perspectives.







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Neutral reporting, predominantly consisting of statistical data, comprised 52.6% of the coverage. The study also uncovered a notable deficiency in information on HIV prevention methods. There was no coverage on blood transmission prevention and only a minimal focus on sexual transmission prevention.

Furthermore, 17.9% of the articles were found to use HIV/AIDS terms incorrectly. The stigmatizing articles often highlighted criminal penalties faced by women under Article 113 of the Criminal Code, disproportionately targeting them despite the majority of HIV-positive cases in Uzbekistan involving men. This gender-biased narrative in media perpetuates inequality and hinders effective public health strategies.

**Conclusions:** The study highlights the need for media reform in Uzbekistan to ensure accurate, respectful, and stigma-free coverage of HIV/AIDS. It calls for the development of guidelines for journalists and the establishment of ethical reporting standards.

Additionally, the study emphasizes the importance of policy changes, particularly the decriminalization of HIV transmission and the cessation of gender-biased legal practices, to improve the lives of people living with HIV and enhance the efficacy of HIV prevention and care services in Uzbekistan.

## WEPED380

The positive experiences and unique challenges of PLWHIV living in temporary accommodation in north-east London

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**Background:** This study explores the experiences of People Living with HIV (PLWHIV) in Temporary Accommodation (TA) across North-East London. TA, offered by local authorities to homeless households awaiting permanent housing solutions, includes bed and breakfasts, hostels, managed social housing, and private rented accommodation.

This research addresses gaps in existing studies by exploring how TA specifically impacts the wellbeing of PLWHIV, in terms of both challenges and positive outcomes. Previous research has highlighted poor living conditions, safety hazards, and extended wait times for permanent housing among those in TA. **This study also seeks to uncover potential positive aspects and resilience factors unique to the experiences of PLWHIV.**

**Methods:** Online surveys, 1-to-1 interviews, and a focus group were used to engage PLWHIV. Surveys were distributed to Positive East clients, to HIV clinics to reach those accessing treatment and care, and online via social media and e-newsletters. By reaching PLWHIV from a range of backgrounds and situations, the study aimed to provide

a comprehensive understanding of varied experiences with living in TA and to highlight the potential factors that contribute to positive outcomes in satisfaction and wellbeing among PLWHIV.

**Results:** While 66% of PLWHIV expressed dissatisfaction with living in TA, some key positive findings emerged. Notably, **34% of respondents attributed their positive satisfaction** to factors such as spacious and **private accommodations, proximity to their treatment clinics**, and proactive landlords. Other key reasons for higher satisfaction included: 'having a place to call my own' that provided some **privacy, safety and security**; being able to live **more independently**; and having access to **good transport links and services** in their area.

**Conclusions:** The study's outcomes suggest the need for a balanced narrative when considering the experiences of PLWHIV in TA. Recognizing the clear challenges of TA is imperative, but also **acknowledging positive outcomes is important to draw the attention of local authorities and policy makers to the aspects of TA that foster improved wellbeing among PLWHIV.** Further study of how these aspects and other characteristics of TA can be better-managed and enhanced can help ensure TA meets the unique health and wellbeing needs of PLWHIV.

## WEPED381

An inclusive approach to enhancing healthcare access for people who inject drugs (PWID) in Bangladesh

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**Background:** Since 1995, CARE Bangladesh has been actively engaged in addressing the healthcare needs of People Who Inject Drugs (PWID) as part of its HIV program in Bangladesh. The current initiative, supported by the Global Fund and implemented across 20 districts since 2023, focuses on HIV prevention for PWID.

A key project objective involves integrating services into government health facilities and enhancing PWID readiness to access healthcare from these facilities.

**Description:** The project employs diverse activities and strategies to prepare PWID for accessing healthcare and overcoming challenges arising from stigma, fear, and a lack of awareness among the general population. CARE Bangladesh, in collaboration with the consortium partners, implemented various initiatives to prepare PWID to receive health services from government facilities.

Notable strategies included orientation sessions on government health centers, service processes, and behavioral norms through peer education, group education, and counseling sessions. In the initial stages, the project needed assistance in encouraging PWID to seek services at government health facilities, leading to the introduction



of accompanied referrals, particularly for STI and abscess management. Over the years, the project showcased significant progress, with 106 PWID receiving services in the first year, followed by 989 in 2022 and a substantial increase to 1608 in 2023. This upward curve underscores the success of CARE Bangladesh's initiatives in enhancing PWID readiness and acceptance of health services from government facilities.

**Lessons learned:** The key lesson learned from this endeavor is the pivotal role of targeted, comprehensive strategies in gradually overcoming barriers and fostering a positive shift in PWID engagement with government health facilities.

The significant increase in the number of PWID availing services over the years (from 106 in the first year to 1608 in 2023) underlines the success of CARE Bangladesh's initiatives in enhancing PWID readiness and acceptance of health services from government facilities.

**Conclusions/Next steps:** This lesson emphasizes the importance of persistence, adaptability, and collaborative efforts in implementing effective interventions for marginalized populations facing unique healthcare challenges.

## WEPED382

**Personal touch model of care: a strategic approach to improve health outcomes for children and adolescents living with HIV in 4 Counties in Kenya**

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**Background:** Despite the progress made by Kenya in identifying and starting children and adolescents on treatment, achieving optimal viral load suppression of at least 95% remains a challenge. In September 2019, viral load suppression among children aged 0-9 and 10-19 years was 70% and 73% respectively across the 200 USAID Tujenge Jamii (UTJ) project supported sites.

To achieve the 3<sup>rd</sup> 95%, a different approach was needed, and this informed the personal touch model of care.

**Description:** UTJ team together with the health facility teams formed a multi-disciplinary team (MDT) that discussed and reviewed children and adolescents who had high viral load (HVL) across 200 sites in four counties in Kenya. The MDT then invited the children and their guardians for a one-on-one discussion using a case management approach where barriers to optimal viral load suppression were explored.

Most of the barriers identified were social and structural in nature and varied from family to family. Personalized and achievable health, social, education and other life goals were set jointly with the families. Timelines were given within which to achieve these goals and a date for

review and repeat viral load was set. A case manager was identified to walk with the family beyond that initial discussion with the MDT.

This approach was named "The Personal Touch Model of Care- PTMc" and was implemented in all sites that were serving children 0-9 and adolescents 10-19 years.

**Lessons learned:** Viral load suppression improved 70% and 73% at baseline in 2019 to 91% and 93% for children 0-9yrs and adolescents 10-19yrs respectively in 2023. Personalizing care to each family based on individual circumstances and involving them in the decision making helped achieve set goals including viral load suppression.

**Conclusions/Next steps:** Personal Touch Model of Care is a low-cost easy to implement intervention that takes us closer to the 3<sup>rd</sup> 95 especially among children and adolescents. To achieve the 3<sup>rd</sup> 95, social and structural barriers must be addressed alongside clinical management, and project managers need to incorporate this as an integral part of the package of care for children and adolescents living with HIV.

## WEPED383

**Witness Seminar: a promising methodology for documenting and highlighting community participation in legal reform processes for Universal Health Coverage (UHC)**

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**Background:** Social participation in health policies that promote effective universal health coverage (UHC) is poorly documented. Witness Seminar (WS) is a promising methodology, albeit underutilized, particularly in Low- and Middle-Income Countries.

This analysis presents the lessons learned from the implementation of WS to document and provide visibility on how the transgender community participated in the enactment of the Gender Identity Law (GIL) in Argentina in 2012.

**Description:** Two NGOs from Buenos Aires (one research-oriented and a trans community organization) conducted a WS with twenty-two activists from different regions of Argentina, one elected deputy, one former deputy, and two officials from national diversity departments to document the process. This method facilitates the discussion and stance-taking of a group of key witnesses regarding their recollections and perspectives on a recent historic event (the achievement of the GIL).



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**Lessons learned:** The collaborative work undertaken was anchored in a decade-long established partnership between institutions. This involved integrating community leaders as peer research associates, conducting weekly meetings, and aligning on a shared agenda from the outset. It was essential for selecting key witnesses, determining the best strategy to conduct the WS, formulating relevant and comprehensive questions and developing a timeline outlining fundamental events for achieving the enactment of the law.

The methodology employed encompassed key stakeholders who were involved in drafting and deliberation processes of the legislation. Also, we engaged young stakeholders to depict the law's impact on their lives.

This approach allowed an accurate organization of information and testimonies, reconstructing transgender social participation in drafting the bill, placing it on the public agenda, and describing its effects on their access to healthcare.

**Conclusions/Next steps:** WS allows the systematization of an experience of social participation on health reforms. By creating space to amplify voices from vulnerable populations, it promotes meaningful engagement and empowerment of marginalized groups.

It is a fundamental part of studies that promote social participation, to conduct collaborative work with the community, favoring joint decision-making. This is crucial to drive political advocacy that fosters advancements towards UHC.

Furthermore, documenting and disseminating the WS can significantly impact other activists to shape advocacy strategies to improve social participation.

## WEPED384

### Medical legal partnerships: a promising approach for engaging vulnerable populations in the HIV prevention and care continua

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**Background:** People impacted by or living with HIV experience numerous disparities in access to healthcare, including health-harming legal needs (HHLN) such as experiences of discrimination, housing instability, immigration concerns, denial of benefits, and domestic violence. Medical-Legal Partnerships (MLP) provide an opportunity for people vulnerable to or living with HIV to obtain access to legal services that facilitate positive health outcomes, placing the needs of individual participants at the center of these intervention models.

**Description:** We provide an overview of four U.S. federally-funded studies led by a consortium of MLP scholars and practitioners that address health disparities, including disparities in HIV within priority populations such as sexual and gender minorities, gender minority youth, formerly incarcerated individuals, immigrants, and youth. These studies incorporate at least two of these four core components:

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1. Comprehensive training and capacity building of all staff: medical, social-behavioral, and legal;
2. Comprehensive screening to identify HHLN;
3. Provision of legal support by a partnering local community health organization; and,
4. In-service clinics and workshops at healthcare sites covering HHLN topics with a focus on preventive legal aid.

All of these studies are guided by community advisory boards, ensuring community voices, feedback and representation are integrated into all stages of the research process.

**Lessons learned:** A holistic approach to HIV prevention and care is critical to mitigating health disparities, meeting people where they are, and delivering comprehensive services that prioritize client-centered approaches.

Our collection of MLP studies underscores the following components as critical to increasing positive health outcomes: a committed community organization with dedicated leadership, community-informed outreach of priority populations, client/provider trust, on-site legal services provisions, robust and targeted training for staff, equitably hiring of staff from within priority populations, and sustainable funding.

**Conclusions/Next steps:** Medical Legal Partnerships, as structural interventions, hold the potential to offer an opportunity for the reduction of HHLN and contribute to diminishing barriers to healthcare for individuals impacted by or living with HIV.

Future studies should explore the expansion and integration of various models of MLPs to enhance integration of HIV prevention and care services.

## WEPED385

Out in health: gay, bisexual, and other men who have sex with men's negative experiences discussing sexuality and sexual health with healthcare providers in New Zealand

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**Background:** Gay, bisexual, and other men who have sex with men (GBMSM) in New Zealand (NZ) are disproportionately impacted by HIV and other STIs. Biomedical innovations such as PrEP offer new prevention tools, but these are only accessible through clinical interactions. GBMSM's prior experiences with healthcare providers (HCPs) can impact their willingness to seek out ongoing HIV prevention/testing.

We aimed to understand GBMSM's negative experiences discussing their sexuality and sexual health needs with HCPs.

**Methods:** Open-ended data were analysed from 422 HIV-negative GBMSM participating in the 2022 Sex and Prevention of Transmission Study, NZ's national, cross-sectional HIV bio-behavioural surveillance programme. An inductive thematic analytic approach was used to synthesise free-text responses where participants described an issue that had caused an HCP to react negatively to their sexuality or sexual health needs.

**Results:** We identified four themes.

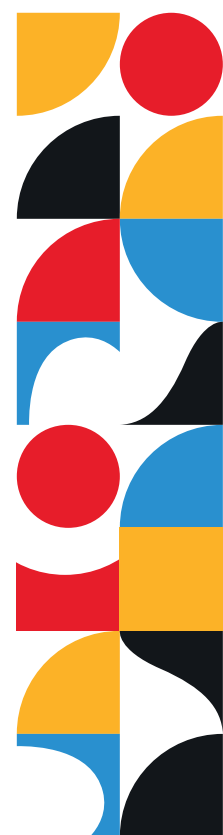
Firstly, GBMSM encountered judgemental and prejudiced HCPs who made scornful, paternalistic and stereotyped remarks about participants' HIV status, prevention/testing needs, and risk practices.

Secondly, participants experienced discrimination, such as being refused care, stigmatised, or assaulted.

Thirdly, GBMSM described HCPs who were disrespectful, making ridiculing comments about sexuality, acting indifferently towards their sexual health, or lacking sensitivity. Finally, participants encountered HCPs who were inexperienced and unskilled in delivering GBMSM sexual healthcare, often in relation to discussing and prescribing PrEP. GBMSM's negative experiences led them to change HCPs, avoid sexual health services and suffer mental health sequelae, delayed diagnoses, and medical complications.

**Conclusions:** In the biomedical prevention era, GBMSM frequently encountered HCPs who lacked cultural competence, cultural safety, and GBMSM-specific clinical knowledge and skills needed to deliver effective, inclusive sexual healthcare. Improving HCPs' knowledge of and ability to interact safely with GBMSM throughout undergraduate studies, vocational training, and continuing professional development is needed to improve GBMSM's experiences of sexual healthcare services and hence uptake of HIV prevention/testing.

Putting people first in NZ's goal of eliminating local HIV transmission by 2030 will require healthcare environments where GBMSM have positive experiences raising their sexuality and sexual health needs.





### WEPED386

#### Rethinking HIV-PrEP delivery in Canada: marginalized 2SGBQM's views on accessing injectable cabotegravir

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**Background:** Oral HIV pre-exposure prophylaxis (PrEP) has reduced HIV incidence among Two-Spirit, gay, bisexual, queer and other men who have sex with men (2SGBQM) in Canada, but some marginalized subgroups remain under-represented relative to need. Ahead of the regulatory approval of long-acting injectable cabotegravir (CAB-LA) in Canada, PrEP delivery models must be examined to minimize barriers to PrEP access and use.

**Methods:** 'The Future of PrEP is Now' is a community-based research project examining the needs and preferences of 2SGBQM in Canada for accessing CAB-LA. We conducted 10 focus groups and 9 semi-structured interviews with 2SGBQM across Canada, prioritising participants meeting PrEP guideline indications and who are: Indigenous and Two-Spirit; African, Caribbean or Black; other persons of colour; transgender or non-binary; residents of remote/rural areas; and people who use substances.

We analyzed qualitative data using reflexive thematic analysis to understand acceptability, community needs, and preferences related to CAB-LA.

**Results:** Participants (N=42; 76% with current/previous PrEP experience) were positive about CAB-LA, citing its perceived ease of adherence compared to oral PrEP, and convenience related to not having to store medication. However, many discussed the inconvenience of CAB-LA's two-monthly injection cycle, requiring additional visits to healthcare providers annually on top of the quarterly monitoring visits currently recommended for oral PrEP.

Also of concern was the cost of CAB-LA, especially in provinces without publicly-funded PrEP programs. Participants were interested in PrEP (oral and CAB-LA) delivery through an expanded range of providers, including sexual health clinics, community organisations, pharmacies, and primary care providers (PCPs), though complaints about PCPs' lack of familiarity with PrEP were common.

Finally, 2SGBQM described current PrEP access pathways as overly complicated, desiring more integrated approaches to PrEP consultations, delivery and monitoring.

**Conclusions:** In this sample of marginalized subgroups of 2SGBQM in Canada, recommendations for implementation of CAB-LA include expanding the range of service providers able to administer PrEP, encouraging greater adoption of PrEP care into clinical practice among PCPs, aligning monitoring frequency with CAB-LA administration, better integration of monitoring within PrEP services, and expanding universal publicly-funded coverage.

### WEPED387

#### Positioning PrEP in the hearts and minds of young women: validation findings of a PrEP category brand strategy for adolescent girls and young women

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**Background:** As the pre-exposure prophylaxis (PrEP) category expands to include new products, establishing PrEP as a brand is essential to align all communication under a common strategy and better connect with and effectively communicate choice to today's adolescent girls and young women (AGYW).

The first step toward building that brand is developing a positioning strategy answering the question: What do we want AGYW's hearts to feel and minds to think about PrEP?

**Methods:** We reviewed existing insights and campaigns on AGYW and PrEP, including those on available and pipeline PrEP products. Inputs to the strategy were assessed alongside ministry of health representatives, advocates, and youth advisors. To validate the strategy, we held discussion groups with 121 AGYW in urban, peri-urban, and rural settings in Kenya, South Africa, and Zimbabwe. Creative interpretations of the strategy were presented to participants and evaluated along a set of metrics using projective techniques and co-design activities. Data were analyzed for insights along a marketing framework including culture, category, consumer, product inputs, to identify the key brand benefit (KBB)—the emotionally engaging focus of the brand.

**Results:** Five key insights emerged:

1. PrEP is self-care, and self-care means loving oneself enough to take care of oneself;
2. PrEP provides peace of mind, negating the anxiety of momentary perceptions of risk;
3. PrEP supports AGYW in putting themselves first;
4. PrEP choice puts AGYW in control: they can decide whether and which method to use; and,

5. relationships with intimate partners are the context of AGYW's lives but not the emotional driver of PrEP use.

The KBB is that PrEP is a way for AGYW to prioritize physical health and mental well-being, to live a life uninterrupted by HIV. PrEP affirms that self-love is strength.

**Conclusions:** Self-care, agency, and strength of AGYW are major insights that informed the strategy, creating a unified, evidence-informed brand for PrEP as a category of products.

This strategy will inform high-quality campaigns that connect with AGYW on an emotional level to inspire them to act. PrEP category positioning applied across demand generation efforts provides the foundation for clear, impactful, positive, and consistent communication.

## WEPED389

### Gaymi as a bridge: campaign evaluation of HIV self-testing secondary distribution among YMSM

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**Background:** Gaymi refers to females' intimate gay friends. This relationship found the potential for sexual health promotion for gay men by comprising HIV self-testing secondary distribution. As innovative strategies are needed to expand HIV testing coverage among young students men who have sex with men (YMSM) in China, this study aimed to explore the effectiveness of the Gaymi relationship-leveraged HIV testing promotion for YMSM.

**Methods:** In December 2020, we conducted an HIV testing promotion campaign at a university in China. Online outreach and offline activities were performed by the on-campus community organization. Female college students who had YMSM friends were recruited as the index (who distribute HIV testing kits).

After paying a returnable deposit, indexes obtained an HIV self-testing package comprising a urine testing kit, educational brochures, and a postcard facilitated deposit retrieval. Once the HIV self-testing kits were used by YMSM (alters, who received HIV testing kits), alters were instructed to upload results for their female friends' deposit reimbursement.

Subsequently, both index and alter participants would receive a mixed-method assessment for the process evaluation and effect evaluation following the distribution of HIV self-testing kits.

**Results:** A total of 40 HIV self-testing kits were applied with 50% utilized by the alters. 60% (12/20) of YMSM attempted first-time testing, reporting high perceived ease of use (4.95/5) and intention to use (4.90/5) HIV self-testing. The

perceived instructional and emotional support reached 4.85 and 4.625. Qualitative results from in-depth interviews with 28 participants revealed that the Gaymi relationship was acceptable for the secondary distribution as indexes were sexual minority friendly. Through in-person inspection, and informing before delivering, indexes actively eliminated the on-campus stigma to protect their YMSM friends. Post-intervention, the knowledge and willingness for HIV self-testing of alters were enhanced. Moreover, the Gaymi relationship benefitted those testing inaccessible alters from distant sites. For alters, receiving care from female friends facilitated the stigma reduction, contributing to self-identification. Gaymi's intervention visualized the sexual minorities in China, presenting high sustainability for future iterations.

**Conclusions:** The Gaymi relationship played a feasible bridging role in HIV self-testing distribution, presenting effectiveness in reaching new testers, improving HIV knowledge and testing behavior, bringing emotional support, and facilitating stigma reduction for YMSM.

## WEPED390

### The mLab App, an HIV prevention intervention using mobile technology, for increasing PrEP uptake

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**Background:** HIV prevention tools are needed to mitigate new cases in the US, especially among health disparate groups. Extremely high mobile phone use makes mHealth technology an ideal platform for delivering HIV prevention tools. In response, our study team developed the mLab App which incorporates an algorithm to interpret a photograph of the OraQuick rapid home HIV self-test results to provide accessible, objective, secure, and real-time feedback on HIV test results. It also contains an automated data collection and results reporting feature that relays test results back to the research team.

The study participant receives automated messages to encourage future repeat testing, as well as linkage to PrEP care for those who receive a non-reactive test or linkage to confirmatory testing and HIV treatment for those with a reactive test.

**Methods:** This was a multi-site three-arm randomized clinical trial in 525 men who have sex with men and transgender women ages 18-29 years in New York City and Chicago, IL. Participants were randomized to one of three study arms:

1. Receiving the mLab App including HIV home test kits,
2. Standard of care HIV prevention information only, or,
3. HIV home test kits only.



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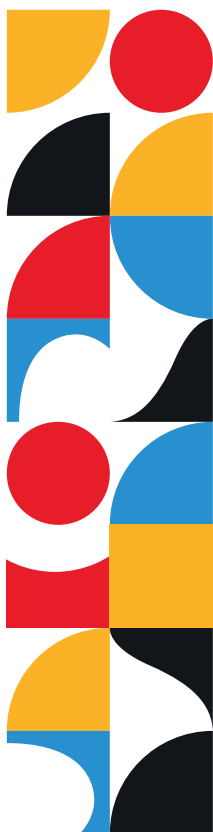
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The primary goal was to increase HIV testing. The secondary goal was to increase PrEP uptake, which is the goal of this analysis.

**Results:** In our multivariate analytic models, at 12-months there was a statistically significant higher increase in PrEP use in the mLab App arm compared to standard care arm ( $p < 0.001$ ) with a similar, but non-significant difference ( $p = 0.412$ ), for the mLab App compared to at-home testing only. There was no notable difference in outcomes when stratified by race or gender.

**Conclusions:** In this study, the mLab App demonstrated efficacy in improving PrEP uptake as compared to the standard of care arm. Testing and implementation of this intervention across global settings should be considered given the low uptake of PrEP in high need settings across the globe.

## WEPED391

Understanding young men's perspectives on voluntary medical male circumcision (VMMC): insights from a population-based survey in four counties in western Kenya

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**Background:** With support from the U.S. President's Emergency Plan for AIDS Relief (PEPFAR), Kenya adopted voluntary medical male circumcision (VMMC) for HIV prevention in 2008. We sought to understand men's perspectives on circumcision based on a population survey conducted in 2019 to optimize service uptake and verify VMMC coverage. At that time, Kenya had nearly achieved 80% circumcision coverage in men 15-29 years based on VMMC Decision-Makers Program Planning Tool 2 statistical modelling.

**Methods:** Data were derived from the 2019 population survey of VMMC coverage in Kenya. Males aged 10-29 were surveyed between July and September 2019 via random selection of households in four Western Kenyan counties. Questions included demographics, VMMC status, knowledge and perceptions about circumcision, and VMMC service delivery experiences. Participants were asked for reasons they chose to be circumcised or to remain uncircumcised. Descriptive analyses were conducted.

**Results:** Of 3585 participants, 68% ( $n=2440$ ) were circumcised, 27% ( $n=970$ ) were uncircumcised, and 4% ( $n=158$ ) had unverified circumcision status. Ninety percent of participants ( $n=3232$ ) had family who was circumcised. Of the circumcised, 78% ( $n=1913$ ) had it done between 5-14 years old. Top reasons for forgoing circumcision were unspecific

personal decision (35%,  $n=310$ ), lacking or waiting for parental consent (14%,  $n=140$ ), and not knowing about circumcision (12%,  $n=119$ ). Various fear-related concerns were reported as a reason for forgoing circumcision by 11% ( $n=78$ ) of 10-14-year-old participants, compared to only 2% ( $n=22$ ) of 15-29-year-olds.

Top reasons for choosing circumcision were better hygiene (61%,  $n=1479$ ), HIV risk reduction (49%,  $n=1201$ ), sexually transmitted disease (STI) risk reduction (30%,  $n=731$ ), and being approached about it (47%,  $n=1144$ ), although varying by age group, with respondents 10-14 years old reporting being approached about it more (56%,  $n=754$ ).

**Conclusions:** Even in countries with a mature VMMC program, such as Kenya, continued emphasis on STI prevention and hygienic benefits of VMMC is important. Building relationships with and improving health literacy of parents and targeted outreach to youths to allay fears about circumcision may improve uptake.

Varying motivations in the decision to circumcise suggest the importance of implementing demand creation strategies that systematically assess and tailor to the needs of clients.

## WEPED392

Understanding regulatory processes and gaps that could impede fast-track introduction and rollout of the Dual Prevention Pill (DPP) in Uganda: bridging the gap between community and regulatory bodies

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**Background:** Biomedical HIV prevention products take approximately 1-5 years to be approved in Uganda after the World Health Organization and US FDA's approval. The Dual Prevention Pill (DPP), which combines oral PrEP and oral contraception, is currently undergoing bioequivalence studies and could be the next multipurpose prevention technology (MPT) to come to market, possibly available by 2025. The DPP could be a preferred option for adolescent girls and young women (AGYW) in Uganda who currently contribute to 79% of all new HIV acquisitions and are also vulnerable to unintended pregnancies. Engaging community in the regulatory process could fast track introduction.

**Description:** Through Girl Power project, an initiative of the AVAC 2022/23 Fellowship Program, 6 consultation meetings were held with 30 AGYW, 12 CSOs, Uganda National Drug Authority and Ministry of Health to understand what role communities play in influencing fast approval of new HIV products. This culminated in the joint meeting between the stakeholders to better understand regulatory



approval processes for new HIV prevention products and addressed existing regulatory gaps that could impede introduction of the DPP/MPTs in the future.

**Lessons learned:** Regulators noted that the DPP dossier submission would require a bioequivalence study report, which provides requisite evidence for MPTs like the DPP that combine two previously-approved products in addition to other technical screenings of pharmaceutical requirements and Good Manufacturing Practice (GMP) status.

Primary challenges for delayed approval included incomplete submissions, poor adherence to registration guidelines, delayed responses to additional data requested and non-compliance with Good Manufacturing Practices. The meeting established the "Product Regulators Engagement Committee" – a platform to engage regulatory bodies, community and researchers throughout all stages of HIV research and development (R&D), a model that could be replicated across countries. For the DPP and other MPTs containing contraception, this engagement included family planning stakeholders who will have a shared role in product introduction.

**Conclusions/Next steps:** Bringing drug regulators and community to the table early while the products are in R&D to clarify regulatory pathways will increase the likelihood of fast approval and rollout. Swift approval and rollout of new, highly efficacious options could reduce the high HIV incidence among AGYW in Uganda.

## WEPED393

Rapid ART initiation with BIC/FTC/TAF in HIV-positive people who inject drugs (naïve or re-linking to care): a pilot study of an integrated care model

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**Background:** HIV-positive people who inject drugs (PWID) face unique challenges in accessing and adhering to antiretroviral therapy. In Greece two HIV major outbreaks have been described in Athens in the past decade. This

pilot study aimed to evaluate the effectiveness and safety of an integrated care pathway combining rapid ART initiation with BIC/FTC/TAF with peer navigation support (PNS) for treatment-naïve or treatment experienced PWID.

**Methods:** This prospective, single-arm, open-label, multicenter study enrolled adult PWID linking or relinking to care at three HIV clinics in Athens, Greece, who received rapid ART initiation with BIC/FTC/TAF combined with PNS from December 2021 to November 2023.

Primary endpoints were viral suppression (VL<40 copies/ml) and % PWID experiencing grade 3/4 adverse event (SAE) related/not related to study treatment at Week-24. Historical controls were used to compare the median time from the date of HIV diagnosis to starting ART and effectiveness at Week-24.

**Results:** A total of 36 PWID were enrolled with a follow-up period of at least 24 weeks. Mean age (SD) at baseline was 40.5 (6.4) years. Most participants were male (83.3%; 30/36), not in an opioid agonist treatment program (75.0%; 27/36), Caucasian (97.2%; 35/36), had a low/basic level of education (58.3%; 21/36), and unemployed (88.9%; 32/36). Four participants (11.1%) were homeless.

Among the 108 visits scheduled up to Week-24, participants attended 68.5%, missed 21.3%, and had upcoming visits planned for 10.2%. Among participants with available HIV-RNA, 66.7%, 70.8%, and 90.9% had VL<40 copies/ml at Week-4, Week-12, and Week-24, respectively.

Four participants had SAE (none related to treatment). The median time to initiate treatment (from the date of screening to the start of BIC/FTC/TAF) was 0 days. For 122 historical controls from the same HIV clinics, the median time (25<sup>th</sup>-75<sup>th</sup> percentile) from diagnosis to initiating ART was 141.5 (43.5-414.5) days, while among those with available HIV-RNA at Week-24, 40% had VL<40 copies/ml.

**Conclusions:** The combination of rapid ART initiation with BIC/FTC/TAF and PNS was effective in achieving high rates of rapid viral suppression among PWID in Greece.

These findings support the implementation of rapid initiation of ART and PNS interventions for PWID to improve HIV outcomes.



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## WEPED394

Infant and maternal health outcomes and stakeholder perspectives on post-natal home visits in Mathare North, Nairobi, Kenya

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**Background:** Strong evidence support home-based delivery of postnatal interventions in improving newborn survival and maternal outcomes. UNICEF and World Health Organization recommend a minimum of two post-natal home visits within the first week of life. Limited data exists regarding successes and challenges of implementation in Kenya, where mothers and infants—including those with or exposed to HIV would benefit.

To address this knowledge gap, we utilized an existing birth cohort study of mother infant pairs on postnatal follow up for two years at a health center in Nairobi to compare health outcomes between those receiving standard clinic visits versus additional home visits for one year.

**Methods:** Mixed methods approach assessed morbidity/mortality and gathered stakeholder perspectives regarding provision and receipt of postnatal home visits. Women living with HIV and HIV-negative women were enrolled during their third trimester. Outcomes were assessed at clinic visits. In-depth interviews among a subgroup of mothers and stakeholders assessed benefits and challenges. Survival analysis methods assessed differences in risk of recurrent acute diarrhea, pneumonia, or hospitalization (Andersen-Gill regression) and mortality (Cox proportional hazards regression) between groups; models were adjusted for maternal HIV status, age, marital status, and education. Thematic analysis with inductive and deductive approaches were iteratively used to explore emerging themes.

**Results:** Exit data were available for 153/211 (73%) mother-infant pairs, 58 (38%) received additional weekly home visits and 95 (62%) received clinic visits only. Among the infants, 74 (48%) were HIV-exposed and 79 (52%) were HIV-unexposed. There was a significant difference in risk of acute diarrhea (adjusted Hazard Ratio [aHR]=0.50, 95% CI: 0.26-0.93; p=0.030), but not in risk of pneumonia (aHR=0.23, 95% CI: 0.036-1.46; p=0.118), hospitalization (aHR=0.15, 95% CI: 0.020-1.20; p=0.073), or mortality (aHR=0.33, 95% CI: 0.042-2.79; p=0.315). Emerging themes on benefits of home visits included psychological support, education on infant danger signs, exclusive breastfeeding, and prevention of HIV transmission to infants. Barriers included stigma, invasion of privacy, and lack of spousal support.

**Conclusions:** Despite limited power, additional post natal home visits may reduce morbidity in the first two years of life. Mothers and providers found home visits beneficial despite some barriers and recommended home for scale in universal health coverage.

## WEPED395

The problem of elimination of mother-child transmission of HIV in the DRC: role of the community

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**Background:** Mother-to-child transmission of HIV infection (MTCT) remains a public health problem despite the TEST-TREAT strategy implemented, to bring the MTCT rate to less than 5 % in 2025. This desire has been renewed many times in the different versions of the ETME Plan since 2012.

However, despite all the investments, the situation of the HIV program over the last five years in the DRC remains worrying, with mother-to-child transmission of HIV at 18%.

**Methods:** This is an evaluation conducted using quantitative data from three provinces of the DRC: Haut Katanga, North Kivu and Kasai Oriental.

The study focused on 5 years of data, i.e. from 2017 to 2021 inclusive for indicators directly linked to the cascade of PMTCT services.

This involved evaluating the performance of PMTCT interventions, identifying bottlenecks at the operational and intermediate level as well as the best strategies most suited to scaling up.

**Results:** The main bottlenecks identified were the poor access of pregnant women to Prenatal Consultation (12% of pregnant women do not benefit from any Prenatal Consultation session during pregnancy, 83% do not attend the Prenatal Consultation service before the second trimester, 52% benefit from less than 4 Prenatal Consultation during pregnancy). Lack of knowledge of serological status by HIV+ pregnant women (30% of HIV+ pregnant women not tested and informed of their HIV+ status), failure to put pregnant women tested HIV+ on ARV (at least 30% of pregnant women tested HIV+ and informed of their status did not receive ARV). No access of exposed children to ARV prophylaxis and early HIV diagnosis (1 in 4 exposed newborns did not receive ARV prophylaxis at birth, only 3 infants exposed to HIV did not benefit from early diagnosis according to the national protocol).

**Conclusions:** In the DRC, substantial progress has been made in the prevention of MTCT, however additional efforts must be made to eliminate MTCT by 2025. Thus, these analyses and exchanges must be continued in other provinces to better understand individual problems in each province of the country to optimize PMTCT.

## WEPED396

### CAYA - a nurse case management HIV prevention intervention for youth experiencing homelessness: results from a randomized wait-list controlled trial

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**Background:** Youth experiencing homelessness (YEH) face numerous challenges that can put them at high risk for HIV infection. Nurse case management has proven effective in managing the complex needs of populations experiencing homelessness and supporting HIV risk reduction. This study aimed to evaluate the CAYA "Come As You Are" intervention, a nurse-led model that provided comprehensive HIV prevention education and services for YEH aged 16-25 years.

**Methods:** The CAYA study began in September 2019, and data for this analysis was collected from November 2019 to May 2023. A randomized wait-list controlled trial was conducted to assess the efficacy of the CAYA intervention compared to usual care. Efficacy measures include uptake of preexposure prophylaxis (PrEP), HIV and STI testing/treatment engagement, and condom use. Follow-up surveys were administered immediately after the 3-month intervention. Descriptive statistics were calculated by study arm for baseline demographic characteristics. Analysis for this study was based on the intent-to-treat principle. Generalized linear mixed models in a Bayesian framework were used to compare the between-group change over time in the dichotomous outcomes assessed at baseline and immediately post-intervention.

**Results:** Four hundred and fifty participants were enrolled using a 2:1 ratio in the intervention and control groups, respectively (intervention = 303; control = 147). On average, the sample was 21 years old, 50.2% male, 43.3% female, 6.4% other/unknown gender, 62.0% Black, 16.0% Hispanic, 11.3% White, and 10.7% other race/ethnicity.

There were no significant demographic differences between the two groups. At baseline, rates of HIV/STIs were high (HIV 3.5%, Syphilis 6.0%, Gonorrhea 4.6%, Chlamydia 11.6%), and condom use at the last sex was low (36.9%). Despite high levels of transiency among the youth, the immediate post-intervention follow-up rate was 70.9%.

Results show a more significant increase in PrEP use from baseline to the first follow-up in the intervention group compared to the control group (OR = 3.31; 95% CI: 1.15 – 10.06). There was no treatment effect on condom use or HIV/STIs.

**Conclusions:** This study demonstrates that a personalized HIV prevention approach led by nurses can increase PrEP uptake and thereby reduce HIV risk among a vulnerable, hard-to-reach population of youth.

## WEPED397

### Empowering communities to advance HIV cure research: a review of an advocacy for cure grant project in Greater Selebi-Phikwe, Botswana

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**Background:** The Tatelo study, a pediatric HIV research initiative in Botswana since 2015, explores early treatment in children. It involves interrupting Antiretroviral Therapy and administering broadly neutralizing antibodies monthly for up to six months.

Some children maintained viral suppression, displaying low, replicate incompetent reservoirs (<https://www.hsph.harvard.edu/shapiro-botswana-research-fund>).

A 2022 baseline in our AIS-funded advocacy for cure project, targeting 7 communities in Greater Selebi-Phikwe Botswana, revealed a knowledge gap in communities regarding ongoing HIV trials.

**Description:** To bridge the gap, 30 community leaders were interviewed to gauge their knowledge on current HIV cure research. Nine chiefs were trained on HIV cure strategies to disseminate information during community gatherings. Dialogues were held with 100 traditional doctors and 100 religious leaders to convey accurate scientific results on HIV cure.

Further dialogues occurred between 12 traditional doctors and 12 heads of District Health Management Teams (DHMTs) to explore collaboration possibilities. Lastly, 30 Civil Society Organizations (CSOs) implementing HIV programs were trained on the two main pathways under investigation in HIV cure research.

**Lessons learned:** The baseline study indicated that only 20% of community leaders could define what an HIV cure is, while by the endline, this figure increased to 67%. Initially, 93% of community leaders were not aware of individuals being cured of HIV; however, by the endline, this number dropped to 57%. Nine chiefs endorsed a memorandum of understanding, committing to incorporate the HIV cure project into their community health plans. Additionally, 66 traditional doctors and 90 religious leaders



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signed statements of commitment to refer HIV-positive clients, who have been healed through traditional herbs, for investigation in cure research. They also pledged to do herbal and traditional medicine testing from Laboratory Testing Centers. Traditional doctors and DHMT agreed to make a follow-up on a proposal that was put forth to the Ministry of Health exploring the possibility of collaboration between traditional doctors and physicians practicing Western medicine. Twenty-nine CSOs were trained on pathways for HIV cure research.

**Conclusions/Next steps:** Continued investment in HIV programs will mainstream HIV cure initiatives and increase HIV cure research information dissemination. Strong collaboration between traditional and Western medical practitioners is crucial because of their shared clientele.

## WEPED398

*Clients' perspectives on the feasibility of pre-exposure prophylaxis (PrEP) uptake in private pharmacies in South Africa*

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**Background:** Pre-exposure prophylaxis (PrEP) is a highly effective strategy for preventing HIV, acquisition of HIV. Still, there are obstacles to its accessibility and uptake, especially for populations at risk of acquiring HIV. Provision of PrEP offers an opportunity to impact HIV by increasing PrEP uptake and reducing the incidence of HIV.

This study explored the feasibility of PrEP uptake through private pharmacies (independent pharmacist-owned, privately held businesses) in South Africa.

**Methods:** A qualitative research approach was employed to gather insights from private pharmacy clients regarding their perspectives on accessing PrEP through private pharmacies. In-depth interviews (IDIs) were conducted between May and July 2023 using an open-ended question guide to understand the opinions of private pharmacy clients in relation to PrEP uptake in pharmacies. Enrolment of consenting participants was through purposive sampling from eight participating private pharmacies located in two major cities (Johannesburg and Cape Town) in South Africa. Data management and analysis involved verbatim transcription and thematic analysis on MAXQDA version 22 software.

**Results:** A total of 30 participants, of which median age was 22 years (interquartile range: 20-30 years) and 8 (27%) were males. Emerged themes included awareness and knowledge on PrEP and barriers (social and health systems related) to PrEP uptake. Social considerations, such as stigma and privacy concerns, and health system fac-

tors, such as perceived service quality and convenience of access, influenced the feasibility of obtaining PrEP from private pharmacies. Private pharmacy clients' perceptions of PrEP's affordability and cost were other facilitators identified as potentially influencing the feasibility of PrEP uptake at pharmacies.

Almost all the participants stated that low cost, increased affordability, and convenience (easier accessibility) would enhance uptake of PrEP provided through private pharmacies and in general.

**Conclusions:** There are both opportunities and challenges for PrEP uptake in South Africa's private pharmacies. Addressing awareness gaps, reducing stigma, ensuring affordability, and integrating PrEP services into private pharmacy settings are critical to increasing the feasibility of PrEP uptake.

These findings could inform the development of tailored interventions and policies to improve PrEP delivery through private pharmacies, ultimately contributing to the expansion of HIV prevention efforts in South Africa.

## WEPED399

*Paradox of Community – Led Monitoring: community – led approaches to monitor community engagement within HIV Differentiated Service Delivery (DSD) programs across 20 African countries*

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**Background:** Community – Led Monitoring (CLM) enables People Living with HIV (PLHIV) to take the lead to routinely monitor issues that affect them. Applying CLM to Community Engagement (CE) is crucial towards achieving quality HIV Differentiated Service Delivery programs.

However, the engagement of PLHIV across HIV DSD programs are often impeded by structural issues at the regional and national level. Targeted community-led approaches are therefore needed to strengthen CE activities and advocacy.

**Methods:** Building on a successful pilot in 2019, the Community Advocacy Network (CAN) innovative application of community-led monitoring to community engagement resulted in an innovative 19- indicator tracking tool for decision-making and programming related to differentiated service delivery at the country level. 20 countries across the African continent collected data retrospectively between July to November 2022 for the period 1 June 2021 to 31 May 2022. The level of engagement was assessed using a six – color coding system ranging from dark green (81-100%) to grey (0%).



**Results:** On average, 50% of results are in the "meaningful engagement" or "satisfactory engagement" achievement rate. Liberia, Cote d'Ivoire and DRC scored meaningful engagement of communities in DSD activities. Rwanda, Zambia, Zimbabwe, Ghana, Ethiopia, Mozambique, and Nigeria scored satisfactory CE. Sierra Leone, Tanzania, Eswatini, South Sudan and Kenya scored minimal CE, but low scores are mostly linked to M&E-stage activities not being conducted yet. 39% of CE results were in the 81-100% achievement rate (meaningful engagement) across Rwanda, Zimbabwe, DRC, Liberia, and Côte d'Ivoire. Nigeria, Kenya, Sierra Leone, and Zambia (10% of the results) scored 61-80% achievement rate (satisfactory engagement). 30% of results were in the red/grey score indicating no CE in specific areas, mainly in South Sudan, Eswatini, Burundi, Senegal, Malawi, Uganda, Cameroon, and Tanzania.

The CE findings have enabled countries to use the data to develop advocacy plans by integrating the CE findings in their CLM feedback meetings and/or have adapted the tool for wider CLM efforts within their national community.

**Conclusions:** CLM underscores the untapped and huge potential for meaningful community engagement by offering pathways for refining strategies to ensure robust community responses that advocate for an appropriate package of services.

## WEPED400

### Understanding antiretroviral (ART) adherence among pregnant women in rural Mpumalanga province, South Africa

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**Background:** South Africa has an extremely high HIV prevalence (12.7%), and although free ART is available to all, mother-to-child transmission remains high. The objective of the project was to understand why some pregnant women do not take their freely available ART medication as well as implement an intervention to increase and sustain adherence.

**Description:** The cluster randomized control trial recruited 673 HIV-positive pregnant women from 12 community health clinics in Mpumalanga province. Women were recruited at less than 24 weeks pregnant to followed-up until continuously until their baby was 12 months old. A theory-based social-cognitive 'Protect Your Family' intervention was given to experimental clinics, while control clinics received time-appropriate general pre/post-natal health information. The intervention consisted of a structured behavioral risk reduction program targeting PMTCT, part-

ner violence, stigma, disclosure, alcohol/drug use, anxiety reduction, communication, disclosure, ART adherence, male involvement, family planning, delivery, safe sex, immunization, nutrition, feeding, and medication.

**Lessons learned:** Over half of the respondents learned they were HIV positive the day they learned they were pregnant. Over time, women in the experimental condition did not become adherent and there was a change to non-adherence. The necessity concerns framework shows that a pregnant woman adhered to ART as she deemed it necessary to protect her fetus from HIV but once the child was born HIV-negative, and the mother had no concern for the transfer of HIV from mother-to-child, the concerns about taking the medication grew, and post-partum ART adherence decreased.

Cultural practices led to high loss to follow-up and thus reduced intervention. Findings show that HIV status knowledge and thus HIV testing needs significant improvement and that comprehensive interventions starting from the time a person is diagnosed and continued for life are urgently required to show the necessity and mitigate the concern of adhering to ART as well as to take cultural beliefs and practices into account.

**Conclusions/Next steps:** Adhering to the ART protocol is not simply a matter of providing free ART medication to all those who require it and expecting them to then take their medication as prescribed. Interventions need to be continual to ensure long-term adherence.

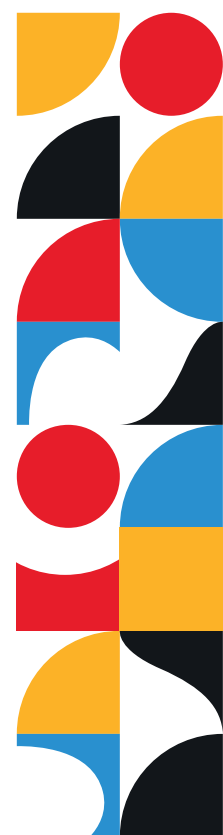
## WEPED401

### Knowledge and experiences of participating in an HIV vaccine efficacy trial with second randomization to oral pre-exposure prophylaxis in South Africa, Tanzania, and Uganda

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**Background:** While development of a safe and effective HIV vaccine remains an important priority to contain the epidemic, continued effort is required to ensure that existing prevention strategies are effectively implemented. We assessed knowledge and experiences of participating in a PrEP and HIV vaccine trial (PrEPVacc) among people aged







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18-40 years at four sites in South Africa, Tanzania, and Uganda. The trial recruited fisherfolk, female sex workers, bar workers and the general population and participants were randomized both to different vaccine delivery arms and two forms of PrEP (Truvada and Descovy).

**Methods:** Between October 2021 and September 2023, 105 males and females were purposively selected to take part in repeat in-depth interviews at 2, 6 and 12 months, and other 94 females and 27 males in 15 focus group discussions across all trial sites. Sampling characteristics included age, gender, PrEP arm, and adherence behavior according to self-report and urine test results. We explored knowledge of trial participation, acceptability and uptake of both PrEP and vaccination, including their disclosure. Data were analyzed manually using thematic framework analysis.

**Results:** Participants understood that they were randomized to both vaccination and PrEP. They were also aware that the vaccine was under trial with a placebo arm, and PrEP could protect them from acquiring HIV. The main motivation for using PrEP was the individual's perception of HIV risk. While both PrEP and the vaccine were accepted, vaccination was preferred because it was administered fewer times and had fewer side effects compared to oral PrEP which had to be taken daily. In addition, some significant others like partners, other family members and peers discouraged PrEP use and vaccination due to fear of possible related side effects, and in the case of PrEP, associations with daily antiretroviral therapy for people living with HIV.

**Conclusions:** Trial randomization was understood, and products accepted. However, individual perceptions of risk, user preference and significant relationships influenced acceptability and use of PrEP and vaccination. Interventions should not only focus on the individual but consider other layers like family and community relations and policy factors that could influence acceptability and use of a product.

# WEPED402

How can the international AIDS conference value and enhance the expertise, leadership and participation of women and trans people living with HIV as equal partners in research?

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**Background:** The 2021 Political Declaration on HIV and AIDS commits to community leadership, including supporting community-led monitoring and research. Women and trans people living with HIV and our networks have vast experience and expertise. Is this recognised in global agenda setting platforms like the International AIDS Conferences (IAC), which aims to increase knowledge exchange, advocacy, and community engagement?

**Methods:** We collected data on women and trans people living with HIV at AIDS2022 through:

- Data requests to IAS for numbers of women and trans people living with HIV as invited speakers, abstract presenters and scholarship recipients at AIDS2022.
- Review of AIDS2022 abstracts to determine how many were co/authored with/by representatives of networks/ organisations of women and trans people living with HIV.
- Analysis of data to assess representation trends.

## Results:

Speakers and scholarships:

	Total	Women living with HIV	Trans, non-binary and non-conforming people living with HIV	Trans women living with HIV
Invited speakers	173 (100%)	16 (9%)	2 (1.2%)	1 (0.58%)
Abstract presenters	2450 (100%)	59 (2.4%)	9 (0.37%)	0
Scholarships	1602 (100%)	97 (6%)	27 (1.7%)	9 (0.6%)



## Abstracts:

- Only 3 of 120 oral abstracts at AIDS2022 were co-authored by organisations of women and trans people living with HIV. All 3 specifically focused on health, wellbeing and lives of women and girls living with HIV, with 2 focused on trans women living with HIV.
- 24 posters were co/authored: these all directly address key issues of women and girls and trans people living with HIV.
- 99% of abstracts at AIDS2022 were authored by academics, medical institutions, governments, international agencies, NGOs, pharmaceutical companies, with **no co-authors from organisations of women and trans people living with HIV.**
- 9% of oral abstracts (n=11) had **community co-authorship that included but was not limited to women and trans people living with HIV.**

**Conclusions:** At IAC there are persistent disparities in the representation of networks of women and trans people living with HIV.

We are underrepresented in scholarships, as speakers and abstract presenters, and as co/authors of abstracts. Our vast expertise is sidelined within HIV research.

IAS should:

- ensure women and trans people living with HIV in speaking and leadership roles at IAC and monitor this.
- promote community co/authorship in research (e.g. through abstract and review instructions) to amplify diversity of expertise in the global HIV response.

## WEPED403

Crowdsourcing and message testing to reduce stigma among women who exchange sex and/or use drugs and healthcare providers in Kazakhstan: examining tensions between community and provider needs and goals

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**Background:** Anticipated or experienced stigma from healthcare providers (HCPs) prevents engagement of women who exchange sex and/or use drugs (WESUD) in HIV prevention and care services. Conventional approaches to designing HIV prevention or stigma reduction interventions often do not sufficiently involve focal communities. By contrast, crowdsourcing relies on high community involvement in the design and dissemination

of public health messages and intervention strategies. We discuss preliminary results of a crowdsourcing contest and subsequent message testing in Kazakhstan designed to engage WESUD and develop a multimedia anti-stigma campaign for HCPs.

**Methods:** From January-March 2023, we held a nation-wide crowdsourcing contest to elicit WESUD experiences in seeking HIV and drug-related health services in the form of text, audio, image or video submissions. We completed a content and thematic analysis to identify potential messages for future testing.

In Fall 2023, we conducted 5 message testing focus groups with WESUD (N=22) and 3 focus groups with HCPs (N=14) to elicit feedback on potential messaging campaign ideas.

**Results:** We received crowdsourcing submissions from 90 WESUD, which included both positive and negative experiences in HIV prevention settings. Participants described substantial stigma and fear and a desire to be treated with dignity.

Four campaign ideas were developed and tested in focus groups: 2 on advancing WESUD identity and rights (i.e. disclosure of sex work/drug user identity, human rights and equity) and 2 on advancing clinician skills (i.e. provider communication, clinics as a source of support/protection). WESUD preferred campaign ideas that focused on identity and rights, as well as on shifting clinics to be more supportive. HCPs, on the other hand, had negative responses to identity/rights based messaging and were more receptive to skills-based messaging.

**Conclusions:** Crowdsourcing with highly stigmatized groups, like WESUD, is an effective tool for supporting the development of community-responsive strategies that counter stigma and shift the landscape of HIV service provision. Tensions around messaging preferences highlight key challenges in the development of anti-stigma messaging. Future messaging campaigns must be responsive to the divergent needs and agendas of WESUD vs. HCPs to ensure that intervention efforts both represent WESUD voices and effectively engage HCPs in stigma reduction.

## WEPED404

Relationship functioning moderates primary outcomes in two trials of a couple-based HIV prevention program for young sexual minority men

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**Background:** 2GETHER is a relationship education and HIV prevention program designed for young male couples in the United States. This status neutral intervention is com-



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posed of two groups sessions (i.e., didactic skills instruction, interactive activities) and two skills coaching sessions (i.e., facilitated skills practice for each couple). 2GETHER has demonstrated efficacy in reducing biomedical and behavioral indicators of HIV risk, including rectal sexually transmitted infections (STIs) and condomless anal sex (CAS), in two randomized control trials (RCTs): "2GETHER Chicago" (delivered face-to-face) and "2GETHER USA" (delivered via telehealth across the U.S.).

The goal of the current analyses was to examine whether relationship functioning at study entry impacted RCT outcomes using a combined dataset of these two trials.

**Methods:** 2GETHER Chicago enrolled 128 dyads ( $N=256$ ) from 2017-2021, and 2GETHER USA enrolled 200 dyads ( $N=400$ ) from 2018-2020. Participants in each trial had high retention at 12-month follow-up (i.e., 91.4% and 88%, respectively). The two trials used the same measures, allowing us to combine datasets for the current analyses. We used multilevel models in MPlus to examine how baseline relationship functioning (i.e., satisfaction, positive communication, negative communication) impacted change in primary outcomes (i.e., rectal STIs, CAS with outside partners) across 12-months.

**Results:** Among participants randomized to the 2GETHER (active) condition, those who reported higher relationship satisfaction, more positive communication, and less negative communication at baseline experienced a steeper decline in CAS partners across 12-months. Participants with more negative communication at baseline reported a steeper decline in rectal STIs at 12-months.

**Conclusions:** Overall, young sexual minority men who entered the trial with higher-functioning relationships tended to benefit more from the HIV prevention content in 2GETHER in terms of behavior change at 12-months. This may indicate that more "distressed" couples cannot engage fully with the HIV prevention content because these skills require effective communication between partners. However, those with worse communication showed greater reductions in rectal STIs.

Perhaps 2GETHER taught those in poorer-functioning relationships how to integrate certain prevention strategies despite their poorer communication skills. More thorough integration of communication skills training and conflict resolution may help couples with less developed relationship skills take full advantage of couple-based HIV prevention.

## WEPED405

### Identifying gaps in the ability of pharmacy staff to initiate pre-exposure prophylaxis (PrEP) in community pharmacies in South Africa

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**Background:** Pharmacy delivery of pre-exposure prophylaxis (PrEP) is a novel strategy for reaching populations at substantial risk of HIV acquisition and reducing the number of new HIV acquisition, particularly in low -and middle -income countries. Consequently, clinical staff readiness, knowledge, and abilities to provide PrEP services in pharmacy settings, must be investigated.

This study explored the ability of pharmacy clinical staff to initiate PrEP in community pharmacies in two South African provinces.

**Methods:** In this qualitative study, in depth interviews (IDIs) were conducted among eleven pharmacy health care workers who were conveniently sampled from the nine participating pharmacies across Cape Town and Johannesburg, South Africa. The approximately 40 minutes each IDIs were conducted using a semi-structured interview guide.

Participants were asked to freely express their thoughts, knowledge, and experience in providing PrEP services. With participants consent, all interviews were audio-recorded, transcribed verbatim, and cleaned data analyzed using thematic analysis technique.

**Results:** Pharmacy healthcare workers enrolled comprised of 1(9%) managerial staff, 2 (18%) nurses and 8 (73%) pharmacists. Key emerged themes were centered on gaps identified in practical aspects of PrEP initiation, experience, and training. The pharmacy clinical staff expressed concerns with implementing PrEP, especially in the absence of nursing support.

While some were familiar with dispensing PrEP through prescription from doctors or hospitals, initiating it independently was a new challenge for them as they lacked experience with the counselling aspects.

Furthermore, despite having experience dispensing PrEP, staff had not received specific training in PrEP initiation.

**Conclusions:** These findings are consistent with similar studies conducted in the United States and Kenya, which identified lack of PrEP knowledge, experience, and training amongst clinical staff in pharmacy settings.

Consequently, the findings underscore the necessity for targeted training inclusive of PrEP delivery and management to enhance provider confidence and competence to deliver this critical service. This will potentially increase acceptability and uptake for PrEP in South Africa and other regions considering pharmacy-led delivery model.

## WEPED406

### Disclosing participation in an HIV vaccine and PrEP trial in Southwestern Uganda – the effect on participant engagement

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**Background:** Development of a safe and effective vaccine against HIV remains a key strategy for the control of the epidemic. However, development and testing of such a vaccine faces a range of social and behavioural challenges including potential stigmatisation for trial participants.

We investigated disclosure of participation in an HIV PrEP and vaccine trial (PrepVacc) to understand the impact on participant engagement.

**Methods:** Between October 2021 and August 2023, 5% (30) of men and women aged between 18 and 45 years in the PrEPVacc trial in southwestern Uganda were purposively selected for repeat in-depth interviews at 2, 6 and 12 months during the trial. Others were selected to take part in six focus group discussions of 10 to 12 participants, divided equally by gender. Discussants and interviewees represented good adherers, poor adherers, and PrEP refusers. Experiences with vaccination, motivation to participate and disclosure of participation were explored. Data were analysed manually using thematic framework analysis.

**Results:** Participants noted that disclosing participation to others improved their participation in the trial. Reasons for disclosing included a desire to participate openly and comfortably, to gain others' support including financial and physical, and to motivate others. They disclosed to friends, sexual partners, family members and employers. Men disclosed more easily than women. Younger participants disclosed more than older participants. Concerns like fear of being suspected of infidelity or having HIV, social harm, blame, and relationship breakages hampered disclosure. A lack of confidence in having the correct study information prevented disclosure, as a failure to explain what they were doing attracted negative reactions including disapproval.

As participants gained confidence in the study, approval and support from others improved. Participants who disclosed their participation tended to adhere to the study requirements and encountered less discomfort about taking part, and potential social harm.

**Conclusions:** Successful HIV intervention trial participation calls for proactive public engagement and awareness raising. Disclosure by study participants to significant others about taking part can increase participation, strengthen retention and adherence, and reduce social harms.

## WEPED407

### "You cannot be HIV+ and infertile": examining the relationship between stigma, disclosure and COVID-19 vaccination infertility rumours among young women living with HIV in Khwisero, Kenya

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**Background:** Following the WHO guidelines, the government of Kenya recommended that all PWH receive at least two doses of the COVID-19 vaccine and successful boosters.

We aimed to understand the correlation between COVID-19 vaccination uptake among YWLWHIV and HIV stigmatization, disclosure and the ongoing fertility controversies surrounding the COVID-19 vaccination in Khwisero in western Kenya.

**Methods:** KISA WEST is a region in Khwisero in western Kenya that is still struggling with high HIV prevalence rates, stigma and disclosure. The women in this setting experience their reality through their childbearing capabilities. Therefore, Ethnographically, from January 2023 to July 2023, we recruited 53 young women between the ages of (18-30) individually and in focus group discussions.

Forty-eight women made up the 4- focus group discussions – each with 12 women segregated by their COVID-19 vaccination status and anti-retroviral therapy. The remaining five women– 3 unvaccinated and on ARVS and two partially vaccinated and not on ARVs, participated in the continuous In-depth interviews.

Participants were sampled purposively through the help of a mentor mother (a woman living with HIV and working in community comprehensive clinic services).

**Results:** 1. Women who had yet to start on ART due to the stigma of being labelled as "HIV+" and the community narrative that "women with HIV were incapable of reproducing" had no vaccination reservations as they hoped the vaccine would act as permanent contraceptive plan following the infertility rumours.

2. Women who were on ART but had yet to disclose their status to their family and friends avoided the vaccine in fear of vaccination side effects brought about by the belief of reaction between the ARVs and the vaccines. The women believed that the reaction of the two would make them sick and expose their status to their loved ones.



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**Conclusions:** COVID-19 vaccine uptake among young women with HIV in Khwisero is still suboptimal; understanding that vaccination rates are driven not only by individual beliefs but also by interconnected multifactorial long-term experiences of YWLHIV is critical for present and future pandemics. Therefore, examining such interlinks is needed to develop target strategies for addressing current and future health intervention uptake among PWH.

## WEPED408

### Awareness of HIV and test-taking behavior among Nepalese migrants living in Japan

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**Background:** HIV awareness and access to testing and treatment are crucial, as it is still a major global health problem. As of June 2023, the number of Nepalese migrants increased over 156,000 in Japan, the 5<sup>th</sup> largest international migrant population in Tokyo. However, the number of Nepalese participations in HIV testing activities targeted for international migrants has remained stagnant despite being publicized in Nepali.

Thus, we assessed the need for HIV testing and factors that might promote test-taking behavior among Nepalese in Tokyo.

**Methods:** We conducted a self-administered questionnaire survey on HIV awareness and test-taking behavior during the Nepal Festival in Tokyo from July 22<sup>nd</sup> to 23<sup>rd</sup>, 2023. Convenience sampling method was employed to recruit participants. Participants received the questionnaire either in Nepali or English, on paper or online from scanned QR code.

**Results:** Of 305 participants, 71.2% were male, the average age was 31.2±7.8 years, 30.8% were single, 90.8% had a high school diploma or higher, 71.4% had lived in Japan for 5 years or longer. Seventy-seven (25.2%) responded that they would be interested in taking an HIV test in Japan in future.

In the logistic regression analysis, those with higher perceived risk of HIV infection (aOR:4.11; 95% CI: 1.61-10.46), those with lower AIDS-related stigma scores (aOR1.05; 95% CI: 1.01-1.1), and those who knew that they could be legally allowed to stay in Japan even if they were infected with HIV (aOR: 1.75; 95% CI: 1.01-3.01) were associated with positive attitudes toward taking the test.

**Conclusions:** Despite the interest in taking HIV test, only a few Nepalese are getting tested during outreach testing activities. The study findings indicate the need to modify

the outreach testing activities so as to effectively cover those who feel they may be at risk for HIV infection and those willing to know their status with testing. Since 25.3% of respondents at the Nepal Festival stated they would be interested in testing, it is crucial to lessen the stigma linked to HIV, and spread accurate information about HIV among Nepalese communities in Japan.

## WEPED409

### Covering ALL women via AEGIDA: experiences of transgender women who exchange sex and engaged with an HIV prevention study in Kazakhstan

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**Background:** HIV prevention/care with transgender women (TGW) is growing globally, although nascent in Central Asia. TGW are vulnerable to HIV, facing stigma and discrimination that reduce access to testing and prevention/care. Here, we present data on a sub-sample of TGW who exchange sex and use substances (TGWESUS) enrolled in AEGIDA, 4-session, NIH-funded intervention to support consistent HIV testing.

**Description:** TGWESUS were recruited through local LGBTQAI+ influencers and snowball sampling. Twenty TGWESUS completed screening interviews (February-August 2023); seven were eligible. Six women enrolled; four completed exit interviews. AEGIDA applied cognitive restructuring (reframing and self-compassion), peer education/training (HST), and motivational interviewing. We assessed feasibility and acceptability and conducted post-follow-up exit interviews to evaluate how AEGIDA affected thoughts, feelings, and behaviors around HIV testing.

**Lessons learned:** The majority (80%) of TGWESUS screened reported condomless vaginal/anal sex with any sexual partner in past 90 days; 40% reported drug use and 53% alcohol abuse in the past year. AEGIDA was feasible and acceptable for TGWESUS; 83% completed all four sessions and attendance 100%/100%/83%/83% was good.

Median days to session completion was 40 (13-63 days), which was longer compared with cisgender participants, which will be factored into future adaptation. In exit interviews, TGWESUS participants noted improvements in self-worth and compassion: "My self-care has strength-

ened, I had been checked before, but now I realized that this is even more important" "That stage in life (AEGIDA) taught me to value my body and myself in general."

Another noted that the peer education was useful: "My thoughts became a little different, feeling appeared that I could give something to others," as well as the cognitive restructuring and self-efficacy focus "AEGIDA helped me establish myself as a person who will not allow [myself] to be insulted, I could take care of myself".

**Conclusions/Next steps:** High vulnerability to HIV and stigma among TGWESUS highlight the need to tailor research and programming for TGW. AEGIDA with its focus on self-care via HST, anti-internalized stigma via cognitive restructuring and empowerment may be an important way to engage TGWESUS in HIV prevention/care and enhance their health and well-being.

## WEPED410

**Making HIV prevention herstory: the African Women's Community Prevention Accountability Board, the Choice Manifesto and lessons for primary prevention, women's health and long-term success in the HIV response**

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**Background:** The African Women's Community Prevention Accountability Board (AWCPAB) grew out of nearly fifteen years of African feminist-led engagement with researchers, policy makers and governments seeking to ensure that trials, products and approaches reflect the needs and priorities of adolescent girls and women in all their diversities, who remain disproportionately impacted by HIV.

Independent, outcome and impact focused advocacy models led by and for impacted communities are urgently needed for the changing HIV landscape. The AWCPAB and its evolving approaches and tactics can be used by other groups to develop nimble, responsive coalitions and campaigns that achieve results.

**Description:** Starting in 2010, when an ad-hoc group of East and Southern African women engaged the team conducting a trial looking at the relationship between various contraception methods and HIV, this group has secured unique, fit-for-purpose engagement structures that shape how research is conducted and communicated and roll out is planned for.

The table offers select time points, actions taken, lessons and broader applications. This ongoing advocacy has secured support from the highest level at government and UNAIDS, changed research approaches and kept a focus on technologies such as the dapivirine ring that are life-saving tools which donors might otherwise have set aside.

### Making HIV Prevention Herstory: A Selected Timeline

2010: African feminists, led by WLHIV, demand that the investigators and funders of the ECHO trial convene a Global Community Advisory Board of above-site activists and advocates. The first-ever GCAB guides messaging, protocol development and results dissemination activity.

2016-2018: G-CAB members join with other women prevention advocates to review and demand changes to the protocol for HPTN 084, with continued engagement across the lifespan of the trial

202xx-present: The dapivirine ring shows efficacy in reducing HIV risk - AWPCAB members push back against resistance at funder, implementer and normative levels that the ring is not a relevant part of the prevention toolbox, and that it should be set aside in favor of long-acting injectable cabotegravir, rather than implemented as one of a tool box of options.

2023: Launch of the CHOICE manifesto - AWPCAB brings its product specific concerns together in a CHOICE manifesto that calls all stakeholder to account for programs and policies that reflect women's priorities. This is one of the first broadly-supported primary prevention focused agendas by and for African women living with and at risk of HIV.

### Lesson and Broader Application

New technologies and key research questions and approaches should engage communities where products will be tested and informed activists and advocates who come from and work with these constituencies and communities. Common in HIV treatment, this approach should also be used in HIV prevention and AWPCAB shows it is possible.

Community engagement has to start while protocols are still in development; above-site input can transform approaches.

Product developers do not listen to community preferences without sustained and persistent advocacy—even when there is an effective product. In spite of unchanged incidence in adolescent girls and young women over many years, stakeholders with resources to accelerate or obstruct product introduction do not listen to women's preferences for choice and reversible methods, even though the evidence from family planning backs up this programmatic strategy.

Single-product advocacy is important, so is a broad and ambitious campaign for changes in business as usual.

**Lessons learned:** The AWPCAB has been successful in devising structures that engage duty-bearers and hold them accountable for actions at every stage of the primary prevention product development pathway. It has done so by diplomatically and firmly refusing to accept engagement approaches that replicate the status quo, and by rejecting the idea that funders and governments should decide which products women should have access to to reduce HIV risk.

Challenges include: turning commitments into action, ensuring broad input into documents and positions, ie the CHOICE manifesto, and a continued fight to make women's issues central to the HIV response.

**Conclusions/Next steps:** AWPCAB is not a program or institutional initiative. It is a self-organized and -governed African feminist movement that will continue until our CHOICE agenda is a reality.



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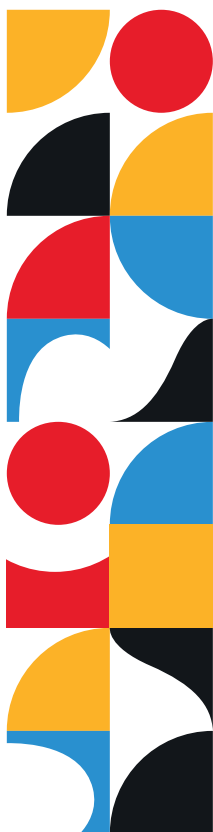
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## WEPE411

### Optimizing antiretroviral therapy delivery: lessons learned and best practices from a community-based model in Cambodia

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**Background:** Stable people living with HIV (PLHIV) can safely decrease clinic visits and potentially access antiretroviral therapy (ART) within the community setting. The Community Antiretroviral Therapy Delivery (CAD) model plays a crucial role in Cambodia's HIV response. This study seeks to chronicle the insights gained from the CAD model's development, implementation, and assessment, contributing to establishing a sustainable continuum of HIV care for PLHIV in Cambodia.

**Description:** The CAD constituted a 36-month quasi-experimental encompassing six months of intervention development, followed by 24 months of implementation, and a six-month evaluation of impacts and cost-effectiveness. This project operates across 10 ART sites, spanning the capital city and four provinces. Community ART Group (CAG) leaders have been tasked with collecting and delivering pre-packaged antiretrovirals to stable PLHIV. Additionally, they engage in outreach activities such as counseling, group education sessions, monitoring ART adherence, checking vital signs, following up on missed appointments, and referring unwell PLHIV to clinics.

**Lessons learned:** The project successfully enrolled 2,057 stable PLHIV in the intervention, with 59% being females. Among them, 48 were adolescents (aged 15 to 19 years), and 40 belonged to key populations, including men who have sex with men, transgender women, and female entertainment workers. Eighty-two CAGs were established, half of which were led by women living with HIV. The project engaged 76 healthcare providers, with 27 of them being females.

Results from the midterm qualitative evaluation underscored the project's positive impact, particularly on PLHIV and healthcare providers at ART clinics. Key influencing

factors included the empathy and compassion demonstrated by CAGs towards their peers, the willingness of ART site staff to collaborate, and the high level of stakeholder commitment. The model exhibited practicality and significant potential for success, with indications of local ownership at various levels being robust and encouraging.

**Conclusions/Next steps:** The CAD model is proven to be relevant, viable, and highly impactful, reducing burdens for PLHIV and the health system. Positive outcomes strongly advocate for scaling up the CAD model, emphasizing its potential for meaningful improvements in HIV care. The evidence underscores its effectiveness, making it a valuable guide for enhancing and expanding community-based antiretroviral therapy initiatives.

## WEPE412

### Negotiating safer chemsex: a qualitative study among sexual minority men who engage in chemsex in Singapore

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**Background:** Chemsex, or the confluence of substance use and sexual activity among certain populations has been identified as a potential driver of HIV transmission. In Singapore, stringent and punitive drug laws and HIV criminalization laws persist that limit research and the reach and impact of community-led interventions.

This study explores the subculture of safer chemsex, as individuals navigate the complex interplay between legal frameworks surrounding HIV disclosure and drug use, with the role of negotiation within the subculture of safer chemsex as a protective mechanism against harms typically associated with chemsex, including HIV transmission.

**Methods:** Semi-structured in-depth interviews were conducted with 33 purposively sampled GBMSM seeking treatment for chemsex in Singapore. Interview topics included participants' experiences and life histories of chemsex, substance use, incarceration, trauma, and ongoing recovery from chemsex. Interviews were audio-recorded, transcribed and analyzed using inductive thematic analysis, from which the negotiation within the subculture of safer chemsex emerged.

**Results:** Our findings highlight the centrality of negotiation in the practice of safer chemsex. Participants engage in comprehensive negotiations, covering diverse aspects crucial for risk reduction.

Negotiations around HIV prevention methods were common, with participants actively discussing and agreeing upon the use of condoms or PrEP. Negotiations around HIV status and individuals at sessions demonstrated a commitment to transparency and informed decision-making.

The negotiation of session duration emerged as a factor influencing risk, with participants recognizing the correlation between prolonged sexual activity and increased vulnerability to HIV. Establishing ground rules was a prevalent subcultural practice, contributing to the co-creation of consensual and safer spaces.

Power dynamics in negotiation, such as the exchange or payment of drugs and control over their type and administration also played a pivotal role.

**Conclusions:** This study sheds light on the multifaceted nature of negotiation within the subculture of safer chemsex and its potential role as a protective mechanism against harms typically associated with chemsex, including HIV transmission.

Recognizing negotiation as a subcultural practice and ritual in safer chemsex is essential for designing targeted interventions that harness existing protective behaviors. Understanding and leveraging negotiation dynamics can inform HIV prevention strategies tailored to the unique challenges presented in Singapore.

## WEPED413

**Integration of HIV, FP and PrEP youth-friendly services to improve service uptake and completion, amongst adolescent girls and young women in South Sudan**

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**Background:** In South Sudan, it is a challenging task for adolescent girls and young women (AGYW) to access comprehensive and integrated sexual reproductive health (SRH) services. Young people shy away from accessing services from health facilities, as services are deemed not youth friendly.

This, coupled with entrenched, harmful patriarchy, gender disparities, and discrimination, resulting in AGYW having less involvement in their SRH rights and access in South Sudan.

**Description:** The Determined, Resilient, Empowered, AIDS-free, Mentored, and Safe (DREAMS) initiative is implemented by Jhpiego under USAID/PEPFAR-funded ACHIEVE project in Juba, targeting out of school AGYW 15-24 years. It provides youth friendly services through 73 trained mentors, who refer and support, enrolled AGYW, to access and complete different clinical services using a community coordinated approach, where various providers come to the same site, for AGYW to access and complete different services of their choice and in accordance to their needs.

**Lessons learned:** A total of 4,119 AGYW (2,290 aged 15-19 and 1,829 age 20-24) in October 2022 to September 2023, were screened for HIV risk and enrolled in DREAMS. Of these, 82.7% (3,408) completed the life skills primary pack-

age that is inclusive of curriculum based, group facilitated sessions and 3,527 completed secondary services inclusive of HTS, PrEP, post GBV services, and STI screening and testing. Through this approach AGYW completed referrals to the following services: HTS: 3,021, STI screening and treatment: 338, family planning: 269, PrEP: 268, PEP: 7 and post-GBV: 235. This approach resulted in more than 300% increase in the number of AGYW completing secondary services, relative to FY 21 and FY 22.

**Conclusions/Next steps:** Integration of multiple services, in DREAMS safe spaces using the community outreach approach, improves referral completion rate and allows AGYW to have the confidence to initiate and access desired health services in their own preferred community youth friendly space.

## WEPED414

**Resilience of peer navigation among HIV positive older people (50+) in multi-crisis during the war in Ukraine**

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**Background:** We explored how older people with HIV (OPWH, defined as ≥50 years) may learn and practice Peer Navigation in Ukraine during a multi-crisis with progressively diminishing means of subsistence, destruction of critical public infrastructure and individuals' homes through military bombings, and forced loneliness when loved ones must flee. We evaluated how Supervision may support Peer Navigators (PNs) in this context.

**Methods:** For OPWH, we developed a peer navigation program consisting of a team of 6 PNs (4 women and 2 men) running June-December 2023 in Kyiv city. PN eligibility criteria included being a OPWH with virologic suppression for at least 12 months, and, crucially, wishing to help other OPWH. Clients' eligibility criteria were out-of-care OPWH, including both recently diagnosed and long-term 'lost to follow up'. PNs were trained including Motivational Interviewing techniques, by a supervising practicing psychologist. An HIV physician was appointed to be available for consultation on medical questions by the PNs.

**Results:** We learned that the appropriate capacity for each PN is 5-7 OPWH for 3 months. Over the 7 months, the supervisor conducted 10 group consultations and approximately 30 individual consultations for each PN.

We learned that one of the major obstacles for PN was how to draw appropriate boundaries between themselves and their client.

Furthermore, PNs preferred on-demand consultations as needed instead of pre-planned meetings. There was less demand for consultation with the HIV clinician than ex-



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pected, with 3 group sessions and 5 on-demand individual consultations over seven months. PNs preferred in-person group discussion of cases and problem solving rather than online meetings. Though PNs were initially were hesitant to share their own experience as a OPWH. Through facilitated guidance from the PN supervisor, PNs practice evolved to disclose their own experience with HIV and ART to help their clients. A commune of people was formed who are able to cooperate and be friends.

**Conclusions:** PNs working with OPWH require both social and professional support to cope with their personal challenges. Flexible supervision following OPWH's needs was vital for PNs' survival and maintaining their mental health under the multi-crisis conditions during the war in Ukraine.

## WEPED415

Needs assessment towards online and less frequent PrEP monitoring: focus group perspectives from young and migrant men who have sex with men and transgender persons in the Netherlands

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**Background:** Frequent in-clinic PrEP monitoring visits may be barriers hampering scale-up of PrEP. Online monitoring and less frequent monitoring may reduce such barriers. We aimed to identify the perspectives of (future) PrEP users on such alternative PrEP provision models.

**Methods:** We conducted five online focus group discussions (FGDs) in June 2020 with men-who-have-sex-with-men (MSM) aged 18-25 years, recently migrated MSM, transgender men and women, and MSM who regularly

attend sexual health centers (SHC). The FGDs aimed to explore participants' thoughts on the current monitoring model (3-monthly in-clinic), and alternative monitoring models (6-monthly; online). In the Netherlands, each PrEP monitoring visit includes STI-screening. The FGDs were audio-recorded and transcripts were analyzed using thematic analysis.

**Results:** Participants (n=27) were receptive to the ideas of reducing the number of PrEP monitoring visits and conducting these (partly) online. Online and 6-monthly monitoring were perceived to be efficient and convenient, saving time and (travel) costs, and beneficial for those who prefer to avoid clinical settings. The latter was particularly important for transgender participants in transition who expressed an already high burden of medical appointments.

Main concerns with 6-monthly monitoring were related to delayed diagnosis and treatment of STIs and anticipated difficulties with arranging STI-testing appointments at the SHC (free of charge) due to limited capacity, and the general practitioner due to costs of STI-testing.

Concerns related to online care were: safeguarding privacy of video consultations and delivery of PrEP at home when living with others (young MSM) and perceived inability to master the online monitoring procedures due to insufficient language proficiency and unfamiliarity with the Dutch health care system (migrant MSM).

Participants recommended an in-clinic start to ensure good knowledge of PrEP intake schedules and to gain familiarity with PrEP monitoring before commencing with 6-monthly and online monitoring. Participants also recommended to adapt monitoring location and frequency according to individual needs.

**Conclusions:** Our study indicates willingness of (potential) PrEP users to adopt new PrEP modalities and underlines the importance of incorporating individual choice in deciding frequency as well as location of monitoring. The outcomes of this study provide concrete pointers for developing and implementing online and 6-monthly PrEP monitoring.

## WEPED416

Addressing challenges faced by people who use injectable drugs and people living with HIV/AIDS in rehabilitation centers: insights from FASAA Rehabilitation Centre, Zimbabwe

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**Background:** The correlation between drug abuse and HIV/AIDS transmission is well-known, driven by risky behaviors such as unprotected sex and syringe sharing among people who use drugs (PWUDs). This case study examines the relationship between drug abuse and HIV/

AIDS infection within FASAA Rehabilitation Centre, Zimbabwe, and explores the challenges faced by clients experiencing dual stigma as PWUDs and individuals living with HIV.

**Methods:** Data was collected from 50 respondents at FASAA Rehabilitation Centre through focus group discussions, questionnaires, and counseling sessions. From February 2023 to January 2024, the majority (90-95%) of clients suffered from Substance Induced Psychosis (SIP) and Substance Use Disorders (SUDs). The center primarily provided acute care for issues related to domestic violence, public violence, and gender-based violence. Most admissions (95%) were involuntary, resulting from trauma, violence, and mental health problems. Counseling and psychosocial interventions were crucial for repairing family relationships. Female admission rates were low, possibly due to engagement in sex work. Approximately 8% of clients were receiving HIV treatment, with one case of co-occurring tuberculosis (TB). FASAA Rehabilitation Centre also served as a safe space for LGBTQ individuals, ex-prisoners, females, the elderly, and others in need of rehabilitation services.

**Results:** Dual Stigma: Clients facing both drug abuse and HIV/AIDS stigma require comprehensive support to address their unique challenges.

Importance of Acute Care: Rehabilitation centers play a crucial role in stabilizing individuals experiencing substance-induced psychosis and providing initial interventions.

Gender Disparities: Efforts must be made to understand and address barriers preventing females, especially those engaged in sex work, from seeking rehabilitation services.

Holistic Approach: Integrating HIV/AIDS and other healthcare services within rehabilitation centers is crucial to address the complex needs of PWUDs.

**Conclusions:** This study highlights the significance of addressing the relationship between drug abuse and HIV/AIDS within rehabilitation centers. Despite challenges related to dual stigma and gender disparities, FASAA Rehabilitation Centre has provided essential acute care and support to clients. However, there is a need to enhance interventions and adopt a holistic approach to address HIV/AIDS, mental health, and other healthcare needs of PWUDs.

## WEPED417

### Boosting access to community-health worker information: what do you want to know?

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**Background:** Enhancing equitable access to community health worker (CHW) information is vital for improving quality of healthcare outreach in low resource settings. Understanding the diverse informational needs of CHWs is critical for tailoring training and support.. The Boost digital application is a freely available, data-light digital job aide co-created with CHWs in sub-Saharan Africa.

Our objective was to explore the content topics that CHWs access frequently, offering insights into the knowledge needs of CHWs in high HIV burden settings.

**Methods:** We conducted an analysis of the frequencies of access to different health topics made by community health workers on the Boost Application in Zimbabwe from May to December 2023. Access to content topics were abstracted from application dashboards and disaggregated by all HIV-related topics. Content access was disaggregated by language preference (English, Shona, Ndebele), geography (urban vs rural) and sex.

**Results:** From May to December 2023, a total of 5,556 content views were recorded. The majority, 76%(n=4223) accessed the application through the English module, 20% accessing the Ndebele modules, and 4% accessing the Shona module. Most content views (94%; n=5223) were in rural regions, while 6% were accessed in urban areas. Rural users most frequently accessed basic HIV information, including what HIV is and how it is transmitted. Urban users most frequently accessed topics related to HIV prevention, testing, and myths.

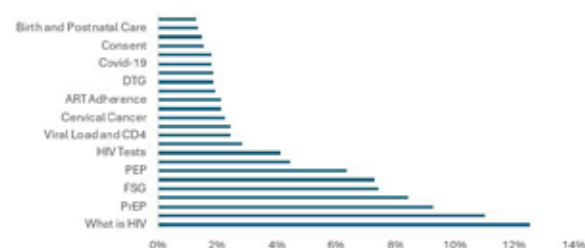


Figure. Overall content views.

**Conclusions:** We demonstrate the utility of digital job aides for increasing knowledge among CHWs in a high burden setting. Varying preferences in accessing healthcare information between urban and rural regions, emphasize the need for co-created and tailored health education programs for CHWs to understand and address specific community needs effectively.



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## WEPED418

Combining a traditional peer-to-peer model with IT for better HIV programming for Young Key population persons during COVID; a case study of HOYMAS-Kenya, a key population-led organization working in Kenya

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**Background:** Traditionally in Kenya, most programs targeting GBMSM have been based on peer-to-peer programming, especially for community-based organizations. In 2020 as a result of the COVID-19 pandemic, they were forced to abandon traditional one-on-one outreaches and focus on utilizing alternative digital means of conducting outreaches.

One such organization is HOYMAS-Kenya a community-based and led organization established in 2009 to promote health and human rights of key populations in Kenya.

**Description:** Since 2010, all HOYMAS programs have been led and executed by peer educators who have been trained by the Ministry of Health to offer information and encourage testing and safer sex practices among key populations physically.

At the onset of COVID, all the PE were trained on how to utilize digital media platforms to give out sexual health information crafted, designed, and approved by the peer outreach team and adopted an online appointment booking system (Quickres) for our clients which saves them time, and also sends them reminders when they are due to visit the clinic.

**Lessons learned:** In the last year, despite regular anti-LGBTQ protests, HOYMAS digital outreaches have been able to reach 5294 GBMSM with health information and services. Among these: all 5294 are receiving HIV, stigma reduction, violence response and SRHR commodities monthly, 320 clients currently on PrEP, 467 clients living with HIV accessing ART in the facility, 97% of these virally suppressed and undetectable.

For a population that is criminalized and has to avoid care in public facilities, it is imperative to enhance the peer-to-peer model of service delivery while being dynamic and allowing room for innovation and change by ensuring communities are equipped with skills to enable them to offer online and digital services during uncertain times.

**Conclusions/Next steps:** HOYMAS will accelerate community-led message creation exercises that take into account the different personas being targeted and current barriers to engagement with HIV and SRH messaging can increase the rate of conversion between seeing such messages and taking proposed action and lead to higher rates of engagement and uptake of HIV testing services.

Using an automated platform to disseminate messages and peer support is key to ensuring service delivery to harder-to-reach populations.

## WEPED419

Developing a multi-level HIV navigation program for Latinos/as/xs living in Prince George's County, Maryland, United States: opportunities and lessons learned from community-academic partnership

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**Background:** In Maryland, United States, Latinos/as/xs face a disproportionate burden of HIV, being five times more likely to be diagnosed compared to non-Latino/a/x whites. This is particularly pronounced in Prince George's County (PGC), a county in Maryland where many Latino/a/x residents are predominantly foreign-born noncitizen immigrants and experience challenges related to limited English proficiency and lack of health insurance. In PGC, Latinos/as/xs have the highest rate of late HIV diagnoses, and between 2018 and 2020, HIV diagnoses among Latinos/as/xs in the county nearly doubled from 7.5% to 14.9%.

To address this, our community-academic partnership initiated a project aiming to establish a culturally and linguistically appropriate HIV multi-level systems navigation and support intervention for Latinos/as/xs living with HIV in PGC.

**Description:** We plan on conducting formative work to examine the HIV care landscape in PGC. We will assess the HIV care landscape by conducting clinic assessments and observations through value stream mapping and individual process mapping of Latino/a/x clients assessing these facilities. In-depth interviews with engaged and not engaged Latinos/as/xs living with HIV, clinical care providers/staff, and local key informants will explore feasibility and acceptability of establishing and integrating a multi-level HIV navigation and support intervention.

**Lessons learned:** Funded through a community-academic research grant, our project strategically placed community partners at the forefront during the conceptualization, research planning and subsequent execution and dissemination phases. Key lessons learned to date underscore

1. The pivotal role of knowledge sharing in establishing and maintaining community-academic partnerships;
2. Upholding community priorities in all phases of our research strategy, ensuring that the community serves as a catalyst for the overall planning and execution of the project;

3. Emphasizing the importance of interdisciplinary partnerships with members who represent and reflect the community we aim to serve; and

4. Recognizing the need of integration into a broader Latinx community-government-academic network to strengthen our collective collaboration and effectively identify and address possible barriers and challenges.

**Conclusions/Next steps:** The next phase involves implementing the research plan while maintaining strong community-academic partnerships.

Our goal is to address the HIV burden among Latino/a/x communities in PGC through a comprehensive, linguistically and culturally-congruent intervention.

## WEPED420

### Lessons learned from standing up the South Sudan military voluntary medical male circumcision (VMMC) program

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**Background:** In the complex landscape of South Sudan, the HIV Secretariat of the South Sudan People's Defense Force (SSPDF) offers quality HIV services for a resource-poor population with limited access to healthcare services. In 2018, with support from the DOD HIV/AIDS Prevention Program (DHAPP) and the implementing partner RTI, the HIV Secretariat began offering voluntary medical male circumcision (VMMC) services to male troops, their family members, and the surrounding communities as part of a comprehensive HIV/AIDS service initiative. The facility-based services have expanded to three military hospitals in Juba, Wau and Jonglei, each serving as a hub, coordinating mobile services. The program focuses on three main goals: increasing male military participation in VMMC services, enhancing awareness and demand for VMMC within the SSPDF, and building the capacity of health facilities to provide safe, high-quality VMMC services.

**Description:** Since 2018, the SSPDF has completed over 30,000 circumcisions. Clients receive the WHO recommended minimum package of services, including HIV testing and counseling, screening and treatment for sexually transmitted infections, provision of male and female condoms, counseling on safer sex practices and risk reduction, and male circumcision through surgical removal of the foreskin. This holistic approach contributes to preventing HIV within the military and civilian populations.

**Lessons learned:** Creating a diverse team of VMMC practitioners from different facilities enhances camaraderie and facilitates the transfer of knowledge from experi-

enced surgeons to others, including Training of Trainers participants. The military community faces stigma, reflected in clients seeking services discreetly in the evenings and entering through the rear door. Using peer to peer awareness to counter myths and misinformation is critical. Local authorities from the county health department play act as gatekeepers to community access for VMMC services. Additionally, radio is a helpful communication channel to share VMMC messages.

**Conclusions/Next steps:** Moving forward, community engagement involving political and community leaders is recommended to enhance access and strengthen VMMC services. Sharing VMMC messages broadly with the community, and collaboration with local health authorities and partners is helpful for resource mobilization, knowledge exchange, and the continual improvement of the program's impact on HIV prevention within the military.

## WEPED421

### Enhancing inclusivity: examining the global impact of cultural competency on clinical trial recruitment in HPTN – 10 year update

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**Background:** In the past decade, clinical trial recruitment within the HIV Prevention Trials Network (HPTN) has evolved significantly in response to the influential blueprint outlined by the Black Caucus in their 2014 report, "A Way Forward for Clinical Trials."

This study investigates the global impact of integrating cultural competency into recruitment efforts, aligning with industry standards to address challenges posed by the HIV epidemic.

**Description:** The research details key recommendations from the Black Caucus's 2014 report, emphasizing the standardization of HPTN networks and the implementation of mandatory unconscious bias training for NIH-funded clinical sites. Triggered by the HPTN 073 study, which highlighted the underrepresentation of Black MSM in clinical trials, the study further recommends improved recruitment strategies and resources for this demographic. Structural and institutional changes were subsequently implemented, aligning with industry best practices to facilitate essential trainings across all HPTN studies.

**Lessons learned:** Results highlight the profound impact of integrating unconscious bias training into recruitment efforts, resulting in the enrollment of nearly 10,000 individuals from historically marginalized communities. Globally, NIH-funded sites have adopted strategies to include overlooked communities, fostering diverse trial populations and achieving key milestones in the fight against HIV.



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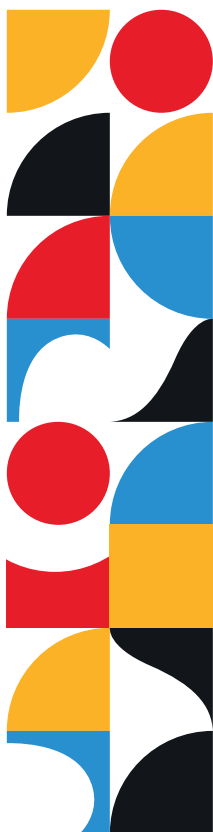
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Notable outcomes include demographic shifts in trial populations, increased accessibility to innovative methodologies, and the integration of training programs into industry-specific registrational trials for new drugs.

**Conclusions/Next steps:** The study concludes that unconscious bias training, in part, is imperative for the inclusion of key prioritized populations in clinical trials. Structural, individual, and institutional shifts are essential for sustained approaches to diversify clinical trials, emphasizing the industry's commitment to ongoing efforts in solidifying inclusivity.

The findings provide crucial insights for shaping industry-specific public health sustainability models, guiding future endeavors to effectively combat the HIV epidemic. To achieve an end to the epidemic, future focus must include clear pathways to including necessary groups in all levels of clinical trial development.

## Key populations and other vulnerable populations: Behavioural, social and cultural issues and contexts

### WEPED422

Information-sharing within social networks of women who exchange sex and use drugs/alcohol in Kazakhstan: implications for increasing consistent HIV testing

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**Background:** Women who exchange sex and use drugs/alcohol in Kazakhstan are susceptible to HIV/STI infection. Social support and information-sharing may facilitate HIV testing, including self-testing that avoids a major barrier to testing: stigma. However, little is known about how HIV and sexual health communication function within social networks of women exchanging sex in Kazakhstan.

**Methods:** We conducted formative qualitative research, 30 in-depth interviews and 4 focus groups (n=48), with women in two Kazakhstani cities, Almaty and Taldykorgan. Researchers recruited participants through snowball sampling with assistance from local NGO leaders/co-authors. Interviews discussed friendships, communication, and information-sharing, particularly related to HIV/STIs.

**Results:** Participants report that they are more receptive to information about HIV from peers, compared with professionals: "It is useless for a specialist to come and start talking, no one will sit and listen [...] But if a friend whom I know will competently tell me everything about it, I will listen to her." Women communicate frequently about testing: "Yes, we constantly discuss this, share the results, show each other. [...] We sometimes advise each other where to go to get tested for HIV. We prompt each other." They share their feelings on stigma around testing: "My acquaintances completed the test and said: 'yes, I have HIV, so what?' But I feel fear and shame," and promote testing despite anticipating negative outcomes: "we share our emotions, there were girls who were afraid: 'Oh, I'm afraid.' I said to them: 'Don't be afraid, it doesn't hurt.'" In focus groups, differences in conversations about testing with coworkers were described:

1. It seems to me this is a sensitive topic, I myself do not discuss it.
2. I had such discussion, I even offered them to be tested.
3. We discuss HIV testing with our girls we work with, and sometimes they all cry together during discussion."

**Conclusions:** Social support and networks can be strong facilitators for information-sharing to promote HIV prevention/treatment among women in Kazakhstan, but notable gaps in communication were noted.

Efforts that support organizing among sex workers may accelerate the positive impact of information exchange, supporting consistent HIV testing and access to treatment/prevention.

### WEPED423

An integrated strategy to maintain continuity of access to HIV and STI services in an anti-LGBTQ sociopolitical climate: lessons learned from community-based HTS implementation project with MSM in Tamale, Ghana

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<sup>1</sup>CEPEHRG, Programs, Accra, Ghana, <sup>2</sup>Ghana Health Service, ART Unit, Tamale, Ghana

**Background:** In Ghana, the current sociopolitical environment is hostile to Key Population (KP) programming. Men-who-have-sex-with-men (MSM) continue to be target of marginalization and are not afforded equal legal protection. In Tamale, anti-LGBTQ societal norms and hostile community attitudes undermine large-group outreach thereby increasing social isolation and decreasing access to HIV testing services for MSM. We describe an integrated strategy that maintained access to HIV&STI services in an anti-LGBTQ community in Tamale.

**Description:** CEPEHRG intensified peer-led rapid HIV testing services by halting large-group interventions and used one-on-one and social media interventions to reach



their peers. Due to the topography in Tamale, the area is characterized by dispersed settlements making it extremely difficult to reach peers. Irrespective of this, Peer Educators (PE) scheduled with their peers to converge at safe locations at different times and transported them on their motorbikes to the health facilities for HTS and STI services. For security purposes, PEs transported one peer at a time. The daily average number of peer transports to a health facility was four per PE.

**Lessons learned:** The peer-led integrated strategy improved uptake of STI and HIV services among MSM in Tamale. Prior to the intervention, from January-March 2023, 17 MSM were reached and none of them was tested for HIV or STI. After the introduction of integrated peer-led strategy using one-on-one and social media, from April-May 2023, the project reached 312 MSM.

Out of this, 209 tested for HIV; 32 (15%) tested HIV+ and all 32 (100%) were initiated on ART. 115 (55%) were enrolled on PrEP, 16 (8%) were treated for genital warts, 19 (9%) for gonorrhea, 11 (5%) for discharges, and 13 (6%) for syphilis.

**Conclusions/Next steps:** Concept of peer-led integrated strategies to HIV testing is time-consuming and labour intensive but effective in reaching out to MSM in an anti-LGBTQ community. The team will continue to scale up one-on-one and social media interventions to improve KP program and share the best practices with partners and community members.

## WEPE424

Identifying patterns of negotiation strategies used by men having sex with men to ascertain their HIV protection when having sex with non-steady partners

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**Background:** Pursuing a specific HIV prevention strategy depends on the acceptance and cooperation of sexual partners and must be negotiated. Early HIV-related research focused on condom negotiation strategies and proved that negotiations asserted condom use and reduced HIV vulnerability. However, negotiation strategies used specifically among men having sex with men (MSM) remained underexamined. Moreover, current negotiation strategies in the face of Pre-Exposure Prophylaxis (PrEP), the 'undetectable=untransmittable' and 'treatment as prevention' paradigm and in times of online dating are still unknown.

Against this background, this project aimed to establish negotiation strategies for HIV protection among MSM before and during sex with non-steady partners.

**Methods:** We conducted in-person interviews with 29 seronegative MSM living in Switzerland who had sex with non-steady partners they dated online or in gay saunas. We combined three interview approaches:

- Narrative and episodic interviewing;
- A virtual-reality serious game developed in this project to immerse participants in situations similar to those they might encounter in real life;
- Another narrative sequence and a short survey. We analyzed the interview data using open coding.

**Results:** We identified seventeen negotiation strategies used by MSM in chats, during in-person dates or when having sex to motivate their non-steady partners to accept and follow their preferred HIV protection strategy.

These negotiation strategies can be grouped into three categories: subject-centred strategies (such as being authoritative); strategies leveraging sexual arousal (such as seduction); and strategies centred on risk communication (such as providing risk information).

Further, we identified actions taken by MSM to end negotiations which did not meet their aims and to break off interactions. In the course of negotiation, these strategies were combined into patterns.

We identified four patterns:

- Assertion or
- Defense of the preferred protection strategy,
- Flexible adaptation to the partner's preference,
- Surrender to the partner's will.

**Conclusions:** Current HIV protection negotiation strategies take various forms and go beyond condom negotiations. They may be directed to condom use or condomless sex, depending on the individual protection strategy MSM have adopted.

In prevention counselling, negotiation strategies should be addressed, and the negotiation skills of MSM should be developed.



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## WEPED425

Examining the role of posttraumatic stress and depressive symptoms in HIV pre-exposure prophylaxis (PrEP) motivation among women survivors of intimate partner violence

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**Background:** Post-traumatic stress disorder (PTSD) and major depressive disorder (MDD) are associated with functional impairments, yet little is known about their influence on HIV pre-exposure prophylaxis (PrEP) motivation among women survivors of intimate partner violence (IPV). Understanding how PTSD and MDD symptoms influence PrEP motivation is particularly important given survivors of IPV have an increased risk for HIV acquisition. The present study assessed the association between PrEP motivation (PrEP motivational cascade) with latent profiles of PTSD and MDD symptoms among women survivors of IPV.

**Methods:** Data were collected from a sample of 285 women from Baltimore, MD, and New Haven, CT. Latent profile analysis was performed to identify patterns of depressive and PTSD symptoms among women survivors of IPV. Logistic regression was performed to examine the association of profile membership on PrEP motivation.

**Results:** A six-profile solution was determined to best fit the data. Profiles were characterized: Profile 1, very low depressive and PTSD symptoms; Profile 2, average depressive symptoms and low (below the mean) PTSD symptoms; Profile 3, high depressive symptoms and low PTSD symptoms; Profile 4, moderate depressive symptoms and high PTSD symptoms; Profile 5, high PTSD avoidance and average depressive symptoms; Profile 6, high depressive and high PTSD symptoms. The odds of being in Stage 3 (PrEPparation) than Stage 1 (Precontemplation) were lower for women assigned to the low depressive and PTSD symptom profile (Profile 1) than women in the high depressive and PTSD symptom profile (Profile 6) (OR=0.22, 95% CI= .06,.76, p=.02). Women assigned to the low PTSD and average depressive profile (Profile 2) had lower odds of being in Stage 3 than Stage 1 compared to women assigned to the high depressive and PTSD symptom profile (Profile 6) (OR=.25, 95% CI= 0.07, 0.92, p=.037).

**Conclusions:** Women with higher PTSD and MDD symptoms expressed greater motivation to engage in PrEP than women with low PTSD and MDD symptoms.

Findings support the CDC's clinical PrEP recommendations to integrate depression screening into PrEP services, but there is a critical need to also include PTSD screening. Precision care should synchronize trauma-informed practices and mental health treatment to engage survivors in PrEP services.

## WEPED426

Using a digitized ecosystem to provide integrated HIV and SRH: using mixed health systems in Burkina Faso, Kenya, South Africa and Uganda

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**Background:** The HIV prevalence among adolescent girls and young women in sub-Saharan Africa is more than three times than among their male counterparts. Greater access to convenient HIV and SRH services can ensure increased uptake of integrated services HIV and sexual and reproductive health services, thereby addressing the dual threat of HIV and unplanned pregnancy. Tiko Africa harnesses the power of technology to create a digitized ecosystem that delivers youth friendly, judgment free HIV services alongside SRH services to low-income adolescents and young people of 15-24 years.

**Description:** Working with Ministries of Health, Tiko Africa identifies settings where adolescent girls and young women (AGYW) are at highest risk of acquiring HIV, have heightened adolescent pregnancies and live in multidimensional poverty. Ecosystems consisting of community based organizations (CBOs), public and private health care facilities and pharmacies are mapped and on-boarded onto the Tiko platform. CBO-linked and trained community mobilizers deliver information on HIV and SRH services to AGYWs, enroll them on the Tiko platform and refer them to Tiko-accredited facilities.

The digital ecosystem provides AGYW with the choice of accessing free services and fully subsidized services at public and private clinics respectively. The outputs of the AGYW user journey are reflected on real time dashboards. Data is used to inform targeting and improvements.

**Lessons learned:** In 2023, Tiko provided 553,000 to 347,190 adolescents and young people. 29% of the services were HIV testing services. As a result, 2,133 individuals were initiated on PrEP and 322 on ART. 61% of all the services were contraceptives. 25% more AGYW took integrated services between July - December 2023 compared to Jan -June



2023. Inclusion of HIV self testing at pharmacies and addition of public facilities with free HIV services were cited as primary reasons for seeking for more than one service.

**Conclusions/Next steps:** AGYW can be effectively reached with integrated HIV and SRH services by affording them the choice of when, where and how to access services. Using the Tiko application to digitize an ecosystem of quality assured, youth friendly service providers allows young people to choose where to access services and rate services, which allows for timely improvements.

## WEPED427

'Oh, why are PrEP Gays always like this...': psychosocial influences on U.K. based MSM's relationship with, and use of PrEP

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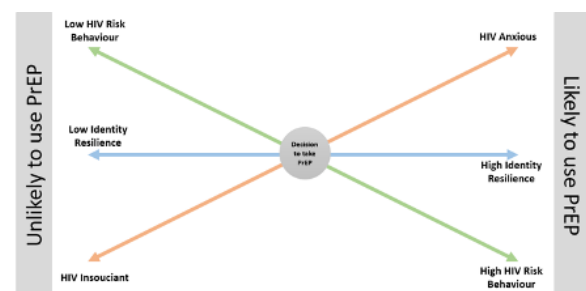
**Background:** Pre-Exposure Prophylaxis (PrEP) is medication used to prevent the spread of Human Immunodeficiency Virus (HIV). At-risk populations, including Men who Have Sex with Men (MSM), are eligible for PrEP for free in the UK. However, uptake is not universal with many individuals still reporting barriers to accessing PrEP. This current study aimed to increase our understanding of psychosocial factors that influence PrEP usage.

**Methods:** Twenty-two MSM residing in the UK participated in a interview study and Reflexive Thematic Analysis was used to analyse the data. Participant ages ranged from 20 – 56 years ( $M = 29.40$ ,  $SD = 8.0$ ), with 12 participants currently using, or had historically used PrEP (i.e., PrEP Users) and 10 participants who had never taken PrEP (Non-PrEP Users).

**Results:** The results are presented under three themes:

1. 'HIV Anxiety and the LGBTQ+ Community',
2. 'Condomless Sex Facilitation and Condom Morality', and;
3. 'Microaggressions Towards PrEP Usage'.

These describe how perceptions of HIV and condom preferences influence the decision to take PrEP. These coalesce into a 'PrEP user' identity, carrying a risk of anticipated or enacted stigma. From this, a framework that could predict the psychosocial influences on PrEP uptake started to form.



**Conclusions:** This study highlights current psychosocial barriers to PrEP, as well as the benefits (e.g., reduced HIV anxiety) that PrEP usage brings. It also highlights novel ways in which stigma towards PrEP is perceived and constructed through microaggressions and downward social comparisons.

Importantly, it highlighted how PrEP can cause cognitive dissonance within even those who take it, resulting in concealment and denial of PrEP usage. This is beneficial for informing future PrEP uptake campaigns and ameliorating access to vital anti-HIV medication, for example, with targeted public health messaging to reduce stigma.

## WEPED428

HIV-related discussions with sex partners by Nigerian transgender women and men who have sex with men

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**Background:** Discussion of HIV and other sexually transmitted infections (STIs) among sex partners facilitates risk reduction. We evaluated HIV/STI-related communications and sexual behaviors among a historically marginalized community of sexual and gender minorities (SGM) in Abuja and Lagos, Nigeria.

**Methods:** From March 2013-August 2018, we enrolled people assigned male sex at birth, aged 16+ years in Abuja and 18+ in Lagos, who reported anal sex with men. At enrollment and 3, 9, and 15-month follow-up visits, participants were asked about their sexual behaviors, condom usage, and HIV/STI-related communications with main sexual partners (MSP) and casual sexual partners (CSP), including whether they discussed their own HIV status and their partners' HIV status.

Robust Poisson regression models with generalized estimating equations were used to estimate relative risks (RRs) and 95% confidence intervals (CIs) for factors potentially associated with HIV/STI-related communications with each type of sexual partner.



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**Results:** Among 2795 SGM enrolled, questions about HIV/STI-related communications with MSP were answered by 2436 (87.2%) and with CSP by 2398 (85.8%). HIV/STI-related communications were reported with some or all MSP by 68.1% (1659/2436) and with CSP by 43.9% (1052/2398). The median age for both groups was 23 years (interquartile range 20–27).

Among participants who reported HIV/STI-related communications with MSP, 54.1% (897/1659) discussed their own HIV status and 55.8% (925/1659) discussed their partner's status.

Among participants who reported HIV/STI-related communications with CSP, 37.0% (389/1052) discussed their own HIV status and 36.6% (385/1052) discussed their partner's status.

In multivariable analyses limited to 1958 participants with both MSP and CSP, condom use at last sex with CSP was associated with HIV/STI-related communication with MSP (RR 1.16 [95% CI 1.08 – 1.25]) and with CSP (RR 1.22 [95% CI 1.08 – 1.38]).

**Conclusions:** HIV/STI-related communications with main and casual sex partners were strongly linked and both were associated with increased condom use with casual partners.

HIV prevention and treatment programs for SGM should promote open communications in sexual relationships—including through the deployment of modern strategies such as digital platforms to facilitate disclosure—to help reduce HIV/STI transmission risks particularly in the context of individual and structural stigmas including criminalization.

## WEPED429

Toward key population-friendly services:  
defining tailored approaches for men who  
have sex with men in Kenya

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**Background:** This abstract outlines the key findings of a qualitative research study conducted in Kenya, aimed at defining and enhancing Key Population-friendly services for Men who have Sex with Men (MSM).

The study investigates the specific healthcare needs, challenges, and preferences of MSM individuals to inform the development of targeted and inclusive services.

**Methods:** Utilizing a qualitative approach, the research engaged MSM individuals and healthcare providers in open-ended interviews and focus group discussions across wellness centers that offer health care services to MSMs in Kenya.

The study sought to identify barriers to accessing healthcare, elucidate perceptions of current services, and explore opportunities for tailoring healthcare delivery to better suit the unique needs of MSM.

**Results:** Preliminary analysis revealed several challenges faced by MSM individuals, including stigma, discrimination, and a lack of cultural competence among healthcare providers. Participants emphasized the importance of confidentiality, non-judgmental attitudes, and inclusivity in healthcare settings.

Furthermore, the study identified potential strategies to enhance key population-friendly services, including specialized training for healthcare professionals, community involvement, and the establishment of safe spaces for healthcare access.

**Conclusions:** The findings highlight the need for a paradigm shift in healthcare provision to address the specific concerns of MSM individuals. Key population-friendly services should be grounded in cultural competence, inclusivity, and a commitment to eradicating stigma.

Collaborative efforts between healthcare providers, policymakers, and MSM communities are essential for the successful implementation of such services.

This abstract underscores the importance of defining and implementing key population-friendly services for MSM in Kenya. By addressing the identified barriers and incorporating the preferences of MSM individuals, healthcare services can become more accessible, acceptable, and effective.

The study advocates for the integration of these findings into national health policies and calls for greater inclusivity and cultural sensitivity in healthcare provision for MSM in Kenya.

## WEPED430

Assessment of knowledge, attitude and risk  
practices for HIV transmission among people in  
prisons in Ghana

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**Background:** In Ghana, HIV prevalence in prisons is greater than in the general population. However, HIV response in prisons have been overlooked and little has been done. Quality data on attitudes and practices in prison is needed to inform the development of appropriate HIV intervention programs in prisons.

This study aimed to assess knowledge, attitude and risk practices related to HIV transmission among people in prisons.

**Methods:** A cross-sectional design using solely quantitative data collection techniques was adopted. Systematic random sampling was used to select 1055 people in prisons to participate in this study. Ethical approval was obtained before commencing this study from the Ghana

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Health Service-Ethics Review Committee, permission to conduct the study was sought from Ghana Prisons Service and informed consent was obtained from the participants. Statistical Package for Social Sciences program was used to analyze data. Median range and proportions for different variables were estimated.

**Results:** Out of the 1055 study participants, 69.5% reported that consensual sex happens in prison. Consensual sex was found to be a more commonplace practice among males compared to females (61.4% vs 4.1%). Knowledge on HIV transmission was found to be high among people in prisons.

The knowledge of unprotected vaginal intercourse as a route of HIV transmission was higher among females (98.6%) compared to males (94.7%) However some misconceptions regarding HIV transmissions were found.

About 43.2% of people in prisons incorrectly accepted the misconception that HIV may be contracted from mosquito bites and 40% believed that HIV may be contracted via contact with the toilet seat. Risk practices were found to have statistical significant association with knowledge on HIV transmission ( $P = 0.02$ ) and attitude towards HIV prevention ( $p = 0.01$ ).

**Conclusions:** Participants have high risky behavior due to misconceptions about HIV transmission and negative attitudes towards HIV. Public health priorities should include HIV education and contraceptive access in prisons in Ghana.

The use of condoms and lubricants are currently prohibited in Ghanaian prisons although prisoners are at risk of contracting HIV and other STIs. Condom access in prisons has been shown to not threaten security and not enhance sexual activity.

## WEPED431

MoH-led key population condom supply chain mechanism improves uptake of condoms among female sex workers: Pakachere IHDC experience in Malawi

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**Background:** Access and use of condoms and lubricants among FSWs in Malawi is affected by structural and social factors including supply chain, gender norms and low risk perception. We describe efforts by the Ministry of Health (MoH) in Malawi to collaborate with key population (KP) implementing partners to improve the condom and lubricant supply chain and address stockouts in high-risk venues.

Data from PEPFAR-supported programs (LINKAGES & LEAP) in 4 high HIV burden districts of Malawi is analyzed as a case study pre and post MOH KP condom supply mechanism.

**Description:** In 2018, MoH introduced a KP condom and lubricant supply chain mechanism for PEPFAR and GF implementing partners in Malawi. KP sites including 19 PEPFAR supported Drop-in-Centres were mapped and added to the national distribution plan. KP implementing partners were trained in quantification, forecasting, reporting, commodity management, storage, and quality improvement. Peer Educators were mentored to use tools for calculating the condom needs of FSWs based on number of sexual encounters per day. National level stock cards were used for each site and program to ensure standard reporting to MoH.

**Lessons learned:** From October 2016 to September 2018, a total of 6,131,247 male condoms, 143,992 female condoms and 812,372 packets of lubricants were distributed to FSWs in Blantyre, Lilongwe, Mzimba and Mangochi with significant condom stockouts in KP sites across this period. Condoms were sourced from public health facilities in this period. Comparatively, from October 2020 to September 2022 in the same districts and KP sites, a total of 16,050,887 male condoms, 720,238 female condoms and 1,494,924 lubricants were distributed following the introduction of MoH KP condom supply mechanism.

Meaningful engagement of KP program with the (MOH) Department of HIV, STI and Viral Hepatitis on KP condom needs, quantification, forecasting and supply chain improves condom supply among Key and priority populations with lesser stockouts.

**Conclusions/Next steps:** The MoH-led KP commodity supply chain mechanism has significantly addressed condom stockouts in KP sites in Malawi. MoH is conducting an additional mapping to expand the delivery of commodities to KP-led organizations beyond PEPFAR and Global Fund partners. Trainings for peer cadres will be conducted to ensure efficiencies.

## WEPED432

Unveiling the HIV/STI vulnerability among transgender men in Rio de Janeiro, Brazil

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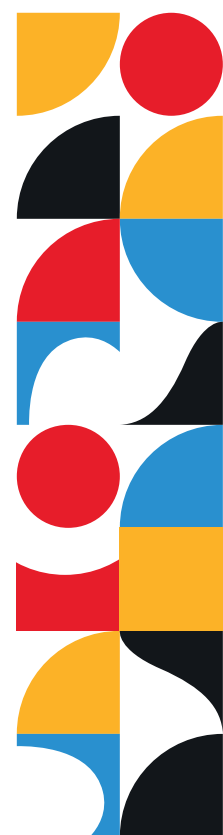
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**Background:** Transgender individuals face a disproportionate burden of HIV worldwide, yet data on sexual behavior and HIV prevention use among transgender men are still scarce. This study aimed to shed light on the characteristics of transgender men attending a large HIV/sexually transmitted infection (STI) referral center in Rio de Janeiro, Brazil.

**Methods:** The study included individuals who self-identified as transgender men attending a large referral HIV/STI prevention/care service in Rio de Janeiro/Brazil (INI/Fi-





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ocruz) between March 2018 and December 2023. Individuals completed a brief survey and were offered HIV testing, same-day pre-/post-exposure prophylaxis (PrEP/PEP) or antiretroviral therapy (ART) as applicable.

**Results:** Among 9,339 individuals seeking care at the referral service, 132 were transgender men (52.0% Black/Pardo, 59.0% with secondary education). The median age was 24 years (IQR:21-28).

The primary reason of attendance was access to Itinerant Justice (63.0%), a partnership between Fiocruz and the Rio de Janeiro State Court to promote access to free legal services; 25.0% sought HIV/STI testing. The most common referral was by friends and peers (83.0%). Most transgender men reported sexual interest in cisgender women (75.8%), followed by transgender women (28.8%), and cisgender men (26.5%). In the previous 6 months, 23.75% of individuals had 2+ sex partners, 6.4% reported transactional sex, 6.5% had a partner living with HIV (LWH), and 17% reported unprotected receptive anal sex.

Overall, 26.5% refused HIV/STI testing. Among those tested, 94 (96.8%) were HIV-negative and 3 (3.2%) were LWH (2 with known HIV-status, 1 new diagnosis). Among those LWH (n=3), one was on ART (33.3%) and virologically suppressed (33.3%). Among HIV-negative individuals, 4.3% (N=4/94) initiated PrEP; 39.36% (N=37/94) had PrEP indication, 22% (N=21/94) initiated PrEP, and 42.9% (N=9/21) remained on PrEP by December 2023.

**Conclusions:** The susceptibility of transgender men to HIV is often underestimated. Current findings highlight their vulnerability to HIV/STI infections, indicating the potential benefits of implementing HIV prevention strategies for this demographic. Transgender men face challenges related to invisibility and barriers to accessing health services. A comprehensive understanding of the HIV/STI dynamics specific to transgender men is imperative for tailoring approaches and interventions appropriate for this population.

## WEPED433

Empowering youth through comprehensive approaches to adolescents' sexual health, gender relations, and violence prevention in the LISS project, Dominican Republic

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**Background:** The LISS project addresses HIV transmission risk factors in Dominican Republic youth, focusing on sexual and reproductive health education and gender-based violence.

This abstract explores strategies employed to effectively engage diverse youth in the implementation of HIV risk factor workshops.

The workshops, comprising 16 consecutive sessions implemented weekly, integrated a sexual and reproductive health manual developed in collaboration with medical students and an adapted version of the Healthy Relationships Plus Program for violence prevention.

**Description:** The success of this intervention hinged on the strategic integration of a dual approach encompassing classic HIV prevention for youth and a contemporary strategy for violence prevention. Recognizing the significance of both enhancing knowledge about sexual and reproductive health and fostering skills for violence prevention, the project adopted a comprehensive methodology. The violence prevention program specifically aimed at addressing adolescent risk behaviors through a multifaceted approach. This approach included not only the traditional focus on personal safety, substance use, and delaying sexual relationships but also delved into critical aspects like violence, the impact of technology, mental health, and positive coping strategies.

By adopting a holistic perspective that considers the interconnected nature of these factors, the program sought to empower youth with the knowledge and skills needed to navigate the complex landscape of sexual health and interpersonal relationships.

**Lessons learned:** Key lessons learned include notable improvements in knowledge about sexual and reproductive health, evidenced by an 18.78 percentage point increase in posttests scores. Similarly, awareness and knowledge around GBV and interpersonal skills increased by 26.65 percentage points.

Considering the specific needs of diverse communities and emphasizing community involvement were crucial factors in enhancing violence prevention efforts and increasing impact.

Other engagement methods, such as adapting to youth schedules and employing peer facilitators, played a pivotal role in sustaining program engagement and impact.

**Conclusions/Next steps:** The next steps involve scaling up of programs to additional diverse communities, further tailoring interventions to meet specific youth needs, sustaining engagement through ongoing innovative methods, and prioritizing continued community involvement to enhance overall impact and effectiveness.

## WEPED434

### Telehealth use and engagement in care in adolescents/youth with HIV in Texas, USA pre- and post-COVID-19 emergence

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**Background:** Youth with HIV (YWH) are less likely than adults to be in care and virologically suppressed. In Houston, Texas, a priority area for Ending the HIV Epidemic (EHE), 39% newly diagnosed were 13-29 years in 2021. During the COVID-19 pandemic HIV clinics shifted to telehealth. Evidence is needed to describe telehealth impact on YWH.

**Methods:** Retrospective chart reviews on YWH (16 - 29 years) at 3 high volume HIV clinics in Houston examined data (3/15/2019 to 8/31/2022) on telehealth, engagement in care (EIC) using Ryan White criteria, HIV RNA PCR, substance use, mental health, housing status, race, ethnicity, and mode of acquisition. Results were categorized by time periods (Table). Descriptive statistics (mean, SD) were calculated. Outcomes were tested using multiple linear and logistic regression.

Time Periods (PE <sup>1</sup> = 3/15/2020)	Type of Visits					Met Criteria for EIC <sup>2</sup> n (%)
	In-person visits	Audio telehealth	Video telehealth	Total telehealth combined	All Visit Types	
Mean visits per participant (All time periods)	6.25	0.77	0.16	0.93	7.18	---
1-year pre-PE n (%)	550 (100%)	0 (0%)	0 (0%)	0 (0%)	550 (100%)	125 (57%)
1st-year post-PE n (%)	311 (70%)	105 (24%)	28 (6%)	133 (30%)	444 (100%)	97 (44%)
2nd-year post-PE n (%)	351 (86%)	51 (12.5%)	6 (1.5%)	57 (14%)	408 (100%)	105 (48%)
All time periods (3/15/2019 - 8/31/2022)						31 (14%)

Notes: <sup>1</sup>YWH = Youth with HIV; <sup>2</sup>PE = COVID-19 Pandemic Emergence; <sup>3</sup>EIC = Engagement in Care

Table. Types of visits and engagement in care by time period in YWH<sup>1</sup> (N = 119).

**Results:** Participants (N = 219) were 77% male sex assigned at birth (SAAB), 22% Female SAAB, 1(0.46%) documented trans-female, 84% Black, Indigenous, and/or people of color, 33% Hispanic, 37% with perinatally acquired HIV, 40% with mental health diagnosis, 66% with documented substance use disorder, and 12% unstably housed. Telehealth was used by 43% of participants with 0.93 (SD = 1.37) mean telehealth visits and 7.18 (SD = 4.57) total mean

visits/participant. Telehealth use ( $p < .001$ ), situationally acquired HIV ( $p < .004$ ), and younger age (16 - 21 years) ( $p < .001$ ) were significant factors in improving EIC in all time periods and in individual time periods. Telehealth was predominantly via telephone (Table). Telehealth use decreased 58% in year 2 of the pandemic.

**Conclusions:** While video telehealth was not employed robustly in YWH in Houston, and its use was reduced after year 1 of the pandemic, telehealth may be a powerful strategy to support accessing care and EHE in YWH. While EIC decreased with the pandemic, this study shows that telehealth, whether completed with audio or with video, positively impacts EIC.

## WEPED435

### Cross partner community led monitoring initiative on an orphan and vulnerable children (OVC) project for Haitian Migrants and their descendants on the Dominican Republic: learnings and best practices

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**Background:** The USAID-funded Building Resilience project, an OVC initiative in the Dominican Republic, focuses on Haitian Migrants and their descendants, targeting households with at least one member living with HIV. This family-centered community-based project operates across six provinces, implemented by four local sub-partners. It Offers tailored services in health, protection, education, and stability through a comprehensive case management.

A community Led Monitoring (CLM) was designed to add the voices of the priority population and community case workers (CCW) to drive and influence service delivery priorities, quality and address services gaps relative to their needs.

**Description:** The pilot was implemented, from September to December 2023, and involved: Introduction and Planning of CLM activities, Formation of the Community Committee, Discussion Groups/Interviews, and Presentation of Results. During the Planning phase, key stakeholders and sub-partners staff convened to discuss program objectives and schedule, sign confidentiality agreements, and facilitate the selection of CLM committee participants. The Committee included: Caregivers, adolescents, CCW, Supervisors, M&E, and the project coordinator. The Discussion Groups/Interviews phase was organized into three groups: Caretakers, adolescents, and CCW.

**Lessons learned:** The CLM pilot underscore the value of inclusive participation, adaptability to local contexts, inter-partner collaboration and learning, Capacity building through CLM and Community-Centric Data Gathering,



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particularly when working with such a highly vulnerable population. The pilot's 84% participation rate highlighted the importance of involving community members and CCW in the project's monitoring activities and decision-making. Partners collaboration brought unique perspectives, enabling a better understanding of regional variations in challenges and needs, this fostered a more tailored and context-specific approach to addressing HIV/AIDS concerns.

By involving beneficiaries and CCW, valuable skills were developed, enhancing their ability to contribute actively to future community-led initiatives and ensures that the information collected is closely tied to the priorities and concerns of the targeted population.

**Conclusions/Next steps:** The application of CLM across all provinces is the next step to solidify these findings and refining the methodology for future implementations, a mixed communication method could be explored, including face-to-face, telephone and suggestion boxes. This initiative will reduce implementation costs, improve execution time, and maintain high-quality data with a minimal learning curve.

## WEPED436

### Cultural consensus modeling to inform culturally-tailored HIV and pregnancy prevention interventions for South African adolescents

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**Background:** South African (SA) adolescents experience high rates of STI/HIV and unintended pregnancies. Cultural consensus modeling (CCM) is a methodology to determine shared cultural beliefs or norms to arrive at a culturally sensitive understanding of a topic. The aim of this study was to use a CCM approach to examine the acceptability of HIV and pregnancy prevention practices and factors that affect method acceptability among SA adolescents.

**Methods:** Participants were Black, Sesotho-speaking, SA adolescents (N=2325; aged 14-17 years; Mean age = 15.4) recruited from 15 schools in the Manguang Metropolitan Area of South Africa. Participants completed demographic and sexual health questionnaires and a culturally-grounded measure assessing the acceptability of HIV and pregnancy prevention methods.

Cultural consensus analysis (akin to an exploratory factor analysis using participants rather than items) was employed to identify the number of clusters of similar responses for method acceptability (termed cultural mod-

els); this analytic approach also produces a 'culturally correct' answer key for each item. Exploratory bivariate analyses examined whether there were potential demographic and sexual health differences between participants who were/were not consonant with the identified cultural model.

**Results:** A single cultural model was identified (largest eigenvalue = 688.9; second largest eigenvalue = 78.9; ratio of largest to next = 8.7). Approximately 3.2% of participants were not well aligned with the identified cultural model; those not aligned were more likely to be male (p=.002) and younger (p=.03).

Findings highlight the importance of social motivators (e.g., positive peer affiliation) for HIV and pregnancy prevention combined with access to free condoms and other public reproductive health services. Highly acceptable methods included having a single sexual partner and use of male condoms.

**Conclusions:** Results point to the importance of cultural context for HIV and pregnancy prevention method acceptability. Most adolescents were consonant with the identified cultural model. In line with prevalent SA HIV prevention messaging (Abstinence, Be Faithful, and Condom Use: ABC), ABC prevention themes emerged combined with an important role of peers, sources of sexual health information, and free clinic service access. There was lower acceptability for other prevention methods. Results can inform future culturally-sensitive SA HIV interventions.

## WEPED437

### PrEP awareness and interest among a rural Indigenous population in the United States

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**Background:** American Indians/Alaska Natives (hereafter referred to as "Indigenous Peoples") have over twice the rate of HIV acquisition as compared to their white counterparts, and they are more likely to die from HIV-related complications. Pre-exposure prophylaxis (PrEP) holds considerable potential for reversing HIV inequities among Indigenous Peoples; however, PrEP prescribing is low among Indigenous Peoples and little research has explored PrEP awareness and interest among this population.

This research explores PrEP awareness and interest among a rural population of Indigenous Peoples in Minnesota (United States).


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**Methods:** A survey was conducted in a rural tribal community in Minnesota during Fall 2022. Surveys were administered via ACASI in diverse locations throughout the reservation, including during a Powwow, at a casino, and in public spaces. Eligibility criteria included being 18 years old and having ever used drugs. Measures included demographics, sociostructural factors, HIV-related behaviors, and PrEP awareness and interest.

The analytic sample consisted of surveys from 224 individuals who self-identified as American Indian and did not report current PrEP use or HIV diagnosis. Univariate and bivariate analyses were conducted to examine differences in PrEP awareness and interest.

**Results:** Participants were primarily female (58.9%), heterosexual (89.3%), single (52.9%), and had graduated from high school (88.1%). Reported engagement in HIV-related behaviors included having 2 or more sexual partners in past 6 months (13.4%), past year STI testing (32.6%), past year HIV testing (23.2%), and recent drug use (21.9%).

Approximately one in four (27.7%) reported PrEP awareness prior to taking the survey and 17.0% indicated they were interested in taking PrEP. Recent HIV testing was significantly ( $p < .05$ ) associated with increased PrEP awareness (42.3% vs. 23.3%).

Indigenous Peoples reporting 2 or more sexual partners (30.0% vs. 15.0%), past year STI testing (31.5% vs. 10.0%), past year HIV testing (30.8% vs. 12.9%), and past 6-month drug use (31.3% vs. 13.1%) were significantly more likely to indicate interest in taking PrEP.

**Conclusions:** Although PrEP awareness was low, Indigenous Peoples who reported HIV risk behaviors were significantly more interested in taking PrEP than their peers. Steps should be taken to increase PrEP access in Indigenous communities through culturally appropriate collaborative efforts.

## WEPED438

### Client-perpetrated violence and psychosocial well-being among cis men and trans women offering online transactional sex

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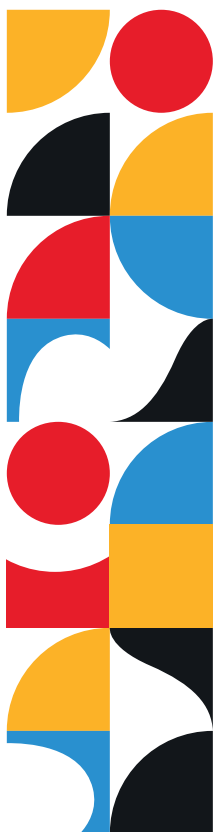
**Background:** Sex workers experience high rates of violence linked to criminalisation and insufficient legal protection. Online transactional sex (OTS; trading sex for money/goods online) seems a safer option, particularly for cis men (CM) and trans women (TW), although data on violence experienced by them is scarce.

This study aimed to identify profiles of client-perpetrated violence and psychosocial well-being among CM and TW offering OTS in 8 countries, and factors associated with class membership.

**Methods:** ANRS-SEXTRA is a community-based cross-sectional study among CM and TW offering OTS in Bolivia, Canada, Ecuador, France, Morocco, Mauritius, Portugal and Romania. Data were collected via an online questionnaire (June 2021-May 2022) including four types of client-perpetrated violence (never-sometimes/frequently) and five psychosocial well-being scores (0-10) (Table 1).

A latent class analysis identified 4 profiles. Factors associated with profiles' membership were estimated using multinomial logistic probit regression, controlling for country fixed-effects. Only comparison between class 1 vs. 4, the most different ones, is presented here.

**Results:** Among 1610 participants (median[IQR] age 29[24;36], 75.4% CM, 19.2% TW, 5.4% non-binary), 56.5% experienced at least one form of client-perpetrated violence. Four profiles emerged (Table 1): class 1 (8.5%), was labeled "High violence, low well-being"; and class 4 (32.5%), "Low violence, high well-being".





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Factors independently associated with "High violence, low well-being" (class 1 vs. 4), were: precarious finances (coef.: 4.69,  $p<0.001$ ), declaring OTS as not-by-choice (coef.: 3.24,  $p=0.001$ ), and trading sex for drugs/alcohol (aOR: 2.18,  $p=0.030$ ) or shelter (coef.: 3.80,  $p<0.001$ ). Conversely, conducting OTS mainly at home (coef.: -2.86,  $p=0.004$ ), doing it as not a source of income (coef.: -2.82,  $p=0.005$ ), and being HIV-negative (coef.: -2.22,  $p=0.027$ ) were associated with "Low violence, high well-being".

	Class 1: high violence, low well-being (8.5%, n=139)	Class 2: moderate violence and well-being (34.3%, n=561)	Class 3: high violence, high well- being (24.7%, n=404)	Class 4: low violence, high well- being (32.6%, n=532)
	M (SE)	M (SE)	M (SE)	M (SE)
Client perpetrated violence (%)				
Physical violence	0.60 (0.04)	0.35 (0.02)	0.59 (0.03)	0.01 (0.006)
Verbal violence	0.76 (0.05)	0.61 (0.02)	0.95 (0.02)	0.16 (0.02)
Psychological violence	0.69 (0.05)	0.55 (0.03)	0.89 (0.02)	0.10 (0.02)
Sexual violence	0.66 (0.05)	0.45 (0.03)	0.73 (0.03)	0.06 (0.01)
Psychosocial well-being scores [0-10]				
Self pride	3.13 (0.20)	5.84 (0.09)	8.35 (0.10)	8.41 (0.08)
Confidence	2.90 (0.19)	5.89 (0.09)	8.53 (0.09)	8.52 (0.08)
Integration in society	4.46 (0.19)	6.90 (0.09)	8.70 (0.09)	8.97 (0.08)
Health	2.95 (0.19)	5.91 (0.10)	8.11 (0.10)	8.59 (0.08)
Strength	3.13 (0.18)	5.70 (0.10)	8.40 (0.10)	8.66 (0.08)

Table 1: Latent class analysis results for client-perpetrated violence and psychosocial well-being scores among CM and TW offering OTS ( $n=1610$ ).

**Conclusions:** These results reveal diverse violence and psychosocial well-being experiences among CM and TW in OTS, highlighting the need to prevent violence against sex workers while recognizing nuanced challenges and multiple vulnerabilities faced by this population. Further analysis will explore how these experiences may influence HIV/STI exposure among this group.

## WEPED439

### Depression among trans women and men who have sex with men from Brazil, Mexico, and Peru: who has the highest odds?

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**Background:** Depression is frequent among trans women (TW) and gay, bisexual, and other men who have sex with men (GBMSM), as compared to cisgender/heterosexual populations, and may be associated with their HIV status, specific sexual experiences, and indicators of social inequality.

We aimed to identify factors associated with depression among TW/GBMSM from Latin America.

**Methods:** We conducted a cross-sectional web-based survey among adult (age  $\geq 18$  years) TW/GBMSM living in Brazil, Mexico, and Peru in 2021. We collected sociodemographic, behavioral, and substance use data. Mental health well-being was assessed with the mental health module of the Short Form Health Survey.

We defined depression according to the Patient Health Questionnaire (score  $\geq 3$ ) and used this as an outcome for logistic regression analyses. In the final multivariable model, we kept all significant variables ( $p \leq 0.05$ ).

**Results:** The study included 18,397 participants (60.7% Brazil, 28.9% Mexico, and 10.4% Peru) with mean age of 33.5 (SD=9.4) years; 96% were GBMSM, 4% TW, 32.6% had secondary education, and 15.3% reported they were living with HIV. Over half of the participants (60.8%) reported none/low individual income.

Participants with depression were 23.1% (25.4% Brazil, 22.8% Peru, and 18.4% Mexico), and the mean score of mental health well-being was 20.3 (SD=8.2) (20.8 [SD=5.0] Mexico, 20.1 [SD=5.2] Brazil, and 19.9 [SD=4.9] Peru). Brazilians, young individuals, people living with HIV, having none/low individual income, and not having a partner were all associated with higher odds of depression (Table). Those with higher mental health well-being score had lower odds of depression.



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	OR (95% CI) (n= 13,470)	aOR (95% CI) (n= 11,701)
Country (ref. Mexico)		
Peru	1.31 (1.15-1.48)***	0.74 (0.59-0.92)**
Brazil	1.50 (1.39-1.63)***	1.38 (1.21-1.57)***
Age (18-24 vs. >24)	1.80 (1.66-1.96)***	1.25 (1.01-1.24)**
Gender (ref. cisgender men)		
Trans woman	1.40 (1.19-1.66)***	1.14 (0.90-1.46)
Monthly individual income (ref. high)		
Medium	1.36 (1.14-1.62)***	1.32 (1.02-1.70)*
Low	2.12 (1.79-2.51)***	1.78 (1.36-2.34)***
None	3.81 (3.17-4.59)***	2.55 (1.89-3.44)***
Stable partner (no vs. yes)	1.37 (1.27-1.48)***	1.18 (0.89-1.16)**
Transactional sex (yes vs. no)	1.33 (1.19-1.49)***	0.91 (0.78-1.07)
Binge drinking (yes vs. no)	1.04 (0.96-1.11)	---
Living with HIV (yes vs. no)	1.12 (1.02-1.24)***	1.22 (1.06-1.39)**
Mental health well-being (score)	0.72 (0.71-0.73)***	0.72 (0.71-0.73)***

\* $p \leq 0.05$ ; \*\* $p \leq 0.01$ ; \*\*\* $p \leq 0.001$

Table.

**Conclusions:** The frequency of depression among TW and GBMSM surpasses that of the general population in each country, and is associated with indicators of higher social vulnerability. The integration of mental health services should be considered to strengthen the HIV prevention and care cascade for sexual and gender minorities.

## WEPED440

Mental health is not an issue, it is a huge problem: mental health challenges experienced by men who have sex with men (MSM) in Johannesburg, South Africa

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**Background:** Behavioural, social-cultural and structural risk factors, including stigma and discrimination, restrict the ability of MSM to access and remain in health services, contribute to poor social and economic status, and fuel human rights violations. These factors decrease the agency of MSM in decision-making around sexual health. Minimal research is available on MSM mental health challenges in resource limited settings.

With funding from Gilead, OUT LGBT Well-being conducted a needs assessment to understand the mental health and economic challenges of MSM. Results were used to design and provide appropriate support to MSM through OUT's USAID/PEPFAR-funded HIV program.

**Description:** Between June 2022-January 2023, trained OUT peer educators used the validated Brief Mental Health questionnaire to screen MSM in Johannesburg. MSM were recruited from the EMH health clinic, small group events, social media and outreach events such as Soweto Pride.

The questionnaire included mental health measures for symptoms of depression, anxiety, alcohol and was adapted to include drug use and suicide ideation. Item scores of 3+ were used to identify symptoms of possible mental health disorders.

We also screened for employment status and living arrangements. Screened clients were offered individual counselling, job skills workshops, social and recreational upliftment activities, and referrals to shelters and health services.

**Lessons learned:** 2040 MSM were screened. Of those, 31% (n=642) had symptoms of anxiety, 22% (n=441) of depression, 51% (n=1050) of harmful alcohol and 24% (n=491) drug use. 7% (n=149) were at risk of suicide and 56% were unemployed. A third (317) of MSM matched to health data, were HIV-positive (30%).

**Conclusions/Next steps:** The program has important policy implications for services provision for MSM in resource limited settings. MSM require targeted support focusing on emotional and social wellbeing. OUT secured funding from Elton John Aids Foundation to test if this package of services would improve retention of HIV-positive MSM, who engage in chemsex, in programs.

## WEPED441

Self-silencing is often an overlooked interference to PrEP interest and initiation among U.S. Black cisgender women in Baltimore, Maryland

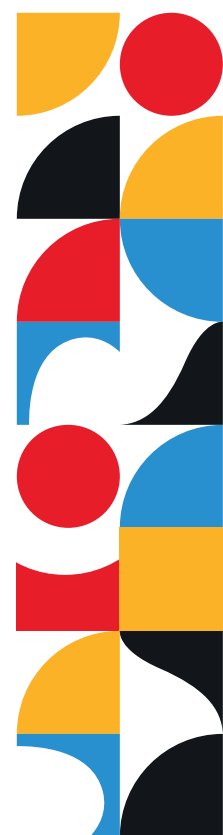
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**Background:** Sociostructural factors related to U.S. Black cisgender women's experience of racism and sexism (i.e., gendered racism) provides a rationale for low HIV pre-exposure prophylaxis (PrEP) engagement, despite the sustained HIV burden. In response, Black women have been shown to self-silence in adhering to The Superwoman or Strong Black Woman Schema which obligates women to self-silence to be strong, suppress emotions, and resist vulnerability to survive. Self-silencing may include minimizing their needs for HIV prevention such as PrEP, to exhibit strength.

This study sought to investigate the association and mediators between self-silencing behaviors and PrEP engagement among Black cisgender women in Baltimore, Maryland.

**Methods:** An online survey was conducted between April 2023 and December 2023 with adult PrEP-eligible, Black cisgender women engaged in healthcare services in Baltimore.







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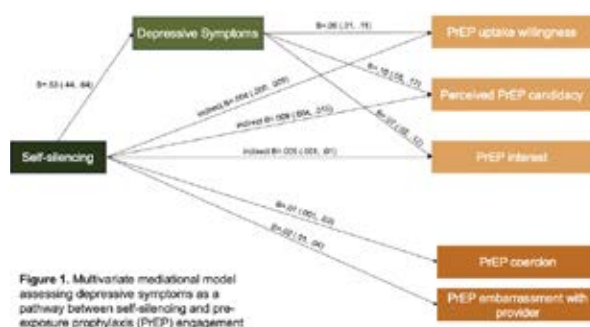
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timore, Maryland, United States. The online survey assessed demographics, self-silencing, depression, and PrEP engagement (i.e., interest, uptake, intentions, coercion, embarrassment, and candidacy). Multivariate mediation analysis with bootstrapping was performed to examine depression as a mediator of self-silencing and PrEP engagement.

**Results:** Among the 300 participants, higher self-silencing were associated with having a partner interfere her PrEP access and being embarrassed to discuss PrEP with a healthcare provider ( $p < .05$ ). Higher depressive symptoms were associated with higher PrEP interest; stronger willingness to take PrEP; perceived PrEP candidacy; and have higher self-silencing ( $p < .05$ ). Depressive symptoms partially mediated the relationship of self-silencing with PrEP interest; PrEP uptake willingness; and perceived PrEP candidacy ( $p < .05$ ).



**Conclusions:** Historically-driven sociostructural factors may influence PrEP engagement among Black cisgender women in Baltimore, Maryland. Self-silencing makes it difficult to assess depressive symptoms among Black women, although this group is highly interested in PrEP. PrEP programs serving Black women should offer trauma-informed care routinely to address women's mental health. Future research should consider culturally-responsive interventions that promote PrEP by empowering Black women and engaging stress reduction.

## WEPE442

Going digital: assessing virtual HIV interventions for key populations in Bhutan, Mongolia and Sri Lanka

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**Background:** Online interventions can revolutionize healthcare service accessibility, provide information, and reduce stigma and discrimination throughout all HIV services. As part of the Sustainability of HIV Services in Asia 2

(SKPA-2) Program, we evaluated virtual HIV interventions in Bhutan, Mongolia, and Sri Lanka, identifying gaps, including linkages between virtual and in-person services for key populations.

**Methods:** From December 2023 to January 2024, we reviewed virtual HIV interventions in Bhutan, Mongolia, and Sri Lanka. Information was extracted through desk reviews, key informant interviews, focus group discussions, and stakeholder consultations. A checklist was developed to assess digital information and outreach availability and quality, online linkage to services, and virtual service delivery. Interview guides gathered inputs on key population needs and preferences for virtual interventions. Individualized subgroup analysis was conducted, focusing on men who have sex with men, transgender individuals, people who inject drugs, sex workers, and people living with HIV.

For each group, we assessed the targeting of virtual HIV interventions, utilization of telehealth, and platforms being employed, and identified perceived and existing gaps in implementation.

**Results:** Virtual interventions predominantly targeted men who have sex with men, and female sex workers, focusing on HIV prevention, condom distribution, and HIV testing. Gaps were identified for people who inject drugs, and transgender individuals. There is high demand for creating innovative community-led messaging on social media designed by youth.

Our study ranked HIV service availability for each key population and identified a clear roadmap for service providers and policymakers to expand programming.

**Conclusions:** Virtual services can alleviate the burden on healthcare facilities and provide self-care options for populations. They enhance access to services, reach previously untested populations, and introduce new strategies such as HIV Self-testing and PrEP for hidden populations and can help countries meet their 95-95-95 targets. In small countries with concentrated key population HIV epidemics, many offline outreach programs may have saturated their reach. Virtual interventions help identify and connect new people with services.

Our findings underscore the imperative to broaden virtual interventions to raise awareness, generate demand, and improve access to services.

## WEPED443

### Inuka coaching problem-solving therapy to support mental health and HIV medication adherence among status-neutral men who have sex with men in South Africa

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**Background:** Mental health challenges are common among men who have sex with men (MSM) in South Africa (SA) and impact ART and PrEP medication adherence. A status-neutral mental health intervention for depression and medication adherence support has not been offered to MSM in South Africa.

**Description:** Five MSM lay coaches were certified in the Inuka coaching method, based on the evidence-based Friendship Bench program, which includes four individual coaching sessions (offered online or in-person) to support mental health. Twenty MSM with symptoms of mild to moderate depression (PHQ-9 scores 5-14) who were using PrEP or ART received mental health and medication adherence support at two clinics in Johannesburg and Pretoria from October-December 2023.

Pre- and post-intervention changes in mental health were assessed using the SRQ-20, and post-intervention in-depth interviews (IDIs) with participants and coaches assessed the utility of the Inuka method for mental health and medication adherence support among MSM.

**Lessons learned:** After completion individual sessions, participants' median SRQ-score increased from 12 to 18 ( $p < 0.001$ ). IDIs were conducted with 15 of 18 participants and all 5 lay coaches, producing three major themes. First: 'the power of being listened to and then take actions', stresses Inuka's utility for MSM and lay coaches to engage with each other, offer mental health support, and improve adherence behaviour.

Second: 'camaraderie', highlights Inuka's accessibility to provide an inclusive space to mitigate loneliness and social isolation in this highly stigmatized group. Third,

'learning new skills', emphasizes the utility of this coaching approach to offer skills to participants and lay coaches that may help mitigate future mental health challenges. Participants prioritized mental health over medication adherence as personal challenges, and thus coaches expressed the desire to learn skills to emphasize the connection between mental health and medication adherence during coaching. Participants expressed equal preference for online and in-person individual sessions, and emphasized the role of MSM group support sessions to improve connection and reduce isolation.

**Conclusions/Next steps:** Inuka coaching, with adaptations of training material for MSM lay coaches on medication adherence, may offer a useful approach to improve mental health and medication adherence for MSM in South Africa.

## WEPED444

### Community support, a key factor in access to and health maintenance in a context of multidimensional crisis: the case of Haiti

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**Background:** With a prevalence rate of 1.8%, Haiti is the Caribbean country most affected by HIV/AIDS. The lack of appropriate services, harm reduction and discrimination, put key populations (KP), at higher risk of contracting HIV. In 2020, despite the context of the COVID-19, the PRINCE project was launched.

Developed in a challenging political, social and security context, the project is coordinated by AIDES and involves three Civil Society Organizations (CSO) (POZ, FOSREF and KOURAJ). Its objective is to enhance innovative, community-based HIV services tailored to the needs of KP.

**Description:** PRINCE is a community-based program that focuses on the key role of peer educators (PE). A training of trainers in community support for sexual health was co-developed with CSO. The new trainers from the organizations then synergised their skills to train the CSO's PE. The PE, belonging to KP (Men who have sex with men, Sex workers and Trans people) reside in the project's targeted areas.

Despite the structural dysfunctions linked to the country's crises, the PE remain key players within their communities. Trained up, they actively engaged in physical or virtual outreach to raise people's awareness of sexual health



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from 2021 to 2023. Responding to needs, they provided referrals to health services, particularly for testing and accessing Pre-exposure Prophylaxis (PrEP).

**Lessons learned:** Six trainers were trained, and they in turn successfully trained up another 35 PE. Community support for PE in the area of sexual health was maintained throughout the project, despite the obstacles in the country, thereby enhancing access to sexual health services and to PrEP for KP. The PE reached 10,330 individuals from the KP, and 1987 people initiated a PrEP protocol. The exchange of experiences among PE highlighted the importance of facilitating PrEP access and developing complementary strategies, particularly in communication, to reach new generations.

**Conclusions/Next steps:** The PE, trained and supported in a context of multiple crises, are maintaining their awareness-raising activities and ensuring the continuity of support in sexual health and access to care. The knowledge of the PEs has been acquired, they are recognized, and they will be able to continue their involvement in their communities.

## WEPED445

### Estimated prevalence of mental health conditions among key populations in Zambia: the case of Lusaka Wellness Center

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**Background:** Mental health problems affect the well-being of key populations in Zambia, contributing to their vulnerabilities to HIV infection. In this context, key populations include men who have sex with men (MSM), female sex workers (FSWs), and transgender persons (TGs). Key populations face stigma and discrimination in communities, including gender-based violence, which leads to mental health problems—which can significantly contribute to high-risk sexual behaviours.

However, there remains a dearth of literature on the estimated prevalence of mental health problems among key populations.

**Methods:** The USAID Controlling HIV Epidemic for Key and Underserved Populations (CHEKUP II) Activity works to provide comprehensive services including mental health to key and underserved populations in Zambia.

As part of service delivery, we screened 890 key populations for common mental health problems between January and November 2023. Of those screened, 429 (48%) were MSMs, 447 (50%) were FSWs and 14 (2%) were TGs. We assessed for depression using the Patient Health Questionnaire (PHQ-9), anxiety using the Generalised Anxiety Disorder Scale (GAD-7), and substance use using the CAGE-AID tool. Any participants who responded 'yes' to question 9 on the PHQ-9 (on whether they have suicidal thoughts) were further screened using the suicide safety questionnaire.

**Results:** Results showed that 72% (FSWs), 83% (MSM), and 71% (TGs) had mild depressive symptoms, whereas 28% (FSWs), 17% (MSM) and 29% (TGs) had moderate-severe depressive symptoms. Suicide screening results showed that 10% (FSWs), 2% (MSM), and 21% (TGs) had positive suicide ideation. Anxiety screening results revealed that 79% (FSWs), 88% (MSM), and 64% (TG) had mild anxiety, whereas 21% (FSWs), 12% (MSM), and 36% (TGs) had moderate-severe anxiety. Alcohol and substance use screening revealed that 42% (FSWs), 40% (MSM), and 43% (TGs) are dependent on alcohol.

**Conclusions:** Mental health problems (depression, anxiety, substance abuse, and suicide ideation) were more prevalent among TGs than FSWs and MSMs. Integrating mental health services is critical in understanding and managing the well-being of KPs, beyond biomedical services.

The increased presence of substance abuse and suicide ideation calls for augmented action to improve the well-being of key populations as a part of the HIV prevention and treatment program.

## WEPED447

### Sex work venue and vulnerability to HIV acquisition among women who exchange sex and use substances in Kazakhstan

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**Background:** HIV acquisition among women engaged in sex work (WESW) is driven by structural factors, including the physical working environment. Global research has found that street-based sex work venues are the contexts

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for higher levels of HIV vulnerability, compared to indoor venues like brothels. However, fewer studies have focused on subpopulations of WESW affected by syndemic condition-related behaviors, including sex work and substance use, and few have been conducted in Kazakhstan, where the HIV epidemic is growing.

**Methods:** Between November 2022 and August 2023, we enrolled 90 HIV-negative WESW who use drugs in AEGIDA, a HIV self-testing intervention. Baseline survey data included sociodemographics (age, ethnicity, marital status, education), sex work venue (i.e., indoor venues – brothel, hotel, sauna; public venues – street, car; private dwellings; or online), alcohol or substance use prior to sex work, and exchanging sex for any goods (food, housing, drugs, or alcohol). We utilized logistic regression models (unadjusted and adjusted for all covariates) to characterize the association between each sex work venue and any condomless sex with a paying partner in the prior 90 days.

**Results:** Participants conducted sex work in indoor venues (n=70, 77.78%), in private dwellings (n=39, 43.3%), and in public venues (n=23, 25.56%). Only 8 (8.89%) engaged in online sex work. Engaging in sex work in a public venue (vs. not) was associated with nearly 4 times the likelihood (aOR=3.85, 95% CI: 1.14, 14.68) of having had condomless sex with a paying partner in adjusted models. No other venue was significantly associated with condomless sex with a paying partner.

Across all venues, alcohol or substance use prior to sex work was associated with an increased likelihood of condomless sex with a paying partner (aOR range: 4.94 - 6.43).

**Conclusions:** Similar to other global settings, conducting sex work in public spaces was associated with a greater likelihood of condomless sex and thus increased vulnerability to HIV.

Our findings emphasize the additional risk from substance use prior to commercial sex. Combination interventions addressing both HIV and substance use risks, as well as interventions that address structural drivers of HIV risk in street-based sex work are needed.

## WEPED448

### Navigating fear and stigma: LGBTI experiences after Uganda's 2023 Anti-Homosexuality Act

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**Background:** Despite progress in HIV prevention and treatment in Uganda, LGBTI individuals (lesbian, gay, bisexual, transgender, and intersex) face a disproportionate burden of HIV and severe legal and social challenges. The 2023 anti-homosexuality act with harsh penalties for same-sex acts and "promotion of homosexuality" further exacerbated these challenges. This research explored the lived experiences of LGBTI individuals in Wakiso District following the act's passage.

**Methods:** We conducted in-depth interviews with 22 LGBTI individuals – 12 gays and 10 transgender persons. These interviews focused on their experiences and perceptions of the act's impact on their lives and access to HIV prevention and treatment services. We analyzed the data using thematic analysis.

**Results:** Our findings revealed profound fear, stigmatization, and isolation among LGBTI individuals. Participants reported feeling unsafe leaving their homes, limiting their access to basic necessities and HIV prevention services like condoms and lubricants. Fear of arrest and violence led to decreased utilization of HIV treatment services, jeopardizing their health and well-being.

**Conclusions:** The 2023 anti-homosexuality act has had a devastating impact on the lives and health of LGBTI individuals in Wakiso District, hindering their access to vital services and fostering an environment of fear and discrimination. Urgent action is required by human rights and HIV activists to engage policymakers and advocate for revision or repeal of the discriminatory clauses. Additionally, comprehensive support systems and safe spaces are crucial to protect and empower LGBTI individuals in navigating this challenging landscape.

## WEPED449

### A longitudinal exploration of mental health among adolescent mothers living with HIV in South Africa: insights from the COVID-19 pandemic

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**Background:** The COVID-19 pandemic negatively impacted the lives of young people living in adversity, increasing the risk of unintended adolescent pregnancies and exacerbating mental ill-health.

Understanding the possible impact of COVID-19 on the mental health of young mothers affected by HIV is critical to current and future response planning for both this group and their children.

**Methods:** We analysed longitudinal data from n=704 adolescent mothers (first child ≤19 years), living with (n=213) and not living with HIV (n=488), residing in the Eastern Cape Province, South Africa (age [follow-up]: M=22.2[IQR:21.1-23.3]).







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Symptoms of depression, anxiety, posttraumatic stress, and suicidality were assessed using validated measures in two waves of data collection (pre-COVID-19 [2018-2019], and post COVID-19 [2021-2022]).  $\chi^2$ /t-tests explored changes in mental health symptom prevalence over time (using cut-off scores), differences according to HIV status, and differences in sample characteristics according to mental health status. Resilience was examined by comparing those with constant or improved mental health to those chronically or newly symptomatic.

**Results:** 30.3% (213/704) of the sample were living with HIV. Significant increases in poor mental health were identified on all measures of mental health symptoms post onset of the COVID-19 pandemic. Any common mental disorder symptomology rose from 13.4% pre-COVID-19 to 49.7% post-COVID-19 onset ( $\chi^2=215.5, p<0.0001$ ).

This increase was similar for all individual mental health symptoms, including comorbid mental health conditions (scoring above the cut-off on one or more mental health scales). Half (49.7%; 350/704) of participants reported chronic or deteriorating mental health symptoms. Changes in mental health prevalence over time were not found to differ by HIV status.

Participants reporting resilient mental health were more likely to report no baseline experience of abuse ( $p=0.007$ ), domestic violence ( $p<0.0001$ ), or community violence ( $p<0.0001$ ), and were more likely to be food secure ( $p<0.0001$ ).

**Conclusions:** Globally, this is the largest longitudinal exploration of mental health among adolescent mothers, including young mothers living with HIV. These analyses identify a critical need for mental health provision to support all adolescent mothers and identify possible factors (violence reduction and food security) to promote resilience and mental health. Further explorations of pathways to mental health risk and resilience among this group are required.

## WEPED450

Using rapid service coverage and routine program data to understand access to/use of condoms and STI diagnosis among men who have sex with men and female sex workers in Eswatini

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**Background:** The PEPFAR/USAID-funded Meeting Targets and Maintaining Epidemic Project (EpiC) Eswatini project conducted its first rapid coverage survey (RCS) in September 2023. The objectives of the study were to understand key populations (KP) access to services; and to ascertain

the proportion of KPs who use HIV prevention, care and treatment interventions, and knowledge provided specifically on condom access and use compared to sexually transmitted infection (STI) cases diagnosed.

**Methods:** A structured tool specifically designed for the study was used to interview participants. The survey was approved by ethics committees from FHI 360 and National Health Research Review Board in Eswatini.

We also used EpiC routine KP program data collected between October 2022 and September 2023 on number of STI cases by population and location. Data analysis was done with Excel and unweighted data was used to interpret and present results.

**Results:** Among the interviewed participants, [men who have sex with men (MSM) (N=772) and female sex workers (FSW) (N=1,685)], access to free condoms was reported to be higher among MSM at 85% (n=433) compared to 57.9% (n=975) among FSW. Condom use in last sexual encounter; 58.2% (n=981) FSW whilst MSM reported 63% (n=488) use which translates to about 40% inconsistent condom use by each population.

In Hhohho and Manzini regions FSW reported above average for both free condoms and condom use in last sexual encounter; 78.1% and 61.7% respectively, whilst below average for MSM at 75% and 68% respectively.

FSWs further provided information on clients influencing non-condom use (multiple responses); 58.2% regular, 37.4% high paying, 17% new clients, 12.6% depend on client's preference and 24% non-response.

Program data also shows high STI diagnosis in both regions; FSW diagnosed in Hhohho and Manzini were 8% (188/2,456) and 13% (339/2,675), MSM 8% (101/1,330) and 10% (137/1,330) compared to the others which range between 2% and 7%.

**Conclusions:** The survey identified gaps in access to free condoms at KP hotspots and its consistent use to prevent the spread of HIV as well as STIs.

The findings will help the KP program to provide targeted program interventions that will address the gaps identified per sub-population and location.

## WEPED451

### Supporting efforts to reduce key population stigma among healthcare workers in Mombasa, Kenya: results from an ongoing prospective cohort

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**Background:** Key populations that bear a disproportionate burden of HIV – sex workers, people who use drugs, transgender people, and sexual minorities (i.e., men who have sex with men) – face high levels of interpersonal stigma, including when accessing healthcare. Such stigma is detrimental to health outcomes. In Mombasa, Kenya there are several ongoing interventions to reduce key population stigma among healthcare workers.

To guide these interventions and track impact, this study details data from a newly established multi-year cohort.

**Methods:** The *Mombasa Healthcare Worker Study* is a prospective cohort launched August 2023 with ongoing enrolment of clinical and non-clinical employees at public health facilities. Via repeated digital surveys, key population stigma is measured with the Bogardus Social Distance Scale.

Participants rate willingness to engage with key populations at different social levels (e.g., neighbours, friends, family) with 'high stigma' defined as scores exceeding the 50<sup>th</sup> percentile of the possible range.

Logistic regression analyses investigated differences between sub-samples and associated characteristics with adjusted odds ratios (aOR) and 95% confidence intervals (CIs).

**Results:** From six public health facilities across Mombasa, 272 healthcare workers have been enrolled with 92% retention between the first two waves. Of these, 235 (86.4%) are clinicians and 37 (13.6%) are non-clinicians (e.g., administrators, cleaners).

At Wave 1, 70.8% of healthcare workers demonstrated high stigma towards at least one key population, which remained stable at Wave 2 (73.4%,  $p=0.143$ ). High stigma was most common towards people who use drugs (55.4% at wave 1), followed by sexual minorities (48.1%), transgender people (48.0%) and sex workers (34.1%).

This hierarchy was consistent at Wave 2. In a multivariable analysis, at baseline the following factors were independently associated with high stigma towards key

populations: less than one year working in healthcare (aOR=1.78, 95%CI:1.07-2.93,  $p=0.032$ ) and being a non-clinician (aOR=1.12, 95%CI:1.03-1.98,  $p=0.004$ ).

**Conclusions:** Key population stigma is prevalent among healthcare workers in Mombasa, likely undermining quality and uptake of care. High levels of stigma among the non-clinical workforce suggests that interventions should include all healthcare workers, while involving more experienced workers as leaders of anti-stigma initiatives could prove effective. This cohort will monitor the impact of such interventions over time.

## WEPED452

### Why did I quit oral PrEP? If you bring CAB-LA, will I sign up? – female sex workers share views and experiences

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**Background:** The HIV prevalence rate among female sex workers in Zambia is over four times higher than in the general population (48% vs. 11%). However, oral PrEP continuation rates among FSWs are not significantly higher compared to the rest of the population. Reasons for discontinuation, duration on oral PrEP, and likelihood to take up injectable PrEP once available, remain undocumented among this high risk population.

**Description:** Between October and December, 2023 we undertook to engage with female sex workers that had once accessed oral PrEP, but had since discontinued. From client data, we reviewed their demographic details, date of last visit for oral PrEP purposes, while via phone calls, we recorded their reasons for discontinuing PrEP, and their likelihood to take up long acting injectable cabotegravir (CAB-LA), and recorded reasons, if any, why they would choose not to.

**Lessons learned:** 108 FSWs were engaged. Age distribution was 18 to 51 years. Majority (72.2%) were aged 20-34 years old. Most had attained primary (49.1%) or secondary (47.2%) school education. Majority (51.9%) last attended clinic at one month of oral PrEP and had collected medicines for up to Month 4, while 35.2% and 8.3% came for their Month 4 and Month 7 visits respectively. The largest proportion (33.3%) cited "side effects", while 18.5% cited "Got tired of pills", 13.0% "feared their clients/partner's perceptions", 11.1% said "high mobility" and 8.3% gave "Tablets too big" as reasons. One (0.9%) client seroconverted. Most (84.3%) did not seek medical advice when discontinuing, while 66.7% immediately replaced PrEP with use of condoms.

The majority (89.8%) said they would take up injectable PrEP once offered; 6.5% indicated "May be" and 3.7% indicated they would not take injectable PrEP. Among those that responded "May be" and "No", the majority (86.5%) cited "fear for long term side effects".



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**Conclusions/Next steps:** FSWs largely discontinue oral PrEP due to side effects. As these do not normally last over a month, there is need for improved counselling, support and managing expectations among this population. Though the drop off rates for oral PrEP are high, FSWs are eager to take up long-acting injectable PrEP.

## WEPED453

### Factors related to the intention to use long acting pre-exposure among transgender women in Argentina

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**Background:** Since 2021, Argentina has been offering oral PrEP at no cost to key populations. Transgender women (TGW) have a high HIV prevalence; nevertheless, uptake and persistence of PrEP has been notably low. Studies in other countries suggest preferences for long-acting PrEP (LA-PrEP) over oral PrEP.

This study analyzed factors related with intention to use LA-PrEP among TGW in Buenos Aires, Argentina.

**Methods:** We conducted a cross-sectional study using a convenience sample of TGW who attended an NGO's HIV testing service between February-July 2023. A self-administered questionnaire covered psychosocial and sociodemographic variables, knowledge and intention to use LA-PrEP, preference for PrEP modalities (injectable/implant) and sexual behavior.

We explored correlates of intention to use LA-PrEP applying chi-square tests, odds ratios (OR), confidence intervals (CI) and Student's t-tests.

**Results:** In total, 89 TGW participated, with a median age of 28 years (IQR=24-35). Regarding sociodemographic characteristics, 27% informed incomplete secondary education, 20.2% were migrants and 27% were currently engaged in sex work. Receptive condomless anal sex (CAS) was reported by 42.2%.

Also, 32.6% reported use of oral PrEP currently. In the last three months, 51.7% used substances before or during sex, mainly cannabis (50.6%) and cocaine (19.1%).

Only 11.2% were aware of LA-PrEP and 65.2% expressed intention to use it (45.9% preferred implants, 31.1% subcutaneous, and 23% intramuscular). Who did not intend to

use LA-PrEP exhibited significant concerns about potential interactions with gender-affirming hormone therapy ( $t(76)=29.307$ ;  $p<0.05$ ). Intention to use LA-PrEP was significantly associated ( $p<0.05$ ) with current sex work (OR=5.30, 95%CI=1.44-19.55), migration (OR=3.08, 95%CI=1.11-8.55), incomplete secondary education (OR=3.55, 95%CI=1.09-11.58), use of cocaine before or during sex (OR=3.55, 95%CI=1.09-11.58).

**Conclusions:** Intention to use LA-PrEP was high among TGW at risk and with social vulnerability. Low awareness, concerns and factors related with a positive intention to use LA-PrEP, must be considered to develop strategies to implement a comprehensive, sensitive, and effective LA-PrEP delivery program in Argentina.

## WEPED454

### Transgender community engagement in designing a virtual HIV intervention for TGWs with limited digital literacy in Delhi NCR India: experience sharing from workshops

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**Background:** In strengthening community-based interventions focused on Transgender women (TGW), gathering insights through community consultations, particularly in Delhi NCR. Limited accessible research exists on integrating and centring transgender communities in such interventions.

As part of initiative Transcending, a virtual multi-level intervention focused on increasing HIV testing and status-neutral linkage to care among TGW, workshops were conducted with community stakeholders to guide intervention development and implementation.

**Description:** Six workshops took place at community-based organizations in Delhi NCR, India, from Apr - Oct 2023. The aim was to design a multi-level WhatsApp-based intervention incorporating messaging to enhance HIV testing uptake among TGW. Approximately 20 participants, including TGW with diverse field experiences such as community healthcare workers and HIV intervention beneficiaries, engaged in the workshops.

The TGW groups are very diverse in India, the literacy levels, digital literacy and other key factors were considered. The workshops applied socio-ecological and information-motivation-behaviour (IMB) frameworks to guide intervention component selection.

**Lessons learned:** The community centric design and open space technology approach facilitated impactful discussions between community members and the intervention team. Key stakeholders provided valuable insights, informing optimal targets for behaviour change, recruitment strategies, enrolment procedures, and reten-



tion efforts. Workshop participants played a crucial role in selection of digital content formats – largely voice based, including word choice. Further self-explanatory pictorial designs for IEC for community with limited literacy.

**Conclusions/Next steps:** Integrating the valuable inputs from transgender community and stakeholders into all aspects of intervention and research processes enhances participant engagement in virtual behavioural interventions.

The combination of inclusive processes and rigorous theoretical models enabled the successful development of a community-centred, multi-level, multi-component virtual intervention for transgender community.

This participatory approach serves as a model for developing theoretically grounded and community-centered virtual behavioral interventions, particularly with community with limited digital literacy.

## WEPED455

Community connect: transformative strategies for community referral and testing for HIV to identify discordant couples in Muhuru ward, Migori County

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**Background:** Identifying and retaining discordant couples on care remains a challenge, primarily due to the veil of secrecy surrounding the relationships. Approximately two-thirds of couples living with HIV in the country are discordant. A collaborative strategy, CMMB in partnership with Kenya Redcross Society (KRCS) and MoH Migori County through Global Fund HIV transmission prevention program sought to address this issue.

The strategy focused on empowering discordant couples' peer educators to deliver accurate information, motivate their peers to access comprehensive care services, and bridge the gap between facility-based services and community needs.

**Description:** In May 2022, 24 discordant couples, including one from Muhuru Sub County Hospital in Migori County, were identified. A dedicated couple, navigating a discordant relationship for two years, underwent training in peer education, communication, and community-facility referrals for HIV management services.

Assigned to Muhuru ward, they became peer educators, conducting home visits, establishing support groups, sensitizing community meetings, and utilizing social media for information dissemination. Their pivotal role included building trust, facilitating discussions, providing HIV prevention information, and linking couples to health

services. Monthly analysis of peer calendars and referral forms offered insights into service provision for targeted couples.

**Lessons learned:** The peer educators played a crucial role in linking couples to health services, building trust, and facilitating productive conversations. By December 2023, the enrolment of discordant couples had increased from 32 to 86, resulting in improved HIV prevention and treatment outcomes. These outcomes included heightened knowledge, enhanced communication, and increased utilization of prevention methods.

**Conclusions/Next steps:** The success of the program in recruiting and engaging discordant couples underscores the significance of community-based HIV program approaches.

Integrating the program into the health system is crucial for sustainability, scalability, and long-term engagement. This integration is expected to lead to reduced new infections and improved treatment outcomes in Migori County.

## WEPED456

Young trans people first: youth-inclusive gender-affirming services facilitate access to HIV and sexual health services among young transgender women in Bangkok, Thailand

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**Background:** Globally, young key populations are disproportionately affected by HIV. In order to address the gaps, the Tangerine Clinic, a transgender-led gender-affirming sexual health clinic in Bangkok, integrated youth-inclusive gender-affirming care into HIV services. This approach aims to minimize the harms of self-medicated hormone treatment, as gender-affirming care had yet to be covered under the Thailand's Universal Health Coverage, and to facilitate access to HIV and sexual health services among young transgender populations.

We conducted an observational cohort examining access to HIV and other sexual health services among young transgender clients of the Tangerine Clinic.

**Methods:** We analyzed data collected from clients of the Tangerine Clinic during November 2015–September 2023. Data on HIV and sexually transmitted infections (STI) services accessed by transgender women aged ≤24 years, who used gender-affirming care as a service entry point, and service outcomes were reported.



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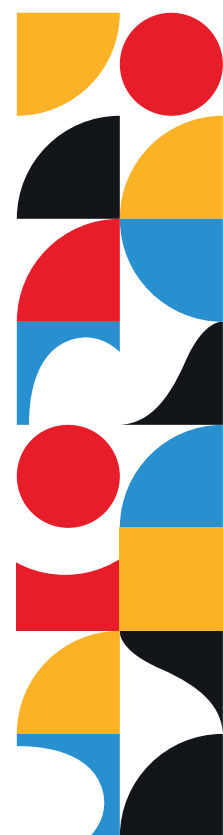
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Gender-affirming care at the Tangerine Clinic included gender-affirming care counseling, hormone treatment and hormone level monitoring.

**Results:** Of 6,280 transgender women clients of the Tangerine Clinic, 2,839 (45.2%) aged  $\leq 24$ . Among them, 2,012 (70.9%) reported gender-affirming hormone treatment as their primary reason for a clinic visit. Of those, 1,924 (95.6%) received HIV testing and 39 (2%) who tested HIV-positive, 35 (89.7%) initiated same-day antiretroviral treatment and 28 (71.8%) achieved virologic suppression. Pre-exposure prophylaxis was prescribed to 390 (20.7%) and post-exposure prophylaxis to 65 (3.4%) individuals who tested HIV-negative. Psychoactive substance use was reported by 7 (0.3%) and 188 (9.3%) engaged in sex work. Syphilis testing by TPHA was conducted in 1,665 (82.8% of 2,012), 23 (1.4%) were confirmed by VDRL to have active syphilis, and 21 (91.3%) received treatment. Of 256 (12.7% of 2,012) who tested for chlamydia/gonorrhea by nucleic acid amplification testing, 59 (23%) tested positive and 52 (88.1%) received treatment.

**Conclusions:** Integration of youth-inclusive gender-affirming care into sexual health services successfully facilitated access to HIV prevention and treatment, STI testing and treatment, and safe hormone treatment among young transgender women. It is crucial to nationally scale up the youth-inclusive gender-affirming HIV service intervention for young transgender populations in Thailand in order to accelerate an ending AIDS goal by 2030.

## WEPED457

Social systems exclusion associated with increased HIV and bacterial STIs among transgender women and transfeminine non-binary persons living in the U.S.: racial and ethnic differences and implications for intervention

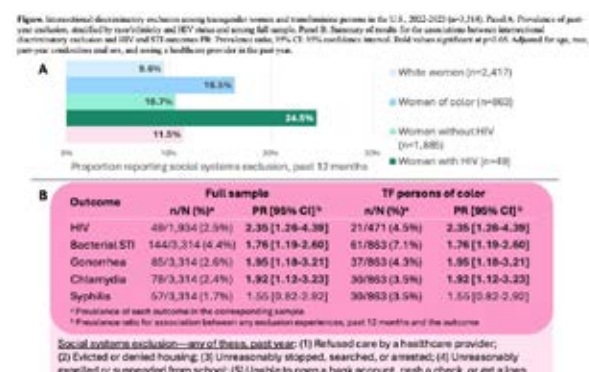
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**Background:** Intersectional discrimination is an established determinant of poor health among gender diverse populations. We sought to investigate discrimination as a potential driver of HIV and STI outcomes among transgender women and transfeminine non-binary persons (TF persons) in the US.

**Methods:** A US nationwide online survey (June 2022-July 2023) of TF persons assessed social systems exclusion with five items identified via factor analysis as a single domain of the Intersectional Discrimination Index (**Figure**), a non-attributable measure of stigma. We measured differences in exclusion experiences by race/ethnicity and HIV status, using modified Poisson regression with robust variance estimation to calculate prevalence ratios (PR) for associations between exclusion and self-reported (1) HIV status and (2) STI diagnoses in the last year.

**Results:** Of 3,314 TF participants, 1,666 (50.3%) reported lifetime experiences of exclusion, 979 in the past year. Past-year exclusion was more prevalent among TF persons of color (i.e., non-white; PR 1.71, 95% CI 1.41-2.07) and TF persons with HIV (PR 2.29, 95% CI 1.37-3.80; **Figure**). Those reporting past-year exclusion had over double the HIV prevalence and 76% higher past year bacterial STI prevalence, including nearly double the prevalences of gonorrhea and chlamydia, as those reporting no past-year exclusion (**Figure**). These effects were more profound among TF persons of color for HIV prevalence, bacterial STI prevalence, and syphilis.



**Conclusions:** Social systems exclusion is a form of intersectional discrimination associated with markedly higher prevalence of HIV and bacterial STIs among TF persons. TF persons of color and those with HIV are subjected to multiple forces of marginalization (transphobia and racism; HIV stigma and transphobia) and disproportionately affected by social systems exclusion.

To protect the rights and well-being of transgender women, there is an urgent need for structural intervention to ensure access to social, economic, healthcare, and safety resources to foster improved sexual health and HIV outcomes.

## WEPED458

### Bridging the gap: enhancing pre-exposure prophylaxis uptake and continuity among key populations at substantial risk of HIV in Uganda

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**Background:** In Uganda, where the annual incidence of up to 52,000 acquiring new HIV persists, addressing the unique challenges faced by Key Populations (KPs) in accessing and maintaining Pre-Exposure Prophylaxis (PrEP) is of paramount importance. The criminalization of specific sexual identifications and practices under the Anti-Homosexuality Act, coupled with deep-rooted fears of stigma, abuse, harassment, and legal consequences, creates formidable barriers that hinder PrEP uptake and continuity among high-risk individuals and threatens Uganda's overall progress in the HIV response.

Program data from Ministry of Health PrEP tracker 2020 showed that continuity on PrEP for persons at risk was approximately 20% compared to the national target of 60%.

**Description:** With support from the Elton John AIDS Foundation, Alive Medical Services (AMS) is spearheading a targeted initiative addressing PrEP utilization complexities among KPs in 63 health facilities in 25 districts in Uganda. Each PrEP user is connected with a trained Peer Educator, discreetly managing community-based follow-ups and refills using blood-based self-test kits. Peer Educators mobilize KPs to hotspots and engage empowered health workers to initiate PrEP in the community.

**Lessons learned:** Between February 2023 and September 2023, 2,876 KPs were initiated on PrEP. Of these 2,444 had a refill at month 1 (85% continuity) whilst 1,036 had a refill at 3 months (71% continuity).

In the face of an unfavourable social and legal environment, peer educators expressed concerns about navigating community activities. Regular mentorship visits empowered and encouraged them.

Feedback from Health workers highlights a notable improvement attributed to trusting relationships Peer-educators cultivated in the community. This has resulted in individuals facilitating seamless connections to the 63 health facilities for refills.

**Conclusions/Next steps:** Peer-led community-based approaches addressing stigma and mental health increases PrEP uptake and continuity. This is consistent with the evidence that peer-led interventions can increase uptake

of HIV services. It is recommended for other CSOs delivering health programming in Uganda to follow similar approaches. Scaling up mental health services and addressing stigma in health facilities are the next priorities to further improve PrEP uptake and continuity, underscoring AMS' dedication to dynamic and responsive interventions to meet the evolving needs of the communities we serve.

## WEPED459

### Insights and learnings on HIV status process approach among OVC households in the Dominican Republic

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**Background:** The USAID-funded Building Resilience project in the Dominican Republic aims to improve HIV detection and antiretroviral treatment adherence among Haitian migrants and their descendants, ultimately reducing viral load in these communities.

**Description:** Building Resilience project employs a family-focused service model to enhance the health of orphans and vulnerable children (OVC) by identifying HIV cases, promoting treatment adherence, and monitoring viral load. The target population faces challenges such as higher HIV prevalence, limited awareness, and access to antiretroviral treatment (ART), exacerbated poverty, lack of legal documentation leading to deportations, and restricted access to social protection programs.

**Lessons learned:** The project is contributing to the global 95-95-95 goal by ensuring that targeted children, adolescents, and caregivers know their HIV status. From September 2021 to 2023, 12,913 beneficiaries were reached. Initially (September 2020), only 38% knew their HIV status. Through adjusted approaches and new strategies, by September 2023, 93% knew their HIV status.

Addressing complexities in raising HIV status awareness highlighted key lessons, emphasizing improving community volunteer effectiveness and sensitizing caregivers to their religious and cultural beliefs about HIV risk in children. Optimizing volunteer training, particularly in age-appropriate assessments, and redesigning the HIV Risk Assessment Tool were crucial in easing volunteers' discomfort with sensitive sex-related questions. Establishing trust through continuous training and fostering a psychological connection between volunteers and caregivers further enhanced volunteers' ability to assess HIV risk and facilitate necessary testing referrals.

Integrating cultural and religious sensitivities into HIV education, dispelling prevalent myths, and sensitizing caregivers, specifically addressing their limited acceptance of risk assessments for their children were crucial. By concentrating efforts on these areas, a more supportive and



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effective approach for conducting HIV risk assessments, referring for HIV testing, and ensuring completed referrals was implemented. This resulted in a significant improvement in the percentage of children in the program who knew their HIV status.

**Conclusions/Next steps:** Culturally sensitive, comprehensive approaches are crucial for assessing HIV risk and delivering services to this vulnerable population. Effective communication, rapport-building, and targeted interventions are vital to engage 95% of people with HIV in knowing their serostatus. This involves raising awareness about the importance of HIV testing and ensuring broad access.

## WEPED460

Exploring self-perceived HIV risk and associated factors among sexual and gender minority adolescents in Brazil: findings from the PrEP1519 cohort study

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**Background:** Sexual and gender minority adolescents (SGMA) in Brazil are more prone to discontinuing PrEP compared to adults, potentially due to their perception of HIV risk. We aimed to assess the factors influencing self-perception of HIV risk among adolescent men who have sex with men (AMSM) and transgender women (ATGW).

**Methods:** PrEP1519 constituted a single arm, demonstration cohort study focusing on daily oral PrEP among AMSM/ATGW aged 15-19 years, in three Brazilian cities. Baseline assessments were carried out, followed by quarterly visits. For this longitudinal analysis, we included adolescents enrolled in PrEP from February 2019-February 2022.

We analyzed up to 12 observations from each participant using random (intercept) effects logistic model to estimate adjusted odds ratios (aOR) and 95% confidence intervals (95%CI) of factors associated with self-perception of HIV risk (low vs moderate/high).

**Results:** 1,234 adolescents were included. The majority were MSM (91.0%), aged 18-19 years (76.0%), black/brown skin color (70.5%), attended secondary school (69.2%); 75.9% and 59.2% reported condomless receptive anal sex with a steady partner and with casual partners over the past 3 months, respectively.

Adolescents with secondary and college education were more likely to perceive themselves at moderate/high HIV risk (aOR=3.5;95%CI:1.4-8.4 and aOR=3.3;1.3-8.4), respectively.

Furthermore, engaging over the past 3 months in condomless receptive anal sex with casual partners (aOR=1.8;1.3-2.6), in group sex (aOR=1.8;95% CI:1.3-2.6), in transactional sex (aOR=2.2; 95% CI:1.1-4.5), and having more than four casual partners (aOR of 2.6;95%CI:2.0-3.5) were factors associated with self-perception of moderate/high HIV risk.

**Conclusions:** Adolescents engaging in high-risk HIV behaviors were more likely to be aware of their risks. Nevertheless, there exists a subset of adolescents at HIV risk, albeit less overtly, who may not perceive themselves as vulnerable to acquire HIV. We posit that those with greater access to information are more aware of HIV risks. Consequently, schools can play a crucial role as an essential strategy in advocating for HIV prevention measures among SGMA.

## WEPED461

HIV vulnerabilities and extreme disparities among young transgender women in Lima, Peru

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**Background:** In Peru, transgender women are most affected by HIV, with a prevalence of 20.8-29.8% compared with 0.2-0.3% in the general population. Peruvian young transgender women (YTW) ages 16-24 years are a critical but understudied group for primary HIV prevention efforts. Previous studies show sharp increases in HIV prevalence among transwomen ages 25 years and older.

**Methods:** Between February-July 2022, a cross-sectional quantitative study with YTW ages 16-24 years (N=211) was conducted in Lima, Peru, consisting of a biobehavioral survey accompanied by laboratory-based testing for HIV and other STIs (syphilis, chlamydia, gonorrhea, and hepatitis B). Bivariate and multivariable Poisson regression models were used to estimate risk ratios between sociodemographic and behavioral characteristics and HIV status.

**Results:** Among participants (median age 23 years), HIV prevalence was 41.5% (95% CI: 33.9-49.4%), recent syphilis acquisition 19.4% (95% CI: 12.7-28.4), chlamydia 6.3% (95%



CI: 3.1-11.1), and gonorrhea 12.3% (95% CI: 7.9-18.7). Almost half (47.9%) reported condomless anal sex in the past six months, 50.7% reported sex work in the past 30 days and 13.7% reported accepting more money for condomless sex.

There were no significant differences in reported sexual behaviors by HIV status. Only 60.8% of participants reported ever having been tested for HIV, and 25.6% reported a past 6-month STI test.

More than two-thirds (67.8%) had not heard of PrEP and only 4.7% had taken PrEP in the past month. Most (58.8%) reported ever experiencing violence, including psychological (56.4%), physical (44.5%), sexual (26.1%), and transgender-specific intimate partner violence (24.6%).

Current moderate-to-severe psychological distress was endorsed by 20.3%, 20.4% reported PTSD symptoms, 10.0% reported attempting suicide in the past 6 months, and 64% reported alcohol misuse.

**Conclusions:** Findings highlight that the HIV epidemic for YTW in Lima, Peru, is situated in a context of widespread social exclusion, including economic vulnerabilities, violence victimization, and its mental health sequelae that starts early in life. There's an urgent societal need to improve the quality of life of YTW.

Additionally, reducing HIV inequities and guaranteeing access to prevention and care for YTW, will require interventions that target developmentally-specific clusters of stigma-related conditions.

## WEPED462

### The price of protection: quantifying differences in compensation for vaginal sex with and without condoms among female sex workers living with HIV in South Africa

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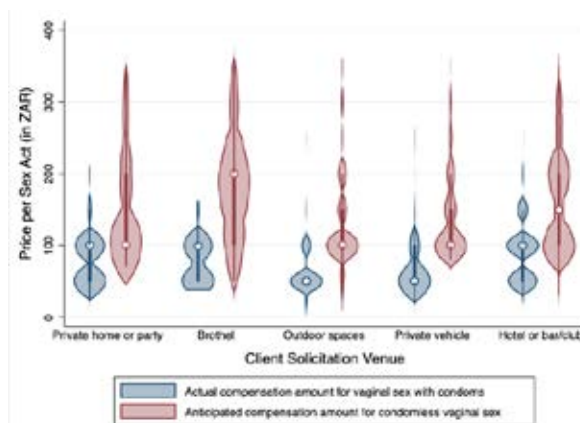
**Background:** Amid financial instability and other structural injustices, female sex workers (FSW) living with HIV face competing incentives to protect their health and safety while maximizing earnings, sometimes at the expense of condom use.

**Methods:** We leveraged data from an 18-month trial of adaptive strategies to improve HIV treatment outcomes among FSW in Durban, South Africa (*Siyaphambili*)—implemented through TB HIV Care. We estimated per-act payment differentials for vaginal sex with and without condoms (in Rand, 50ZAR:3.85US\$) by subtracting self-reported average compensation for vaginal sex with condoms from anticipated compensation for condomless vaginal sex.

Multivariable Poisson regression with robust standard errors estimated associations between payment differentials for vaginal sex with and without condoms and past-month client condom use behaviors.

**Results:** Among 1,391 FSW, the median compensation for vaginal sex with and without condoms was 100 ZAR (interquartile range [IQR]:50-150) and 150 ZAR (IQR:100-200), respectively—corresponding to a median payment differential of 50 ZAR (IQR:30-100). FSW paid <100 ZAR for vaginal sex with condoms were more likely to report unstable housing ( $p=0.022$ ), solicit clients in outdoor/public spaces ( $p<0.001$ ), and experience sexual violence ( $p=0.010$ ). Actual and anticipated compensation amounts for vaginal sex with and without condoms, respectively, varied by client solicitation venue (Figure).

Per-act payment differentials  $\geq 50$  ZAR were associated with inconsistent condom use with regular (adjusted prevalence ratio [adjPR]=1.97, 95% confidence intervals [95%CI]:1.36-2.87) and new (adjPR=2.12, 95%CI:1.45-3.10) clients, as well as more frequent condomless vaginal sex acts with clients (adjusted incidence rate ratio [adjIRR]=1.99, 95%CI:1.23-3.22).



**Conclusions:** Payment differentials for vaginal sex with and without condoms disincentivized condom use with clients, reaffirming the importance of doxycycline pre-exposure prophylaxis and long-acting contraception for preventing bacterial STIs and unwanted pregnancy, respectively, in this population.

By offsetting anticipated compensation deficits attributed to condom use, economic strengthening and financial stabilization interventions could facilitate increased condom use with clients.





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## WEPED463

Awareness, preferences, and attitudes towards three types of pre-exposure prophylaxis among Chinese MSM: a national cross-sectional study

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**Background:** This study aimed to assess the knowledge and preferences of Chinese men who have sex with men (MSM) regarding long-acting injectable (LAI) pre-exposure prophylaxis (PrEP), as well as their attitudes and intentions towards three types of PrEP (daily oral, on-demand oral, and LAI-PrEP), and to provide a valuable reference for the implementation and promotion of PrEP among the MSM population in China.

**Methods:** A cross-sectional study was conducted between December 2023 and January 2024 in 20 cities across different regions of China. HIV-negative MSM participants were recruited using purposeful sampling, with sample sizes proportionate to the population density of each city. The survey instruments included socio-demographics, PrEP eligibility assessment, and PrEP-related cognitions, including preferences for the three types of PrEP and the reasons. Data were collected using electronic questionnaires and analyzed descriptively.

**Results:** The study included 1,544 participants with a mean age of  $30.0 \pm 7.5$  years. According to the Chinese PrEP guidelines, 54.4% of participants were eligible for PrEP. Three-quarters (74.4%) perceived their risk of HIV infection as low or very low. The awareness rate of PrEP was 90.6%, and a quarter (24.5%) reported a PrEP use history. When PrEP can be provided for free, there were 36.4%, 75.4%, and 53.6% of the participants reported a willingness to use daily oral, on-demand oral, and LAI-PrEP, respectively; these numbers were reduced substantially with the real market price. Participants perceived the on-demand oral PrEP to require less time (73.2%), lower cost (70.4%), higher convenience (69.5%), and better privacy (58.9%).

**Conclusions:** Chinese MSM demonstrated a high level of awareness and interest in PrEP, with substantial preferences for on-demand oral and long-acting injectable PrEP.

Factors such as convenience, cost, privacy, safety, and effectiveness influenced their preferences. Individual preferences and characteristics should be considered when implementing and promoting PrEP among MSM in China.

## WEPED464

Developing indicators to sustain the gains of the 95-95-95 targets and beyond

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**Background:** As we near 2025, five countries have achieved 95-95-95 targets, 16 are on their way (UNAIDS 2023 Global Report). The 10-10-10 targets on social enablers highlight the link between criminalization and social behavior towards the prevalence of HIV.

However, the social enablers in their current format do not clarify indicators that could guide high achieving countries on sustaining their gains. There is a need for a set of indicators through which countries can periodically anticipate the risk of resurgence and work towards HIV/AIDS resilience.

**Description:** Aidsfonds has been collecting and analyzing, best practices, reflections and feedback on the linkage between social behavior, criminalization and advocacy. This combination, together with the existing body of knowledge, positions the organization to lead efforts on drafting indicators that could shape the sustainability of retaining the 95-95-95 gains.

**Lessons learned:** Through projects on service delivery, policy change, training of health care workers, and community outreach across Europe and Africa.

We have the following assumptions to back up efforts in suggesting a global Theory of Change which would guide the production of those indicators. For example:

- There is a co-relation between Key Population integration in overall society and accessibility to testing, *by proxy, this could indicate the decreasing levels of testing in case of anti-rights polarization.*
- There is a co-relation between mental health of Key Population groups and accessibility to testing, *by proxy, the degrees of mental fatigue experienced by Key Population groups could indicate the accuracy of testing being indicative of HIV infection rates.*

**Conclusions/Next steps:** Conclusions: Building an HIV/AIDS resilience Theory of Change (ToC) for beyond 95-95-95 targets is possible through the expanding body of knowledge on the linkage between public perception and policy making, on the infections rate for HIV.

Next Steps: Invite community leadership, key stakeholders and global decision making bodies to prioritize efforts for substantiating the work being done on the development of this Theory of Change with its operational indicators.

## WEPED465

The use and consequences of liquid silicone injections. A key problem in the trans community living with HIV

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**Background:** An argentinian organization with over thirty years work on a comprehensive approach to HIV response is working on the consequences of the use of Liquid Silicone Injections (LSI) in the trans community (TC). Focusing on this key population with a high HIV rate has helped identify healthcare barriers due to stigma and discrimination, which complicates seeking care and adequate treatment. There is a central challenge in the use of LSI and its complications on TC living with HIV.

The need to achieve rapid body changes and the pressure of gender stereotypes often leads to dangerous procedures such as body modifications through the use of LSI (studies show that half of TC have done so).

**Methods:** This organization initiated a project with a state health program focused on gender and diversity. The research involved a descriptive diagnose study with a cross-sectional qualitative methodology, including a literature review and 14 in-depth interviews with healthcare professionals regarding the current situation on the consequences of the use of LSI in the TC.

**Results:** The complications of LSI are often caused by the use of high volumes of non approved products, applied by untrained individuals. These complications can be divided into short and long-term, with local, distant, or systemic effects that can be life threatening. The most frequent are long-term complications which involve siliconomas that can cause pain and inflammation, as well as migration and deformities.

Multiple specialties are involved in addressing these complications, including surgery, rheumatology, dermatology, and palliative care. Guidelines tend to focus on prevention but lack specific information on how to manage these complications.

Moreover, the existing knowledge comes from the experience of professionals who report individual cases.

**Conclusions:** There is no evidence-based clinical practice guideline that addresses comprehensively the diagnosis, treatment, and management of complications due to the use of LSI.

It is urgent and necessary to highlight this issue and to engage in scientific discussion to develop standardized responses to improve the quality of life of transgender community and its healthcare access, particularly for those who live with HIV and are affected by the use of SLI.

## WEPED466

Violence response intervention provided by peers is more effective to that provided by traditional health care workers

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**Background:** Violence remains a significant barrier for key and vulnerable populations (KVP) to access health services in both communities and facilities. In Tanzania, 27% of women aged 15-49 years have experienced physical violence, and 12% experienced sexual violence; 38% of these reported seeking help. Peer-led approaches are known to be good strategies for violence prevention and response (VPR). It is speculated that, among violence survivors it's easier to disclose violence experience to a peer than to a health care provider (HCP). EpiC, a PEPFAR/USAID-funded project is using peer-led approach to reach KVP with education, information, and messages about VPR to create a supportive environment for survivors to seek help.

We aim to quantify the outcomes of peer-led approach in helping KVP access post violence care health services.

**Description:** From October-December 2022, 141 peer educators and navigators (PE/PN) in 11 regions were trained on VPR as community VPR teams. We analyzed routine data on violence among KVP who accessed biomedical services between January 2023 and September 2023, and those who disclosed violence at the community through peers.

We determined the rate of disclosure of violence through VPR teams against disclosure through health care providers while accessing biomedical services and determined proportion that received different services.

**Lessons learned:** 2,186 KVP disclosed violence during biomedical services while 4,102 KVP disclosed violence through peers (3,310 experienced physical/emotional and 566 sexual violence). The violence experience disclosure rate was 47% higher among KVP reached by PE/PN than those reached during biomedical services. 20% of violence survivors reported through HCP while accessing biomedical services referred for post-violence care.

Among those KVP disclosed violence through peers, 3,603 received first-line support, and 65% (2,375/3,603) referred for post-violence services. 16% (380/2375) received HTS, 7 tested HIV positive, and 6 linked to HIV treatment. 1% (24/2375) of those referred received contraceptives and 2% (49/2375) received post-exposure prophylaxis (PEP).

**Conclusions/Next steps:** Peer-led community VPR teams can be an effective approach for coordinating prevention and response among survivors. A well-coordinated VPR presents an opportunity for KVP to access health services. Scaling up the use of peers for VPR is important strategy for effective programming.



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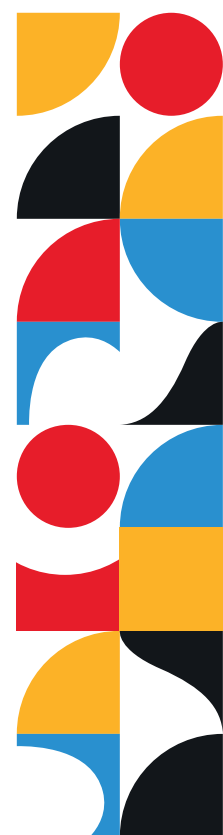
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## WEPED467

### Characterization of neighborhood violence and HIV/STI testing among sexual minority youth in the United States using the 2021 youth risk behavior surveillance system

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**Background:** Within the U.S., HIV/STIs continue to structurally oppress Black and Brown sexuality minority youth (SMY). Preventative measures such as frequent testing remain low for SMY and further inequities among SMY of color. Access to HIV/STI prevention measures among SMY may largely be shaped by socio-structural factors such as neighborhood violence.

Thus, we examine the associations between HIV/STI testing and neighborhood violence among SMY in the US.

**Methods:** We analyzed 2021 CDC Youth Risk Behavioral Surveillance System (YRBSS). Multivariate logistic regressions models were used to determine odds of testing for HIV/STIs among SMY of color, with experienced neighborhood violence.

Interaction analysis explored the intersection of ethnoracial identity and HIV/STI testing among SMY; separate models were run for each predictor. Analyses conducted in IBM SPSS.

**Results:** Among 4240 SMY, approximately 7% ever tested for HIV and 6% for STIs. We observed statistically significant decreased odds HIV/STI testing among SMY who witnessed someone being attacked in their neighborhood ( $\alpha\text{OR}=0.274$ ; 95% CI: 0.274, 0.512 &  $\alpha\text{OR}=0.478$ ; 95% CI: 0.345, 0.663), not attending school due to not feeling unsafe on their way to or from ( $\alpha\text{OR}=0.369$ ; 95% CI: 0.262, 0.520 &  $\alpha\text{OR}=0.594$ ; 95% CI: 0.404, 0.873), and were themselves threatened or injured with a weapon at school ( $\alpha\text{OR}=0.469$ ; 95% CI: 0.249, 0.547 &  $\alpha\text{OR}=0.599$ ; 95% CI: 0.381, 0.940). Black SMY and SMY of other/multiple ethnoracial identities showed decreased odds of ever testing for HIV if they were ever witnessed someone attacked in their neigh-

borhood ( $\alpha\text{OR}=0.388$ ; 95% CI: 0.220, 0.686 &  $\alpha\text{OR}=0.309$ ; 95% CI: 0.207, 0.406) and were themselves threatened or injured with a weapon at school ( $\alpha\text{OR}=0.316$ ; 95% CI: 0.127, 0.788 &  $\alpha\text{OR}=0.323$ ; 95% CI: 0.182, 0.572) compared to their White counterparts. Similar trends among Black SMY and SMY of other/multiple ethnoracial identities were observable for STI testing.

**Conclusions:** Decreased odds in HIV/STI testing among SMY, particularly Black and SMY of other/multiple ethnoracial identities highlight neighborhood violence as a possible target of future intervention and equitable HIV/STI testing policies.

Future work may benefit from qualitative perspectives and the utility of local spatial units of how intersectional experiences of neighborhood violence impede access to and utilization of testing among SMY.

## WEPED468

### Ukrainian refugees in European countries: barriers, solutions and best practices access to HIV and tuberculosis care

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**Background:** HIV incidence rate in Ukraine was 37 people per 100 thousand people in 2021, whereas the number of people living with HIV was estimated at 240,000. Existing HIV rates in Ukraine are 6 times higher than in the EU average. European Center for Disease Prevention and Control estimated the number of Ukrainian refugees living with HIV staying in the EU countries in the range from 9000 to 33 000 in the first months following the start of the Russian aggression against Ukraine.

**Methods:** A qualitative study was carried out with Ukrainian refugees in 6 receiving countries: Germany, Poland, France, Lithuania, Georgia, and Moldova. We interviewed Ukrainian refugees living with HIV and/or affected by TB as well as care providers and public health experts (total number of interviews = 89).

The aim of the study was to explore barriers in access to care, the role of stigma and of discrimination, formal and informal strategies for overcoming the barriers, success stories, including civil society practices.

**Results:** European countries have demonstrated unprecedented support for Ukrainian refugees, extending assistance to individuals living with HIV and other key affected populations. However, amidst this commendable effort,

systemic challenges, particularly bureaucratic complexities, necessitate proactive interventions from social workers and volunteers, who often possess limited knowledge about social diseases.

Adaptation difficulties have a detrimental impact on treatment adherence, with refugees prioritizing basic needs amid overwhelmed healthcare systems in some host countries, notably Germany and Poland, which received the highest numbers of refugees.

Addressing post-traumatic stress disorder and providing mental health support, alongside extended waiting times and limited access to community groups for people living with HIV, presents a substantial challenge to the well-being and a comprehensive care of Ukrainian refugees in Europe.

**Conclusions:** EU countries set an unprecedented benchmark for Ukrainian refugees implementing the "temporary protection" policy although not fully in line with the specific needs of key populations.

It is much recommended to give a voice to community based groups among Ukrainian refugees and adapt existing services as well as decision and funding mechanisms in HIV care for migrants and refugees.

## WEPED469

### Emerging HIV vulnerability: a comparative analysis of HIV prevention and care outcomes among Young Transgender Women in Brazil

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**Background:** Addressing the HIV epidemic among young transgender women (YTGW) in Latin America requires targeted interventions for prevention and care. This study assessed the impact of an intervention by comparing HIV prevention/care outcomes pre- and post-intervention among Brazilian YTGW.

**Methods:** Data are from the baseline assessment of an HIV status-neutral-intervention study conducted in Rio de Janeiro, Brazil, between February-July 2022. YTGW (18-24 years) participated in structured surveys and underwent testing for HIV. Participants were categorized into HIV-negative, known, and newly diagnosed (self-reported HIV-negative who tested HIV-positive). HIV knowledge was assessed using an adapted HIV Knowledge Questionnaire-10 with 8 items. Recent HIV infection was identified using Maxim HIV-1 Lag-Avidity EIA assay.

Multivariable analysis compared newly diagnosed YTGW to those who were HIV-negative.

**Results:** Among 164 YTW, 13% (n=21) were living with HIV [LWH], with 68% (n=15) unaware of their HIV status, including 33% (4/12) recently acquiring it. Compared to youth with known HIV-positive status, newly diagnosed YTGW identified as Black/*Pardo* (67% vs. 43%), live with parents/family (74% vs. 14%), and have fewer housing concerns (27% vs. 43%). In comparison to HIV-negative YTGW, those newly diagnosed had less education (40% vs. 70%), more transactional sex (66% vs. 46%), reported an unknown number of sexual partners (40% vs. 19%), and had lower HIV knowledge (47% vs. 23%). Lower education (aOR:7.99[95%CI:1.78-47.85]) and moderate/high risk of crack/cocaine use (aOR:8.6[95%CI:1.44-54.91]) were associated with higher odds of new HIV diagnosis. Participants aged 20-24 years had lower odds of new HIV diagnosis (aOR:0.18[95%CI:0.04-0.73]).

	Total n=164	HIV new diagnosis n=15 (9%)	HIV negative n=142 (87%)	HIV known diagnosis n=7 (4%)
Age, years (median [IQR])	21 (19;23)	21 (19;22)	21 (20;23)	23 (21;24)
Race				
Black	63 (38%)	6 (40%)	57 (40%)	0 (0%)
<i>Pardo</i>	42 (26%)	4 (27%)	35 (25%)	3 (43%)
White	55 (34%)	5 (33%)	46 (32%)	4 (57%)
Indigenous	1 (0.6%)	0 (0%)	1 (0.7%)	0 (0%)
Asian	2 (1.2%)	0 (0%)	2 (1.4%)	0 (0%)
Refused to answer	1 (0.6%)	0 (0%)	1 (0.7%)	0 (0%)
Schooling, complete years				
Up to 8	18 (11%)	5 (33%)	11 (7.8%)	2 (29%)
9-11	37 (23%)	4 (27%)	31 (22%)	2 (29%)
12 or more	108 (66%)	6 (40%)	99 (70%)	3 (43%)
Living with				
Alone	42 (26%)	3 (20%)	36 (25%)	3 (43%)
Parents	68 (41%)	7 (47%)	60 (42%)	1 (14%)
Family	29 (18%)	4 (27%)	25 (18%)	0 (0%)
Partner	9 (5%)	1 (7%)	8 (6%)	0 (0%)
Friends	15 (9%)	0 (0%)	14 (10%)	1 (14%)
Other	8 (5%)	1 (7%)	5 (4%)	2 (29%)
Had concerns with housing situation <sup>1</sup>	45 (27%)	4 (27%)	38 (27%)	3 (43%)
Had food insecurity <sup>2</sup>	97 (59%)	7 (47%)	87 (61%)	3 (43%)
Crack/cocaine use				
Low risk	149 (91%)	133 (94%)	5 (71%)	11 (73%)
Moderate/high risk	15 (9%)	9 (6%)	2 (29%)	4 (27%)
Transactional sex	81 (50%)	10 (66%)	65 (46%)	6 (86%)
Unknown HIV status of sex partners	36 (22%)	6 (40%)	27 (19%)	3 (43%)
Low HIV knowledge <sup>3</sup>	43 (26%)	7 (47%)	33 (23%)	2 (29%)

IQR: interquartile range, TGW: transgender women. <sup>1</sup>In prior 6 months, <sup>2</sup>In prior 3 months, <sup>3</sup>HIV knowledge range:0-8, low knowledge <6.

Table 2. Factors associated with a new HIV diagnosis among YTW enrolled in BeT study, Rio de Janeiro, Brazil, 2022.

Variables <sup>1</sup>	aOR	95%CI	p-value
Age 20-24	0.18	0.04-0.73	0.021
Schooling ≤8 years	7.99	1.78-47.85	0.017
Schooling 9-11 years	1.6	0.33-7.18	0.543
Moderate/high risk of crack/cocaine use <sup>2</sup>	8.6	1.44-54.91	0.018
Low HIV knowledge	3.02	0.83-11.52	0.094

aOR: associated odds ratio, CI: confidence interval, YTW: young transgender women. <sup>1</sup>Adjusted for Race, transactional sex, fillers, and binge drinking. <sup>2</sup>Measured by the "Alcohol, Smoking and Substance Involvement Screening Test" (ASSIST); score range:0-12, moderate/high risk>2.

Table 1. Sociodemographics, sexual behavior and HIV knowledge among young TGW enrolled in BeT study, Rio de Janeiro, Brazil, 2022.

**Conclusions:** The findings highlight a lack of awareness of HIV-positive status among many YTGW, emphasizing the need for tailored interventions addressing the intersection of HIV prevention, social factors, and structural needs for this vulnerable youth population. Interventions should include education, substance use reduction, and comprehensive support to effectively curb the HIV epidemic in YTGW.



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## WEPED470

HIV/AIDS prevention materials at funk parties and high school students: a qualitative study in Heliópolis Favela, Brazil

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**Background:** STI/AIDS prevention communication to young people has been quite invisible for years as it disseminates decontextualized information, due to preventive strategies that don't include this key population in their development and implementation process. Preventive materials are distributed at funk parties, cultural events of Brazilian peripheries, to reach socially vulnerable population.

We sought to understand how favela young people evaluate materials distributed at these events.

**Methods:** A semi-structured interview was conducted in 2023 with the coordinator of "Heliópolis Investindo na Vida" (H.I.V.) project, which aims to prevent HIV/AIDS in Heliópolis region of São Paulo, Brazil. Preventive materials produced by the project and disseminated at funk parties during 2022 - a pamphlet and preventive materials, including condoms - were indicated as the key material for evaluation.

A talking circle was held in September 2023 with students from Heliópolis School (aged 16-18) to discuss the distribution strategy, acceptability and quality of these materials. The analysis was based on Vulnerability and Human Rights framework applied to health.

**Results:** Ten students living in the Heliópolis region were included in the study, 3 black cis women, 5 white cis women and 2 white cis men. Regarding the distribution of the materials, they agreed that they would not take the pamphlets. If they did, they wouldn't read it and would discard it.

Still, they wouldn't accept condoms due to potential judgment from friends and family, upon returning home, and pointed out the difficulty in hearing the people distributing the materials, because of very loud sound.

Regarding the pamphlet, they indicated excessive text, lack of illustrations and a bad overuse of slang. They suggested visual elements be more contextualized with funk parties. Finally, they pointed to party DJs as the best potential communication channels about prevention information in these events.

**Conclusions:** There are challenges to implementing prevention strategies to peripheral young people. Although developed in the area where they are distributed, the results suggest that the prevention materials could be better received if they keeping coherence with the specificities of funk parties. HIV/AIDS prevention contextualized to this cultural and health space should be better explored by IST/AIDS programs with youth participation.

## WEPED471

Prediction of substance use among 10974 individuals using machine learning algorithms

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**Background:** There has been a rise in substance-use and chemsex among people in Lebanon as a result of the compounded socio-economic and political crises the country has been experiencing since 2019. Given the shortage of accessible and non-stigmatizing harm reduction services, people who use substances, and particularly those who use substances during or prior to sexual activity, are at risk of potential harm to their health and well-being. The stigmatization of substance-use and sexual and reproductive health have led to a scarcity in data on substance-use and chemsex limiting the ability of public health interventions to appropriately respond to the rising trend.

As such, this study aims to investigate the main predictors of substance-use among young individuals voluntarily accessing anonymous sexual health services in Beirut.

**Methods:** An anonymous standardized questionnaire was administered by a healthcare provider to subjects who presented to a sexual-health clinic in Lebanon between 2015 and 2023. Data on demographics, substance-use, sources of sexual education, sexual practices, and condom-use were collected.

The main predictors of substance-use were determined using two separate machine-learning models (for drug and alcohol-use) with calculation of the percentage of contribution to the prediction.

**Results:** 10974 subjects (27%F, 54%M, 18%other, age: 32±7 years) were enrolled. The main predictors of drug-use were cigarette smoking and sexual practices (percentage of contribution: 32% and 29% respectively), with an accuracy of prediction of 76%, a recall of 81% and AUC (area under the curve) of 73% (IC95%: 71-75%).

The main predictors of alcohol-use were level of education, source of sexual education and age (percentage of contribution: 34%, 11 and 11% respectively), with an accuracy of prediction of 81%, a recall of 92% and AUC (area under the curve) of 75% (IC95%: 73-77%).

**Conclusions:** The findings highlight the significance of cigarette smoking as a major predictor of drug-use, emphasizing the need for targeted interventions for smoking and use of other substances.

Additionally, the association between unreliable sources of sexual education with substance-use reveals a need for incorporating integrated inclusive and non-stigmatizing public health interventions addressing both sexual health education and harm reduction to minimize the risks of substance-use and enhance overall well-being.

## WEPED472

### Unravelling barriers: a study on access challenges to HIV prevention services among adolescent and young men who have sex with men in Mexico

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**Background:** In the current landscape, adolescents and young adults are disproportionately affected by new HIV infections globally. In Mexico, studies highlight that youth and male-male sexual encounters contribute to clustered HIV outbreaks. Notably, findings from the ImPrEP project emphasized that older age and higher education levels correlated with better retention in PrEP. Despite these insights, HIV prevention strategies inadequately target young individuals.

This study aims to uncover barriers obstructing access to HIV prevention for adolescents and young men who have sex with men (AYMSM) in Mexico.

**Methods:** Conducted in collaboration with Community Led Organizations in Chiapas, Yucatán, and Jalisco states, this study involves data obtained through structured questionnaires from AYMSM reaching HIV prevention services.

We collected information regarding sociodemographic characteristics, sexual behavior, drug use and perceived barriers to access services. Using Likert scales, all answers reported as significant or very significant in the perceived barriers section were considered as "identified barriers". A comparison between those identifying or not identifying barriers was then conducted.

	Overall n=392 (%)	Did not identified barriers n=240 (%)	Identified barriers n=152 (%)	P-value
Education				
Primary school or less	44 (11.22)	28 (11.7)	16 (10.5)	NS
Financially dependent	174 (44.4)	95 (39.6)	79 (52)	<0.001
Condomless anal sex in the last 6 months	215 (54.9)	107 (44.6)	108 (71.1)	<0.001
Have felt pressured to have unprotected sex	24 (6.4)	1 (0.4)	24 (15.8)	<0.001
Chemsex				
Rarely	5 (1.1)	25 (37.3)	30 (26.8)	<0.001
Often	21 (46.7)	12 (17.9)	33 (29.5)	
Usually	16 (35.6)	8 (11.9)	24 (21.4)	
Unknown	1 (2.2)	8 (11.94)	9 (8)	
Preferred not to answer	2 (4.4)	14 (20.9)	16 (14.3)	
Distance from their home to the HIV community center				
<60 minutes	343 (87.5)	219 (91.3)	124 (81.6)	0.005
≥60 minutes	49 (12.5)	21 (8.8)	28 (18.4)	

**Results:** A total of 392 participants were included, 38.8% (152) identified at least one barrier to accessing prevention services. Mean age of participants was 21.1 yrs (SD 1.09). Among the reported barriers, 20.2% cited non-friendly

services, 16.3% mentioned inconvenient time schedules, 18.1% indicated economic limitations, 19.4% highlighted transportation issues, and 20% pointed to stigma. Notably, only 2.8% of the total participants were using PrEP. Table 1 provides a summary of observed differences between AYMSM's perception of or lack of perception of barriers to accessing services.

**Conclusions:** AYMSM experiencing economic dependence and reporting higher risk sexual behaviors perceived significantly more barriers to access HIV prevention services. Adequately targeting their specific needs is key in order to improve PrEP and PEP uptake, as well as timely HIV diagnosis in this particular population.

## WEPED473

### Older people with HIV living in Ukraine during crisis: mental health and substance use implications

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**Background:** Ukraine has the second highest rate of new HIV cases in Europe and roughly 25% are older people with HIV (OPWH), defined by UNAIDS as individuals 50 years or older. OPWH often navigate complex stressors related to chronic diseases, mental health, substance use, ageism, and stigma. Existing stressors were exacerbated by the 2022 Russian invasion of Ukraine.

This analysis sought to examine the impact of crisis on the mental health and resilience of a sample of OPWH, and to assess any variation in outcomes between those with a diagnosed substance use disorder and those without.

**Methods:** The quantitative analysis assessed data from a sample of 98 OPWH recruited from two HIV clinics in Kyiv. The analysis used data collected through telephone questionnaires from May – July 2022. Primary outcomes included depression, anxiety, and trauma symptoms, as well as resilience scores.

Multivariable logistic regression models were constructed to assess the impact of prior substance use on mental health symptoms and self-perceived resilience during humanitarian crisis.

**Results:** The prevalence of mental health symptoms was high among the sample, with over 70% reporting depression symptoms, nearly 60% reporting anxiety symptoms, and over 60% reporting 6 or more trauma symptoms.

Gender, age, employment, chronic diseases, war-related experiences, and substance use disorder diagnosis were associated with negative mental health outcomes. Participants diagnosed with a substance use disorder were



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4 times more likely to report depression symptoms, 9 times more likely to report anxiety symptoms, and nearly 7 times more likely to report 6 or more trauma symptoms. However, they were 4.5 times more likely to score higher on the Brief Resilience Scale than those without a substance use disorder.

**Conclusions:** These findings indicate that a substance use disorder diagnosis was the greatest predictor of mental health outcomes within the sample of OPWH. However, it was also a predictor of higher self-perceived resilience. The findings support a need for strengths-based approaches in HIV care that acknowledge the skills and psychological resources of individuals in recovery. Future research is needed to investigate the role of overcoming addiction in building resilience from the perspective of service users.

## WEPED474

### Sexualised drug use among transgender women in the TransCITAR cohort in Argentina

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**Background:** Sexualised drug use (SDU), including chemsex, is a public health concern as it increases the risk of HIV acquisition and mental health problems. It has been widely studied among men who have sex with men; however, information is scarce among transgender women (TGW).

This work aimed to estimate the prevalence of SDU and its associated factors in TGW participating in TransCITAR cohort study in Buenos Aires, Argentina.

**Methods:** This study analyzed the subsample of TGW from TransCITAR, a cohort study that assesses physical and mental health of transgender and non-binary people. Participants were enrolled between Sept/2019-2022 and completed questionnaires on sociodemographic variables, alcohol use (AUDIT  $\geq 8$ ), illicit drug use (DAST-10  $\geq 6$ ), sexual behavior (condomless anal sex [CAS]). SDU was defined as having used any illicit drug (cocaine, crack, ecstasy or other amphetamines, ketamine, meth, and poppers) before/during sex in the last month. Bivariate analyses were conducted to explore associations with SDU.

**Results:** Sample consisted of 413 TGW with a median age of 31 years (IQR: 26-38). Sociodemographic characteristics of the sample were: 31.2% foreign-born, 41.6% unstable housing, 50.6% incomplete high school or lower educa-

tional level, 54.7% current engagement in sex work and 43.1% were living with HIV. More than a half (58.1%) reported SDU in the last month, being the most frequently used cocaine (29.9%), ecstasy (5.8%), crack (2.2%), ketamine (1.9%), amphetamines (1.5%), and poppers (0.2%). Among the participants, 23.3% showed hazardous drinking, 4.4% possible drug dependence, and 32.4% significant depressive symptoms.

A considerable proportion (39.2%) reported CAS at least once in the last month. SDU was associated with unstable housing (OR=1.72; 95%CI=1.15-2.58), current sex work (OR=2.85; 95%CI=1.90-4.24) and depressive symptoms (OR=1.60; 95%CI=1.04-2.45).

**Conclusions:** SDU among TGW is substantial. However, unlike other key populations, it seems to be more associated to sex work in a context of psychosocial vulnerability than to recreational purposes.

More studies are required to better understand this phenomenon of SDU among TGW from Latin America, to explore motives and implications and compare patterns of behavior with other populations and regions of the world.

## WEPED475

### Pilot SMART trial of motivational enhancement interventions to increase pre-exposure prophylaxis use in sexual minority men

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**Background:** Although pre-exposure prophylaxis (PrEP) could substantially mitigate HIV risk, sexual minority men (SMM) who use stimulants commonly experience difficulties with engaging in PrEP clinical services. Motivational interviewing (MI) and contingency management (CM) reduce substance use and condomless anal sex in this population, but interventions require adaptation to promote engagement along the PrEP care continuum.

**Methods:** This pilot sequential multiple assignment randomized trial (SMART) tested the feasibility, acceptability, and preliminary effectiveness of distinct combinations of telehealth MI and CM in 70 SMM who use stimulants that were not currently taking PrEP. A national US sample was recruited via social networking applications to complete a baseline assessment and mail-in HIV testing.

Those with non-reactive HIV results are randomized to either:

1. A 2-session MI intervention focusing on PrEP use and concomitant stimulant use or condomless anal sex; or,

2. A CM intervention with incentives for evidence of PrEP clinical evaluation by a medical provider (\$50) and filling a PrEP prescription (\$50). The primary outcome was documented evidence of filling a PrEP prescription (e.g., photo of a medication bottle) over 6 months.

**Results:** There were high rates of engagement in the MI and CM interventions. Participants completed 75 of 78 MI sessions (96%) and 100% received overviews of CM financial incentives. Sessions rated using the MI Treatment Integrity (MITI) fidelity rating system were indicative of high levels of facilitator adherence to the intervention protocol.

Mean MITI global scores generally exceeded 4 out of 5: cultivating change talk mean 4.36 (SD = 0.6); softening sustain talk mean 3.91 (SD = 0.51); partnership 4.46 (SD = 0.57) and empathy mean 4.24 (SD = 0.59).

More than one-third of randomized participants (27/70; 39%) provided documented evidence of PrEP use over the 6-month follow-up, but there were not significant differences between those initially randomized to MI versus CM (OR = 1.01; 95% CI = 0.35, 2.87).

**Conclusions:** Telehealth motivational enhancement interventions are feasible and acceptable with SMM who use stimulants. Although we observed a high rate of PrEP use over follow-up, more definitive randomized controlled trials are needed to test distinct combinations of MI and CM.

## WEPED476

### Leveraging the Needle Syringe Program for harm reduction among persons who inject drugs in Nigeria

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**Background:** The United Nations in 2019 issued a ministerial declaration on the need to strengthen actions at the national, regional, and international levels to accelerate the implementation of joint commitments to address and counter the world drug problem. Per the Nigeria national drug use survey, 14.4% of the general population use drugs, a rate higher than the global average of 5.6%. People who inject drugs (PWIDs) can thus, be associated with increased transmission of HIV and blood-borne infections like Hepatitis B&C. The Global Fund (GF) in collaboration with the National Agency for Control of AIDS (NACA), the Federal Ministry of Health (FMoH), through FHI360 supported the scale-up of NSP among PWIDs between July 2022 and December 2023.

This study examines the scale-up of NSP during the intervention period.

**Methods:** The study is a retrospective review of program data for NSP and associated services including Opioid overdose management, and wound management provided to PWIDs in 7 states from July 2021 – November 2023 in Nigeria. Community facilitators were engaged to provide clean needles to PWIDs while retrieving used needles for disposal.

Data was obtained from the District Health Information System (DHIS) and the registers. Data was analysed with Person correlation statistic.



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**Results:** A total of 48,205 (Male = 36,865(76.4%), Female =11,340(23.6%)) PWIDs were enrolled on NSP. They were provided with a total of 2,715,113 (male=2,087,844, female=627,269) needles and syringes with 2,099,427 (male =1,606,840(76.5%), female =492,587(23.5%) syringes retrieved. A total of 253 (211M, 42F) PWIDs were treated for injection-related wounds, while 8 (7M, 1F) PWIDs were treated for opioid overdose with Naloxone.

Also, there was significant relationship between PWID recruited for treatment/care and needles and syringes distributed ( $r$ -value = 0.916\*\* $;$   $p$  =0.000)

**Conclusions:** The NAHI grant ensured that PWIDs who share needles were provided with clean and safe needles, while clients who had opioid-related overdoses were treated with Naloxone.

This continuous access to NSP services will lead to a reduction in HIV and other blood-borne infections if sustained. There is a need to scale up the intervention to ensure more PWIDs are reached with the services for better outcomes.

## Sexuality, gender, relationships and sexual cultures

### WEPED477

Sexual minority men's experiences of, and strategies for emotional intimacy in intimate partner relationships – findings from a photovoice study

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**Background:** Emotional intimacy is fundamental to promote intimate relationship quality and satisfaction. However, research on emotional intimacy has predominantly focused on heterosexual relationships, with little evidence about sexual minority men's experiences of, and strategies for emotional intimacy.

The overemphasis on sexual minority men's sexual practices and sexual health vulnerabilities in existing sexual minority men research has also undersold emotional intimacy as a critical asset for sexual minority men to build healthy and sustainable relationships, and aid their psychological well-being.

Hence, using a strengths-based approach, this study aimed to understand sexual minority men's experiences of, and strategies for emotional intimacy in their intimate relationships.

**Methods:** Building on a larger qualitative photovoice study that explored men's experiences and strategies in building equitable intimate partner relationships, this analysis focused on the experiences of 16 sexual minority men from diverse locales globally.

Participants were recruited via online recruitment platforms including Twitter, and completed virtual, semi-structured, individual Zoom photovoice interviews between May to November 2022. Data was transcribed verbatim, coded using NVIVO 12 and thematically analyzed using interpretive descriptive methodologies.

**Results:** Three distinct yet entwined themes characterized emotional intimacy in sexual minority men's relationships.

In the first theme, i) *embracing vulnerabilities to drive self-acceptance*, courage, resilience and introspection underpinned sexual minority men's efforts to tackle wide-ranging challenges that threaten emotional intimacy in their relationships.

In theme two, ii) *building relationality with partners*, participants spoke about the value of empathy, trust and compromise in their communication and support for each other.

Lastly, in iii) *securing social connections with family, friends and the community*, the need for familial, friends' and community acceptance was positioned by participants as key to promoting their sense of belonging, which bolstered emotional intimacy in their relationships.

**Conclusions:** These insights highlight emotional intimacy as a prized asset for sexual minority men and foundation for building healthy relationships. The thematic findings can inform health promotion efforts to reduce risks for distressed and/or disrupted intimate partner relationships and promote sexual minority men's psychological well-being in the long term.

### WEPED478

Identifying and characterizing relationship typologies by multilevel predictors among adolescent mothers in sub-Saharan Africa

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**Background:** In sub-Saharan Africa (SSA), there is heterogeneity within adolescent mothers' (AMs') sexual relationships. However, existing studies focus on a single relation-

ship characteristic even though these characteristics do not operate in isolation; moreover, no studies have examined multilevel predictors of AMs' relationship typologies. Identifying and characterizing typologies by multilevel factors can inform targeted interventions to lower HIV risk.

To address these gaps, this study aims to identify relationship typologies and characterize typologies by multilevel factors among AMs.

**Methods:** Data are from the Population-based HIV impact Assessment (PHIA) Project from 9 SSA countries (2015–2019). Using a sample of 2,761 AMs (15–19 years old) across 1,816 PHIA clusters, we conducted multilevel latent class analysis to identify typologies at the AM and PHIA cluster-levels using 5 indicators: uninformed of partner's HIV status, age-disparate relationship (partner <5 versus ≥5 years older), married/cohabiting, participated in transactional sex, and worked in last year.

We conducted multinomial logistic regression to characterize typologies by individual (age, school enrollment, AM's household wealth) and community-level (urbanization and percentage of low-wealth households in PHIA cluster) predictors.

**Results:** There were 3 relationship types.

Typology 1 (61%): Age-disparate marriage with minimal transactional sex;

Typology 2 (30%): Uninformed of partner's HIV status and unmarried peer partnership;

Typology 3 (9%): Working and in an age-disparate marriage.

Compared to Typology 2, Typologies 1 and 3 were characterized by AMs who were older and had low school enrollment; Typology 1 AMs were also more likely to be in low-wealth households and live in rural communities than Typology 2.

We identified 2 classes at the PHIA cluster-level. PHIA Class 1 (51%): high prevalence of Typology 1 AMs; PHIA Class 2 (49%): high prevalence of Typology 2 AMs. Rural and low-wealth communities had higher odds of being in PHIA Class 1.

**Conclusions:** Results suggest that AMs' relationships fall into 3 distinct typologies with age, schooling, household wealth, and urbanization predicting AMs' typology.

Further, 2 PHIA cluster-level classes were identified with urbanization and percentage of low-wealth households predicting these classes.

Further research is needed to understand how interventions can be tailored to specific relationship typologies in this vulnerable population.

## WEPED479

### Similarities and distinctions in the drug use and sexual behavior of transgender women and nonbinary adults assigned male at birth in the United States

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**Background:** Transgender women (TW) are at elevated risk for acquiring HIV. Nonbinary assigned male at birth individuals (NBAMAB) are those who exhibit gender fluidity, or identify as both male and female, or no gender, and have largely been overlooked in HIV research. Further, research on substance use and HIV transmission risk behaviors (TRB) among TW and NBAMAB has not investigated relationship factors and their associations with these behaviors.

The goal of this study was to examine similarities and differences of the HIV TRB between TW and NBAMAB with respect to drug use and relationship correlates.

**Methods:** Data were gathered from a large screening survey intended to determine eligibility for various research studies in the United States. Recruitment occurred through social media and geosocial sexual networking apps. Socio-demographics, drug use, sexual behavior, relationship status, sexual agreements, main partner gender, and other partner characteristics were measured. Descriptive comparisons were evaluated in bivariate analyses.

Multi-group hurdle models predicted the occurrence and frequency of condomless anal sex (CAS) with casual cis male partners.

**Results:** Surveys were completed between November 2017 and March 2020 with 2758 TW and 2347 NBAMAB respondents. The likelihood of being single was comparable; however, among those with a main partner, NBAMAB respondents were more likely to have a non-monogamous sexual agreement. In both groups, illicit drug use was associated with higher occurrence and frequency of CAS with casual cis male partners.

Cannabis use was not significantly associated with either. TW with a non-monogamous agreement and either a cis male or a TW main partner reported the highest rates of HIV TRB. For NBAMAB with a non-monogamous agreement, main partner gender identity did not differ with the occurrence or frequency of CAS with casual cis male partners.

**Conclusions:** These results suggest that some NBAMAB may face risks for sexual HIV transmission similar to those seen in TW. Among those who are partnered, differences in HIV TRB between TW and NBAMAB were characterized by sexual agreements, main partner gender identity, and



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relationship duration. These findings illustrates that relationship factors may be a substantive determinant of health behavior and should be considered further among gender minorities.

## WEPED480

**Leveraging animated sexuality education videos in rural Namibia: young women and adolescent girls living with HIV take the lead to deliver sexuality education to adolescents in partnership with schools**

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**Background:** The purpose of the program is to engage and reach Adolescent Girls and Young Women (AGYW) ages 10-16 in and out-of-school in rural Namibia with sexuality education.

Objectives include breaking down harmful taboos around sexual health; providing accurate sexual health information; and creating a safe environment.

**Description:** Launched by the Young Women Empowerment Network with Advocates for Youth through the AMAZE initiative, the program focused on identifying priority topics for sexuality education among adolescents, adapting and developing sexuality education animated videos in local languages, and disseminating these with educational brochures through participatory educational sessions and outreach delivered in-school and out-of-school in 5 regions of Namibia (Karas, Kavango East, Oshikoto, Oshana, and Oshana).

Based on discussions with AGYW, four existing AMAZE videos were adapted on sexual abuse, sexual assault, menstruation, HIV disclosure, and one new video developed on mental health. These videos were translated into Oshindonga, Rukwanga, Damara/Nama, and Namibian sign language.

**Lessons learned:** Educational sessions and outreach were conducted using the materials in 18 schools including two special needs schools, four youth centers, four faith-based Sunday schools, teen clubs, and clinics. A total of 2,740 adolescent girls were reached in multiple sessions over eight months, including girls with disabilities and girls living with HIV. Initial anecdotal evidence suggests improved knowledge, heightened awareness of the topics, an increased sense of empowerment, and initiation of health-seeking behavior among adolescent girls.

Best practices included engaging AGYW in content selection, development, and dissemination; investing time to develop trust with schools; and using thumb drives to facilitate offline use and what's app for video sharing.

Main challenges included time needed to adapt and develop materials, identifying additional services to support girls who have been raped, and responding to demand from other schools.

**Conclusions/Next steps:** Many girls in rural Namibia encounter misinformation, health challenges, gender inequality, violence and poor access to sexual and reproductive health services, yet few programmes reach them or respond to their needs. Acknowledging and addressing the knowledge gaps through participatory activities that leverage innovative sexuality education resources in local languages and linkages to services can contribute to empowering girls to stay healthy and seek care.

## WEPED481

**Empowering futures: a comprehensive sex-education initiative for HIV/AIDS and teenage pregnancy prevention in Mityana district, Uganda**

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**Background:** "Comprehensive Sex-Education Initiative for HIV/AIDS and Teenage Pregnancy Prevention," addresses the heightened risk of HIV/AIDS, early marriages, and teenage pregnancies, particularly exacerbated by the COVID-19 pandemic in Uganda. The broad objective of the program was to improve the sexual and reproductive health outcomes of adolescents and youth aged 14-24 years.

This comprehensive program aimed at empowering young people with accurate information, life skills, and a supportive environment to make informed decisions regarding their sexual health, ultimately reducing the risk of HIV/AIDS transmission and teenage pregnancies.

**Description:** The project's duration was one year, starting in January 2023, focusing on Mityana District. AYAH-Organization collaborates with 10 schools, including Buzibazi, St. Henny, Bujubi, Avima, St. Kizzito, Maanyi Community P/S, Maanyi Parents P/S, Bujubi P/S, Sserinya P/S, and Misigi P/S. The initiative targeted young men and women aged 14-24 and involved recruiting and training 100 young people as peer educators and 10 teachers as mentors. Activities included training of peer educators and peer mentors, sex-education, parental education, HIV counseling and testing campaigns and referral services.

**Lessons learned:** The project experienced notable success, with outcomes indicating increased awareness and knowledge among participants. Findings reveal improved understanding of HIV/AIDS transmission, prevention, and



other related topics. The peer education model demonstrated efficacy in mobilizing students for HIV counseling and testing campaigns. Lessons learned include the importance of tailored training manuals, engaging parents in sex education, and sustaining collaborations with schools for continued impact.

**Conclusions/Next steps:** The significance of the project lies in its potential to reduce HIV/AIDS prevalence and teenage pregnancies through targeted sex education. The peer education approach, coupled with parental involvement, emerged as a successful strategy. The project's outcomes underscore the importance of comprehensive sex education in mitigating reproductive health risks.

Future implications involve sustaining partnerships, expanding to other districts, and advocating for continued support for similar initiatives. The project lays the groundwork for fostering positive behavior among adolescents and contributing to broader HIV prevention efforts in Uganda.

## WEPED482

Whether relationship quality is associated with risk or resilience for drug use and condomless sex among sexual minority men in relationships depends upon what they believe their partners do

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**Background:** Drug use is common among SMM and associated with sexual risk behavior, such as condomless anal sex (CAS) with a casual partner. Recent work suggests SMM in relationships tend to use drugs similar to their partners. Similarity in drug use may contextualize associations among relationship functioning, drug use, and sexual risk taking.

This study tested the hypotheses that perceptions of a relationship partner's drug use and sexual behavior would predict personal drug use and sexual behavior as well as moderate the association between relationship functioning and these outcomes.

**Methods:** A sample of 5511 partnered, cisgender, SMM recruited via geosocial networking apps in the US completed an online survey. They reported their own drug use and sexual behavior with casual partners in the past 30 days; their belief about their partner's drug use and sexual behavior in the past 30 days; and completed three subscales of the Perceived Relationship Quality Components (PRQC) scale.

**Results:** Overall, participants who reported cannabis use, other illicit drug use, or CAS with a casual partner were more likely to report their partner did as well. Among participants who indicated their partner did not use cannabis or other illicit drugs, relationship quality was negatively associated with personal use ( $OR_{cannabis}=0.985$ ,

$p<.001$  and  $OR_{illicit\ drugs}=0.973$ ,  $p<.001$ ); meanwhile, among those who reported their partner used cannabis or other illicit drugs – relationship functioning was positively associated with personal use ( $OR_{cannabis}=1.018$ ,  $p<.001$  and  $OR_{illicit\ drugs}=1.015$ ,  $p<.001$ ).

Above and beyond sexual agreement, relationship quality was negatively associated with personally engaging in CAS with casual partners among those who reported their partner did not ( $OR=0.979$ ,  $p<.001$ ) and positively associated with engagement in CAS with casual partners among those who believed their partner did ( $OR=1.019$ ,  $p<.001$ ).

**Conclusions:** These findings suggest that partners in male couples tend towards similar drug use and sexual behavior. Accomplishing changes in use, and associated sexual HIV risk reduction, may depend upon joint goal setting and support for relationship quality.

Findings support the development and dissemination of interventions that engage relationship partners together as well as individual interventions that integrate communication skill development and planning (skills necessary to engage relationship partners).

## WEPED483

Reconciling resilience: assessing Adverse Childhood Experiences (ACEs), transactional sex, and socio-ecological resilience as moderators among young South African women

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**Background:** Young South African (SA) women, a population disproportionately impacted by HIV, commonly suffer adverse childhood experiences (ACEs). ACEs, which include experiences such as being orphaned or witnessing or experiencing violence, co-occur in youth, creating life trajectories of cumulative risk exposures. ACEs have been linked to HIV risk behaviors, including risk of transactional sex (TS). Socio-ecological resilience—conceptualized as resources at the individual, interpersonal and community levels that facilitate positive adaptation following trauma—may buffer effects between ACEs and sexual risk behaviors and needs to be explored further.



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**Methods:** We conducted an analysis using data from annual questionnaires completed during a 2012-2018 cohort study in rural Ehlanzeni District, Mpumalanga. We examined the association between ACEs (binary) and TS (binary); and tested moderation effects of five resilience scales across social-ecological levels (psychological, social support, cohesion, organizations, community consciousness) hypothesized to buffer the relationship between ACEs and TS. Inclusion criteria was women 18-25 years old who participated in the 2018 data wave.

**Results:** Our analysis included 1,222 women aged 18-25 years ( $m=22.79$  years), of whom 714 (58.43%) reported ACE exposure, with 519 (42.47%) reporting low (1-2) ACEs and 195 (15.96%) reporting high ( $\geq 3$ ) ACEs; 345 (28.23%) reported engaging in TS.

Among ACE-exposed women, mean psychological resilience scores were significantly higher (3.29 points,  $p<0.01$ ) for women with 1-2 ACEs ( $m=68.87$ ) than those with  $\geq 3$  ACEs ( $m=65.58$ ), suggesting more cumulative ACEs is linked with lower resilience. Social support mean scores were comparable across ACE sub-groups. Young women reporting ACE-exposure had increased odds of TS than those without ACE exposure, controlling for confounders, AOR = 1.57,  $p<0.001$ , 95% CI [1.21-2.04].

Among ACE-exposed women, women with high ACEs had 2.58 times the odds of TS than women with low ACEs,  $p<0.001$ , 95% CI [1.81-3.68]. The adjusted moderation analysis showed none of the resilience measures moderate effects between ACEs and TS.

**Conclusions:** Our study found significant links between ACEs and TS. Although resilience has shown protective benefits against HIV risk behaviors for ACE-exposed women elsewhere, these measures did not safeguard against TS. Further research examining how resilience factors may help ACE-exposed women reduce unsafe transactional relationships is warranted.

## WEPED484

### Managing co-morbidities together: relationship dynamics and partner support predict medication adherence for HIV and hypertension

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**Background:** Cardiometabolic disorders (CMDs) are highly prevalent among people living with HIV, complicating the medication management of both conditions. Primary partners provide key sources of support for antiretroviral

therapy (ART) adherence, however, little research has considered their role in the context of co-morbidities. Using data from the *Healthy Hearts* couples cohort study, we investigated associations between relationship dynamics and medication adherence for both HIV and hypertension in Malawi.

**Methods:** *Healthy Hearts* is an observational cohort study with people living with HIV and CMD (hypertension/HTN or diabetes), and their primary partners. Index partners were asked questions on relationship dynamics (i.e., relationship closeness, partner support for CMD and HIV, illness-related communication) and medication adherence for HIV and HTN (based on the Visual Analog Scale, ranging from 0-100).

Based on the underlying distribution and standard cut-points, we created a composite measure consisting of four categories: high HIV/high HTN adherence (reference category), low HIV/low HTN adherence, low HIV/high HTN adherence, and high HIV/low HTN adherence.

Multinomial regression models tested for associations between relationship dynamics and medication adherence, controlling for demographics.

**Results:** Index partners ( $N=156$ ) were gender-balanced (52% male), 52 years on average, and had low education levels (81%). Approximately 18%, 17%, 21%, and 45% of the sample had low HIV/low HTN, low HIV/high HTN, high HIV/low HTN, and high HIV/high HTN adherence, respectively. Compared to the reference group (high/high), reporting low HIV/low HTN adherence was associated with lower closeness ( $B=-0.39$ ,  $p<0.05$ ), lower partner support for CMD ( $B=-0.96$ ,  $p<0.01$ ), lower partner support for HIV ( $B=-0.59$ ,  $p=0.03$ ), and lower illness-related communication ( $B=-0.95$ ,  $p<0.01$ ).

Reporting low HIV/high HTN adherence was associated with lower relationship unity ( $B=-0.38$ ,  $p=0.01$ ) and lower illness-related communication ( $B=-0.97$ ,  $p<0.01$ ). Reporting high HIV/low HTN adherence was associated with lower partner support for CMD ( $B=-0.95$ ,  $p<0.01$ ), and lower illness-related communication ( $B=-0.83$ ,  $p=0.02$ ).

**Conclusions:** Successful approaches that involve primary partners in disease management should be extended for CMD such as hypertension. The role of primary partners may be even more important in helping people successfully manage multiple competing health priorities such as HIV and CMD.

Couple-based interventions should target dyadic processes such as closeness/unity, illness-related communication, and disease-specific social support.

**WEPED485****The gendered limits to "E" in DREAMS: a narrative analysis of beneficiaries' agency in sexual relationships before, during and following DREAMS participation**

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**Background:** In countries across sub-Saharan Africa (SSA), adolescent girls and young women (AGYW) remain at disproportionate risk of HIV, including in Zambia. The combination HIV prevention program DREAMS—or Determined, Resilient, Empowered, AIDS-free, Mentored, and Safe—aims to prevent HIV among AGYW in high HIV prevalence SSA contexts. The DREAMS theory of change suggests that through layered programming addressing the community, family, and the beneficiary, AGYW who choose to have sex will engage in protected, more equitable sexual relationships.

Therefore, to understand the effectiveness of DREAMS, it is important to assess whether and how DREAMS influences AGYW's sexual relationship dynamics.

**Methods:** We conducted a qualitative case-study evaluation of DREAMS in Zambia across three purposively selected sites (April-July 2023). We conducted semi-structured interviews (SSI), focus groups (FGDs) and community observations with AGYW beneficiaries (n=55) and non-beneficiaries (n=11) ages 16-21, and implementers (n=51). The SSI with AGYW included a romantic life history calendar; participants detailed their romantic and sexual relationships over time.

We used narrative analysis – summarizing and comparing the chronology and context of participants' sexual relationships vis-a-vis the timing of DREAMS participation—to compare accounts by beneficiary status and exposure to DREAMS.

**Results:** Beneficiaries described improved understanding of the importance of HIV testing, condom use, and women's rights. Specifically, AGYW described learning they had the right to decide when and under what conditions they had sex.

However, beneficiaries' descriptions of their sexual relationships demonstrate ongoing limitations to act on these lessons. AGYW's narratives suggest some evidence of improved engagement in HIV testing with their partners following DREAMS participation; however, the narratives suggest little change in the gender power dynamics

within their relationships, including on condom use, regardless of exposure-level to DREAMS, or in comparison to non-beneficiaries. AGYW's matter-of-fact recounting of unequal sexual decision-making in their relationships demonstrates intrapersonal and interpersonal limits to empowerment messages within broader patriarchal contexts.

**Conclusions:** While DREAMS has provided important tools to AGYW beneficiaries, without addressing men and boys more directly, it may continue to fall short of the gender transformative change needed to substantially lower AGYW's risk to HIV in ongoing gender-inequitable relationships.

**WEPED486****Empowering young women as near-peer mentors to support gender equality using soccer- and rights-based approaches in Eastern Province, Zambia**

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**Background:** Young women face high rates of HIV and often have limited opportunities for leadership in addressing gender inequalities such as child marriage, teenage pregnancies, and sexual and gender-based violence (SGBV) which are persistent in rural areas of Zambia. Grassroot Soccer Zambia (GRSZ) partnered with Muchinga Corridors and Adolescent Reproductive Health Advocates to empower young women as agents of change in three rural districts to achieve gender equitable environments.

**Description:** Between 2021 and 2023, GRSZ and partners designed and implemented a soccer- and rights-based package led by young women trained as near-peer mentor 'Coaches.'

Coaches delivered an 11-session, soccer-based, gender-focused SRHR and HIV prevention curriculum, called SKILLZ Girl, to girls aged 15-24 years who were at risk of or survivors of SGBV.

Radio and door-to-door campaigns alongside home visits with parents or guardians led by young women were used to speak out on the rights of girls. Escorted referrals and outreach events linked girls to health services in partnership with health service providers.

**Lessons learned:**

- The program mobilized 7,314 girls and built their confidence to demand for their rights, build connections with their peers, and create a network for advocacy.



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- The program fostered collaboration and cooperation: 2,233 girls were linked to different youth-friendly SRHR services, and Coaches visited 7,923 household members who supported girls' rights-focused interventions. Low uptake of SGBV services was common.
- A sports and human rights based-dual approach was practical in enhancing skills of 60 near-peer mentor Coaches and their recognition as gender advocates.
- The program showcased the positive influence of young women's leadership, where few rural communities had negative perceptions.

**Conclusions/Next steps:** Utilization of young women as near-peer mentors, combined with soccer- and rights-based approaches, appears to be a potent strategy in advancing gender equality. The involvement of these mentors facilitates a unique and relatable connection with young girls, offering guidance, inspiration, and a powerful representation of what is achievable.

It's important to acknowledge the significance of partnerships for the long-term viability and expansion of this model, particularly in collaboration with parents and service providers.

## WEPED487

### Development and pilot of an LGBTQ+ inclusive sexual health education curriculum with an emphasis on HIV prevention

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**Background:** Leaders in the LGBTQ+ and education fields developed and piloted a LGBTQ+ Inclusive Sexual Health Education Curriculum focusing on HIV prevention for youth ages 12-27. This curriculum fills a gap in culturally attuned sex education inclusive of LGBTQ+ identities that addresses increased risk of HIV infection and transmission and limited access to HIV services for LGBTQ+ youth in northeast Ohio.

**Description:** This project took place from January 2022 - December 2023 in Cleveland, Ohio and targeted LGBTQ+ youth ages 12-27 - a priority population as outlined in the Ending the HIV Epidemic Plan: Cuyahoga County (EHE). Major activities included:

1. The development of an evidence based, LGBTQ+ inclusive sexual health curriculum in three instructional formats including in-person, hybrid, and e-learning;
2. A pilot of the curriculum to 52 young participants ages 12-27, which included the execution of eight focus groups and four structured interviews;
3. The completion of a community stakeholder review involving 24 community stakeholders reviewing for accuracy, inclusion, and efficacy; and,

4. The compilation and analysis of data on knowledge acquisition, utility and relevance of the curriculum, and overall experience and engagement.

**Lessons learned:** Major findings found that after engaging with the curriculum: 82% of pilot participants were able to identify the four components of routine HIV testing and prevention; 82% of participants were able to identify three safer sex practices to prevent HIV infection and transmission; and 98% of participants were able to identify an STI/HIV testing site local to them.

A majority of youth participants also indicated that the curriculum dispelled myths about HIV and STIs, including the prevalence, and treatable nature of HIV.

**Conclusions/Next steps:** Project findings suggest the efficacy of an LGBTQ+ inclusive sexual health curriculum on reducing general stigma and fear around HIV and increasing knowledge of HIV prevention methods and how to access HIV resources in youth ages 12-27.

This project is the first step in the creation of a replicable sexual health education model with an emphasis on HIV prevention that can be used in schools, youth programs, and community centers for broad dissemination.

## WEPED488

### Intimate partner violence and vertical transmission of HIV during pregnancy and postpartum: a qualitative study in southwestern Kenya

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**Background:** Quantitative evidence suggests intimate partner violence (IPV) is associated with HIV health outcomes among perinatal women. We conducted a qualitative study nested within an ongoing trial among perinatal women in rural Kenya to explore how and why certain types of IPV may influence HIV treatment during pregnancy and postpartum.

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**Methods:** In 2022, postpartum ( $\leq 24$  months) women living with HIV who reported ever experiencing IPV in their current relationship in trial questionnaires were invited to participate in an interview exploring how IPV affected their HIV treatment.

A trained female researcher fluent in Dhuluo conducted 23 individual semi-structured interviews that were translated into English, transcribed verbatim, and thematically coded in Dedoose.

**Results:** Women ( $N=23$ , median age=27) discussed experiencing IPV over the course of their current relationship, the majority occurring perinatally. Nearly all women reported psychological and financial IPV, the majority reported physical IPV, half reported male controlling behaviors, and many reported sexual IPV.

In addition, approximately half of the women reported reproductive coercion, including forced removal of contraception, psychological pressure to become pregnant, and forced sex resulting in pregnancy. In one instance, a male partner denied a laboring woman skilled health care by locking her out of the home and insulted her for having a baby while living with HIV.

Many women described a direct link between IPV and their challenges with perinatal HIV care and treatment. These pathways between IPV and HIV care/treatment included:

1. Psychological IPV leading to difficulty with antiretroviral treatment (ART) adherence due to effects on mental health;
2. Partners directly sabotaging ART or insisting women discontinue ART;
3. Periods of non-adherence due to leaving the home after severe physical IPV; and,
4. Challenges with ART adherence due to strategic HIV status non-disclosure to prevent violence escalation.

One participant struggled to give her infant ART out of fear of her partner's response.

**Conclusions:** Women living with HIV and experiencing IPV described IPV as detrimental to maintaining optimal HIV treatment. To end vertical transmission of HIV and improve maternal and infant health, efforts to address IPV within maternal health settings should be prioritized in HIV policy and programming.

## WEPED489

### Adolescent girls and young women's leadership and voice in the HIV response

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**Background:** According to UNAIDS, in 2022, there were an estimated 4,000 new HIV infections weekly among adolescent girls and young women (AGYW) aged 15–24 worldwide. Unequal gender norms and practices contribute to higher vulnerability to HIV among AGYW by creating

significant barriers in accessing HIV prevention and treatment services. UN Women and the United States President's Emergency Plan for AIDS Relief (PEPFAR) collaborated to invest in the leadership and voice of young women in the HIV response to advance sustainable, long-term change to prevent HIV and mitigate the impact of HIV/AIDS among AGYW.

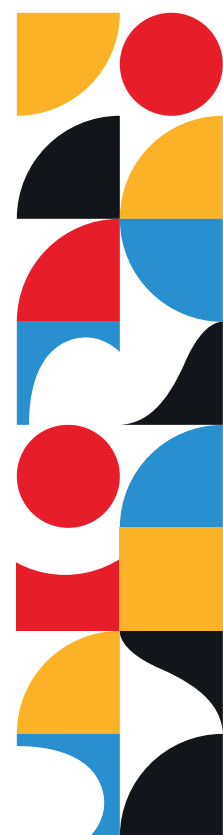
**Description:** Implemented across 15 sub-Saharan Africa countries over 18 months, this partnership between UN Women and PEPFAR, and in collaboration with the Global Fund to Fight AIDS, Tuberculosis and Malaria and its HER Voice Fund, has built feminist leadership skills of 185 young women leaders and connected 144 of them with 63 established women leaders from various sectors as their mentors.

The partnership also created and sustained spaces for young women engagement and advocacy through engaging in the UN Women High-Level Meeting in Tanzania that resulted in a set of policy commitments for action, a satellite event at the IAC 2022 and other national policy opportunities.

**Lessons learned:** 80% of participating young women leaders reported acquiring a great deal of confidence in their leadership capacities and valued their mentorship experiences. Collective action through feminist leadership training and mentorship, movement building and networking, intergenerational dialogues with established women leaders, and creating spaces for young women to engage meaningfully are all critical components of a holistic approach to HIV prevention fostering critical conversations about gender norms, taboos on sexuality.

**Conclusions/Next steps:** Investing in the leadership of AGYW in the HIV response is critical for ensuring that HIV prevention, treatment and care respond to their priorities and needs. It is a long-term investment in the goal of HIV prevention, that can lead to transforming the trajectory of the HIV epidemic.

The next phase of the partnership will support young women leaders and their organizations, both technically and financially, in strengthening their capacities, their networks, and their ability to influence change.







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## WEPED490

"Prostitutes are the ones who like using PrEP": a qualitative analysis exploring barriers and facilitators to PrEP uptake among DREAMS recipients in Zambia

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**Background:** In sub-Saharan Africa, including Zambia, adolescent girls and young women (AGYW) face a heightened risk of contracting HIV. To combat this issue, the Determined, Resilient, Empowered, AIDS-free, Mentored, and Safe (DREAMS) program provides a comprehensive approach to HIV prevention, including social and economic empowerment, youth-friendly sexual and reproductive healthcare, and access to pre-exposure prophylaxis (PrEP). To encourage greater use of PrEP among AGYW, it is essential to identify the barriers and facilitators of PrEP usage within the DREAMS program.

**Methods:** Our team evaluated the DREAMS program in three districts of Zambia between April – July 2023. We collected data from AGYW beneficiaries (n=55) and program implementers (n=51) using interviews and focus groups. Using thematic analysis, we identified factors that influenced beneficiaries' PrEP use as described by DREAMS beneficiaries and implementers. Data were analyzed by a team of Zambia and U.S.-based researchers using Atlas-ti (v23).

**Results:** Beneficiaries described benefits and facilitators of PrEP use. We identified two themes:

1. Improved knowledge of PrEP and its benefits,
2. PrEP as security and empowerment.

Beneficiaries expressed a sense of distrust toward their partners, driven by uncertainties about their partners' HIV status or potential engagement in other relationships, which emerged as facilitators for PrEP use.

Beneficiaries expressed barriers to PrEP use, including concerns about potential consequences and PrEP stigma, some grounded in misconceptions. Some AGYW mistakenly believed that PrEP was the same as antiretroviral drugs and could lead to illness.

Beneficiaries also expressed concerns about potential stigma, fearing that using PrEP could lead to promiscuity and negative labeling as they associated PrEP use with

sex workers. Implementers also described misconceptions about PrEP as a key barrier to its use, along with the need for parental consent for AGYW under age 16.

**Conclusions:** The inclusion of PrEP services within the DREAMS biomedical packages has been well-received by AGYWs in Zambia, underscoring its significance in empowering them to manage their health effectively. However, despite its benefits, certain beneficiaries still face challenges in accessing PrEP due to stigmatization. Therefore, it is imperative to implement targeted interventions to address and alleviate PrEP-related stigma and ensure equal access to PrEP services for all.

## WEPED491

Cognition and underlying beliefs precipitating problematic chemsex practices among gender and sexually diverse populations in Bangladesh

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**Background:** Problematic chemsex, constituting drug use during sexual encounters, often propagates addictive cycles of recurring drug-induced sex. Each addiction has underlying cognitions which is influenced by associated cues. Despite behavioral modification initiatives, relapse remains a risk due to unawareness of these cognitions. Therefore, Cognitive Behavioral Therapy (CBT) has been recommended in chemsex intervention guidelines.

This abstract aims to bridge research gaps regarding beliefs and cognitions of individuals engaged in chemsex, to inform effective CBT implementation.

**Methods:** Two rounds of in-depth interviews were conducted on 12 purposively selected participants [eight men who have sex with men (MSM) and four transgender women (TGW)] involved in chemsex between January and June 2023 from four drop-in centers in Dhaka city.

The first interview explored participants' significant life events and degree of chemsex practices.

The second interview applied the downward arrow technique (by David Burns) to explore phenomenological experiences and nuanced cognitions shaping these individuals' chemsex involvement episodes. These interviews were audio-recorded, transcribed, and thematically analyzed.

**Results:** Findings revealed that various chemsex episodes were driven by different cognitions triggered by specific circumstances. MSM's cognitions were governed by perceived performance: "My sexual life will be impaired without Yaba". They expressed fear originating from being "bottom-shamed": "without drugs, my penis will not erect sufficiently, so they (partners) will call me a bottom and treat me like a girl". Because of this narrative, they be-

lieved that bottom-shaming would threaten their masculinity and their ability to attain partners, making them feel like a "worthless person". For TGW, these beliefs and cognitions were rooted in their gender identity.

TGW reported that ostracization from family members led to their engagement in chemsex, perpetuating beliefs like: "with Yaba, I can live in my dream world (of being treated as a wife) again" and "whenever I engaged in chemsex, it felt like I was back in my own life (as a feminine male). It is liberating".

**Conclusions:** This study shows that chemsex is not always a planned behavior, rather it is often cue-dependent, like other addictions. Effectively, eliciting cognitions could be proved valuable by incorporating them into psychotherapy and relapse prevention.

## WEPED492

**Inclusive comprehensive sexuality education (CSE) programme for adolescents and young people with disability in Lagos, Nigeria**

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**Background:** In Nigeria, 7% of the 29 million people with disabilities are adolescents and young people. Majority of whom are at risk of unintended pregnancy, acquiring HIV and sexually transmitted infections (STIs) and gender-based violence.

Access to inclusive health services and comprehensive sexuality education (CSE) can improve the sexual reproductive health of young PWD. Based on this gap, the inclusive CSE programme was developed.

**Description:** The programme which commenced in 2023 is being implemented in 18 special schools and 3 Local Government Areas in Lagos state, Nigeria. The aim of the programme is to provide life skills 'Sexual Reproductive Health information and services to in and out of school adolescents and young people with disabilities..

The programme commenced with a multi-stakeholder meeting which involved young people with disabilities, youth led CSOs, Ministries of education and Youth and community leaders to highlight the gaps in the SRH needs of young PWD and its impact on their abilities to make informed choices and decisions.

In the second phase, a technical committee was set up to deliberate on the adaptation of the existing CSE manual and curriculum to suit the needs of young PWDs and preferred modalities delivery. The third phase involved the selection of special schools and a capacity building workshop for instructors, counselors and community CSOs and

development of the inclusive CSE curriculum and manual including the braille versions. The Fourth Phase heralded the roll out and review meetings.

**Lessons learned:** The programme has led to the legislative approval for the integration of CSE, development of a nine-month curriculum and manual (braille versions) with 9 modules, 36 topics and increased capacity of 18 instructors /counselors and 2 community CSOs to deliver inclusive CSE. The roll out phase showed an increased SRHR knowledge among 465 in-school and out of school adolescents and youth aged 13 -24 years across disability clusters and parental involvement.

**Conclusions/Next steps:** Inclusive Comprehensive sexuality education can serve as an HIV prevention strategy for Adolescents and Young people with disabilities in developed countries.

## WEPED493

**Behavioural insights on injectable PrEP acceptance and uptake amongst adolescents and young people (AYP) in Zambia**

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**Background:** In Zambia, 38% of new HIV infections occur among adolescents and young people, 78% of which are among adolescent girls and young women (ZAMPHIA, 2021). In response, the Zambian Ministry of Health (MOH) is prioritising AYP in the first phase introduction of injectable cabotegravir for HIV prevention (injectable PrEP) in 2024. The USAID DISCOVER-Health Project supported the MOH in gathering behavioural insights to inform the rollout of injectable PrEP amongst key groups, including AYP.

**Methods:** Methods to gather behavioural insights included a human-centred design (HCD) rapid assessment, using Key informant interviews, focus group discussions and development of personas and journey maps leading to creative briefs with key messages. Findings were triangulated through technical expert meetings. Resultant SBC products were pre tested and validated. The processes engaged 122 AYP and covered five of the six sites[1] where injectable PrEP will be rolled out.

**Results:** The HCD revealed various barriers and facilitators for acceptance and uptake of injectable PrEP by adolescents and young people.

Facilitators:

- Highlighting that injectable PrEP is convenient, discrete, safe to use.
- Messages and approaches relating to young people's aspirations, especially how health can support economic independence.
- At the interpersonal communication level –addressing fears and concerns about sexual health, alcohol, and drugs.



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- Engaging key influencers, especially trusted older uncle/aunt figures and training peers.

Barriers:

- Stigma associated with HTS, ARVs, being HIV-positive
- Risky sexual behaviours linked to drug & alcohol abuse
- Shame associated with sex and sexuality - fear of judgement from parents, guardians, and religious leaders.
- Concerns about the impact of injectable PrEP on sexual performance, libido, fertility.

These behavioral insights informed the first phase suite of injectable PrEP SBC products tailored to adolescents and young people and spanning the service delivery cascade, including an HIV self-assessment tool (digital, USSD and paper), discrete appointment card, fact sheet, and peer, stakeholder, and media engagement packages.

**Conclusions:** These processes proved valuable in creating a tailored collection of products, establishing trust that the materials and approaches developed are appropriate, and accessible, and ultimately increasing the acceptance for the uptake of injectable PrEP among AYP.

## WEPED494

Gender inequitable attitudes among HIV providers and clinic staff in Uganda: prevalence, determinants, and associations with the provision of gender-sensitive care

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**Background:** In settings where gender norms are a driver of men's and women's HIV risk and care engagement, like in sub-Saharan Africa, the provision of gender-sensitive care is critical to HIV service quality and client outcomes. More research is needed on how gender inequitable attitudes among HIV providers and staff may be affecting the provision and quality of care for HIV clients.

**Methods:** A cross-sectional, interviewer-administered computerized questionnaire was completed by 144 HIV providers and clinic staff involved in HIV services working in six rural and peri-urban government health facilities in central Uganda.

We measured inequitable gender attitudes (personal endorsement of gender inequitable norms) through the Gender Equitable Men scale (validated for use with men and women), and two indicators of gender-sensitive care: 1. An overall gender-sensitive care score (measured through a Provider Cultural Competence scale adapted to be gender-focused) and;

2. A self-efficacy for client-centered communication score (measured through the Self-Efficacy Questionnaire [SE-12] for provider communication), adapted to measure provider's confidence in engaging in gender-sensitive, client-centered communication.

Using multivariate linear regression models, we investigated determinants of inequitable gender attitudes, and tested the association between gender inequitable attitudes and indicators of gender-sensitive care, controlling for identified covariates (gender, cadre, clinic, years of experience, and education level).

**Results:** The sample had moderate endorsement of gender inequitable attitudes (M=35, SD=7.89, scale range=24-72). Controlling for covariates, women, those of lower education levels, and clinic staff with limited client contact (compared to lay and health professionals) had greater gender inequitable attitudes. Controlling for covariates, we found that HIV providers/staff with more inequitable gender attitudes had lower gender-sensitive care scores (B=-0.253 SE= 0.84, p=0.002) and lower self-efficacy for gender-sensitive/client-centered communication scores (B=-0.62, SE=0.032, p=0.05, marginally significant).

**Conclusions:** Gender-transformative interventions often focus on changing gender norms among men, but this study demonstrates the need for interventions that challenge inequitable gender attitudes among HIV providers and staff (including women) to improve the provision of gender-sensitive, client-centered care, and thus client outcomes.

## WEPED495

Enhancing status neutral testing through social network strategies. Experiences from Laikipia County, Kenya

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**Background:** To achieve the global 95;95;95 goal of Testing, linking to care and retaining the newly identified HIV infections and linking the ones tested Negative to HIV Prevention Services, People newly diagnosed with HIV should be reached and put on treatment and those that test negative be linked into prevention services. Laikipia County has an estimated 11352 people living with HIV of whom 9786 (86%) have been identified and linked to HIV treatment. In regions where HIV treatment coverage is high, identifying the remaining <14% and linking the negatives at high risk to HIV prevention services remains a challenge. Status Neutral testing is therefore critical to help in the Tracking of the infection chain.

**Methods:** The USAID Tujenge Jamii (UTJ) project working with the County Department of Health in Laikipia County implemented Status Neutral testing through Social Net-



work Strategy in 13 health facilities) aiming at reaching to the population at high risk of acquiring HIV and following the networks of those that consent and recruit. This was done among the 305 clients identified to be at high risk of acquiring HIV virus through risk assessment screening in the 13 facilities between October 2022 and May 2023 and accepted to be seeds.

**Results:** A total of 305(201female and 104male) clients were offered Social Network Services and consented of which 319 social contacts were identified, of the 319 contacts identified all were eligible for testing and 199 reached and tested giving a 62% testing rate. Of those tested 8 were identified to be positive a positivity rate of 4% and all of them linked to care. Among the 191 that had negative results and were still at risk of acquiring HIV, 57 were initiated on Pre-Exposure Prophylaxis (PrEP), achieving a PrEP uptake of 30%. This Strategy therefore facilitated both Linkage to treatment and linkage to prevention services to those that tested negative.

**Conclusions:** Social Network Strategy is the way to go in ensuring Status Neutral testing among the population at risk of Acquiring HIV infection and should be adopted to scale in the HIV prevention interventions.

## WEPED496

### Creating HIV empowered champions among youth through youth centres in Bulawayo

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**Background:** Although youth centres started in the 1970s as meeting places and sports centres for school leavers where employers would come and select prospective employees in Bulawayo, they have evolved as strategic safe places for the empowerment of young people to effectively respond to HIV and develop durable life skills.

Following the rise in new HIV cases among adolescents and emerging trends of drugs and sex filled youth parties, exposing them to the risk of acquiring HIV, the Bulawayo City Council and the National AIDS council enhanced the centres with HIV and life skills education.

**Description:** The two organizations remodeled youth centres as empowerment places and increased them from the original 11 to 21 in 2016, where youth access educational material for their studies, play educational and health awareness sports and interact with models who had passed through the centres and established successful careers. These include soccer players and captains of industry among others. HIV and general health programmers also conduct regular exhibitions and present life skills coaching clinics emphasising the importance of delayed sexual debut, use of various HIV prevention methods, uptake of treatment while discouraging the use of drugs. The centres conduct regular engagement with

parents to share strategies of empowering youths and conduct community mobilizations to attract more young people. Edutainment is used to attract the youth and keep them engaged.

**Lessons learned:** From the remodeling of the youth centres as HIV and life skills empowerment places in 2016, membership has grown from an average of 19 per youth centre to 312 per centre. The number of youth centres members who completed high school also rose from 6 per centre per year to 89 between 2016 and 2023.

The number of youth centres who tested positive for HIV also dropped from 5 per year to 1 per centre per year. Youth centre graduates who enrolled into major sports teams and played professional sports also rose from 1 per year per centre to 7. Risky behaviour has overall decreased.

**Conclusions/Next steps:** Youth centres have contributed to the transformation and empowerment of young people against HIV leading to better outcomes of the response to HIV.

## Sexualities and sexual cultures: Meanings, identities, norms and communities

## WEPED497

### Revamping HIV screening strategies for Bridge population in post-COVID India: lessons learned from One Stop Centres

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**Background:** The Bridge population has historically played a significant role in India's HIV epidemic, acting as a transmission bridge. The COVID-19 pandemic has led to substantial transformations within this group, necessitating a re-evaluation of HIV screening strategies to meet India's national goal of 95-95-95.

**Description:** To tackle this challenge, 34 One Stop Centres (OSCs) were established across 16 states in India from March 2023. These centres aimed to provide integrated HIV prevention and care cascade services, addressing the health and non-health needs of the Bridge population unreached by conventional interventions. Strategically located near hotspots, including highways, transshipment sites, lodges, transportation hubs, and industrial settings, the OSCs targeted migrants, both domestic and cross-border, and other vulnerable groups.

**Lessons learned:** In just eight months, OSCs screened 46,213 clients for HIV, revealing a positivity rate of 0.36%. The evolving landscape post-COVID became evident, marked by increased migration, economic vulnerabilities,



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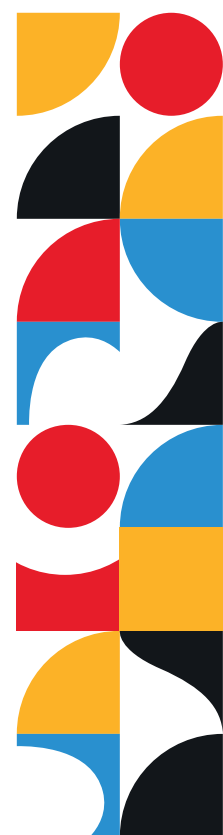
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a shift from brothel to home-based sex work, and a rise in inter & intra-city cab drivers. Challenges in treatment linkages were amplified by the absence of dedicated truck helpers, higher rates of mental health issues, substance use, and communication barriers.

The inadequacy of traditional risk assessment tools was observed during implementation, leading to indiscriminate kit usage and a frequent nationwide shortage. Data obtained through OSCs were shared with partners and stakeholders, fostering cross-sectional learnings, including with Nepal.

**Conclusions/Next steps:** The findings underscore the urgent need for a substantial revision of HIV screening guidelines for the Bridge population, considering the post-COVID economic and behavioural shifts.

As vulnerability evolves, strategies must adapt to ensure effective reach, assessment, and screening, contributing to India's ambitious 95-95-95 goal. This shall address immediate challenges, as well as provide a resilient framework for future public health responses in dynamic scenarios.

## WEPED498

**Sexualised substance use posing new HIV risks among men who have sex with men (MSM) and transgender (TG) persons in India**

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**Background:** Newer risk factor of Sexualised Substance Use (SSU) among Men who have sex with Men (MSM) and transgender (TG) persons are threatening new HIV infections in India. Use of psychoactive drugs for the purpose of enhancing sexual pleasure, extended duration of sex acts and reduction of pain attributable to sexual activities, especially among MSM and transgender persons also increases the risk of, STIs, HIV and other blood borne viruses.

**Methods:** Focus Group Discussions (FGD) among MSM and Transgender community members who had experiences of using drugs for enhancing sexual experiences. Qualitative responses provided during FGDs were further quantified, wherever possible using 'search' for key words/phrases.

**Results:** Two hundred and eight (208) MSM (64) and TG (144) persons reported using Cocaine (20.2%), Crystal Meth (30.3%), Ecstasy (16.3%), Poppers (Amyl Nitrite) (13.5%), alcohol (86.5%) heroin (27.9%), pharmaceutical opioids (22.6%) and sedative hypnotics (23.1%) for the purpose of enhancing sexual experiences. While, 22.1% injected drugs, 24% reported consistent condom use under the influence of these drugs.

**Conclusions:** Use of drugs for the purpose of enhancing sexual experiences, exists among MSM and TG persons poses dual risk of HIV and other blood borne viruses through injecting coupled with unprotected sex. Peer influence often leads to group sex further lowering condom use. Lowered inhibition, poor cognition and judgement further amplifies risks of intimate partner violence and mental health too. Interventions to reduce risks and HIV harms needed urgently.

## WEPED499

**Socio-economic approach to addressing structural barriers for HIV prevention in Eswatini**

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**Background:** In Eswatini 79% of the population constitutes youth with adolescents constituting a quarter of the population. 12.2% of new HIV infections are recorded amongst 15-24-year-olds Adolescent Girls and Young Women (AGYW). World Vision is implementing Global Fund - funded project targeting out of school youth 10-24 years aimed at Halting the spread of HIV and reversing its impact. The project operates at Mhlume In Mgidzangcunu community which is characterized by high HIV incidence, poverty, gender inequalities and risky sexual behaviors. Observing these characteristics led the project to drive a socioeconomic empowerment initiative aimed at addressing the existing structural HIV predisposing conditions at this community towards zero new infections.

**Description:** The project enrolled 15 AGYW 10-24 years from Mgidzangcunu into worth group savings. This group was reached with

1. Comprehensive, layered HIV prevention package and high impact HIV services and
2. Gender sensitive Skills Building including entrepreneurship and employability.

They were encouraged to start Income Generation Activities (IGAs) which successfully earned them \$1051.10 profit, from group savings amounting to \$2627.76 since 2022. Additionally they established thriving sole proprietary businesses in food, beauty and care industries earning them combined profits worth \$1576.66. Dependency on their partners for economic security has dropped drastically. Risky HIV behaviors have significantly waned amongst these AGYW: none registered risky behaviors in the last 12 month and have all accessed high impact HIV interventions such as PrEP and HIV testing services with no recorded sero-conversions.

**Lessons learned:** It is important to recognize the significance of socioeconomic empowerment to mitigate HIV risks in implementing community HIV prevention program. Delivery of HIV programs focusing on socioeconomic empowerment initiatives is transformational beyond health to general improvement across all spheres

of well-being for the AGYW including confidence to access resources for healthcare, negotiate safer sex practices, and challenge gender norms that contribute to HIV vulnerability.

**Conclusions/Next steps:** Socio-economic predisposition amongst AGYW has a stake in the fight against HIV. Through holistic approach and integration efforts, we can pave a way for AGYW to thrive in both their businesses and their health including sustained behavior change.



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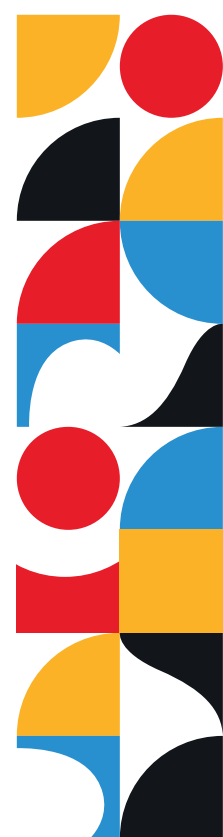
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## Implementation science and scale up of HIV testing

### WEPEE500

Reaching online networks when social networks disappear: enhancing HIV testing in Ukraine through targeted online campaigns and mail order HIV self-testing programs amidst the Ukrainian-Russian war

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**Background:** Despite free and differentiated HIV testing options, the Ukraine-Russian war has led to low testing uptake by key and priority populations (KPs) due to physical destruction or damage to medical facilities, evacuation of medical personnel, displacement of people within the country, and prioritization of immediate physical and humanitarian consequences of war over other health needs.

To improve and sustain HIV case finding in the context of war, it is important to deploy innovative health communication and promotion strategies, especially in regions with limited access to healthcare services.

**Description:** Funded by PEPFAR and implemented by PACT, FHI360, AFEW, and local NGOs, the Community Action for HIV Control implemented targeted online advertising campaigns for HIV self-testing kits from March to July 2023. Led by NGOs and targeted to KPs, the campaign included online advertising, enhanced digital communication strategies and intensive client engagement. The program utilized various platforms associated with KPs interest and use (Facebook, Instagram, Telegram, Google Search, Google display network, YouTube) and several types of publications and visual messages on those platforms targeted toward specific populations were trialed.

Eighteen million displays were achieved, and about a thousand orders for HIV self-test kits were made. The click-through rate (CTR) was 4.33% for Meta, 4.84% for Google Search, and 1.11% for Google Display Network. Cost per click (CPC) – \$0.12

**Lessons learned:** The war introduced atypical challenges, including disrupted access and shifted priorities, to already vulnerable and difficult to reach populations. The targeted online communication campaign increasing HIV testing awareness and HIVST, showing the resilience and effectiveness of digital platforms.

Specific outcomes, such as high CTR and modest CPC, demonstrated the success in reaching KPs and enhancing NGOs' online presence using limited financial resources.

**Conclusions/Next steps:** The program's success amidst the war underscores the pivotal role of digital health initiatives. Future strategies should focus on expanding targeted digital approaches to promote HIV services, ensuring continuous support and accessibility even in unstable conditions. HIVST offers options for HIV testing in volatile context and for KPs in remote areas with limited testing availability at health facilities or NGO outreach. Online engagement and promotion of HIVST can sustain this case finding strategy.

### WEPEE501

Motivating HIV testing uptake through online risk assessments among key populations in Namibia

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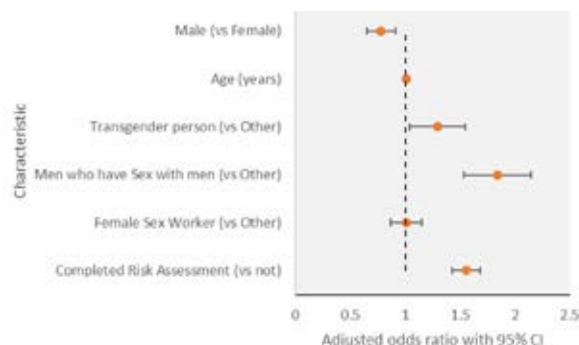
**Background:** QuickRes, globally managed by FHI 360, empowers clients to understand their HIV service needs through an optional self-guided online risk assessment (RA) that provides personalized recommendations. Clients access QuickRes through referrals and social media promotions. After completing the RA, clients receive service recommendations tailored to their history and risk profile.

In Namibia, QuickRes has promoted HIV testing and treatment since October 2020. As of September 2023, case managers facilitated 16,867 HIV test appointments, 36.4% of which were for clients who had completed the online RA.

**Description:** To understand the relationship between RA outcomes and appointment adherence among clients, including key populations (men who have sex with men [MSM], female sex workers, and transgender women), we conducted a series of analyses including Chi-Square tests and logistic regression with odds ratio calculations. We focused on factors such as risk profile, population type, HIV testing history, age, and sex to determine their impact on the likelihood of individuals arriving for HIV testing appointments.

**Lessons learned:** The analysis showed that individuals who completed the online RA had 1.5 times the odds of attending their appointments ( $p < 0.001$ ) (see figure). Additionally, MSM were notably more likely to attend, with 1.8 times the odds compared to other groups ( $p < 0.001$ ). Individuals who had not undergone HIV testing in the past three months were more likely to attend their appointments ( $p < 0.001$ ).

Age and sex also influenced attendance patterns: The odds of attending appointments increased by 7% for every additional decade of age ( $p < 0.001$ ), and men were less likely to attend compared to women ( $p = 0.002$ ).



**Conclusions/Next steps:** Online RAs such as those offered through QuickRes push the boundaries of traditional screening by motivating HIV testing uptake through client-centered, informed decision-making. In-depth exploration of user barriers and motivations is vital for evolving these tools into comprehensive service navigators.

## WEPEE502

**Innovative testing approaches to increase HIV case finding among men-who-have-sex-with-men (MSM): lessons learnt from the implementation of the Sexual Network Testing (SNT) approach in Kumasi, Ghana**

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**Background:** HIV testing is a key entry point to HIV prevention and treatment and efforts to achieve the first 95% of the UNAIDS 95-95-95 targets. In Ghana, testing outcomes and identification of men who have sex with men (MSM) who are living with HIV is low. The use of innovative testing strategies to identify HIV positive MSM is crucial to increasing HIV+ yield since the traditional peer education referral of MSM have produced low yield.

We describe the successful implementation of the SNT strategy to increase the identification of HIV+ MSM in Ashanti Region of Ghana.

**Description:** The SNT strategy was introduced in three districts in May 2023 to identify MSM who are HIV positive. SNT uses the sexual network of HIV+ MSM to link their sexual partners within the last six months for HIV testing. The SNT approach was applied in two ways in three districts in the Ashanti Region.

**Approach #1 (PLHIV Partner Testing) [PPT]:** Nurses and case managers encouraged MSM PLHIV who had been initiated on ART to introduce their recent MSM partners to a targeted mobile HTS outreach session.

**Approach #2 (Target referral):** Peer educators and field officers were educated to identify harder-to-reach MSM who engage in high-risk sexual behavior and their sexual partners and refer them for HTS at the facility.

**Lessons learned:** The SNT strategy introduced in three districts increased the HIV positive yield among MSM. In April 2023, prior to the SNT strategy, 318 MSM were tested using the conventional outreach and peer education referral approach; 19 MSM (HIV+ yield of 6.6%) were diagnosed positive across the 3 districts. After the introduction of SNT in May 2023, 391 MSM were tested and 48 were diagnosed HIV positive (12.3% yield) across the 3 districts.

**Conclusions/Next steps:** Innovative and targeted approaches to HTS are essential in increasing HIV+ yield among MSM. SNT approach is an effective and efficient way of providing tailored services to closeted MSM and should be extended to other districts in the country. As a next step, we will explore which of the SNT approach is more efficient at attaining greater HIV+ yield.

## WEPEE503

**The Asanté™ HIV-1 Rapid Recency® Assay is reliable, feasible, and acceptable for use at the point-of-care in Lusaka, Zambia**

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**Background:** Zambia established an HIV recent infection surveillance program that utilizes a novel rapid test for recent infection (RTRI)—Asanté™ HIV-1 Rapid Recency® Assay—to differentiate between persons with recent (i.e., acquired within the last 12 months) versus long-term HIV infection. The surveillance program applies a recent infection testing algorithm (RITA) consisting of the RTRI and viral load (VL) testing.

In this pilot study, we describe field-performance of the Asanté RTRI when implemented by Ministry of Health (MOH) healthcare workers at the point-of-care (POC) compared to the central laboratory (CL), and as part of the national RITA to inform surveillance programming.

**Methods:** We enrolled participants found to be HIV-positive during routine HIV testing services between 20 May 2021–10 March 2022 at two MOH health facilities ("sites") in Lusaka, Zambia.



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Participants underwent POC RTRI testing by MOH staff trained by the national surveillance program. For each participant, one additional blood sample was collected for repeat RTRI testing at the CL to verify POC results, and to perform baseline VL testing.

Twenty-eight MOH staff participated in 4 focus group discussions (FGD) to share perspectives on POC RTRI implementation. We estimated agreement between POC and CL RTRI testing using Cohen's Kappa statistic, and calculated sensitivity and specificity of these tests compared to RITA as the reference standard.

**Results:** Agreement of recent infection classification between RTRI performed at POC and CL was 96.0%, with a Kappa coefficient of 0.821 (95% confidence interval [CI]: 0.713-0.928). Compared to RITA, the CL RTRI had perfect sensitivity (100.0%) while the POC RTRI had lower sensitivity (85.0%). Discrepancies between the POC and CL RTRI results were resolved with in-person and tele-monitoring quality control procedures. All FGD participants noted that RTRI testing was acceptable, appropriate, and feasible at the POC.

**Conclusions:** We describe strong correlation between POC and CL-performed RTRI, and healthcare worker-endorsed feasibility of POC RTRI testing.

Our findings suggest that RTRI can feasibly be done at POC when complemented by training, quality control, and supportive supervision.

Findings from our pilot study suggest a possible role for decentralized RTRI testing in current national HIV recent infection surveillance programs.

## WEPEE504

Collaborative efforts between HIV programs and traditional healers and community leaders increased case finding and treatment initiation among Haitian migrants and individuals of Haitian descent in the Dominican Republic

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**Background:** The HIV Services and System Strengthening (HS3) project and the Enhanced HIV Services for Epidemic Control (EHSEC) project, funded by PEPFAR through

the United States Agency for International Development (USAID), offer HIV testing services to priority populations (PP), who are Haitian migrants and individuals of Haitian descent in the Dominican Republic. As of September 2021, HS3 reported 5% HIV case finding and 83% treatment initiation among PP, and the country estimated 76% of PP living with HIV knew their serological status and 54% were on treatment. HS3 consulted with PP to design innovative strategies to strengthen its contribution to UNAIDS goals. Traditional healers and community leaders were identified as playing a crucial role in the health-seeking behavior of PP by providing individualized care, psychosocial support, and providing a familiar cultural context for health care delivery.

Hence, from October 2021, the project trained and engaged 37 traditional healers and 36 community leaders to offer HIV testing services and support treatment initiation.

**Methods:** We analyzed retrospective clients' records from October 2021 to September 2023, using routinely collected, aggregated program data for PP ages 15 and older who received an HIV test and its result. Community leaders mobilized and navigated PP to project testing sites, while traditional healers hosted project testing counselors within their clinics. Both provided community-based education to address treatment myths and tailored psychosocial support to PP living with HIV to initiate treatment.

**Results:** The projects tested 78,857 PP, identifying 4,913 living with HIV and initiating 96% on treatment: 6,218 (8%) were tested through traditional healers and community leaders, identifying 422 (7%) living with HIV and initiating 418 (99%) on treatment, while other testing modalities yielded 6% case finding and 96% treatment initiation. There was no difference in case finding or treatment initiation between testing through traditional healers and community leaders.

**Conclusions:** Our study shows that collaborative efforts between traditional healers and community leaders and HIV programs are feasible. Traditional healers and community leaders are trusted providers and prominent community members and could be important partners in closing the gap of UNAIDS 95 goals in the Dominican Republic.

## WEPEE505

### Scaling-up HIV self-testing to enhance case finding in Central Asia

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**Background:** Reaching the first "95" remains a challenge in Central Asia, especially among key population (KP) groups and men. To improve access to HIV testing, ICAP at Columbia University supports implementation of an innovative online self-test order portal called HIVTEST, which enables people to test at a private location and provides information about what to do with the test results.

**Description:** HIVTEST is implemented in Almaty and Ust-Kamenogorsk (Kazakhstan), Bishkek and Osh (Kyrgyzstan), and Dushanbe (Tajikistan). HIV self-test kits ordered online can be collected, for free, at local pharmacies or self-service postbox terminals open 24/7, or participating NGOs and healthcare facilities during opening hours; or they can be delivered to a client's preferred location by courier service.

When ordering tests online, clients are asked to complete a risk assessment and report the reason they ordered an HIV self-test. HIVTEST invites clients to report their results through the portal.

**Lessons learned:** Between February 18, 2022, and December 31, 2023, 7,421 HIV self-tests were delivered to clients across three countries. Of 3,489 (47.0%) test results reported, 47 (1.3%) were reactive. 4,632 clients (62.4%) identified themselves as men, 2,689 (36.2%) as women, 21 as transmen, 21 as non-binary, 8 as transwomen, and 50 did not specify their gender.

Median age was 26 years old (IQR 22-31). 41.7% were first-time testers, 23.7% last tested for HIV >12 months ago, 34.2% last tested during the past year, and <1% ordered a test to reconfirm their HIV-positive status. 3,503 clients (47.2%) collected their test-kits at local pharmacies, 1,737 (23.4%) at postbox terminals, 1,621 (21.8%) used courier service, 552 (7.4%) collected it from a health facility and 8 (0.1%) from an NGO. 13.2% of men reported having sex with men. Of 4,731 (63.8%) clients completing risk assessment, 80 (1.7%) reported drug use, and 1,814 (38.3%) reported high-risk sexual behaviors (unprotected intercourse, sex with a high-risk partner, sex under the influence of drugs/alcohol).

**Conclusions/Next steps:** Online distribution of HIV self-test kits is an effective approach to expand access to HIV self-testing, especially among younger people, men, and first-time testers. To succeed, a variety of delivery options for HIV self-tests must be offered.

## WEPEE506

### Pat: improving access to HIV testing and sexual health information through AI chatbot technology

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**Background:** Digital cultures have transformed how people access services and information, with chatbots becoming ubiquitous. The emergence of artificial intelligence (AI) and algorithmic medicine also means that the sexual health (SH) sector needs to consider chatbots in line with current communication trends.

A 2019 study revealed that 66% of people in the UK would be willing to use a chatbot for health-related queries, with 50% specifically for SH.

Positive East (PE) is an East London-based HIV charity. To leverage this shift and willingness to use AI, PE developed the chatbot Pat. Pat aimed to pilot a new approach regarding HIV Testing/SH information dissemination to increase good SH within the community.

**Description:** In 2018/19, Pat was co-designed through extensive community consultations involving surveys, focus groups, user testing, and analysis. PE used this data to create over 300 pre-programmed responses, "intents", actioned using user-inputted Natural Language Processing, each dealing with a different SH topic, e.g. HIV testing.

Monthly user reports further inform development, allowing Pat to remain responsive to community needs. Site visitors can interact with Pat via a chat window on the PE website.

**Lessons learned:** In 2023, Pat had 1,510 unique chat sessions. Key user themes include HIV testing (42%), HIV/STI window periods (15%) and STI symptoms (12%).

Pat is an effective tool with high message accuracy (96.8%) and user satisfaction - "it was a smooth, easy [HIV] booking experience...I might have backed out without the easy experience I had."

The initial implementation of Pat resulted in a 77% decrease in SH-related emails to PE's switchboard, redirecting focus to face-to-face interventions.

Pat is currently deployed on four SH service websites, including the NHS. In 2023, across all platforms (PE & SH services), Pat had 1,600 monthly average unique chat sessions, amplifying efforts to enhance SH. Pat remains unique in the SH sector.

**Conclusions/Next steps:** Pat has proven its utility in the SH sector. Pat supports increased SH awareness and contributes to research and policy. By efficiently advising a large number of users at a lower cost, Pat enhances capacity to promote SH, supporting the goal of zero new HIV transmissions.



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## WEPEE507

**A systematic review of PMTCT expansion: reaching the underserved pregnant women with PMTCT services through expansion to communities in Niger and Kwara states, Northcentral Nigeria**

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**Background:** ANC coverage has been low (67%) with a few pregnant women (39%) that deliver in health facilities in Nigeria [UNAIDS, 2020]. Despite the robust HIV response program in-country, PMTCT coverage has remained largely facility based leaving out over 39% of pregnant women that either receive pregnancy care in the community or at home (NPC, 2013). Distance to health facilities, user fees and preference for non-formal healthcare by most pregnant women (PW) are few contributing factors of poor uptake of PMTCT services.

This study was to evaluate access and uptake of PMTCT services among underserved PW.

**Description:** A systematic review of collected data from pregnant women across communities in Niger and Kwara states, Nigeria between January and December 2023. Using a context-specific approach, consultative workshops were held with key players to explore barriers to PMTCT services across communities.

With the findings, rapid community PMTCT (cPMTCT) readiness assessment and activation was conducted across the mapped community ANC/birth centres. 128 cPMTCT outlets were activated across 41LGAs in the 2states with a Hub-Spoke arrangement with PEPFAR-supported facilities. Providers were trained and supported with mentorship/coaching sessions during which they were encouraged to support PW across communities to attend ANC,

accept HTS, and ensure referral of identified HIV-positive pregnant women (PPW) to facilities. Descriptive analysis of the data was conducted to delineate uptake of PMTCT services.

**Lessons learned:** 9,800 PW attended the cPMTCT outlets and received HTS with 32 previously known and 14 newly identified PPW who were referred and commenced on ART. Without the intervention, these PPW would have been missed with an increased risk of vertical transmission.

We observed an increased uptake of PMTCT services across communities with 21% increase in overall number of pregnant women with known HIV status in the states.

**Conclusions/Next steps:** The out-of-facility expansion of PMTCT services was effective in reaching the underserved pregnant women and other population with HIV prevention services across communities. It eliminated the barriers related to distance and user-fees at large-scale facilities and facilitated seamless access to PMTCT services. Further studies are needed to explore the opportunity of utilizing the platforms to provide PrEP to partners of PW.

## WEPEE508

**Reaching unreached PWID through Integration of PWID-centric approaches in hard-to-reach areas in Northern Myanmar**

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**Background:** The phenomenon of drug use in Myanmar is more pronounced in rural areas, particularly in the northern region, where Asian Harm Reduction Network (AHRN) is actively involved in harm reduction activities. In 2020, the COVID-19 pandemic disrupted HIV prevention, care, and services, especially for People Who Use or Inject Drugs (PWUD/PWID). The conditions were worsened by the ongoing political crisis, making healthcare access challenging for PWID. More specifically, prolonged conflicts and COVID-19 measures heightened barriers for service providers to reach PWID/PWUD, given their natural reluctance to access healthcare.

**Description:** To address these issues, in 2022, AHRN and Best Shelter to target disengaged PWID in hard-to-reach and conflict-affected areas by integrating new approaches into existing outreach, mobile outreach, and HIV testing services.

These approaches included recruiting additional residential peers, providing needle and syringe services through secondary distribution, implementing flexible working hours, community-based peer-led HIV screening, and establishing extended outreach outposts in difficult-to-access locations.

**Lessons learned:** Despite challenges posed by COVID-19 and political crises, AHRN/Best Shelter outreach and HIV testing services (HTS) team successfully implemented a PWID-centric approach in hard-to-reach areas. This led to

reaching more PWID, an increase in commodity distribution, and higher rates of HIV testing, resulting in a positive yield, especially in new coverage areas.

In 2021, the program reached 25,623 individuals, distributing nearly 16 million needles and syringes, and 1.7 million condoms. The program also tested 11,745 PWID for HIV and had a positive yield of 18%. These numbers significantly increased in 2022 and Jan-Jun 2023.

In 2022, AHRN/BS reached 28,395, distributed about 18 million needles and syringes, and 2 million condoms. The program tested 15,092 PWID for HIV and had a positive yield of 17%.

In 2023, community-based outreach activities were extended to extremely hard-to-reach areas in Myanmar, establishing four outreach outposts, and, significantly, the program found an HIV-positive yield that increased to 25% in these areas.

**Conclusions/Next steps:** To sustain and expedite the above-mentioned activity, the implementers will maintain the current activities and scale their reach to additional PWID/PWUD in hard-to-reach areas.

This program will continue to provide much-needed prevention services while monitoring positivity yield and increasing ART uptake.

## WEPEE509

### Optimizing HIV self-testing for young key populations: evidence from 7 provinces in Thailand

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**Background:** Young key populations face heightened risks of HIV acquisition and significant barriers in accessing HIV prevention and testing services. With the support of US-AID/PEPFAR/EpiC Project, four Key Population-Led Health Service (KPLHS) organizations strived to make HIV testing more accessible through online outreach and distribution to young KPs.

**Description:** KPLHS clinics use online platforms to promote their HIV/STI services among key populations, predominantly Facebook, X (Twitter), TikTok, and dating applications. For those interested, clients made an online reservation for preferred services or could request an HIV self-test kit on the online booking system, TestMeNow.

For those opting for the latter, HIVST kits were shipped based on client preferred venues, with follow-up con-

ducted online. Those with a reactive result were referred to confirmatory HIV testing at KPLHS clinics or nearby hospitals and initiated ART on the same day.

**Lessons learned:** During October 2022 to September 2023, KPLHS clinics distributed 2,230 HIVST kits to key populations, 83% of distributed kits (n=1,843) were utilized, yielding 102 reactive clients. Approximately 40% of HIVST kits were distributed among young KPs aged 15 – 24 years, and 37 reactive cases were found, accounting for 36% of the total reactive cases.

Comparing case finding rates between routine HIV testing at KPLHS clinics and mobile testing, and HIVST, the latter yielded a higher rate of 6% (37 reactive/1,843 tests) compared to 2% case finding rate (866 positive/40,217 tests). The confirmatory ratio among all reactive cases (n=84) was 82% but lower (62%) among young KP clients (n=20). Notably, 93% of all confirmed HIV positive were successfully enrolled on ART.

**Conclusions/Next steps:** HIV self-testing is instrumental in accessing young key populations aged 15 – 24 years exposed to higher risk of HIV and who face stigma and discrimination in seeking HIV services at hospitals. Further initiatives to scale up the use of HIVST on online platforms should be explored as well as young KP-specific follow-up/support systems.

## WEPEE510

### Lessons learned from implementing multilingual HIV and syphilis testing events for international migrants in Japan

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**Background:** As of 2023, about 3.2 million international migrants lived in Japan, with 80% from neighboring Asian countries. Nearly 50% of the migrants are in their 20s and 30s. In 2022, about 28% of international migrants in Japan were not aware of their HIV status until they developed HIV-related advanced symptoms.

**Description:** We organized 21 free and anonymous multilingual HIV and syphilis testing events across multiple prefectures in Japan, including Tokyo (since 2021), Okinawa (since 2022), Sendai (since 2023), and Saitama (since



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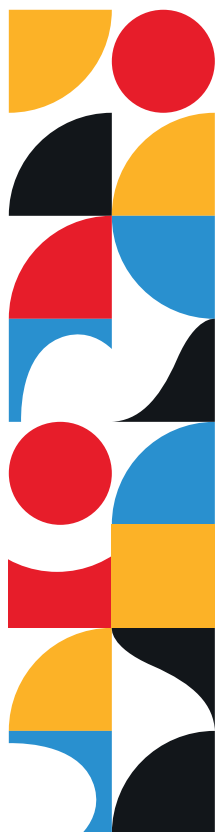
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2023). The project is funded by the Health Labour Sciences Research Grant, aiming to improve access to HIV testing and medical services among international migrants.

We advertised the testing events in multiple languages (e.g., English, Chinese, Vietnamese, and Nepali) via global social media platforms (e.g., Facebook), migrant communities, and dating apps with direct links to the testing booking site in respective languages. At testing sites, participants could ask for online medical interpretation free of charge. A total of 247 people made reservations, of whom 67.7% (n=167, from 22 nationalities) came to the event and received tests. About 81.0% were male, 85.9% were in their 20s or 30s, and 35.9% tested for HIV for the first time. One HIV-positive case (0.6%) and two new syphilis cases (1.2%) were identified and referred to medical facilities accordingly. Nearly 50% of the participants opted for PrEP consultation.

**Lessons learned:** Our HIV/syphilis testing project demonstrated the feasibility of expanding HIV testing among international migrants in Japan through multilingual outreach efforts and testing services. Although PrEP has not been officially approved in Japan, there is a substantial interest in using PrEP as regular HIV prevention among international migrants.

The high non-attendance rate among those who made online appointments suggests the potential barriers from the intention of testing to actual testing uptake. More research in diversifying HIV testing provision - especially in non-clinical settings is highly needed.

**Conclusions/Next steps:** We want to explore the possibilities of:

1. Adding our multilingual testing model to HIV testing services at public health centers and medical facilities,
2. Engaging international communities in organizing the testing events, and;
3. Providing mail HIV testing in multilingual formats.

## WEPEE511

### Identifying and treating acute HIV infection among high-risk individuals: a combination intervention to tackle the uncontrolled HIV epidemic among MSM in Jakarta and Bali, Indonesia

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**Background:** Indonesia has one of the highest numbers of new HIV infections globally, estimated at 24,000 in 2022, particularly among key populations. One in three men who have sex with men (MSM) in Jakarta and Bali are living with HIV (PLWH). Use of pre-exposure prophylaxis is still low.

There is an urgent need for innovative and tailored interventions to curb the epidemic.

**Description:** The aim of the Indonesia Intervention Study to Test & Treat people with Acute HIV Infection (AHI) (INTERACT) is to demonstrate that implementing a clinical pathway to identify AHI, coupled with immediate ART initiation, can improve the HIV care cascade for key populations.

Between May-December 2023, 1879 individuals (≥16 years old) who attended a non-governmental sexual health service were enrolled for AHI screening, including an AHI risk score followed by point-of-care Xpert HIV-PCR (either individual or pooled) testing. Newly HIV-diagnosed participants were offered immediate ART and partner notification.

**Lessons learned:** Median age was 27 years (IQR24-31). 77.5% were male. MSM accounted for 50.4%, clients of sex workers for 20.1%, and sex workers for 5.2%. 43.0% had an AHI risk score of ≥2. 99.3% (1866/1879) received an HIV-antigen/antibody test, of whom 113 individuals tested positive. Of those testing HIV-antigen/antibody negative or inconclusive, 99.7% (1748/1753) received an HIV-PCR test, of whom an additional 6 individuals tested positive. Hence, the use of HIV-PCR enabled an additional 5.3% (95%CI1.9-



11.2; 6/113) of HIV diagnoses, at an AHI prevalence of 0.32% (95%CI 0.11-0.69; 6/1866). Of 119 newly HIV-diagnosed (6.4% [119/1866] positivity), 116 (97.5%) were linked to care and 94 (79.0%) started ART; among those 71 (75.5%) started the same day and 91 (96.8%) within a week.

**Conclusions/Next steps:** Identification of individuals with AHI, who are most infectious and would have been missed by standard HIV- antigen/antibody testing, augments opportunities to interrupt onward transmission. Participant follow-up will allow for HIV and AHI incidence estimation as well as constructing HIV care cascade outcomes.

We are implementing a tailored digital community engagement intervention to improve AHI test uptake and retention in care during 2024. Study data will be used to inform person-centered HIV care models in Indonesia.

## WEPEE512

Reaching the unreached: a transformative approach to HIV and allied health services for key populations in India

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**Background:** India aims to end the AIDS epidemic by 2030, in alignment with the Sustainable Development Goals. Embracing the global 90-90-90 targets and the FastTrack target of 95-95-95, the National Strategic Plan for HIV/AIDS and STI includes the innovative One Stop Centers (OSC) initiative under NACP V. OSCs target hard-to-reach populations often excluded from national HIV control due to stigma and lack of awareness, offering risk assessment, HIV screening, treatment, preventive services, and social support.

**Description:** The OSCs serve as a unified approach to engage Key Populations (KP) and Bridge Populations (BP) usually beyond the reach of traditional HIV programs. These centres, established across 25 Indian states, cater to various groups including Migrants, Transport Workers, the Transgender community, and People Who Inject Drugs (PWID). They provide a comprehensive set of services tailored to client needs, including clinical screenings (HIV, STIs, TB, Viral Hepatitis, NCDs), behavioural counselling, mental health support, and access to social protection schemes. OSCs facilitate streamlined service delivery, enhancing individual and community health outcomes.

**Lessons learned:** OSCs have shown remarkable impact within their first year. Among BP, 67,187 individuals were registered, showing a 0.4% HIV incidence and high rates of ART linkage (89%) and viral load suppression (75%). For PWID, the figures are equally notable: 9,734 registered, with a 4.13% HIV incidence, 86% ART linkage, and 23% viral load suppression.

The transgender community saw 7,280 registrations, a 2.33% HIV incidence, 92% ART linkage, and 56% viral load suppression. Index testing indicates significant HIV incidence among partners of these populations.

**Conclusions/Next steps:** Looking forward, the OSC model stands as a promising star in health service delivery. Its success hinges on robust coordination with stakeholders, efficient supply management, and the provision of value-added services. Strengthening mental health services and enhancing social protection linkages will solidify OSCs as comprehensive one-stop shops for health care. This holistic model not only addresses immediate health concerns but also mitigates broader community-level health challenges, marking a significant stride towards an inclusive and accessible health system for all.

## Implementation science and scale up of prevention

### WEPEE513

Cost-effective and cost-saving mHealth intervention in Young Adults living with HIV in Uganda

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**Background:** New interventions aimed at increasing access and adherence to antiretroviral therapy among young people living with HIV are needed for optimal prevention of transmission. This study assessed the cost-effectiveness of call-for-life – interactive voice call reminder (CLF-IVR) compared to the standard of care (SOC) in promoting treatment adherence among young people living with HIV (YPLHIV) in South Western Uganda.

**Methods:** This cost-effectiveness study used data from a randomized controlled trial and a lifetime time horizon, from the societal and payer perspectives. We used data



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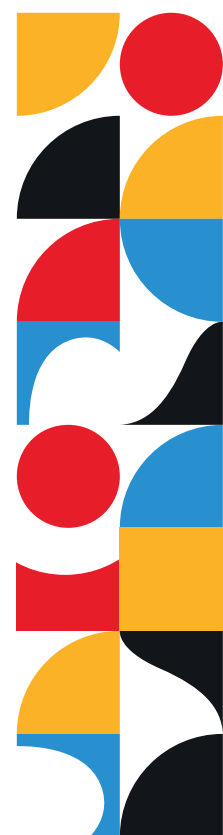
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from the primary study and the literature to parameterize a 3-state Markov model (HIV, AIDs, Dead) and a 1-year Markov cycle. All costs were estimated from the Infectious Diseases Institute accounts records and the literature and were reported in 2021 US dollars. The main outcomes were the mean annual costs in US dollars (\$), disability-adjusted life years (DALYs), and incremental cost-effectiveness ratio (ICER). We also conducted the univariate and probabilistic sensitivity analyses to test the impact of model parameters on results.

**Results:** Compared to the SOC, the CLF-IVR was associated with fewer mean annual costs (\$148 vs. \$793) and DALYs (3.42 vs. 6.31), leading to a cost saving of \$223 per DALY averted from the societal perspective. From the payer perspective, the CLF-IVR was associated with fewer mean annual costs (\$78 vs. \$555) and DALYs (3.42 vs. 6.31), leading to a cost saving of \$165 per DALY averted. In the incremental analysis, the SOC was dominated by the CLF-IVR, i.e., it was costlier and less effective. These results were robust to univariate and probabilistic sensitivity analyses.

**Conclusions:** CLF-IVR is both cost-effective and cost saving, and it may be an efficient strategy to promote treatment adherence among YPLHIV in Uganda, and limit transmission as U=U. Similar interventions may lead to greater returns in promoting adherence to ART among YPLHIV and other vulnerable groups.

## WEPEE514

Utilization of social media platforms to identify and link HIV services to unreached female sex workers in the Eastern Region of Ghana

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**Background:** Social media is becoming an accessible platform for communication among female sex workers (FSWs) in Ghana. Social media has emerged as an avenue where FSWs are increasingly soliciting for potential sexual clients rather than physical hotspots. In Ghana, the HIV prevention program for FSWs is often implemented through traditional peer outreach.

However, there are some segments of FSWs who engage in risky sexual behaviors but are unreached with HIV prevention programs via physical outreach.

Recognizing the unique vulnerabilities of this hidden population calls for a comprehensive approach that combines outreach, education, and support through various social media channels.

**Description:** HeHeF conducted a rapid assessment to identify social media platforms mostly used for finding potential sexual clients by FSWs such as Facebook, Snapchat, Instagram and Tinder. Tailored content on HIV services were posted on these platforms to raise aware-

ness, destigmatize HIV-related issues and promote HIV services. A dedicated landing page was set up on HeHeF website together with a booking form linked to health-care professionals who provided confidential interactions with the FSWs recruited and supported them to seek HIV services at sensitized clinics.

Comparative analysis was carried out between physical and social media contacts.

**Lessons learned:** Total number of FSWs reached from February to July 2023 was 3412. (21% from February to April and 79% from May to July). In-post links to health-service providers was generated by 2674 users. Data collected also showed that social media reached out to more high risk FSWs than through physical outreach. 57% of FSWs recruited through social media had never tested for HIV compared with 33% reached via physical outreach. 61% of FSWs recruited on social media had unprotected sex with non-paying partners compared to 46% recruited through physical contact.

Additionally, 2100 FSWs tested for HIV through social media; 370 were diagnosed HIV+ (17.6% HIV+ yield). Comparatively, 4960 FSWs tested for HIV through physical outreach; 298 were diagnosed HIV+ (6% HIV+ yield).

**Conclusions/Next steps:** Social media in HIV service delivery is an effective tool of reaching high risk FSWs not traditionally accessed by peer educators. It should be adopted as an integral outreach approach for HIV prevention interventions moving forward.

## WEPEE515

HIV Pre-Exposure Prophylaxis Access Retention and Education Research (HIV-PREPARER) among general practitioners and clients in Paris, France

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**Background:** Implementation of PrEP in primary care settings has started in France in June 2021 to broaden and facilitate PrEP access. We completed a pilot mixed-methods study of Parisian general practitioners (GP) and PrEP-eligible clients to evaluate knowledge and attitudes towards PrEP two years after its availability in primary care clinics.

**Methods:** An anonymous survey was sent to a GP network to assess their awareness and confidence in PrEP prescription. Respondents also completed a validated 19-item true/false knowledge scale regarding PrEP and HIV prevention.

Concurrently, PrEP-eligible clients of busy primary care practice in Paris completed an anonymous survey assessing their knowledge and attitudes regarding HIV preven-

tion as well as preferences in PrEP prescribers. A subset of GPs and clients participated in 1-hour focus groups about these items. Focus group discussions were transcribed, translated to English, and thematically analyzed.

**Results:** Of 150 GPs reached, 25 completed the survey. All GPs were aware of PrEP, 80% reported ever prescribing PrEP, and 92% reported interest in prescribing PrEP. The most common barrier to prescription was unclear process for urgent HIV referrals (36%).

The HIV/PrEP knowledge scale mean was 85.9% (SD=8.6%) corresponding to an average of 16.2 items correct out of 19 (median = 17).

Among 44 PrEP-eligible clients surveyed, they were predominantly cisgender men (93%) and gay (86%), with a mean age of 37. All were aware of PrEP, 93% had taken PrEP, 95% felt comfortable discussing it with their GP, and 50% preferred their GP as their PrEP prescriber.

Focus group insights from GPs acknowledged the benefits of providing PrEP but highlighted challenges in discussing PrEP with women and migrant populations.

Client focus groups outlined difficulties in finding a trusted PrEP prescriber with many reporting a preference for infectious diseases specialists due to perceived expertise in LGBTQ issues and sexual health.

**Conclusions:** We identified high interest and sound knowledge of PrEP by both GPs and clients. However, concerns in reaching non-MSM populations as well as difficulty accessing LGBTQ-affirming primary care were potential barriers for some GPs and clients respectively.

These highlight the need for targeted interventions to ensure broader PrEP access in French primary care settings.

## WEPEE516

### Barriers and facilitators to implementing a pharmacy-based pre-exposure prophylaxis (PrEP) service delivery model among key populations, PrEP prescribers and community pharmacists in the Klang Valley, Malaysia

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**Background:** HIV pre-exposure prophylaxis (PrEP) uptake remains inadequate in Malaysia. As community pharmacists are recognized as accessible and trusted healthcare professionals, there is potential to expand PrEP access through a simplified, demedicalized service delivery model in the community pharmacy setting.

This study aimed to understand the barriers and facilitators to implementing a pharmacy-based PrEP service delivery model among key populations, community pharmacists and PrEP prescribers in the Klang Valley, Malaysia.

**Methods:** A qualitative study involving 38 semi-structured in-depth interviews was conducted with 18 key population members, 10 PrEP prescribers and 10 community pharmacists in the Klang Valley from January to April 2023. Key population members included 6 men who have sex with men (MSM), 5 transgender women (TGW), 3 female sex workers (FSW), and 4 people who inject drugs (PWID); 1 MSM and 4 TGW also engaged in sex work while 1 FSW reported injection drug use. Participants were recruited using purposive sampling. All interviews were conducted online in English or Malay for about an hour, audio-recorded, and transcribed verbatim. Thematic analysis was performed using NVIVO.

**Results:** All groups identified common barriers: privacy, confidentiality, affordability, and poor awareness about pharmacy-based PrEP service. Key population members additionally reported poor awareness about PrEP, while PrEP prescribers highlighted barrier related to unavailability of laboratory testing service. Community pharma-



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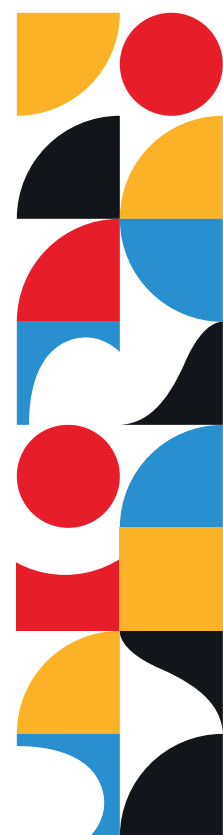
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cists reported other barriers such as lack of training, staff, time, and counselling/private space. Most participants expressed strong support for implementing the service and perceived availability of private space, assurance of confidentiality, affordable pricing, adequate training, digitalized assessment, and collaboration with physicians and non-government organization community health workers for seamless referrals as facilitators to this service.

**Conclusions:** This study provided valuable insights on the barriers and facilitators to implementing a pharmacy-based PrEP service in the Klang Valley. The findings indicate there is a need and demand for an additional choice of accessing PrEP.

Future research should focus on developing an implementation plan addressing identified barriers and capitalizing on facilitators, followed by implementation and evaluation of implementation outcomes to inform the viability of pharmacy-based PrEP service delivery model as a novel implementation strategy to increase PrEP uptake in Malaysia.

## WEPEE517

Using an outreach model of service delivery to improve uptake of cervical cancer screening among women living with HIV in Northeastern Uganda, 2021-2023

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**Background:** Cervical cancer (CxCa) is the leading cause of cancer-related death in Uganda with women living with HIV (WLHIV) being six times more likely to develop CxCa. At the start of the CxCa screening program for WLHIV aged 25-49 in January- March 2021, the uptake of the service was low, achieving only 3% of the quarterly target. This was attributed to screening at only static facilities. This report demonstrates how CxCa screening uptake was improved by using an outreach model of service delivery in North-Eastern Uganda.

**Description:** During January 2021 to January 2023, 25 health facilities (HFs) were equipped to offer CxCa screening in the region.

Additionally, 61 outreach HFs were identified and a team of health workers (HWs) at each of the outreach HFs was trained on CxCa service provision, and given supplies to screen and treat precancerous lesions. At each outreach site, a line list of eligible WLHIV was generated from HIV clinic registers. Phone calls or short message services

were used to book and invite eligible WLHIV for screening. Trained HWs conducted health education and WLHIV who consented were screened by visual inspection with acetic acid.

WLHIV identified with precancerous lesions were treated by thermal ablation, while those with cancerous lesions were referred to the referral hospital for further management. We analyzed routine program data to show the number of WLHIV screened for CxCa.

**Lessons learned:** During January 2021-January 2023, a total of 17,345 WLHIV of 25-49 years were screened for CxCa at static and outreach facilities. Of those screened, 1,159 WLHIV were identified with precancerous lesions yielding a positivity of 6.7% (1,159/17,345) while 52 had suspected cancerous lesions. The outreach HFs contributed 46.7% (8,112/17,345) of the total WLHIV screened. The number of WLHIV screened for CxCa increased from 52 in January-March 2021 to 1,381 in January-March 2023 after scaling services in outreach sites. All WLHIV with precancerous lesions were treated.

**Conclusions/Next steps:** Scaling up CxCa screening in outreach sites increased the number of WLHIV screened, for CxCa. Moving services nearer to clients through an outreach model could increase access and uptake of CxCa services in similar settings.

## WEPEE518

A time-and-motion study of resources required for HIV pre-exposure prophylaxis-related service delivery in South Africa

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**Background:** Despite widespread availability, pre-exposure prophylaxis (PrEP) persistence remains suboptimal for adolescent girls and young women (AGYW) and female sex workers (FSW) in South Africa. This time-and-motion study examines factors that may influence PrEP persistence by assessing the time and resources required to attend PrEP-related services.

**Methods:** We quantified the time spent on PrEP-related services across 13 different sites for AGYW and FSW receiving care through TB HIV Care across South Africa. Wilcoxon rank-sum tests were used to compare the median time engaged in services.

Opportunity costs were assessed for a subset of FSW clients who provided self-reported wages forgone due to time spent receiving PrEP services.

**Results:** A total of 149 AGYW (40%) and FSW (60%) were enrolled. Overall, median time spent receiving PrEP services was 25 minutes (interquartile range [IQR]:14-38 minutes). The median time spent during PrEP visits was 33 minutes (IQR: 21.0-53.5) for AGYW and 22 minutes (IQR:13.0-33.0) for FSW ( $p=0.0014$ ). Significant differences in time spent were also observed for PrEP initiations (41 minutes, IQR:25.0-69.0) versus PrEP refills (20 minutes, IQR:12.5-30.0) ( $p<0.0001$ ) as well as time spent by the care sites ( $p=0.0008$ ). Across all visits, among FSW providing self-reported lost wages ( $n=54$ ), median total opportunity cost was 250 South African Rand (IQR:150-450). Non-statistically significant differences in opportunity cost were observed among FSW initiating PrEP versus refill visits, receiving services from mobile van versus drop-in centers, between TB HIV Care sites, and among those traveling to receive care (Table).

Characteristics	Minutes spent on total visit (Median [interquartile range])	Wilcoxon rank-sum p-value
Overall time spent	25 (14-38)	
Population		0.0014
AGYW	33 (21.0-53.5)	
FSW	22 (13.0-33.0)	
Initiating or refilling PrEP		<0.0001
Initiation visit	41 (25.0-69.0)	
Refill visit	20 (12.5-30.0)	
Location		0.1318
Mobile van	24.5 (14.0-37.5)	
Drop-in center	30 (18.0-55.0)	
Traveled to receive care		0.1638
No, it's occurring at my home or another convenient place	24 (15.0-36.0)	
No, it's occurring at work	25 (12.0-35.0)	
No, it's occurring at my school	26 (19.0-50.0)	
Yes, I travelled specifically for this visit	56.0 (36.0-179.0)	

\*AGYW: adolescent girls and young women; FSW: female sex workers

Table. Time spent receiving PrEP related services for clients in the TB HIV Care Center in South Africa ( $n = 149$ ).

**Conclusions:** A substantial amount of time is dedicated to PrEP services for AGYW, PrEP initiators, women at drop-in centers, and those traveling for care. The associated time and costs might lead to decreased PrEP persistence, particularly as cost accumulates over time. Exploring efficient PrEP delivery options, especially in economically marginalized communities at high HIV risk, could enhance PrEP persistence.

## WEPEE519

Insights and learning from developing sexual and mental health content for chatbot and social media – Young Africa Live

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**Background:** To engage young people in sexual and mental health and ensure they can make informed choices, a new approach is needed. South Africa has over 20 million young people, but current approaches do not meet their needs. Relationships, sex, sexuality and mental health are topics they value, but are often communicated

in inaccurate, antiquated and judgemental ways by moralising, unrelatable authority figures. Young people are less informed and have poorer linkages to and retention within services than adults. They are also disproportionately impacted by HIV and STIs.

**Description:** Young Africa Live (YAL) aimed to provide young South Africans with access to accurate and reliable sexual and reproductive health information through judgement-free private conversations on a WhatsApp chatbot, and peer discussion on Facebook and Instagram.

Implemented by a consortium led by Reach Digital Health, Avert led content development and social media marketing to drive awareness and engagement. YAL's channels were integrated within the Department of Health-sponsored B-Wise sexual health information brand.

### Lessons learned:

- Social media marketing can be a cost-effective way to recruit large numbers of users to a chatbot platform, with over 100,000 users recruited in less than a year.
- Social media platforms' unclear content policies, and their lack of understanding of sexual health communications, pose a challenge to social media marketing efforts. The project faced increasing, inconsistent, censorship of sex-positive health education content by these platforms.
- Chatbot content that required user engagement, such as quizzes, was particularly popular. Push notifications and serialised content supported longterm engagement.
- Social media analytics show that sex-related content is what grabs young people's attention. Bold creatives that put sex at the forefront were by far the most popular social content throughout the project.
- Social media engagement highlighted topics where further education is needed or issues are misunderstood, such as consent and mental health.

**Conclusions/Next steps:** YAL demonstrates the value in using chatbots and social media to deliver relevant, engaging sexual and mental health content to youth using a sex-positive, youth-friendly approach, empowering young people to make informed decisions. An evaluation is being finalised by Reach Digital Health to assess YAL's impact on health information seeking behaviours.



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## WEPEE520

Long-acting oral PrEP is preferred to injections:  
findings from an online sample of American gay,  
bisexual, and other men who have sex with men

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**Background:** Despite high HIV incidence in the United States (US), pre-exposure prophylaxis (PrEP) access varies among gay, bisexual, and other men who have sex with men (GBM) due to multi-level barriers (e.g., systemic racism, medical mistrust). New or emerging modalities may circumvent some barriers, but other barriers could negate this benefit.

This study examines the structural, social, and personal context informing PrEP preferences.

**Methods:** We used social media to recruit American adult GBM for an online survey assessing preferred PrEP options (see Table).

Surveys collected data on sociodemographics, perceptions of barriers, stigma, and social support. We created frequency tables with descriptive statistics and used multivariable exploded logit regression to evaluate PrEP preference rankings (vs. daily pill).

**Results:** 723 GBM completed the survey; 59.5% were White, and 26.5% were Black. The median age was 34 years. 28.6% most preferred a monthly pill compared to 25.4% for a daily pill, 15.6% for biannual subcutaneous injections, 11.8% for implants, 10.7% for an on-demand pill, 6.3% for bimonthly intramuscular injections, and 1.7% for rectal douches. We found significant differences in preference rankings by structural and behavioral variables (see Table for selected variables).

Black and other-race participants ranked the monthly pill higher compared to White participants (odds ratio [OR] 1.296 and 1.32 vs. 0.938,  $p=0.00$ , respectively).

As scaled variables and barrier ranking increased, the preference was higher for monthly pill, yearly implant, and subcutaneous injections but lower for intramuscular injections and rectal douche when each were compared to daily oral pill.

Variable	On-Demand Pill OR p-value	Monthly Pill OR p-value	Every 2 Month IM Inj OR p-value	Yearly Implant OR p-value	Rectal Douche OR p-value	Every 6 Month SC Inj OR p-value
Baseline	0.92 0.0603	1.19 0.000	0.73 0.000	1.07 0.008	0.77 0.000	1.31 0.000
Black Race	0.907 0.860	1.296 0.000	0.689 0.026	1.117 0.055	0.760 0.292	1.330 0.045
White Race	0.894 -	0.938 -	0.817 -	0.974 -	0.824 -	1.172 -
Other Race	0.961 -	1.320 -	0.733 -	1.035 -	0.702 -	1.437 -
Barrier: Side Effects	0.974 0.006	1.035 0.000	0.944 0.000	1.011 0.048	0.934 0.000	1.068 0.000
Barrier: Adherence	0.982 0.019	1.031 0.000	0.946 0.000	1.012 0.009	0.951 0.000	1.050 0.000
Trust in HCP scale	0.989 0.032	1.021 0.000	0.967 0.000	1.007 0.014	0.969 0.000	1.033 0.000
PrEP Knowledge scale	0.999 0.047	1.002 0.000	0.996 0.000	1.001 0.001	0.997 0.000	1.003 0.000
Social Support scale	0.985 0.106	1.041 0.000	0.936 0.000	1.016 0.002	0.941 0.000	1.061 0.000

**Conclusions:** Among U.S. GBM, the largest proportion favored oral PrEP, taken monthly more so than daily or on-demand, but there was some interest in non-oral forms of PrEP delivery. There were significant differences in preference rankings by structural and behavioral variables. Nuanced understanding of these associations may improve messaging and reduce barriers to PrEP access to improve disparities.

## WEPEE521

The Anti-homosexuality Act 2023 dilemma:  
Innovative adaptation approaches to accelerate  
pre-exposure prophylaxis (PrEP) access and  
uptake among Lesbian, Gay, Bisexual, Trans, Queer  
(LGBTQ+) and other sexual minorities in Uganda

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**Background:** In Uganda, HIV incidence is higher (25%) among LGBTQ+ and their sexual partners. The Anti-Homosexuality Act 2023 has **created a volatile homophobic atmosphere** threatening PrEP uptake, and reversing progress in overall HIV responses.

With funding from the Uganda Foundation-UK, in August 2023 Villa Maria Hospital discreetly engaged LGBTQ+ communities in Kampala and suburbs to design masked, differentiated, person-centered approaches aimed at intensifying PrEP **awareness, access and uptake** within LGBTQ+ secret shelters.

**Description:** Through December 2023, our trained medical staff used a snow ball approach to identify and obtain permission from LGBTQ+ leadership to penetrate LGBTQ+ settings in Kampala and suburbs.

We used human rights illustrations that demonstrate support for equal rights including equal access to PrEP and other HIV prevention services. We provided HIV and PrEP counseling, social stigma reduction counselling, per-

sonalized HTS, STI management, bleeding for creatinine, PrEP initiation, ART initiation, condom and lubricants distribution within LGBTQ+ settings. Data on personal demographics, risk perception, stigma, sexual behavior, PrEP awareness, condom use were collected using interview guided questionnaires and analyzed using STATA Version 14.

**Lessons learned:** 14 LGBTQ+ shelters and settings were quietly identified, 298 LGBTQ+ were mobilized (94 MSM, 58 Lesbian, 85 Bisexual, 38 Queer, 23 transgender). Up to 39(13%) were aged 16-19, 167(56%) were between 20-30, and 92(31%) above 30 years. 298(100%) received HIV and PrEP counseling, sexuality and social stigma reduction, 173 (58%) STI management, 806 (96%) received condoms and lubricants, 277(93%) received HTS, HIV prevalence was 12%, (244HIV-, 33HIV+), 63 (23%) were first time testers, 216 (78%) were bled for creatinine, 216 (78%) were initiated on PrEP, 33(12%) were referred for ART initiation.

Overall, PrEP awareness was high (71%) but initiation was low (29%) among HIV negatives.

Willingness to use PrEP was higher among those aged 25 and above compared to their younger counterparts. Participants suggested preference of longer-acting PrEP such as the injectable PrEP.

Secrecy of location, engagement of LGBTQ+ leadership and service integration were cited as primary reasons for increased PrEP uptake.

**Conclusions/Next steps:** Innovative approaches tailored to personal and community contexts may enhance uptake of PrEP and other biomedical HIV prevention services among LGBTQ+ and other high homophobic settings.

## WEPEE522

### Co-producing interventions to promote equitable access to HIV pre-exposure prophylaxis (PrEP) among Black women in England

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**Background:** Black women are some of the most underserved populations by HIV pre-exposure prophylaxis (PrEP) in England (UK). This is due to a complex interplay between various barriers at the individual, provider and system level. Using the Behaviour Change Wheel (BCW) framework, this study explored the impact of co-design strategies within programme improvement science to tackle barriers to PrEP access in Black women in England.

**Methods:** We held separate co-design workshops with three stakeholder groups: Black women, healthcare professionals (HCPs), and a mixed group that brought together Black women and HCPs. Workshop participants agreed on which key barrier to develop an intervention for, mapped the involved stakeholders, and co-designed an intervention using the BCW. The newly designed interventions were evaluated and compared via the APEASE criteria (acceptability, practicality, effectiveness, affordability, safety, and equity) to determine which stakeholder group designed the best-suited intervention to tackle barriers to PrEP access.

**Results:** All three workshops chose to address the lack of awareness and knowledge of HIV/PrEP among Black women as it represented the first barrier along the PrEP Care Continuum. As a result, co-designed interventions all consisted of a multimodal PrEP awareness campaign that involved national mass media and local engagement events embedded within the community. Key to those interventions was that Black women would be the face of such campaigns to establish trust with the Black community.



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However, the disparities that existed across the co-designed interventions reflected the experiences of the respective stakeholders that co-designed them: the Black women-only workshop emphasised the importance of Black women's involvement throughout the campaign planning and implementation but did not discuss how the campaign would be funded; while the HCP-only workshop supported a much broader coalition that would include the UK Government for funding and integration into the broader HIV elimination strategy.

**Conclusions:** The study underscores the value of Black women's unique expertise and the importance of bringing said expertise into the policy-making process, as it is often tokenised in decision-making proceedings. This fits within a programme science approach that focuses on context-specific strategies to implement tailored and effective interventions that meet the needs of those underserved populations.

## WEPEE523

Impact of CyberRwanda on adolescent family planning and reproductive health: findings from a randomized effectiveness-implementation study in Rwanda

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**Background:** Digital health interventions have the potential to improve family planning and reproductive health (FP/RH) and HIV outcomes among adolescents. CyberRwanda, a digital platform developed using a participatory human-centered design process, provides adolescents with FP/RH information (e.g., on HIV/STI prevention and contraception) and a direct-to-consumer online store for discreet access to contraception and other FP/RH products at nearby pharmacies and health facilities.

**Methods:** We conducted a Type 2 Hybrid Effectiveness-Implementation study (clinicaltrials.org: NCT04198272) to evaluate CyberRwanda in 60 schools across eight Rwandan districts.

Schools were randomized 1:1:1 to the control arm or to one of two CyberRwanda implementation models: self-service (self-guided access on tablet computers) or facilitated (self-guided access plus peer-led club sessions with guided in-person activities). Students aged 12–19 years

were randomly selected for participation and completed surveys at baseline, 12 months, and 24 months. Using generalized linear mixed models, we estimated prevalence ratios (PRs) comparing the primary outcomes of modern contraceptive use, initiation of childbearing, and HIV testing by arm.

Secondary outcomes hypothesized to be on the impact pathway included FP/RH knowledge, attitudes, self-efficacy, and behaviors.

**Results:** We enrolled 6,078 participants between February–May 2021 (51% female, median age: 15 years); 91% were retained at 24 months. CyberRwanda had no effects on contraceptive use, childbearing, and HIV testing in the full sample.

However, secondary analyses among the 27% of participants who reported past sexual intercourse (n=1,477) found significantly higher contraceptive use in the facilitated arm relative to the control arm (63% vs. 53%, PR: 1.2, 95% confidence interval [CI]: 1.1–1.4), in part due to increased condom use among males (63% vs. 50%, PR: 1.3, 95% CI: 1.1–1.5).

Participants in the CyberRwanda arm(s) also had more favorable condom beliefs (facilitated model), higher emergency contraceptive knowledge (both models), and increased contraceptive discussions with partners (facilitated model) compared to the control arm.

**Conclusions:** CyberRwanda was associated with positive shifts in FP/RH-related knowledge, attitudes, and behaviors among adolescents. Our findings suggest that digital interventions may benefit from in-person education to reinforce digital content, although further research is warranted to examine CyberRwanda's longer-term effectiveness as more of the study population becomes sexually active.

## WEPEE524

### Awareness, utilization and willingness to use long-acting PrEP in a statewide sample of transgender and nonbinary adults

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**Background:** Recently, substantial scientific progress has been made in the development, testing, and approval of new modalities for PrEP including long-acting modalities (LA-PrEP) like injectable and implants, which could be highly beneficial for transgender and nonbinary (trans) adults at heightened risk for HIV acquisition.

To inform future LA-PrEP programming in this population, we characterized the prevalence and correlates of awareness, utilization, and willingness to use LA-PrEP among trans adults in the state of Washington.

**Methods:** We analyzed data from the Washington Priority Assessment in Trans Health (PATH) Project, a community-informed, statewide health and wellness cross-sectional study developed for, by, and with trans Washington state residents conducted during March-April 2023. Descriptive statistics with exact confidence intervals (Clopper-Pearson) assess proportion estimates, and a series of multivariable logistic regressions with lasso selection explore correlates of PrEP outcomes.

**Results:** Among PrEP-eligible trans adults (n=752/797), 97.5% (95%CI=96.1%-98.5%) were PrEP aware, 18.0% had a history of PrEP use and (95%CI=15.3%-20.9%) and 65.8%

(95%CI=62.3%-69.2%) were willing to use LA-PrEP. In multivariable models, younger age and living in the suburbs were significantly associated (p<0.05) with higher PrEP awareness. Younger age, homelessness in the previous year, sex work, and unmet need for mental health treatment in the previous year were significantly associated with history of PrEP use.

Lastly, younger age and engagement in sex work were significantly associated with willingness to use LA-PrEP while living in the suburbs, having private insurance, receiving mental health treatment in the previous year, and currently on hormone therapy were significantly associated with less willingness to use LA-PrEP.

**Conclusions:** Our results suggest that while there is high awareness of PrEP among trans adults, utilization of PrEP and willingness to use LA-PrEP are suboptimal in this sample. More research is needed to contextualize further how LA-PrEP fits into the lives and geographical contexts of trans adults, including approaches to ensure equitable access to new HIV biomedical products for trans communities.

Strengthening support for trans-led community-based clinics that provide gender-affirming medical and behavioral health services with multisector partnerships that are well-connected to trans communities to leverage existing systems and increase education on LA-PrEP could significantly improve engagement for this population.

## WEPEE525

### Are we doing enough to understand other drivers of low oral PrEP continuation rates? Learnings from oral PrEP programming in Zimbabwe

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**Background:** Since the introduction of oral Pre-exposure Prophylaxis (PrEP) in 2012, approximately 4 million people initiated by 2023 globally. Despite encouraging progress in oral PrEP initiations, PrEP continuation rates have been consistently low; 28% at 6 months and 19% at 12 months according to programme data from Cameroon, and Zimbabwe has similarly low rates. Currently, PrEP continuation rates do not consider intended duration. This background motivated us to explore if intended duration on PrEP has implications on continuation rates.

**Methods:** We analysed program data from October 2021 to June 2023 for the PEPFAR-supported HIV Control program across six clinics in five urban areas in Zimbabwe. STATA was used for data analyses.



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**Results:** During this period, 38,239 were initiated on PrEP, and 31% intended to be on oral PrEP for 1 month, 7% for 2 months, 40% for 3 months, and 22% for 4 months or more. About 57.2% (95% CI: 56.4-58.0) of men who have sex with other men, 51% of transgender persons (95% CI: 47.3-53.7), 63%, (95% CI: 62.5-64.4) of female sex workers and 87.7%, (95% CI: 86.9-88.4) of AGYW intended to be on PrEP for 3 months or less. Using intended duration on PrEP, we noted that 74% (95% CI: 73.1-74.2) continued at month 1, 66% (95% CI: 65.1-66.3) at month 3, and 40% (95% CI: 39.2-41.7) at month 6. Continuation rates without factoring intended duration were 47% (95% CI: 46.6-47.6) at month 1, 39% (95% CI: 46.6-47.6) at month 3, and 21% (95% CI: 20.4-21.2) at month 6.

**Conclusions:** Majority of beneficiaries intended to be on PrEP for not more than 3 months hence the very low PrEP continuation after 3 months. Intended duration on PrEP should be considered when calculating PrEP continuation rates. It is key to understand and address reasons why majority of recipients of care prefer to be on PrEP for shorter period to realise optimal effectiveness of oral PrEP.

## WEPEE526

### Association of provider type with overestimated self-reported PrEP adherence among sexual minority adolescents in Brazil

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**Background:** Self-report measures offer valuable insights into PrEP adherence among adolescents; however, a limitation arises from the potential influence of social desirability bias. In Brazil, nurses and physicians prescribe PrEP, and it is unclear if provider type is associated with the overestimation of self-reported adherence among adolescent men who have sex with men (AMSM) and transgender women (ATGW).

**Methods:** PrEP1519 constituted a single arm, multicentric demonstration cohort study focusing on daily oral PrEP among AMSM and ATGW aged 15-19 years, in three Brazilian cities. We conducted a cross sectional analysis using data from adolescents who initiated PrEP between February 2019 and December 2020, incorporating results of the quantification of tenofovir diphosphate (TFV-DP) in Dried Blood Spots. Protective TFV-DP levels were specified as being  $\geq 800$  fmol/punch, equivalent to a weekly intake of 4 pills or more. Self-reported adherence was considered high when adolescents reported losing less than 60% of

their pills in the last 30 days. To identify those overestimating PrEP adherence, we examined whether self-reported high adherence matched with protective TFV-DP levels. If these measures were equivalent or self-reported was lower, there was no overestimation.

Employing logistic regression, we estimated adjusted Odds Ratios (aOR) and 95% Confidence Intervals (95%CI) to examine the association of the provider type (comparing services that include both physicians and nurses as providers to those with only physicians) and the overestimation of self-reported PrEP adherence adjusted by age and gender of the adolescent.

**Results:** 174 adolescents were included, with 85.1% falling within the 18-19 age group, 78.2% identified as MSM, 67.8% self-reported black/brown skin color. Regarding provider type, most were attended in services with both physicians and nurses as providers (70.1%).

Attendance at services with both physicians and nurses reduced the likelihood of overreporting PrEP adherence by 73.5% (aOR=0.26; 95%CI: 0.13 – 0.53) compared to those attending services with only physicians as providers.

**Conclusions:** Expanding the scope of PrEP providers may demonstrate enhanced effectiveness in serving sexual minority adolescents. Services that included nursing in PrEP prescribing had more accurate self-reported adherence measures, potentially alleviating the desirability bias often associated with self-reported adherence. This information can improve PrEP care and effectiveness.

## WEPEE527

### "PrEP on the Go": implementing a low-barrier approach in response to client feedback to increase uptake and retention, Jamaica

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**Background:** HIV Pre-exposure Prophylaxis (PrEP) was approved for roll-out in Jamaica in 2023. The initial PrEP launch enrolled only 25 persons in the first 6-months. We explored client experiences to tailor ways to reduce barriers to PrEP use.

**Description:** Working through the Centre for HIV/AIDS Research, Education and Services (CHARES) weekly PrEP clinics, information from peer outreach workers, referrals from serodifferent partnerships, and the social networks of key populations (e.g., men who have sex with men) was leveraged to increase enrollment and retention on PrEP.

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Peer navigators interviewed 54 contacts with whom they had engaged over the first 6-months but who had not yet initiated PrEP. These key informants identified limited appointment slots at CHARES, delays in laboratory testing, and lack of information on PrEP.

**Lessons learned:** CHARES designed a bridge modality called "PrEP on the Go". This process, adapted to Jamaican and WHO guidelines, facilitated initiation of PrEP by delivering a two-week starter pack following a non-reactive HIV test and medical interview.

The program lowered barriers to initiation and expanded access outside the clinic, compensating for limited timeslots at CHARES, while outreach activities improved the community's awareness of and knowledge about PrEP.

Required laboratory specimens were obtained at the initial engagement and reviewed within two weeks to determine eligibility to continue PrEP beyond the starter pack. PrEP on the Go was thereby able to meet all protocol requirements while increasing demand, accelerating initiation, and shortening follow-up.

By year-end, this re-strategizing of PrEP delivery, coupled with continued comprehensive case management services, led to increased PrEP uptake with 63 persons enrolled in the second 6-months of roll-out. In addition, the program achieved 99% retention on PrEP to the year end.

**Conclusions/Next steps:** The initiative rapidly and successfully used feedback from clients to improve PrEP enrollment and retention. Community-based PrEP interventions reduce barriers to PrEP uptake.

We envision a continuous process to better tailor client-centered approaches to deliver PrEP. "PrEP on the Go" can be used to inform improvements in onboarding for other public health sites and as a community-based model for increasing PrEP access and enrollment in resource limited settings.

## WEPEE528

### Characteristics of the primary care providers engaged in PrEP care and opportunities for PrEP implementation in Puerto Rico

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**Background:** Pre-exposure Prophylaxis (PrEP) effectively reduces the risk of HIV transmission. However, Puerto Rico (PR) has the lowest PrEP uptake of all the jurisdictions of

the United States. Primary Care Providers (PCPs) are ideally situated to facilitate PrEP uptake among those most in need. In this study, we identified the characteristics of PCPs engaged in PrEP care in PR to nurture the factors driving successful implementation.

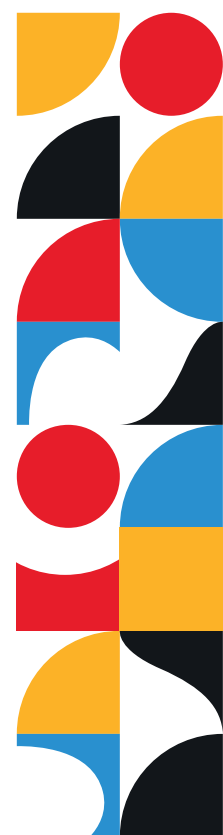
**Methods:** Data were collected in the summer of 2021 among personnel in the primary care centers. Participants were recruited by email to answer an online culturally congruent survey, including questions about their individual and professional characteristics, their training and experience prescribing PrEP, and PrEP stigma. Data was analyzed using SPSS.

**Results:** Of all the PCPs invited to participate, 63.2% (n=225) completed the survey. Of these, 80.4% (n=181) were PCPs directly interacting with patients (vs. those in administrative roles), constituting the analytical sample. 58% of the sample reported ever prescribing PrEP.

Multivariate analysis showed that PrEP stigma was lower rated among PCPs with less professional experience (0.956 (0.924, 0.990)). Longer tenure in the organization (OR 0.959, 95% CI 0.928, 0.991), older age (OR 0.955, 95% CI 0.924, 0.988), self-identifying as heterosexual (OR 0.315, 95% CI 0.121, 0.817), and being a physician (OR 0.448, 95% CI 0.222, 0.904) were associated with less likelihood of engaging in PrEP care.

In contrast, those who self-identified as male (OR 2.311, 95% CI 1.186, 4.506) and with more PrEP training (OR 1.197, 95% CI 1.116, 1.285) were more likely to engage in PrEP care. For every unit increase in hours of PrEP training, the odds of engaging in PrEP care increased by 19.7%.

**Conclusions:** Results underscore the importance of PrEP capacity-building. Training PCPs on PrEP care works. Considering all the factors that predicted engagement in PrEP care, future interventions to increase PrEP uptake should focus on modifiable factors like in-service training and integrating biomedical HIV prevention into the curricula of PCPs in formation. There are also opportunities to improve PrEP implementation by deliberately engaging PCPs other than physicians.







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## WEPEE529

### Assessing acceptability of implementation strategies to improve pre-exposure prophylaxis (PrEP) uptake among Black cisgender women in the United States

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**Background:** In the United States, Black cisgender women remain disproportionately impacted by HIV yet have a low uptake of pre-exposure prophylaxis (PrEP). Few implementation strategies have been designed to increase PrEP uptake in this population, and the acceptability of these strategies is unknown.

We aimed to explore existing PrEP awareness and acceptability of strategies for increasing PrEP awareness and uptake among Black women.

**Methods:** From August 2023 to January 2024, healthcare providers and Black women clients were surveyed at two federally qualified health centers in the Midwestern and Southern U.S. on PrEP awareness and implementation strategies. Data were analyzed descriptively with frequencies and percentages for clients (n=39) and providers (n=11).

**Results:** Nearly half (49%) of women had never heard of PrEP, with the majority (92%) reporting that a provider had never talked to them about PrEP. Among providers, 30% had never initiated a conversation about PrEP with, and 73% had never prescribed PrEP to, a Black female client. When asked about different methods to increase PrEP awareness and uptake among Black women, educational brochures (36%) ranked highest among clients, followed by discussions with providers (28%), and interactions with support staff (i.e., a PrEP navigator) (21%).

The majority of women (69%) said receiving educational materials (i.e., a brochure) would improve their understanding of PrEP.

Providers were asked to rank five different strategies for increasing PrEP uptake among Black women; 55% of providers ranked PrEP education first, followed by provider training (36%), PrEP navigation (36%), clinical champions (27%), and electronic medical record (EMR) optimization (27%). Most providers thought each strategy was relevant and would likely increase the number of Black female clients who start PrEP (100% for clinical champions, 91% for

PrEP education, 91% for provider training, 82% for PrEP navigation, and 82% for EMR optimization).

**Conclusions:** There was low PrEP awareness/experience among participants, yet high interest and acceptability of the proposed implementation strategies, particularly PrEP education.

There is a need for implementation strategies that address barriers among both providers and women to increase PrEP awareness and uptake among Black female clients. The feasibility and effectiveness of these implementation strategies will be evaluated in future studies.

## WEPEE530

### Working with satisfied VMMC users to increase demand for Voluntary Medical Male Circumcision services among men 30+ years. Implementation experiences from Ankole region, Uganda

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**Background:** Strategies to identify and circumcise men 30+ years who are sexually active and more at risk to heterosexual HIV transmission requires understanding contextual barriers to guide targeted innovative demand creation using quality improvement approaches.

Sexually active non-circumcised Men 30+ yrs continue to be at risk of HIV transmission for their sexual partners including STIs and penile human papillomavirus (HPV) associated with female cervical cancer.

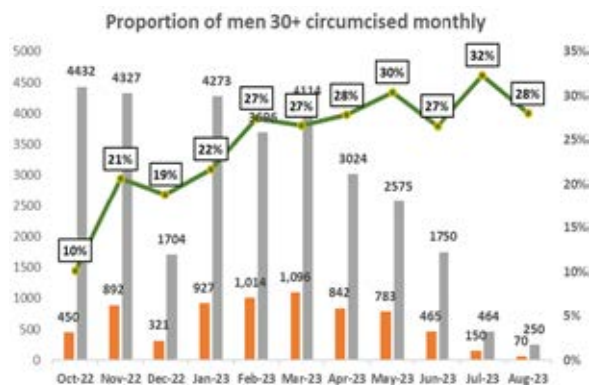
USAID Local Partner Health Services Ankole region worked with 13 districts at 35 VMMC accredited facilities in Ankole region to put deliberate quality Improvement and community interventions to increase VMMC men 30+ years uptake.

#### Description:

- A root Cause Analysis conducted revealed fear for adverse events, myths about VMMC, lack of safe adult space in addition to partner acceptance limiting men 30+ yrs taking on services as the major reasons for low uptake
- The health facility identified satisfied men 30+ years and MCH/AGYW partner champions to create awareness and mobilize men within their profiled work-stations
- A champion was also attached to targeted busy stations like boda-boda stages, churches, towns and prisons use of flexible days and hours, separating men 30+ years and children circumcision space and weekly review stakeholder feedback meetings

#### Lessons learned:

- Proportion of men 30+ years circumcised against the COP target progressively increased from 12 % in October 2022 to 109% by September 2023.
- There was an improvement from 10% (450/4432) October 2022 to 32% (150/464) July 2023 of achieved of the total men circumcised monthly



**Conclusions/Next steps:**

- Use of targeted peer led satisfied users and partners of MCH and AGYW users champions are critical in VMMC demand creation
- Profiling Men 30+ year is an opportunity increase VMMC services uptake, social dimensions determine the mobilization approach and champions to be assigned a particular group or class
- Uganda and the world needs to adopt these strategies for improved VMMC uptake

## WEPEE531

Increasing access of women who inject drugs (WWIDs) to harm reduction services through women-specific/led intervention: a successful differentiated service delivery model in Nepal

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**Background:** In Nepal, women who inject drugs (WWID) make up a significant proportion (10%) of the total people who inject drugs. (NCASC, 2017) However, WWIDs are disproportionately affected by HIV and have significantly lower access to health services, including harm reduction services due to structural factors such as stigma, gender-based discrimination and violence, human rights violations, and criminalization.

Several efforts to introduce women-specific NSP services were made since 2008 but were not sustained. In 2021, women-specific NSP was finally established with funding from the Global Fund (Save the Children as PR) in five high-burden districts of Nepal.

**Description:** Women's Support Group (WSG), a women-led community organization, implemented the women-specific NSP services through a drop-in center (DIC) in Lalitpur District. WSG mobilized resources from VIIV Healthcare and AIDS Health Foundation to integrate primary healthcare services at the DIC, including free health check-ups, SRH services, abscess treatment, and referrals for legal aid and testing and treatment of STI and HCV – making it the only DIC in Nepal with inte-

grated services. WSG's NSP site has been recognized as a best practice in Nepal by funding partners and the government of Nepal.

**Lessons learned:** Through August 2021, a total of 214 women who inject drugs were reached (surpassing NCASC 2017 estimates of a maximum of 193 WWID in the district), of which 190 have been regularly accessing services, including NSP, educational sessions, and monthly free health check-ups.

Nearly 70% of the total reached were below the age of 30. The regularly accessing WWIDs have been tested for HIV through community-led testing every six months and to date, there have been no positive cases. However, there were notably high cases of unwanted pregnancies (n=7, aged 18-24 years) and STI (n=4, aged below 30 years) among WWIDs and all were referred for free treatment and successfully treated.

Two cases of HCV and 3 abscess cases were referred and successfully treated free of charge. Similarly, two WWIDs who reported intimate partner violence were referred for legal aid and both cases are still ongoing in court.

**Conclusions/Next steps:** WWIDs can effectively be reached through women-specific and women-led services, therefore, this model should be scaled up.

## WEPEE532

Community HIV programming and its contribution to national HIV epidemic control

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**Background:** In Ethiopia, female sex workers (FSWs) and their clients play a key role in HIV transmission dynamics. Of the estimated 240,000 FSWs in Ethiopia, 18.7% (44,880) are living with HIV, with a significant treatment gap of 72.5% by June 2023. Across 1,076 sub-national units (SNUs) nationally, USAID funds two geographically separate community Key Populations programs (PSI's MULU and Amhara KP) in 147 SNUs.

Implementation is through drop-in-centers (DICs), which are stigma-free, friendly centers strategically situated in FSW hotspots, offering a comprehensive package of biomedical, behavioral, and structural HIV prevention, care, and treatment interventions.

**Description:** Across the two USAID programs, 45 DICs in eight regions (33 ART, 12 non-ART) were supported over the two years, representing 32% coverage (85/265) of high HIV burden SNUs.

Based on analysis from MoH's national DHIS2 and our DATIM report for national fiscal years 2022/2023, we analysed USAID's two community KP programs' contribution



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towards national progress in HIV epidemic control across the HIV care cascade, with a specific focus on Mulu KP program's contribution.

**Lessons learned:** The two programs contributed 44% (121,385/272,866) of national FSW HIV testing, and 82% (7,629/9,332) of all new FSW HIV positives nationally over same period. 60.7% (7,490/12,325) of national FSW HIV treatment (TX-CURR) at end FY23 were on treatment at 33 ART DTCs across the two USAID funded programs. The remaining 39.3% accessed treatment at the approximately 120 public sector and other ART sites.

PSI's Mulu KP program implemented in 12% SNUs (129/1,076), achieved HIV case yield rates of 7.2% (twice higher the national average) over the two years. Despite accounting for 23.5% (64,694/272,866) of national FSW testing, the program contributed 49% (4,558/9,332) of all HIV positive FSWs nationally. 38.7% (4,767/12,325) of the national FSW TX\_CURR was also under the program's DTCs, with viral suppression rates of 98% as of end of FY 2023.

**Conclusions/Next steps:** HIV programming at community level is highly accepted and contributes over 60% national response for HIV services among FSWs. Targeted community HIV programming achieves greatly in national HIV epidemic control efforts and should be embraced as a feasible way forward for many African countries.

## WEPEE533

### Mental health and substance use disorders among people living with HIV initiating TB preventive therapy: a prospective cohort study in South Africa

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**Background:** TB preventive therapy (TPT) reduces TB-related mortality among persons living with HIV (PLHIV). 3HP, a shorter three-month TPT regimen of weekly isoniazid and rifapentine, is becoming widely implemented to potentially facilitate TPT completion. Mental health and substance use disorders are common among PLHIV, and there are associations between these conditions and re-

duced ART adherence. However, evidence around their prevalence in TPT-initiating PLHIV and impact on TPT adherence and completion is scarce.

We conducted a prospective cohort study to determine the prevalence and impact of mental health and substance use disorders on 3HP completion among PLHIV in South Africa.

**Methods:** We recruited PLHIV on ART initiating 3HP at two primary healthcare facilities in southwest Johannesburg, South Africa between August-December 2023. We defined 3HP completion as taking  $\geq 11/12$  recommended 3HP doses within 12 weeks monitored by electronic medication boxes. We measured anxiety (GAD-7  $\geq 5$ ), depression (PHQ-9  $\geq 5$ ), problematic alcohol use (AUDIT-C  $\geq 4$  (men),  $\geq 3$  (women)), and other problematic substance use (ASSIST  $\geq 4$ ) at enrollment.

We constructed a multivariate logistic regression including these four variables and adjusting for age, gender, and time on ART to determine their associations with 3HP completion.

**Results:** We enrolled 224 PLHIV, including 136 (61%) women; median age was 44 years (IQR 14) and median time on ART 7.2 years (IQR 7.1). Only 111 (50%) participants completed 3HP. Eighty-one (36%) participants screened positive for depressive symptoms and 63 (28%) for anxiety. Seventy-six (34%) reported problematic alcohol use, and 60 (27%) tobacco use, but fewer than 10% reported using other substances. In bivariate analysis, the odds of 3HP completion were substantially lower among those with anxiety (OR 0.63, 95%CI 0.35-1.13,  $p=0.12$ ), depressive symptoms (OR 0.45, 95%CI 0.26-0.78,  $p=0.005$ ) and problematic tobacco use (OR 0.54, 95%CI 0.29-0.98,  $p=0.044$ ), but not among those with problematic alcohol use (OR 0.69, 95%CI 0.39-1.20,  $p=0.19$ ).

Using a multivariate model adjusting for confounders, only depressive symptoms remained significantly associated with 3HP completion (OR 0.52, 95% CI 0.29-0.94,  $p=0.033$ ).

**Conclusions:** Anxiety, depressive symptoms, problematic alcohol use, and tobacco use were common among PLHIV initiating 3HP in South Africa. Depressive symptoms were strongly and independently associated with 3HP non-completion.

Future studies should explore whether integrating and strengthening mental health and substance use treatment for PLHIV initiating 3HP can improve 3HP completion.

## WEPEE534

Promoting access and adherence of combination HIV prevention interventions among adolescent and young people through HIV prevention indexing in Central and Copperbelt Provinces of Zambia

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**Background:** Adolescent and young people continue to be a population more vulnerable to acquiring new HIV. The ministry of health of Zambia in 2023 reported that 37% of the new HIV incidences were among adolescent and young people aged 15 to 24. The Zambia Population-Based HIV Impact Assessment (ZAMPHIA 2021) reported that 55.5% adolescents who had one sex partner were living with HIV.

The highest population in this study was females representing 74% (ZAMPHIA, 2021). USAID DISCOVER Health project implemented by JSI, aiming to reach adolescent and young people with combination HIV prevention services developed and rolled out HIV prevention indexing (HPI) strategy.

**Description:** HPI is an ethical model for reaching to sex partner of clients on pre-exposure prophylaxis (PrEP) with HIV prevention interventions. This intervention educates adolescent and young people on combination HIV prevention interventions.

Adolescent and young people (AYP) seeking PrEP were offered HIV prevention indexing with an opportunity to accept or decline with no implication to access of services. Data was collected and analyzed using Microsoft excel from October 2022 to September 2023.

**Lessons learned:** A total of 26,336 AYP were enrolled on PrEP from October 2022 to September 2023, males 9,954 (37.8%) while females 16,382 (62.2%). Those aged 15 to 19 were 7,574 (28.8%) and those aged 20 to 24 were 18,762 (71.2%). HPI was offered to 16,258 with 97% accepting giving us 21,892 sex partners. 14,041 (69.5%) were tested and 361 (2.6%) were found to be living with HIV while 13,680 tested negative. 8224/13680 (60%) received combined HIV prevention services (PrEP-80.4%, VMMC-20.6%). 2053/21892 (9.4%) partners were known status and on treatment. No seroconversion among those who had partners living with HIV was reported during the same period.

**Conclusions/Next steps:** HPI promoted access and adherence to combination HIV prevention interventions among adolescent and young people.

This strategy is recommended in Zambia recording high incidence rates of new HIV among adolescent and young people.

## WEPEE535

Unlocking untapped potential in HIV prevention: a comparative analysis of national PrEP guidelines in Kenya, Mozambique, Nigeria, South Africa, Uganda, and Zambia

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**Background:** Oral pre-exposure prophylaxis (PrEP) was approved by the US FDA for HIV prevention in 2012. In the last twelve years, while there have been an estimated 16.4 million new HIV acquisitions globally - 1.3 million in 2023 alone - there were fewer than six million cumulative PrEP initiations. Introduction of new PrEP products and simplification of PrEP delivery offer opportunities to increase coverage and choice.

However, impact will be limited unless there is an enabling policy environment to address delivery, supply and demand-side bottlenecks.

**Description:** We conducted a comparative analysis of national guidelines in six high-volume PrEP programs in sub-Saharan Africa to identify opportunities for improving the PrEP policy environment. This analysis assessed seven policy areas, informed by the latest WHO recommendations and implementation guidance on differentiated and simplified PrEP for HIV prevention.

Country	Products: Inclusion of new PrEP products (e.g., ring, injectable)	Access: Prioritization of PrEP offer to those requesting PrEP	Access: Pregnant and breastfeeding women are eligible for oral PrEP	Testing: Optional creatinine screening for those <30 years without kidney-related comorbidities	Testing: Use of HIV self-testing for oral PrEP initiation	Use: Use of HIV self-testing for oral PrEP continuation	Use: Inclusion of event-driven oral PrEP
Kenya	Yes	No	Yes	Yes	No	No	Yes
Mozambique	No	Yes	Yes	Yes	No	No	Yes
Nigeria	No	No	Yes	No	No	No	Yes
South Africa	No	Yes	No	Yes	No	No	No
Uganda	Yes	Yes	Yes	Yes	No	Yes	Yes
Zambia	Yes	Yes	Yes	Yes	No	Yes	Yes

**Lessons learned:** Across all six countries, there are opportunities to optimize PrEP policies to improve person-centered services. Some policy areas demonstrate strong alignment with WHO recommendations, including oral PrEP eligibility during pregnancy and breastfeeding, optional creatinine screening, and event-driven oral PrEP. However, other areas - such as use of HIV self-testing and inclusion of new PrEP products - have been less widely adopted. Of the countries assessed, Uganda and Zambia's guidelines reflect the strongest alignment with WHO recommendations; likely due to their recent publication. Nigeria's guidelines offer the greatest potential for strengthening across the PrEP cascade.



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**Conclusions/Next steps:** Despite years of experience in high-volume programs, there are significant policy gaps across the PrEP cascade. While new PrEP modalities offer opportunities to better meet user needs, adequate policies must be in place to support choice, access, uptake, and use. Given persistent oral PrEP policy barriers, countries must ensure policy assessments are incorporated into introduction strategies for new products, with plans to review policy landscapes with emerging evidence. Countries may also consider releasing interim policy updates or addendums to ensure programming remains aligned with the latest evidence in prevention science.

## WEPEE536

### Developing a practice-driven taxonomy of implementation strategies for HIV prevention

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**Background:** Effective implementation of evidence-based HIV interventions continues to be a challenge, and the field is increasingly turning to implementation science for solutions. Much of this research is focused on developing and defining specific implementation strategies -- methods and techniques designed to enhance adoption and sustainment of interventions in practice. However, there is a fundamental disconnect between the implementation science literature, which focuses almost exclusively on systems-level and program-level strategies that impact provider-level implementation outcomes, and the needs and interests of HIV prevention researchers and front-line practitioners, who focus almost exclusively on provider-level strategies to impact client-level intervention adoption and sustainment. There is an urgent need to expand the existing taxonomy of implementation strategies to better reflect work being done in the field.

**Description:** We developed and piloted a method for developing a taxonomy of practice-driven implementation strategies, collaborating with five community-based health centers in the Southeast US. Through document review and qualitative interviews with implementers at each site (N = 30), we employed an inductive and iterative cross-case analytic approach to specify and categorize strategies, according to standard implementation science definitions and frameworks.

**Lessons learned:** From an initial matrix of 264 activities, we identified 50 strategies common across sites. The majority (68%, n = 34) did not map onto existing ERIC

strategies and were focused on client-level outcomes. From these, we identified seven novel implementation "clusters" that can be used to extend and enhance the practice-based utility of existing implementation science classifications. Implementers did not use implementation outcome language to describe their efforts, but explained their strategy objectives in terms of common EHE goals, e.g., increase HIV testing rates, identify PrEP candidates, which could be conceptualized as practice-specific "targets of action."

**Conclusions/Next steps:** This project demonstrates the feasibility and utility of this method for developing a practice-driven implementation science vocabulary for HIV prevention. For practitioners, these data provide information about concrete strategies they might consider for their own programs, accelerating the program development process.

For researchers, our practice-driven taxonomy is designed to draw attention to the needs and priorities of implementers as researchers apply implementations science frameworks and methods to achieve EHE goals.

## WEPEE537

### Use of virtual platforms to promote prevention health services amongst key population in a low-income setting, Mozambique

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**Background:** Key populations are marginalized groups who often have disproportionate access to health information and limited social support and physical safe spaces. As a result, key populations have vibrant online communities, which allow dispersed community members to create virtual peer groups and safe spaces. In 2022-2023 the National HIV Program in Mozambique, developed a virtual campaign for the promotion of HIV prevention services for these key populations.

We highlight below key lessons learned including selection of peer ambassadors.

**Description:** The virtual campaign for promoting HIV prevention services amongst MSM and TG was developed alongside peer focus groups. A social profiling method was designed for targeted populations. Peer ambassadors with considerable followers were identified, as well as non-peer influencers with strong collaboration with at governmental level for the promotion of anti-stigma and discrimination messages. In a period of 1 year, a variety of prevention messages as well as truth or myth questions (HTC, PrEP, condoms, lubricants, GBV and STIs) were posted and boosted for a further reach on a weekly basis. Livestreams and surveys were done, as well as using the direct channel to communicate non-general health messages such as vaccination campaigns to Key Populations.

**Lessons learned:** The right profile ambassadors were identified to reach and promote interaction with the campaign. The focus groups with key populations. was key to a success, making the campaign flexible and allowed for a quick change of dynamics to meet clients' needs. A total of 532 283 were reached. of which 70% were men 18-44 years old, which includes the age group most affected by the HIV epidemic.

**Conclusions/Next steps:** The experience demonstrated the feasibility of using virtual applications to promote health services to this group. This approach creates a virtual positive space to express health concerns and a direct channel to a health specialist. With the support of donors, these campaigns will be scaled up in 2024. Even in low-income settings, key populations tend to have significant internet access and membership. Therefore, social profiling methods in virtual applications are relevant opportunities with significant impact on their health choices.

## WEPEE538

### Empowering girls: a randomized trial on mHealth 'safe spaces' during COVID-19

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**Background:** Adolescents in developing countries encounter barriers to accessing sexual and reproductive health (SRH) services, including stigma and cultural obstacles. Public health crises like COVID-19 exacerbate these challenges. The World Health Organization (WHO) recognizes the potential of mobile health (mHealth) technologies in improving adolescent health outcomes, but there is limited evidence on their impact.

Previous studies on mHealth interventions for women and girls using text messages or interactive voice response (IVR) programs have shown limited or negative effects. This study investigates the impact of a phone-based "safe space" program in Botswana, addressing HIV risk and SRH for adolescent girls during COVID-19 school disruptions.

Conducted by the NGO "Youth Impact" in Botswana, the study adapted an in-school anti-sugar daddy program to a 1-on-1 phone call-based safe space program. The program included four 20-minute weekly calls covering HIV risk, contraception, and healthy relationships, with emotional support and health service referrals.

**Methods:** A randomized control trial with 1200 adolescents aged 14-17 during school disruptions was used to assess knowledge, agency, mental health, pregnancy, and school dropouts. Data collection involved school records and phone surveys conducted in 2020 (baseline) and 2021 (endline). Analysis was using multivariate regression in stata.

**Results:** The program significantly increased knowledge about partner HIV risk (16%pt) and support services (29%pt).

Participants reported improved empowerment and control over their sexual and reproductive health (11%pt) and increased willingness to share sensitive experiences. Six months post-program, there was a significant reduction (3%pt/80% reduction) in school dropouts and pregnancies among the treatment group. These effects were all statistically significant.

**Conclusions:** The program had a positive impact on longer-term behaviors, suggesting that phone-based safe spaces can be an effective tool for behavior change.

Our study provides evidence that phone-based safe spaces can be an effective tool for improving adolescent health outcomes, even during a major public health crisis such as COVID-19. The program we studied was cost-effective and easy to implement, making it a potentially scalable solution for addressing SRH challenges in developing countries.

## WEPEE539

### Equalizing access to Pre-exposure Prophylaxis (PrEP) among key populations through a digital health hub in Central and Copperbelt provinces of Zambia

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**Background:** Pre-exposure Prophylaxis (PrEP) reduces HIV transmission by over 90% when taken consistently and correctly. However, access to PrEP among key population groups such as men who have sex with men (MSM), female sex workers (FSW), people who inject drugs (PWID) and transgender people (TG) remains suboptimal due to associated stigma and discrimination despite their disproportionately high risk of HIV acquisition.

To promote PrEP access and uptake among KPs, the USAID DISCOVER-Health project, implemented by JSI, launched the Stealth Virtual Clinic (SVC) in February 2023. The SVC is a digital platform that promotes virtual access to PrEP information, and other health services, and directs clients to in-person services, if required.

**Description:** The SVC provides a convenient platform for KPs to receive PrEP services through safe spaces without stigma and discrimination. The SVC involves the use of technology, including a Quick Response (QR) code and mobile short code to request for PrEP services from a safe space and location is identified by a social network mentors directs services providers to the client. Quantitative data was collected and analysed using Microsoft Excel extracted from the Project PrEP management system called Real-time Information Management System (RIMS) at baseline and endline.



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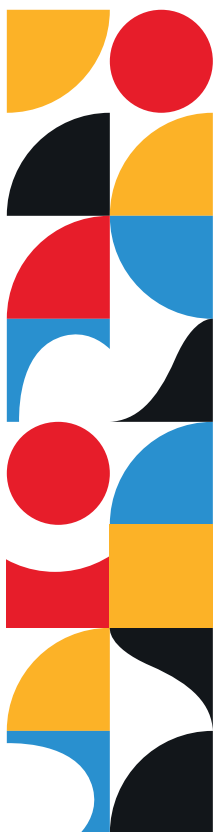
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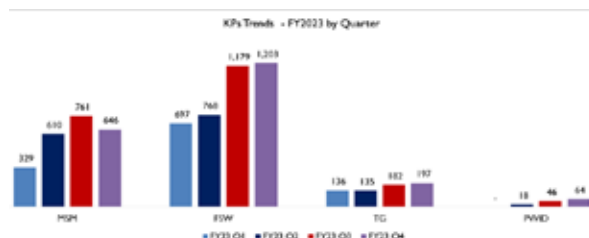
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**Lessons learned:** In January to March, 2023 first quarter of the financial year, 2023 (FY23 Q1), before the SVC launched, key populations contributed 1531 of the project's overall PrEP clients. In FY23 Q4, July to September 2023, the number of key populations accessing PrEP on the virtual platform significantly increased to 5,809 people.

**Conclusions/Next steps:** The SVC platform increased access to PrEP by all the key population subpopulations. Investing in virtual platforms for PrEP delivery increases uptake among high risk populations which would ultimately reduce HIV incidence rates.

## WEPEE540

Developing social behavior change products using Human-Centered Design to promote the roll out of CAB-LA in Zambia

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**Background:** In Zambia, the adoption of long-acting injectable cabotegravir (CAB-LA) as an innovative HIV pre-exposure prophylaxis (PrEP) marks a significant step in providing continuous protection for individuals facing heightened risks of HIV infection. With the recent endorsement of CAB-LA by the World Health Organization (WHO) as an additional prevention method. USAID CHEKUP II, is mandated to provide injectable PrEP to key populations in Nakonde District in Zambia.

**Methods:** The development process adhered to a human-centered design methodology, focused on enhancing products and services with a user-centric perspective. Employing participatory methods, the team conducted group interviews and in-depth interviews with potential end users' of Injectable PrEP. This methodological choice aimed to go beyond mere data collection by fostering a deeper understanding of the participants' experiences. The approach emphasized placing the target audience at the forefront of SBC interventions to ensure prioritized focus on their needs and preferences.

**Results:** A total of 84 respondents (43 male and 41 female) underwent 11 group interview discussions (GIs) and 10 In-depth Interviews (IDIs), ensuring diverse perspectives. The results reveal several positive aspects of CAB-LA, including

a high level of acceptability across all groups, a notable reduction in pill burden, and the perceived benefits of privacy and confidentiality associated with injectable PrEP. Respondents highlighted the convenience and improved adherence, particularly for female sex workers (FSWs) who found it easier to adhere to treatment with their busy schedules. Common concerns across all groups included the fear of pain at the injection site, reluctance to expose their bodies to healthcare providers, and the apprehension of being labeled as HIV positive, impacting HIV testing. While healthcare workers were seen as champions for PrEP services, there were reservations about potential judgment, lack of confidentiality, and insufficient knowledge about CAB-PrEP.

**Conclusions:** Findings highlighted concerns, influencing the development of tailored SBC strategies for a successful Injectable PrEP rollout. The findings emphasize the necessity of targeted SBC approaches that address awareness, information gaps, cultural considerations, and the perspectives of healthcare providers in the context of introducing CAB-LA.

### WEPEE541

Examining and classifying reasons for missing viral load measurements among adults living with HIV: an extended outcome investigation and ascertainment approach in Western Kenya

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**Background:** Only 5% of people living with HIV in Sub-Saharan African countries account for two-thirds of the countries' total viral load. To address gaps in viral load monitoring, we conducted a study applying an investigation approach to examine and classify reasons for missed viral load measurements among adults living with HIV in Kenya.

**Methods:** We developed an extended outcome investigation tool to examine missingness and reasons for missed on-time routine viral load monitoring measurements among participants enrolled in the Adaptive Strategies for Preventing and Treating Lapses of Retention in HIV care (AdaPT-R Study; NCT#02338739). Viral load measurements among adults is monitored 6 months post ART initiation and thereafter annually.

We defined missed viral load as no viral load measurement results within 9-15 months in the first year of study and between 21-27 months in the study post ART initiation. Data was collected between March 2016 and September 2019.

We used descriptive statistics to determine the prevalence and reasons for missing viral load measurements and generalized linear models to determine the patient-level characteristics associated with missed viral load measurements.

**Results:** Among the 1754 study participants who were investigated using the extended outcome investigation, 66.0% were female. The prevalence of missed viral load in years 1 and 2 was 27.6% and 30.4%. Reasons for missed viral load were being lost to follow-up (51.5% in year 1 and 57.8% in year 2), misinterpretation of viral load guidelines on monitor timing among clinicians (36.7% in year 1 and 32.2% in year 2), unknown reason (10.3% in year 1, and 8.6% in year 2), and viral load requested but no evidence of sample collection (1.5% in year 1 and 1.3% in year 2). Patient characteristics associated with missed viral load monitoring included younger ages < 24 years (RR 2.27, 95% CI: 1.66-3.12), higher SES (RR 1.47, 95% CI: 1.03-1.91), receiving HIV treatment at a rural clinic (RR 1.22, 95% CI: 1.02-1.46), and advanced HIV disease (RR 2.39, 95% CI: 1.52-3.73).

**Conclusions:** Innovative, scalable, and sustainable approaches to strengthen timely patient clinical monitoring in accordance with guidelines are urgently needed to achieve universal viral suppression among patients living with HIV.

### WEPEE542

Identifying core components of a male-specific person-centered care intervention for scale-up in Sub-Saharan Africa and other low-resource settings

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**Background:** Men living with HIV (MLHIV) experience high rates of treatment interruption (TI), resulting in increased morbidity, mortality, and viremia. Person-centered care (PCC) tailored to men can improve men's ART engagement. Identifying locally contextual, core components of PCC counseling is necessary for effective implementation and scale-up. We conducted a qualitative sub-study with MLHIV to identify core components of a male-specific PCC counseling curriculum in Malawi.

**Methods:** Two parent trials (IDEaL and ENGAGE; Clinicaltrials.gov #s NCT05137210/NCT04858243) enrolled MLHIV ≥15 years not currently in care (either never initiated ART or experiencing TI >28 days). The trials aimed to improve six-month retention among men experiencing TI using a male-specific PCC intervention. Of 1,309 men enrolled, a random subset of 97 MLHIV were selected for qualitative in-depth interviews (IDIs) at 3- (n=36) and 9-months (n=61) to assess core components of the intervention. Data were analyzed using thematic and content-based analysis in Atlas.ti v.9.



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**Results:** Of 97 MLHIV interviewed, median age was 38, median time since ART initiation 4-months, 89% were actively on ART at interview. Participants identified core service components related to access, quality, and support. Efficient services, undivided healthcare worker (HCW) attention and respect, privacy, and persistent tracing efforts were considered critically impactful for male-PCC. MLHIV wanted to feel that HCWs "never give up on them" as if "they were family".

Some wanted ongoing relationships with HCWs. Men also expressed need for male-tailored HIV messaging which highlights ART's contributions to men's goals and societal roles and acknowledges that lifelong adherence is difficult, requiring self-compassion. Incorporating graphics depicting MLHIV living normal, healthy lives into counseling tools was also impactful for men (Figure).



Figure. Core components of a person-centered counseling intervention targeting men experiencing treatment interruption in Malawi\*.

**Conclusions:** MLHIV need services that prioritize access, quality, and support tailored to their male experiences. Additional research is needed to assess how an intervention with these core components can be taken to scale.

## WEPEE544

Moving towards HIV epidemic control through community and facility-based strategies: findings from ART Surge implementation in Oyo State, Nigeria

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**Background:** In April 2019, the antiretroviral therapy (ART) surge program was launched in nine Nigerian states to rapidly increase the number of people living with HIV receiving ART. Expanded and targeted community HIV testing services (HTS) as well as intensified facility-based HIV services were shown to be effective in identifying people living with HIV as well as initiating and retaining them on treatment.

The success recorded in the program facilitated the scale-up to other states in southwest Nigeria, including Oyo State.

This study examined the ART surge program in the first six months of its implementation and how it has helped Oyo State progressively move towards achieving epidemic control.

**Methods:** A cross-sectional study design was employed. The weekly ART surge performance data from March to September 2021 was generated, analyzed, and compared with six months before the onset of the ART surge (September 2020 to February 2021). Abstracted data from the National Data Repository, including the number of clients tested for HIV and received results, the number of HIV clients who tested positive, linkage rates, interruptions in treatment rates (IIT), viral load coverage, and viral suppression, were analyzed using Microsoft Excel. All clients who received HTS across Oyo State during the period were included in the analysis.

**Results:** A total of **119,959** people were tested for HIV from September 2020 to February 2021. Of those tested, 4,108 (3.4%) tested positive for HIV, with yields of 4.7% and 2.1% in the facility and community, respectively. Comparing the pre-surge and post-surge periods, we observed an increase in HIV testing from **71,450 to 119,959 (68% increase)**. The number of HIV-positive individuals identified increased from **1,250 to 4,108 (a 229% increase)**. Of those newly identified positives during the surge, **99.8% (4099/4108)** were linked to ART, compared to **98.5% (1231/1250)** pre-surge. IIT reduced from **5.4% to 0.8%**, viral load coverage increased from 88% to 94%, and viral suppression improved from **86% to 94.2%**.

**Conclusions:** ART surge implementation with expanded and focused community HIV testing programs, as well as enhanced facility-based HIV services and data-driven decision-making, has led to improvements in HIV case finding, retention, and viral suppression.

## WEPEE545

Telemedicine to improve health equity in two federally qualified health centers in Los Angeles: is telephone the answer?

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**Background:** Telemedicine for HIV care has increased in the U.S., but resource-constrained federally qualified health centers (FQHCs) usually offer only telephone visits (versus well-resourced clinics which offer video visits), raising equity concerns. We developed a multi-pronged intervention to improve the offer and uptake of video telemedicine at two FQHCs in Los Angeles.

**Methods:** Between August 2022-October 2023 our inter-


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vention included: (1) a user-friendly platform for video visits (Doximity); (2) clinician and staff training and reminders to offer telemedicine, including the choice of video; (3) an on-site telemedicine navigator; and (4) quarterly quality improvement meetings. We conducted baseline and endline surveys with people living with HIV (PLHIV) with questions on sociodemographics, clinical characteristics, and perceptions of and experiences with telemedicine. We also reviewed charts for visit type (telephone, video, or in-person) and completion rates before and during the intervention.

**Results:** Of 172 PLHIV enrolled, the median age was 52 years (IQR 38-60); 87% spoke English and the remainder Spanish; and 75% (n=129) identified as cisgender men, 20% (n=35) as cisgender women, and 5% (n=8) as transgender women or non-binary. Telemedicine visit volume did not significantly change with the intervention (14% pre-, 18% post-intervention,  $p=0.4$ ) (Figure). Clinicians reported no challenges with telemedicine, but perceived a strong client desire for telephone over video visits, and thus reported not offering video. Telephone visits had the highest visit completion rate (82%), followed by video (64%) and in-person (59%). Viral suppression did not significantly change with introduction of the intervention (79% <40 copies/mL pre-, 84% copies/mL post-intervention,  $p=0.5$ ).

VISITS	Pre-intervention: March 2021 - July 2022	Intervention: August 2022 - October 2023
Total number of all visits (n)	1908	1262
In-person visits (n, % of all visits)	1452 (87)	1032 (82)
Completed (n, % of in-person visits)	979 (55)	610 (55)
Rescheduled	219 (13)	206 (20)
No-show	353 (21)	141 (14)
Other (cancelled or walk out)	101 (6)	75 (7)
Telephone visits (n, % of all visits)	243 (13)	208 (16)
Completed (n, % of telephone visits)	214 (88)	170 (82)
Rescheduled	9 (4)	12 (6)
No-show	13 (3)	19 (9)
Other (cancelled or walk out)	7 (3)	7 (3)
Video visits (n, % of all visits)	8 (<1)	22 (2)
Completed (n, % of video visits)	5 (63)	14 (64)
Rescheduled	1 (12)	3 (14)
No-show	1 (12)	3 (14)
Other (cancelled or walk out)	1 (12)	2 (9)

Figure. Total visits scheduled (by visit type and visit status) during pre-intervention and intervention periods.

**Conclusions:** Telephone remained the predominant modality for telemedicine in these two FQHCs, despite an intervention to improve offer and uptake of video. Telephone visits play an important role in care at FQHCs. The possible end of reimbursement for these visits due to cessation of COVID-19 emergency measures could widen disparities for PLHIV.

## WEPEE546

### Tracing PLHIV lost to follow-up in countries of Eastern Europe and Central Asia (EECA): lessons learned

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**Background:** In EECA, of 1.24 million PLHIV who know their status, 220,000 (18%) are lost to follow-up (LTFU). Since 2020, the Elton John AIDS Foundation has supported 13

community-based projects across 8 countries in the region that included LTFU identification, tracing and return to ART.

**Description:** Project activities included:

1. Outreach to key population communities (people who use drugs, men who have sex with men, transgender people and sex workers) with HIV testing where PLHIV who know their status but not receiving ART have been identified;
2. Home visits by peer counselors together with HIV clinic staff to PLHIV who missed their clinic appointments by more than 28 days; and,
3. Motivational counseling, psychosocial support and peer navigation services to return LTFU PLHIV and (re-)initiate them on ART.

**Lessons learned:** The projects traced almost 49,200 LTFU; 24,047 (48.8%) were traced successfully; and 18,830 (89.3%) were (re-)initiated on ART.

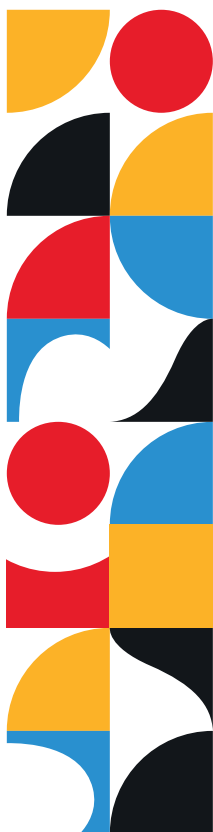
Major challenges included:

1. PLHIV status disclosure by health providers to peer counsellors;
2. Poor success in tracing long-time LTFU;
3. Incorrect information on ART initiation among health providers (CD4 counts) and PLHIV (feeling well) alike;
4. Myths and fears among PLHIV about ART;
5. Barriers to clinic access (travel time and distance, transportation costs, operation hours);
6. Stigma, including self-stigma;
7. Non-disclosure of HIV status to family and lack of support;
8. Active drug use by PLHIV;
9. ART stock-outs and suboptimal treatment regimens with side effects.

Implementing partners resolved these challenges by:

1. Hiring peer counselors as HIV clinic staff and signing non-disclosure agreements;
2. Tracing LTFU as early as possible;
3. Educating health providers and PLHIV;
4. Covering transportation costs to HIV clinic for LTFU and providing other material incentives;
5. Extending clinic working hours into evenings and weekends;
6. Providing individual and group counseling for PLHIV and their family members;
7. Referring PLHIV to drug rehabilitation; and,
8. Optimizing ART regimens, including people who use drugs.

**Conclusions/Next steps:** Implementing partners documented and costed the models of LTFU tracing and (re-)initiating on ART. Immediate next steps are for governments to assume these costs and functions to reach the "third 95" in the EECA region.





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## WEPEE547

### Retention outcomes among Malawian ART clients who are back to care following an interruption in treatment

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**Background:** Sustained antiretroviral therapy (ART) is critical for optimizing health outcomes and HIV epidemic control. The Malawi Ministry of Health and its HIV clinical partners implement a robust back to care program for clients who have an interruption in treatment (IIT), defined as being >28 days late for an ART refill appointment. However, the effectiveness of these programs for short- and medium-term retention after IIT is uncertain.

**Description:** Partners in Hope (PIH) is a Malawian, non-governmental organization, supporting HIV Care and Treatment across 9 districts in Malawi with PEPFAR/USAID funding. From January 2021, PIH offered a comprehensive package of interventions to clients across 74 health facilities who returned to care after IIT. Pivotal in this package is assignment to an individual Case Manager, a lay cadre staff trained in health education and HIV counseling.

Case Managers provided intensive individual counseling and psychosocial support with a non-judgmental, welcoming approach, appointment reminders and phone and/or house follow-up 7 days after a missed appointment. PIH evaluated aggregated cohort program data to determine client outcomes at 3, 6 and 12 months after return to care from an IIT episode in this program.

Return after IIT (n=32,732)	3-Month Outcomes	6-Month Outcomes	12-Month Outcomes
On ART	27,758 (84.8%)	23,873 (72.9%)	19,616 (59.9%)
Re-interrupted (IIT)	3,509 (10.7%)	6,540 (20.0%)	9,804 (30.0%)
Died	122 (0.4%)	205 (0.6%)	307 (0.9%)
Stopped ART	23 (0.1%)	38 (0.1%)	50 (0.2%)
Transfer Out	1,320 (4.0%)	2,010 (6.1%)	2,825 (8.6%)
Unknown	0 (0.0%)	66 (0.2%)	130 (0.4%)

Table. Aggregated cohort outcomes of clients back to care after IIT from January 2021 to September 2022

**Lessons learned:** From January 2021 to September 2022, 32,732 clients (all ages) returned to care after IIT. Retention on ART was 84.8%, 72.9% and 59.9% at 3, 6 and 12 months respectively. Within one year of returning to care, 30.0% of clients re-interrupted and 1.1% died or stopped treatment.

**Conclusions/Next steps:** Despite comprehensive interventions, a high number of clients fell out of care following re-engagement. Further research is needed to fully understand the characteristics of clients who re-interrupt to design interventions that respond better to their needs and challenges. Meanwhile, screening for and addressing already known risk determinants is taking place, including those related to mental health, gender-based violence, mobility and age- or gender-specific factors.

## WEPEE548

### Roles and experiences of community action workers in a community-based antiretroviral therapy delivery model for people living with HIV in Cambodia: a mixed-methods cross-sectional study

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**Background:** The Community-Based Antiretroviral Therapy (ART) Delivery (CAD) model incorporates Community Action Workers (CAWs) to enhance care engagement for people living with HIV (PLHIV), thereby alleviating the burden on ART clinics. This study delves into the roles and experiences of CAWs in implementing CAD among stable PLHIV in Cambodia.

**Methods:** This study utilized both quantitative and qualitative data collected in May 2023 to evaluate the effectiveness of the CAD intervention within a quasi-experimental framework. The research spanned the capital city and nine provinces of Cambodia. CAW-related data, encompassing incurred expenses, time allocation, support and satisfaction levels, and perspectives on their roles in program implementation, were analyzed. Descriptive statistics assessed proportional differences in categorical responses, while qualitative data underwent coding and analysis using a thematic analysis framework.

**Results:** Among the 76 participants, 52.6% were male, and 61.8% were married. The mean age was 48.0 years, ranging from 18 to 72 years, with a mean education completion of 8.4 years (ranging from 0 to 16 years).

Most participants (96.1%) utilized motorcycles for travel, spending an average of 5.8 times per month (ranging from 1 to 66) to meet PLHIV. Participants engaged with about 10 PLHIV monthly (ranging from 1 to 35). The major-

ity reported incurring expenses (84.2%), primarily related to food (median 1.35 USD; IQR 0.37-2.45) and travel costs (median 2.45 USD; IQR 1.96-4.90). Participants expressed confidence in their knowledge and resources to support their members (93.4%), and 80.3% perceived their relationship with personnel at the ART clinics as good. Their reported responsibilities included distributing medicines, counseling, and organizing meetings. They deemed their work essential, citing significant contributions to community support, assistance with ART medication accessibility, and patient monitoring.

**Conclusions:** This study highlights the multifaceted responsibilities undertaken by CAWs and emphasizes the pivotal significance of recognizing their roles in augmenting the effectiveness of the CAD model.

As the CAD model assumes a pivotal role in community-based HIV care delivery, these insights make valuable contributions to better understanding and enhancing support for CAWs in Cambodia and similar settings.

## WEPEE549

### Preferences for long-acting antiretroviral therapy among people with HIV in Kenya: a discrete choice experiment

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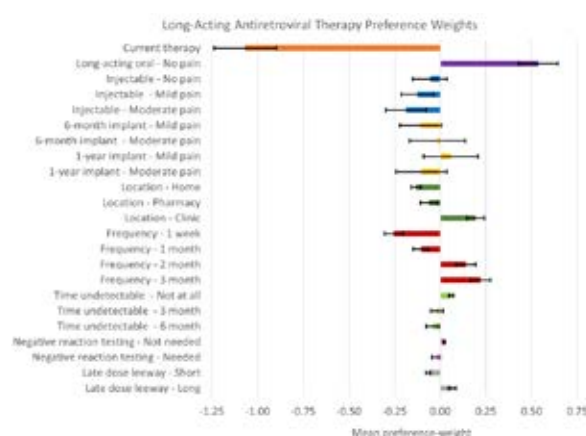
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**Background:** For people with HIV (PWH), long-acting antiretroviral therapies (LA-ART) are promising alternatives to daily oral regimens, with potential to improve adherence and increase viral suppression. Understanding client preferences is crucial for successful implementation and scale up of LA-ART in resource-limited settings such as Kenya. To that end, we are conducting a discrete choice experiment (DCE) to elicit preferences for LA-ART attributes among PWH in Kenya.

**Methods:** We are recruiting 700 PWH from the Kenyatta National Hospital HIV clinic and Sex Workers Outreach Program clinics in Nairobi. In 17 choice scenarios, participants choose between their current daily oral regimen and two hypothetical LA-ART alternatives defined by seven attributes: delivery mode, administration location, frequency, delivery-site pain, pre-treatment viral suppression, pre-treatment negative reaction testing, and late-dose leeway. In preliminary analyses, we used conditional

logistic regressions with interactions between mode and pain to examine the relationship between choices and attributes.

**Results:** As of January 15, 2024, 650 participants had been enrolled, with median age of 35.5 years (range: 18-70); 65% were female, 81% had undetectable viral loads, 55% were sex workers or men who have sex with men, and 6.5% were ART naïve. Participants generally chose the hypothetical LA-ART regimens over their current daily oral ART. The interaction of delivery mode and pain was the most important attribute. Oral LA-ART without pain was the most preferred mode, with 1-year implants with mild pain as the next preferred option. There was preference for administration at clinics and less frequent dosing. Results will be updated upon recruitment completion.



**Conclusions:** Participants favored hypothetical LA-ART alternatives to current daily oral regimens and demonstrated strong preference for oral LA-ART.

Our preliminary findings suggest LA-ART could be acceptable to PWH in Kenya, with client preferences for mode, pain, administration location, and dosing frequency the most important attributes to consider for successful scale up.

## WEPEE550

### Outcomes of Tenofovir, Lamivudine, Dolutegravir-based antiretroviral therapy for adults with HIV - a retrospective subpopulation study at 15 districts in South Africa

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**Background:** In 2020, South Africa adopted Tenofovir, Lamivudine, Dolutegravir (TLD) first-line antiretroviral therapy (ART) for people living with HIV. Although clinical evidence shows TLD has superior efficacy, tolerability, and fewer discontinuations, there is limited data on clinical outcomes in non-trial settings.



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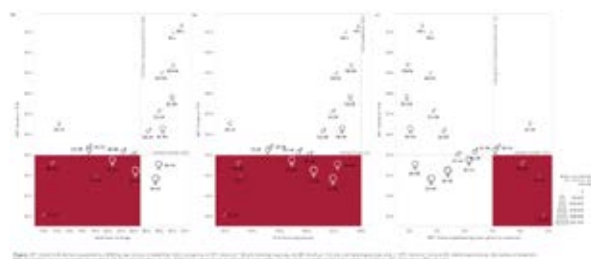
We demonstrate TLD's variable impact on viral load coverage (VLC), viral load suppression (<1000 copies/ml) (VLS) and interruptions in treatment (IIT) in USAID-supported districts in South Africa.

**Methods:** We retrospectively reviewed routine aggregate data reported for September 2020 through September 2023. We analyzed TLD coverage, VLC, VLS and rates of IIT. Data for clients on ART aged  $\geq 20$  years in 15 South African districts were included. Benchmarks for TLD coverage (85%), VLC (85%), VLS (90%), and IIT (5%) were used to group subpopulations in quadrants and identify groups with undesirable outcomes.

**Results:** By September 2023, 2,125,218 clients were on ART (female:69%, male:31%). TLD coverage was 47% (females:43%, males:56%) in September 2020 and increased by 38% (females:85%, males:86%) to 85% by September 2023. VLC and VLS increased gradually as TLD coverage increased for both males (VLC: 2020:76%, 2023:82%; VLS: 2020:71%, 2023:78%) and females (VLC: 2020:79%, 2023:85%; VLS: 2020:75%, 2023:82%). IIT remained similar over time irrespective of sex (3-6%).

In September 2023, TLD coverage, VLC, and VLS was lower among males 20-34, and females 30-34 years compared to other subpopulations (Figure A/B).

Males 25-34 years experienced the highest IIT (Figure C). Despite having 1-2% higher TLD coverage, young women (20-29 years) had lower VLC and VLS, and higher IIT than other subpopulations (Figure).



**Conclusions:** Overall, increases in TLD coverage had favorable outcomes for ART clients. However, younger males and females of reproductive age experienced lower TLD coverage and worse outcomes.

For sustainable epidemic control, routine analyses at subpopulation levels are critical to identifying remaining gaps and developing targeted interventions.

## WEPEE551

### "Closer to a cure": mixed-methods analysis of reasons for switching to long-acting injectable Cabotegravir + Rilpivirine

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**Background:** Research into why people choose to switch to long-acting injectable cabotegravir and rilpivirine (LAI CAB+RPV) has mainly produced survey data describing the challenges of oral therapy (e.g., pill fatigue, adherence anxiety, daily reminder of HIV status, inadvertent disclosure).

This study explores motivations and experiences that go beyond avoidance of oral therapy. In-depth attention to patient experience can reveal unanticipated motivations for switching.

**Methods:** ILANA is a 1-yr implementation study exploring acceptability and feasibility of on-label LAI CAB+RPV every 2 months. Inclusive recruitment was conducted throughout 2022 with targets for 50% women, 50% racially minoritised people, and 30% aged >50. ILANA is a mixed-methods longitudinal study, with iterative qualitative-quantitative data collection via quarterly surveys between M0 and M12 and semi-structured interviews with 14 patient participants at M0 and M12. Baseline survey data was summarised using descriptive statistics. Theoretically-informed interview narrative summaries were analysed thematically. Mixed-method data analysis was integrated and iterative. We present analysis of baseline survey and M0 and M12 interview data on motivations for switching to LAI CAB+RPV.



**Results:** 114 participants [53% female, 51% Black, 30% White, 40% >50yrs]. Median of 13 yrs (IQR 8,19) since diagnosis, 11 yrs (IQR 7,16) on ART, with a mean of 3 prior regimens. At baseline, 14% identified wanting to try a new approach as the most important reason for switching. The most common reasons for switching included ease of socialising (61%), wanting to try a new approach (60%), not carrying pills when travelling (57%), convenience (54%), and avoiding inadvertent disclosure (45%) and the daily reminder of HIV (45%).

The interviews revealed that LAI CAB+RPV offered many participants a sense of positive change in the context of living with a chronic condition, with some equating this to progress towards a cure. While pill fatigue characterised most participants' experiences of oral treatment, LAI CAB+RPV also created hope and new possibilities for the future.

**Conclusions:** LAI CAB+RPV can offer positive psychological improvements beyond the reduction of burdensome adherence experiences, with implications for how and to whom it is offered.

Further research is needed to measure longer-term improvements in quality of life that injectables may offer.

## WEPEE552

### Optimizing viral load coverage using a combination approach for hard-to-reach areas: a case from Chama district in the Eastern Province of Zambia

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**Background:** To achieve desirable HIV treatment outcomes and health, people living with HIV (PLHIV) must maintain a sustained viral suppression. Meaningful estimation of viral load suppression (VLS) rates is dependent on higher viral load coverage (VLC) among eligible PLHIV. VLC is also essential for monitoring progress towards HIV epidemic control. In 2022, VLC in Chama district was at 49% of eligible clients compared to the 88% provincial average.

This limited care providers' ability to offer quality monitoring of treatment or conduct meaningful estimation of VLS rates for the district.

The CDC technical assistance project implemented a combination intervention approach to optimize VLC in Chama district to reach 80% by the end of 2023.

**Description:** To close identified gaps in the VL value chain, the project completed the following interventions: between October 2022 to October 2023:

- Trained 33 facility and community-based personnel in community VL sample collection using DBS cards.
- Trained 7 laboratory staff in point of care VL and early infant diagnosis analysis.
- Conducted live, interactive community radio programs on VL monitoring.
- Synchronized pharmacy and VL sample collection appointments.
- Sent clients web-to-SMS reminders for sample collection and conducted follow-ups using case management approach.
- Decentralized sample collection to the community.
- Supported real-time transmission of electronic results, prompt update of results in clients' electronic records, and improved data use.

**Lessons learned:** Following the interventions, overall VLC increased from 49% (baseline) in October 2022 to 91% in October 2023 (endline), resulting in a significant increase of 42% ( $p<0.0001$ ). Stratified data by age group shows lower VLC (82%) among adolescents and young people (AYP) compared to adults (88%), a concern when considering of treatment as prevention in AYPs since actual VLS rates cannot be ascertained. Both males and females had a VLC of 87%, however. Further, scaling up point of care (POC) VL analysis resulted in reduction in result turnaround time from 30 days to 5 days.

**Conclusions/Next steps:** These results demonstrate that implementing a combination of intervention tailored to identified gaps is effective in achieving optimal VLC and potentially VLS in rural settings. We recommend replicating this approach in other resource limited settings to contribute towards HIV epidemic control.

## WEPEE553

### Improving HIV treatment outcomes among alcoholic clients through differentiated service delivery: a case study of 3 facilities in Uasin Gishu County, Kenya

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**Background:** Alcohol use is a risk factor associated with suboptimal adherence to antiretroviral therapy, decreased healthcare utilization, and poor treatment outcomes among HIV-infected individuals.

Additionally, studies show that heavy alcohol users are four times more likely to have an interruption in treatment (IIT) compared to non-drinkers. Exploring the use of a Differentiated Service Delivery model specific for alcohol users could be an opportunity to enhance HIV treatment outcomes in Uasin Gishu County.



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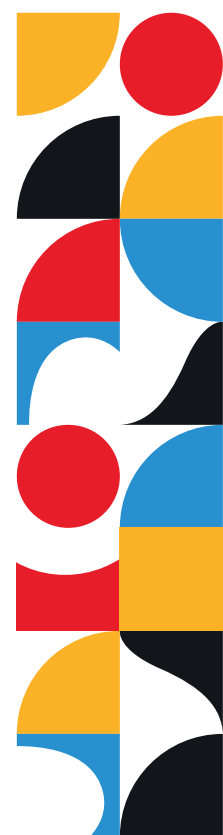
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**Methods:** A prospective cohort study was conducted from 2020 to 2022 whereby 58 (14 females and 44 males) heavy alcohol users (> 45 years) were identified through snowballing from 3 facilities in Uasin Gishu County and enrolled into a tailor-made differentiated service delivery model. By use of Self Determination theory of motivation, a team leader-expert client was selected and incentivized with a wristwatch to support the process, and transport money was offered to all participants during psychosocial support groups, this was in consideration of both intrinsic and extrinsic components of the theoretical framework. Furthermore, all participants were given specific health education and advised to take their medications in the morning before using alcohol. Appointment keeping, and morning drug ingestion were followed overtime and both descriptive and inferential statistics were done.

**Results:** Overall, there was a significant improvement from 33 (56%) to 52 (89.6%) on appointment keeping by the end of the period. This was higher in males at 99% compared to 78% in females.

Additionally, there was statistical significant association between morning drug ingestion and viral load suppression at 42 (93.3%) at chi-square p-value 0.001 and 56.4 times likelihood of viral suppression at CI=95% as compared to non-morning ingestion. In that vein, appointment keeping and viral load suppression were associates at 36(80%) a chi-square p- value of 0.011- and 18.2-times likelihood of suppression for clients who kept appointment at CI=95%

**Conclusions:** A tailor-made DSD model for alcoholics leads to better treatment outcomes. Generalizability can be done to other sites with the same geographical and treatment characteristics in the race toward HIV epidemic control.

## WEPEE554

### Updated South African differentiated service delivery guidance improves HIV services

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**Background:** South Africa has the world's largest HIV burden with an estimated 7.8 million people living with HIV and 5.8 million on antiretroviral treatment (ART) by November 2023. The overwhelming demand on the health system, characterized by congested clinics and frequent visits, contributes to treatment interruptions and disengagement. In 2016, South Africa introduced integrated differentiated service delivery (DSD) for HIV, tuberculosis,

and non-communicable diseases to support treatment adherence and alleviate the burden for recipients of care (ROC) and the health system. In 2023, the guidance was comprehensively updated to further optimize client-centredness. It was fully integrated into the country's ART clinical guidelines, accompanied by supporting standard operating procedures.

**Description:** Notably changes include shifting the first viral load assessment from month six to month three after ART initiation, enabling earlier intervention to support adherence. ROC with a suppressed viral load are immediately eligible for enrolment into their choice of less-intensive DSD models - fast-track facility pick-up points (FAC-PUPs), external pick-up points (EX-PUPs) (primarily via private pharmacies), or adherence clubs (ACs).

These models offer a maximum of two ART refills from a 6-month prescription. Those not eligible may also be given longer refills - including children from 6 months to five years of age, post-natal women, people with concomitant TB, clients with elevated viral loads but clinically stable, and those re-engaging in care.

Recognizing that many people re-engaging after treatment interruption do not need increased clinical management but flexibility, the updated guidance differentiates care based on clinical stability and time since a missed appointment, providing longer refills and continuation or accelerated access to less-intensive DSD models.

**Lessons learned:** The updated guidelines prioritize client-centred optimization resulting in the enrolment of 2,754,483 ROC (including people with controlled hypertension and diabetes) into less-intensive DSD models by November 2023, achieving 88% of the national annual target. This includes 788,995 in FAC-PUPs, 271,1248 in EX-PUPs and 214,458 in ACs.

**Conclusions/Next steps:** Ongoing efforts focus on nationwide implementation of the updated DSD package, emphasizing fidelity to counselling sessions, earlier viral load assessment, enrolment into less-intensive DSD models, longer refills and differentiation at re-engagement.

## WEPEE555

### Challenges and progress in implementing long-acting antiretroviral therapy at an urban community health center

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**Background:** Long-acting injectable ART (LAI-ART) using Cabotegravir/Rilpivirine was approved in the USA in 2021. Benefits include a reduced treatment burden, convenience, and improved adherence, especially for those finding daily oral medication challenging.

Additional advantages relate to social determinants of health, such as reduced HIV stigma and increased medical privacy. Callen-Lorde Community Health Center in New York City, a Ryan-White funded clinic serving over 5000 individuals living with HIV, many facing socioeconomic challenges to successful engagement in care. We report on our successes, challenges, and lessons learned during LAI-ART implementation.

**Description:** The LAI-ART program was launched in January 2021 and required multidisciplinary involvement of clinicians, nursing, finance/billing, and administrative support. As of December 31, 2023, 118 clients are successfully receiving LAI-ART with Cabotegravir/Rilpivirine with 18 more on the waiting list, and an additional 2 on Lenacavir with a waiting list of 8, including clients in the process of outreach and insurance verification. However, 28 clients referred for LAI-ART were unable to initiate due to identified barriers.

**Lessons learned:** Successful metrics include high rates of viral suppression (100%), appointment adherence, client satisfaction and quality of life, retention in care and lack of viral resistance. We recognized numerous systems, client, and provider-level barriers.

At the systems level, insufficient resources for outreach, nursing/staffing shortages post-COVID19, and evolving reimbursement requirements impacted our ability to verify insurances and limited appointment availability.

Provider-level barriers included limited knowledge of LAI-ART and eligibility requirements, as well as a lack of time for in-depth discussions of risks and benefits.

Client-level barriers involved concerns about injection-site reactions, difficulty managing more frequent appointments, and restrictions for individuals with buttock/gluteal fillers and implants. Less frequent issues were related to incorrect contact information, underlying medication resistance, and client readiness.

**Conclusions/Next steps:** Despite structural and institutional-level barriers, there is ongoing demand for LAI-ART, and clients in the program report high satisfaction. Implementing LAI-ART requires building infrastructure and training, addressing cost and access issues with dedicated personnel managing insurance requirements and reimbursement.

Continued monitoring of LAI-ART uptake and persistence at our center, as well as addressing these barriers, will guide our ongoing efforts to scale-up LAI-ART.

## WEPEE556

### Progress towards eliminating vertical transmission of HIV in Mozambique: scaling up access to routine viral load testing for pregnant women living with HIV in Manica province

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**Background:** Mozambique has achieved a 99% coverage rate of antiretroviral treatment (ART) among pregnant women living with HIV, yet the 10% mother-to-child HIV transmission rate remains a significant barrier to eliminating vertical transmission. Viral load (VL) testing identifies women with unsuppressed VL, enabling timely interventions. Manica province struggled with routine VL testing access for pregnant women, reaching only 41% coverage in September 2020. The USAID-funded Efficiencies for Clinical HIV Outcomes (ECHO) project aimed to enhance VL testing among pregnant women living with HIV.

**Description:** ECHO's strategy focused on boosting VL testing coverage among pregnant women living with HIV by increasing testing knowledge among maternal and child health (MCH) nurses and Mentor Mothers, improving VL testing literacy among pregnant women and communities, and providing mentoring and home visits for pregnant women while enhancing monitoring of VL testing results.

ECHO initiated the implementation of its three-pronged approach in February 2021, including training of MCH nurses specializing in antenatal care on VL testing eligibility criteria, educating Mentor Mothers on the importance and scheduling of VL testing for pregnant women living with HIV, integrating VL testing messages into health talks at health facilities and within communities. Mentor Mothers –women living with HIV who adhered to treatment during their own pregnancies– mentored and conducted home visits to pregnant women living with HIV.

Additionally, ECHO implemented a registry book in antenatal care One-Stop entry points to monitor sample collection and results, scheduling VL testing appointments, and making daily updates to electronic databases.

**Lessons learned:** Between September 2020 and September 2023, VL coverage among pregnant women living with HIV surged from 41% to 82%, demonstrating a 100% increase. VL suppression among this group also rose from 81% to 90%.

Continuous training was imperative to counter the risk posed by the rotation of MCH nurses and preserve the achieved results. Effective coordination with the referral laboratory significantly enhanced VL testing logistics.

**Conclusions/Next steps:** The ECHO project's three-pronged approach contributed to doubling VL coverage among pregnant women living with HIV, setting the



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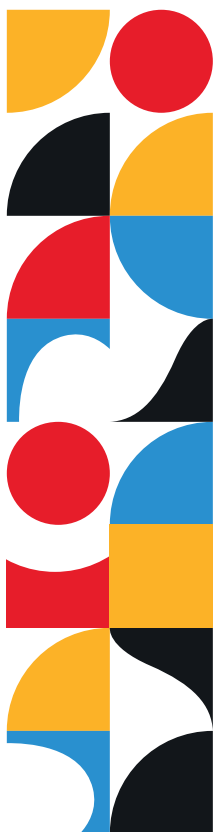
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stage for sustained, ongoing interventions to uphold the ECHO's project achievements in reducing mother-to-child transmission of HIV.

## WEPEE557

Loss to follow up search & rescue: tracking, engaging & re-linking LTFU to HIV treatment, care & support services through community led interventions

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**Background:** LTFU in HIV context is usually defined as any PLHIV for whom 6 months have elapsed since their visit to HIV clinic and/or drug pick-up. Loss at each step of the HIV treatment cascade is well documented with an estimated 20,000 LTFU PLHIV across Pakistan who may be contributing to the spread of HIV. With no formal mechanism in place and a limited health infrastructure, community-led interventions to improve retention on HIV treatment is the only viable option to track LTFU cases.

With the financial and technical help of WHO-EMRO a demonstration project was carried out from Sep 2020 to Dec 2021 to track LTFU PLHIV via community led tracking.

**Description:** APLHIV mobilized its Community Support Groups of PLHIV for on ground tracking activities that entail visiting the LTFU PLHIV and through interaction and counseling convincing them to return within the treatment fold. Competent PLHIV were trained as "Peer Trackers" on tracking techniques/confidentiality/reporting. Contact was made with LTFU PLHIV through phone and home visits and via peer to peer interaction/counseling LTFU were re-linked with ART services. Reasons for LTFU were also ascertained. In case of death, details were ascertained from next of kin and transfer outs and any other outcomes were also noted in detail.

**Lessons learned:** In a short span of 1 year and in the face of second and third wave of COVID-19; 2032 LTFU PLHIV (10% of national estimate) were successfully tracked. 1070 (53%) were successfully re-linked, 817 (40%) were expired, 117 (6%) were silent transfers and 28 (1%) had moved abroad. Issues with MIS were faced due to incomplete details however "data mining" was carried out in ART hardcopy records to find address/contact details. 50% of trackers were female PLHIV who were far more successful in re-linkages compared to male counterparts. Distance to ART Centers was the major reason for LTFU and having a "treatment buddy" in form of Peer Trackers led to willingness to re-engage with ART.

**Conclusions/Next steps:** LTFU PLHIV can be successfully re-linked through community led interventions demonstrating need for communities' engagement in all HIV treatment, care & support services in order to ensure continued adherence to ART.

## WEPEE558

Use of peer led community antiretroviral groups to improve retention in care among people living with HIV in West Pokot County, Kenya

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**Background:** West Pokot County, a diverse and remote region in Kenya, has one of the highest proportions of people living with HIV (PLWH) interrupting treatment in the country, leading to significant morbidity and mortality. This informed establishment of peer led community antiretroviral groups (CARG's) to address challenges affecting retention in care.

**Methods:** We conducted a prospective cohort study by voluntarily enrolling PLWH from Kapenguria hospital in West Pokot County into peer led CARG's based on their geographical location in December 2022. The peer provided psychosocial support to members, coordinated medication refills and viral load sample collection. The community served are migratory and the peer moved together with group members thus supporting continuity in treatment.

Our primary outcome was lost to follow-up (LTFU) after 1 year in the CARG. In the analysis we compared 1 year retention with a random sample of an equal number of PLWH who were active in care in December 2022, not enrolled in a CARG but receiving the standard package of care at the same hospital.

Cumulative incidence of LTFU was calculated by peer led CARG versus non-peer led standard care. Log-binomial regression was used to estimate the relative risk of being LTFU.

**Results:** We enrolled 102 PLWH of whom 51 were in five peer led CARG's and the remainder in non-peer led standard of care. Mean age in both groups was 31.72 years with a median duration of antiretroviral therapy (ART) of 3.12 (IQR 1.97, 4.34) and 2.82 (IQR 1.74, 4.61) years for the peer led CARG's and non-peer led care respectively.

After 1 year of follow-up, cumulative incidence of being LTFU was 0.12 (95% CI 0.04, 0.24) and 0.06 (95% CI 0.01, 0.16) among those in non-peer led care and peer led CARG's respectively.

After adjusting for baseline WHO stage, HIV viral suppression and duration on ART, PLWH provided with standard of care only had a two-fold increased risk of being LTFU compared to those in peer led CARG's (RR 1.99 [95% CI 1.41, 38.31], p-value 0.02).

**Conclusions:** Peer led CARG's as a differentiated care model has significantly better retention outcomes.

## WEPEE559

A comparison of HEP-CAG and P-CAD models on viral load suppression, treatment adherence and retention in care in a community-based differentiated HIV treatment program in Ethiopia

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**Background:** Project HOPE in partnership with partners has been supporting the implementation of community-based differentiated service delivery models (cDSDM). The cDSDM is intended to bring benefits for clients and the health systems that include reducing the number of visits, reducing waiting time and increasing access. Currently, two community-based antiretroviral (ART) refill models, i.e., the health extension professional-managed community ART refill group (HEP-CAG) and the peer lead community-based ART distribution (P-CAD) model are implemented in seven PEPFAR-supported regions of Ethiopia.

The HEP-CAG model utilizes health extension professionals who already have roles in HIV testing and other HIV service provision. P-CAD groups are self-forming groups of people living with HIV/AIDS comprising of stable clients living in the same community where members take turns to pick up drugs at the health facility and distribute them in the community.

This study was conducted to compare the effect of HEP-CAG and P-CAD on outcomes of patients.

**Methods:** This study was part of a cross-sectional evaluation survey that was conducted from September - October 2023 in 44 randomly selected health facilities in Addis Ababa, Amhara, Oromia, SNNP, Sidama, Southwest Ethiopia and Gambella regions.

The survey was conducted to evaluate the effect of cDSDM on patients' viral load suppression, treatment adherence and retention in care. Data was collected retrospectively from medical records of 1,377 randomly selected clients between December 2018 and June 2023. SPSS v21 was used for data analysis.

**Results:** During the survey, there were 529 (89.1%) HEP-CAG and 1286 (91.1%) P-CAD groups that were actively working. Viral load suppression with HEP-CAG (100%) was slightly greater than the suppression obtained with P-CAD (99.7%). The evaluation indicated that 85.8% and 79.4% of members in HEP-CAG and P-CAD were tested for viral load. Overall, good treatment adherence was achieved in 99.7% of the patients in HEP-CAG and 98.4% of patients in P-CAD. With regard to retention in care, 99.4% in P-CAD and 99.8% in HEP-CAG were on cDSDM for the 3<sup>rd</sup> most recent measurement.

**Conclusions:** Comparing the two models in terms of treatment adherence, viral load suppression and retention in care, slightly better outcomes were obtained with HEP-CAG.

## WEPEE560

Lessons learnt from supporting the implementation of different types of External Pick up Points in a Central Chronic Medicines Dispensing and Distribution (CCMDD) program in a District in South Africa

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**Background:** The Central Chronic Medicines Dispensing and Distribution (CCMDD), also known as Dablapmeds, is a program of the National Department of Health (NDoH) of South Africa (SA) that provides access to stable communicable and non-communicable diseases (NCD) clients to collect their repeat chronic medications at approved, more convenient sites. A variety of options, or Pick-up Points (PuPs), are available to clients.

**Methods:** Right To Care (RTC), funded by the USAID, supports the CCMDD program and all PuPs in Ehlanzeni District, Mpumalanga Province in South Africa. The district is predominantly semi-urban and rural. Data from Sept 2020 to Dec 2022 at 11 purposively selected, rural and semi-urban CCMDD sites were analysed. The 11 sites all had Corporate Pharmacies (CPs), Department of Health (DoH) facility PuP (FacPuPs), RTC's Collect & Go™ smart lockers ("lockers") as PuP options. The "lockers" are revolutionary ATM-type machines that release pre-packed medications when a unique pin is entered on the computer console. Therefore, "lockers" require no human interaction, unlike the other two PuP options. Descriptive analyses were done, and multivariate logistic regression models explored associations with promptness in medicine parcels collection.

**Results:** A total of 112951 clients were enrolled, 31% and 69% of which were at rural and semi-urban sites respectively. The lockers accounted for 72 % of all enrolments, CPs and FacPuPs were 20% and 8% respectively. Clients aged between 15-24 years were 3% of total, 36% between 25-39 years, 50% between 40-59 years and 11% >60 years. Prompt collection was more likely with users of lockers (aOR 1.86; 95% CI 1.76 - 1.95) and CPs (aOR 1.64; 95% CI 1.76 - 1.95) compared to FacPuPs. Clients in semi-urban PuPs were less likely than rural clients to collect their parcel timeously (aOR 0.88; 95% CI 0.85 - 0.91). There was no significant association between age and parcel collection promptness.

**Conclusions:** External PuPs can reduce CCMDD pateints lost to follow up in rural areas. Clients on FacPuPs and those in more urban sites may need more support to avoid delayed medicine collection. Some PuPs may, comparatively, enhance on-time treatment collection and the reason(s) for this need to be explored further.



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## WEPEE561

### The ART Kindergarten DSD Model for improved viral load suppression among children 0-5 years at Lighthouse Martin Preuss HIV clinic

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**Background:** Achieving viral load suppression (VLS) above 85% in children living with HIV (CLHIV) aged 0 to 5 years has been challenging in Malawi despite the roll out of pediatric dolutegravir in 2021. This mostly been attributed to several family social issues, and unfriendly pediatric formulations that affect adherence. To address this gap, Lighthouse established an ART Kindergarten differentiated service delivery (DSD) model for CLHIV 0-5 years and their caregivers to provide holistic approach in HIV management. This model offers individual and group support services to caregivers which include psychosocial counseling, enhanced child friendly environment with play center and intentional programming from clinic mentors. The overall purpose is evaluating whether CLHIV receiving care in kindergarten differentiated care have better retention and viral suppression compared to standard of care.

**Methods:** In this retrospective descriptive analysis, we compared outcomes of CLHIV attending the kindergarten clinic with those receiving treatment during routine clinic services at Martin-Preuss-Center, Lilongwe, Malawi. Retention in care and viral load suppression (VLS) rates from October 2022 to September 2023 were compared between the groups using routinely collected program data from the Electronic Medical Record System (EMRS).

**Results:** In October 2022, 202 CLHIV were enrolled in the ART program; 121(60%) in the kindergarten clinic and 81(40%) in general cohort. Retention at the end of the observation period was 88.4% (95%CI 81.3%-93.5%) in kindergarten and 58.0% (95%CI 46.5% to 68.9%) in general cohort ( $p < 0.0001$ ).

VLS in the kindergarten improved significantly during the year from 77.4% at baseline (95%CI 67.0% to 85.8%) to 90.7% (95%CI 83.1% to 95.7%;  $p=0.0158$ ) while the general cohort, VLS increased from 62.2% (95%CI 44.8% to 77.6%) to 78.4% (95%CI 61.8% to 90.2%); ( $p=0.13$ ). CLHIV in the kindergarten had a higher viral suppression than the general cohort (90.7% vs. 78.4%) although this difference missed statistical significance marginally ( $p = 0.056$ ).

**Conclusions:** The holistic and person-centered care through the ART kindergarten DSD model has proved to improve retention as well as viral suppression among children in our population. ART programs must focus be-

yond the biomedical care to address gaps in social and family dynamics that greatly affect adherence among children.

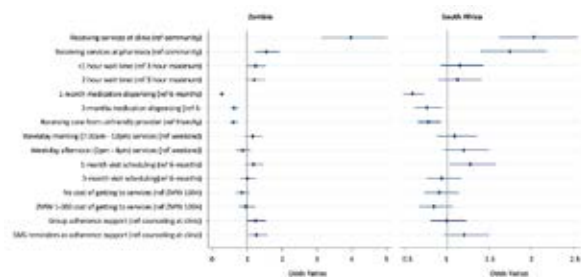
## WEPEE562

### Service delivery preferences during the first year on ART: lessons from a discrete choice experiment in South Africa and Zambia

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**Background:** Disengagement from antiretroviral therapy (ART) is common during the first year of treatment, particularly prior to eligibility for differentiated service delivery models. The PREFER study conducted a discrete choice experiment (DCE) of service delivery and care preferences to improve early outcomes.

**Methods:** A DCE was conducted in 11 South African and 7 Zambian health facilities from 8/2023-11/2023, enrolling adults ( $\geq 18$ ) who had initiated or re-initiated ART a median of 8 [IQR 6, 11] months prior. Participants were presented with hypothetical scenarios, each containing eight attributes representing specific aspects of HIV service delivery (see Figure) and levels detailing characteristics of each attribute. Each participant was asked to make a total of 9 unique choices between two scenarios. Preferences were analyzed using conditional logistic regression and are reported as odds ratios [95% confidence intervals].



**Results:** We enrolled 129 respondents in Zambia (57% female, median age 33) and 124 in South Africa (SA) (84% female, median age 33). Respondents in both countries preferred receiving services at a clinic (SA 2.0 [1.6, 2.5]; Zambia 4.0 [3.1, 5.0]) or pharmacy (SA 1.7 [1.4, 2.2]; Zambia 1.5 [1.2, 1.9]) compared to in the community. Respondents preferred 6-month dispensing to shorter 1- or 3- month dispensing. Respondents were deterred from accessing services by unfriendly providers (SA 0.77 [0.64, 0.92]; Zambia 0.61 [0.51, 0.73]) and preferred adherence support us-

ing text or phone reminders to counseling at the clinic. Costs to clients and time or day of week available were not considered important.

**Conclusions:** Clients in the first year of treatment expressed strong preference for receiving services in clinics rather than community locations. Many clients favored longer dispensing intervals even during the early treatment period.

Models of care that emphasize facility-based service delivery and less burdensome visit/dispensing schedules should be considered for the early treatment period.

## WEPEE563

### Using a hub and spoke model of telemedicine to reduce interruption in treatment for HIV recipients of care

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**Background:** One of the problems with healthcare clients in the HIV and AIDS programs is interruption in therapy (IIT), formerly called lost to follow-up, which leads to poor clinical outcomes. Retaining people living with HIV and AIDS (PLWHA) in care is one of the most crucial pillars of attaining viral suppression and epidemic control. Most healthcare clients experience socio-economical and geographical barriers to accessing quality antiretroviral therapy (ART) in Lusaka district.

The Morehouse School of Medicine collaborated with the Ministry of Health (MoH) to implement an innovative telemedicine initiative aimed at improving the quality of ART services in Lusaka, Zambia, to reduce interruptions in treatment (IIT) and improve healthcare client outcomes.

**Description:** A telemedicine intervention was designed to connect PLWHA to existing clinics and health posts (spoke sites) in their communities with first-level hospitals (FLHs) (hubs) with which those peripheral facilities are associated. At the hub, a telemedicine cart was utilized, and at the spoke sites, portable telemedicine equipment was deployed. Highly skilled health care providers at FLHs provided healthcare services to recipients of care at health centers and health posts through teleconferencing.

From July 2021 to December 2023, the intervention successfully provided telemedicine services to 7011 recipients of care out of 7531 who were scheduled for an ART appointment. The missed appointment rate stood at 6.9%. Additionally, the pooled viral load suppression rate stood at 96%.

**Lessons learned:** The intervention showed that the intervention kept the missed appointment rate below the national target of 10%. The telemedicine showed that telemedicine was an effective tool to increase health-

care client retention. The model assisted in overcoming the distance, accessibility, and equity barriers that most of the HIV recipients of care face. At the start of the intervention, both ART providers and RoCs were reluctant to use the telemedicine platform. Awareness campaigns, combined with the capacity of ART providers, resulted in widespread acceptance.

**Conclusions/Next steps:** Telemedicine could be integrated into the HIV/AIDS program as a way of reaching underserved populations to help overcome barriers to the retention of care.

## WEPEE564

### Enhancing client-centered access to antiretroviral therapy: retention and viral suppression outcomes for clients receiving home ART Distribution in Siaya County, Kenya

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**Background:** Antiretroviral therapy (ART) must be consistent and unhindered for successful management of HIV/AIDS. However, obstacles, such as disability, debilitating comorbidity, old age, distance, difficulty with transportation, and stigma, can make it difficult for patients to attend medical clinics to pick up drugs. Home antiretroviral medicine delivery is a potential remedy to increase treatment adherence and health outcomes for such patients.

Three outcomes (retention on ART at 12 months, viral load testing uptake, and viral suppression [ $<1000$  copies/mL]) of clients on home-based ART delivery (HB) versus standard care facility-based ART distribution (SC) were compared.

**Methods:** This cross-sectional study included KenyaEMR data of participants receiving HB ( $n=94$ ) and SC ( $n=714$ ) at Akala Health Facility and Ukwala Sub-County Hospital in Siaya County in June 2023 and on their respective models for at least one year. HB care was based on disability, immobility, old age, or some co-morbidity while SC received routine care. Generalized linear log-binomial models with robust variance and adjusting for age, sex, ART regimen line, time on ART, and facility were used to estimate the adjusted Risk Ratios (aRR) of retention, and viral suppression treatment outcomes in HB compared to SC. Chi-square test was done to compare viral load uptakes in HB and SC.

**Results:** HB group had a higher proportion of males compared to SC (46.8% vs. 25.8%). HB had a longer average time on ART, 9.3 vs. 6.8 years. HB and SC had similar proportions on the first-line dolutegravir-based regimen;



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81(86.2%) vs. 525(84.1%), respectively. The retention at 12 months in HB ([92 (98%)]) was similar to the retention among clients in SC ([714 (100%)]); aRR = 0.99 (95% CI 0.95-1.03). HB group had a higher viral suppression, 93(98.9%), compared to SC, 540(86.5%); aRR = 1.16(95%CI 1.09-1.22). However, HB had lower viral load uptake compared to SC, 60 (64%) vs. 578 (86%), respectively (p-value <0.001)

**Conclusions:** Viral suppression and retention outcomes for clients receiving HB care are similar or better compared to those receiving SC. HB care may be considered for all clients regardless of stability. Viral load uptake in HB could be improved.

## WEPEE565

'Innovation Fairs': an innovative knowledge sharing approach to facilitate achieving the '95' targets in four provinces of Mozambique

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**Background:** Achieving 95-95-95 targets for all people living with HIV to end the HIV epidemic requires innovative interventions to respond to specific challenges in the HIV care continuum. Innovation is mainly facilitated through knowledge sharing among co-workers. USAID-funded Efficiencies for Clinical HIV Outcomes (ECHO) project designed a virtual event, named 'Innovation Fairs', aiming to create a virtual space for ECHO teams to periodically meet and exchange experiences/innovative solutions to overcome challenges faced in project implementation. We describe the outcomes and lessons learnt of ECHO's 'Innovation Fairs'.

**Description:** Before the events took place, a specific topic representing a project challenge across all supported provinces was identified as the theme of the fair. Each ECHO provincial team presented innovative local solutions that had already produced positive results or proposed new approaches. ECHO created a panel of judges, comprised of four people from the senior-level technical team, to select the best innovation based on the following criteria: strategic alignment with project goals, feasibility, replicability, and a simple monitoring plan. If the selected innovation was a new approach, it was first tested in one province, and if results were promising, replicated in the others.

**Lessons learned:** Between December 2020 and February 2023, ECHO held five 'Innovation Fairs'. From June 2020, ECHO struggled with routine viral load (VL) testing, prompting a fair focused on enhancing VL sample collection for all eligible clients. An ECHO provincial team presented an innovative approach comprising:

1. Proactively identifying eligible clients through clinical records, phone calls and home visits;
2. Developing new training materials;
3. Daily updating of electronic databases; and,
4. Enhancing demand creation and VL literacy within communities.

This strategy was implemented in all provinces and sustained over time, leading to a 33% increase in VL coverage across all provinces, from 58% in June 2020 to 77% in March 2023.

Close monitoring of results enabled ECHO provincial teams to locally adapt and improve over time the new approaches to boost their performance. Coordinating with local health authorities was crucial to engaging health providers.

**Conclusions/Next steps:** Innovative knowledge sharing practices can enhance collaboration, drive innovation, and contribute to the achievement of institutional goals.

## WEPEE566

Experiences and quality of life with long-acting lenacapavir from people with multidrug-resistant HIV-1 enrolled in the Phase 2/3 CAPELLA study

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**Background:** Lenacapavir (LEN) is a long-acting HIV-1 capsid inhibitor administered subcutaneously every 6 months. LEN is approved for treating heavily-treatment experienced people with multidrug-resistant HIV-1, combined with other antiretrovirals (ARVs), based on the CAPELLA study. We explored CAPELLA participants' experiences and quality of life (QoL) following LEN initiation.

**Methods:** Out of the 72 CAPELLA participants, 14 cross-sectional surveys and 6 semi-structured telephone interviews were conducted with US-based participants between June–November 2023. Survey and interview domains included: experiences with LEN, QoL, injection site reactions (ISRs), and ARV adherence. Survey data were summarized descriptively; qualitative data were analyzed using ATLAS.ti® software.

**Results:** Overall, survey participants reported positive experiences with LEN regarding ease of integration into treatment regimens, efficacy, tolerability, discreteness of administration, and reduction in pill burden of the complete HIV-1 regimen (Figure).

After taking LEN, 64% (n=9/14) agreed/strongly agreed that their QoL improved and they had fewer negative feelings about their illness; 92% (n=12/13) agreed/strongly agreed that LEN is well tolerated, and 57% (n=8/14) agreed/strongly agreed that they have fewer medical appointments (Figure). ISRs were considered very/extremely

manageable by 71% (n=10/14) of participants, with none wanting to discontinue LEN as a result. Qualitative interview responses supported quantitative surveys, elucidating findings of treatment effectiveness, improved QoL, and more optimistic perceptions of health (Table). Survey participants reported improved adherence to other ARVs, with 71% (n=10/14) never/rarely missing doses pre-LEN initiation versus 100% post initiation.



Figure. Participants' experiences with LEN.

Theme	Relevant quotes
LEN efficacy and tolerability	<p>"I went from [...] having a high viral load that was increasing every [...] time I took a test to having it go to non-detectable. Of course, that's a very positive outcome."</p> <p>"Well, of course, I'm motivated to continue. Based on past results, I'm expecting that those results will continue and so, yes, I'm motivated by the efficacy of the drug."</p> <p>"I like the fact that it's very convenient. It's very effective [...], I experience very few side effects."</p>
QoL	<p>"I think that my quality of life has been better since I've started taking lenacapavir. When your viral load is low or undetectable, you feel better. You don't feel lethargic or you don't feel that you're not getting better. You don't feel like there's no hope for you. Lenacapavir, it's been effective and so it makes my outlook on life more positive [...] making me [...] believe that I have more time to do the things that I want to do. Things that I like to enjoy with family and friends and life expectancy."</p> <p>"It improved my health. It improved my outlook on life."</p>
Management of ISRs	<p>"The only reactions I had were the [...] little, sort of the bumps on either side of my navel where they did the injection, and [...] for a couple of days, some itching."</p> <p>"The first time I had gotten, you know, I'd gotten a little, my stomach got really, really tightened and upset, and then it did then, and it still does now leaves nodes under my skin, but that was it. I - for the stomach problem, I just waited it out about 15 to 20 minutes, and then it went away."</p> <p>"I didn't like the nodules, but I knew that that was just part of it. So, I was okay with it. But I mean, post-injection, there was nothing else other than that, you know?"</p>
Ease of integration into treatment regimens	<p>"I would continue, you know. And so, no, I don't anticipate stopping it. And I'm very compliant with my other [...] two other medications I take on a daily basis. [...] In what, almost three years, I've probably missed taking the medication maybe [...] five times individual days. So, I'm very, very compliant to the new treatment."</p> <p>"There were fewer pills to take, and it was part of the requirement. And so, you know, I was very dutiful about making sure that I didn't miss any doses."</p>
Perceptions of HIV on LEN	<p>"...just the way it's changed the way I feel about my condition. I feel like, you know, my condition is improving now. My condition is improving now and that doesn't - never happen like it's happened now before."</p> <p>"I look at it as a positive sign that I may [...] beat this HIV infection that I have because I've been having it, I've had HIV/AIDS, I've had it since July of 1987 when I tested positive."</p>
Healthcare professional interactions	<p>"I was told what to expect clearly [...] by the physician's assistant who was working with me, and it was all a very [...] good experience. I didn't have any issues at all."</p> <p>"I was scared but the nurses over there, they were very excellent. They were very good with me and, you know, helping me understand the drug and very much helping me get comfortable with everything."</p>

Table.

**Conclusions:** Following LEN initiation, the majority of CAPELLA participants reported positive experiences with LEN, including improved health status and QoL.

## WEPEE567

### Accelerating implementation of multilevel-strategies to Advance Long-Acting Injectables for underserved populations

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**Background:** Accelerating Implementation of Multilevel-strategies to Advance Long Acting Injectables for Underserved Populations (ALAI UP) aims to counteract the pattern of new HIV biomedical interventions exacerbating health disparities. ALAI UP delivers an implementation bundle to support eight diverse clinical sites across the US in building long-acting injectable antiretroviral treatment (LAI ARV) programs that center equity from the beginning, rather than correct for unintentionally generated health disparities later.

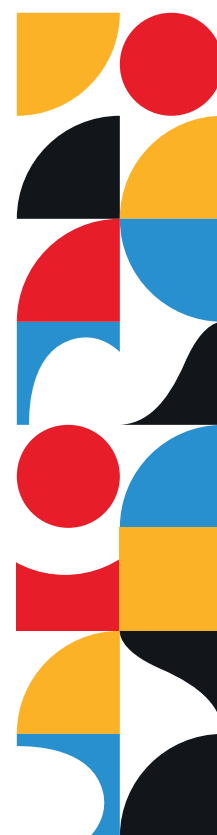
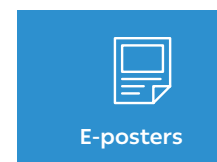
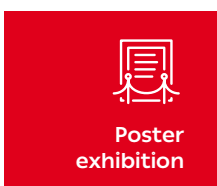
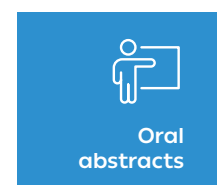
**Description:** ALAI UP's implementation bundle was developed by a multidisciplinary team of clinicians, psychologists, implementation scientists, and technical assistance providers and consists of seven components (Table 1). Clinic champions evaluated each component's usefulness on 4-point Likert scales (1=not useful, 4=very useful) and provided feedback as free text, quarterly.

Descriptive statistics (*mean*, *SD*) and key themes from the first nine months of implementation support are reported.

**Lessons learned:** Clinics identified written resources, motivational interviewing training, and in-person convenings as the most useful components. Community listening sessions, technical assistance, and monitoring, evaluation and learning were less highly rated, though still useful.

Although virtual communities of practice were requested by sites, they rated lowest, largely due to scheduling that precluded clinic staff from attending. Technical assistance provided by coaches who could support building out electronic health records functions and navigation of benefits were rated the highest.

Clinics noted that the process of submitting client-level data, while highly manual and labor-intensive, led to insights into their practices and changes to protocols.





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**Conclusions/Next steps:** A diverse set of clinics from across the US have used ALAI UP support to build and grow injectable treatment programs that consider equity from their inception. Ongoing assessment of the usefulness of each component of ALAI UP inputs will allow us to identify highest yield components and may inform resource allocation decisions at clinic, project, and policy levels in the future.

Implementation Bundle Component	Description	Usefulness Mean (M), Standard Deviation (SD)
1. Resource Incubator	Access to a resource incubator of tools to support clinics in the development of protocols, staff training, and client education materials.	3.6 (0.4)
2. Motivational Interviewing	Training for clinical and non-clinical staff in the fundamentals of motivational interviewing and ongoing coaching for clients and staff.	3.7 (0.6)
3. In-person Convenings	Two, 2.5 day convenings to (1) introduce ALAI UP components and receive feedback on conceptualization of equity-focused LAI ART initiative and resources; (2) provide clinic teams with dedicated time to make progress on written protocols with their colleagues; (3) provide opportunity for cross-clinic learning and relationship building.	3.6 (0.5)
4. Community Listening Sessions	Space for community members and stakeholders from clinic catchment areas to discuss and share perceived barriers and facilitators to implementation of injectable CAB/RPV to inform program roll out.	3.3 (1.1)
5. Technical Assistance	Targeted support to build capacity to deliver LAI-ART equitably, delivered bimonthly by a designated TA provider.	3.2 (0.7)
6. Monitoring, Evaluation and Learning	Activities to support routine monitoring of implementation process, evaluation of clinical outcomes, and facilitation of learning at the clinic and ALAI UP-project level. Includes clinic capacity building to support sharing of client-level clinical data to inform clinical monitoring and quality improvement.	3.0 (1.0)
7. Virtual Communities of Practice	Opportunity for a facilitated conversation where clinics can learn from each other's successes and challenges.	2.9 (1.0)

Table 1. ALAI UP Implementation Bundle (N=8 clinics)

## WEPEE568

### Paediatric-focused client management approach improves biannual viral load coverage among children living with HIV: implementation outcomes from Southern Nigeria

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**Background:** Challenges with antiretroviral therapy (ART) adherence and monitoring put children living with HIV (CLHIV) at increased risk of treatment failure hence the need for more frequent viral load (VL) testing. ECEWS introduced a Paediatric-focused client-management system (PFCM) to improve VL coverage among CLHIV after Nigeria introduced biannual VL tests in 2022, where children are eligible for VL six months after ART commencement and six-monthly thereafter. This study describes the PFCM strategy and its outcomes among CLHIV in southern Nigeria.

**Description:** Advocacy was conducted to service providers across 153 health facilities in Akwa Ibom and Cross River States, Nigeria to communicate the change in VL testing among CLHIV. Caregivers were sensitized during clinic visits, through phone calls and home visits. VL line lists for eligible CLHIV were developed based on this change and shared with service providers. Appointments for drug pickups and blood sample collection were aligned at differentiated ART service delivery (DSD) points, and VL samples were collected during refills at DSD points, with weekly monitoring using a dedicated paediatric dashboard. This paper assessed VL testing coverage (the proportion of eligible CLHIV who had VL tests done six-monthly). Trends in VL coverage from September 2021 to September 2023 were assessed using logistic regression.

**Lessons learned:** In total, 18,014 CLHIV were eligible for VL test over 24 months, with a median age of 8.0±3.8 years and 50.4% males. The mean duration on ART was 3.1±2.8 years, and 56.2% were on DSD. VL coverage improved from 61.7% (2,319/3761) to 87.6% (3242/3701) between September 2021 to September 2023 (Table-1) (OR:1.48, 95%CI:1.44-1.51) and with increasing age (OR:1.04, 95%CI:1.02-1.07), but was comparable across sexes. Longer duration on ART (OR:0.97, 95%CI:0.96-0.98,) and being on DSD (OR:0.92, 95%CI:0.87-0.99) were associated with lower VL coverage.



	September 2021	March 2022	September 2022	March 2023	September 2023
Eligible CLHIV	3761	4871	4841	4541	3701
CLHIV with VL Done	2319	2812	3795	3596	3242
VL Coverage (%)	61.7	57.7	78.4	79.2	87.6

Table 1: Biannual Viral load (VL) coverage trends among children living with HIV (CLHIV) in southern Nigeria.

**Conclusions/Next steps:** Coverage of biannual VL testing for CLHIV progressively improved using PFCM in this setting. Further interventions targeted at subgroups with lower VL coverage are recommended.

## WEPEE569

Community managed care cascade: community support group of HIV positive pregnant women ensure improved PMTCT programme outcomes. Results from Global Fund supported EMTCT project in 13 states of India

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**Background:** While India has made a significant progress in arresting and reversing the HIV epidemic, testing coverage among pregnant women remained very low in some states. Evidence suggests access to HIV testing remained low at 36% in the 13 Plan India project states during 2016-17 with an estimated annual pregnancy of 14 million (48% of total in the country) per year.

Complementing Govt. of India's EMTCT of HIV strategy, Plan India has been implementing Ahana project supported by The Global Fund towards attaining Elimination of Mother to Child Transmission in 13 priority states of India.

**Description:** Three staged programme approach was adopted with:

- Capacity building of health care professionals on HIV screening towards supply side strengthening,
- Expansion in PMTCT service access for pregnant women to initiate early testing and linkage to treatment,
- Formation of district level community support groups of HIV positive pregnant women and strengthen capacities to provide care and support for sustainable service delivery to HIV positive pregnant women (PPW) and breast-feeding women for an improved EMTCT outcome.

**Lessons learned:** With expansion in the PMTCT service coverage, HIV testing among pregnant women increased from 36% during 2016-17 to 89% during 2022-23 resulted in increasing identification of HIV positive pregnant women. More than 25,000 pregnant women identified as HIV positive during April-16 to Sept, 23 were linked to ART.

Linkage to ART services improved from 86% during 2016-17 to 99.7% during 22-23. Institutional deliveries among PPW increased from 90% during 2016-17 to more than 94% in April- Dec, 23. While linkages of HIV exposed infants with

EID services improved from 55% during 2016-17 to 90% in 22-23, HIV testing among spouses of PPWs increased from 74% during 2018-19 to 97% during 22-23.

**Conclusions/Next steps:** Though there is further scope for expanding HIV testing to early treatment linkages during in first trimester, results suggest there is improved programme outcomes with focused and intensified service due management and care and support outreach to the HIV positive pregnant women through community support group mechanism at the field. Plan India's PMTCT programme shows the community led service model for better programme outcome towards EMTCT.

## Global and national financing, economic evaluation and sustainability

### WEPEE570

Government readiness in implementing Swakelola Type 3 policies in supporting Civil Society Organizations (CSOs) with a focus on HIV prevention issues in Indonesia

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**Background:** The sustainability of Civil Society Organizations (CSOs) focusing on HIV/AIDS issues is at stake. According to World Bank data, Indonesia's ranking after being down due to the COVID-19 pandemic has returned to being classified as a Middle-Upper-Income Country. Consequently, several international donors are withdrawing their support and redirecting it to other developing countries. The government's new policy called Swakelola Type 3 could be a solution to the current challenges CSOs face. The Indonesia AIDS Coalition (IAC) through its Social Contracting program, researched the Readiness of the Indonesian Government to Support CSOs through the Swakelola Type 3 policy.

**Methods:** Swakelola Type 3 is planned and supervised by the Ministry/Agency/Regional Device and implemented by CSOs. This research focused on Government Organizations (GOs) at the local level in four regions (Yogyakarta City, Bandung City, Denpasar City, and Kediri District). Data collection techniques in this study were carried out through budget studies, literature reviews, focus group discussions (FGD), and interviews.

**Results:** The research result revealed the following facts:

- The understanding and perception of GOs regarding the implementation of Swakelola Type 3 are still minimal.
- There is no adequate Technical Guidance for the implementation process of Swakelola Type 3.
- The government's budget allocation for funds is insufficient, leading CSOs to be sceptical about



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cooperating with GOs through Swakelola Type 3. The research found that, on average, only 0.3% of the total budget is allocated for Swakelola Type 3.

- There is still a negative stigma towards CSOs, hindering GOs hesitant to open the way for collaboration.

**Conclusions:** The readiness for implementing Swakelola Type 3 cannot be declared at the Ready Level. In conclusion, the study emphasizes the need for the government to enhance its readiness by fostering a deeper understanding of Swakelola Type 3, developing comprehensive technical guidelines, and allocating sufficient resources. Improving communication channels and addressing budgetary constraints are imperative to establishing effective partnerships and ensuring the successful implementation of Swakelola Type 3 for HIV/AIDS prevention in Indonesia.

## WEPEE571

Domestic resource mobilization for HIV&AIDS: evidence from the application of the 0.1% government budget allocation to HIV Initiative in Uganda

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**Background:** The shrinking donor funding and the need to sustain the provision of antiretroviral treatment (ART) and to reduce new HIV infections and deaths have prompted the Government of Uganda to explore potential innovative domestic resource mobilization strategies. Key among these strategies is the directive to all central government departments and local governments to allocate at least 0.1% of their budget to HIV mainstreaming activities starting the financial year 2018/19. This initiative alone can raise an additional UGX 60 billion (US\$16 million) from the exchequer, annually.

However, little progress has been realized since 2018/19, when the directive's implementation started, mainly due to weak capacity to plan and budget for the 0.1%. The capacity gaps in planning and budgeting were especially glaring at the district level.

To ensure adequate and timely flow of domestic resources earmarked for HIV, dedicated analytics, policy, and policy advocacy efforts, and the capacity to plan and budget are required.

**Description:** Uganda AIDS Commission (UAC) working with USAID Uganda Health System Strengthening Activity provided technical assistance (TA) package that included engagements with district leadership and departments

to create awareness, orientation on the HIV mainstreaming guidelines and capacity building on computation of the 0.1% and costing of HIV interventions using Activity Based Costing approach and linking the same to the budgets.

To facilitate planning and budgeting of the 0.1%, UAC worked with the Ministry of Finance to create a budget output code (000013). The code enables budgeting and tracking of spending of the 0.1% allocated to HIV mainstreaming activities.

**Lessons learned:** Application of the TA package in districts and central government departments enabled mobilization of over UGX 60 billion (USD 16 million) additional funding from central and local governments in financial year 2023/24 which was a major increase from UGX 38 billion (USD10.2 million) reported in 2019/20.

**Conclusions/Next steps:** Mainstreaming HIV financing in government departments has potential to improve domestic resource mobilization for HIV services.

UAC has planned to work with key partners to scale up capacity building efforts on planning, budgeting, and tracking of the implementation of the planned HIV mainstreaming activities as well as appropriation of the allocated funds.

## WEPEE572

Examining sustainable financing of the HIV response in Nigeria

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**Background:** Countries transitioning out of donor HIV support require financial sustainability planning. This study, therefore, investigated the HIV funding gap, transition readiness, factors affecting sustainable HIV financing, and the benefit-cost ratio of investing in HIV response in Nigeria.

**Methods:** We estimated Nigeria's HIV resource needs, available funds from domestic and donor sources, and funding gap analysis for 2022-2027. We also reviewed documents (n=13) and conducted semi-structured interviews with purposively selected stakeholders (n=35) between December 2021 and January 2022. Qualitative data were analyzed thematically using a health financing framework. We co-created a financial sustainability plan (FSP) with the stakeholders.

We estimated the cost of action /inaction and the benefit-cost ratios of investing in HIV given a baseline (5%), moderate (50%), and aggressive (90%) scale-up of the HIV response using years of life lost (YLL) and percentage of gross domestic product (%GDP) lost due to morbidity and mortality.



**Results:** A \$2.5 billion funding gap exists in Nigeria's HIV response between 2022 and 2027. No clear donor transition plan exists. The FSP addresses low domestic public and private sector HIV financing, including low, unpredictable, and unstable government budgets. A private sector-led HIV Trust Fund, emerging social health insurance, and philanthropy are opportunities for increasing domestic funding. Purchasing interventions focus on inefficiencies due to duplications, ineffective coordination, weak priority-setting, and low use of primary care and private providers. One-stop-shop facilities targeting key and priority populations receive low priority. The costs of action are \$1.2, \$1.5, and \$2.2 billion at baseline, moderate, and aggressive scale-ups. The costs of inaction are \$3.5 billion, \$2.7 billion, and \$2.0 billion at baseline, moderate and aggressive scale-ups. The total %GDP lost is 0.19%, 0.15%, and 0.12% at baseline, moderate and aggressive scale-ups. The benefit-cost ratios (BCR) of investment in HIV control at moderate and aggressive scale-up scenarios are 2.5 and 0.7, respectively.

**Conclusions:** The HIV response funding gap is high. Moderate investment in HIV response is more cost-beneficial than aggressive scale-up. Interventions to improve the financial sustainability of HIV response in Nigeria must incorporate predictable domestic resource mobilization, integration of HIV into universal coverage schemes, and strategic purchasing reforms that reduce inefficiencies.

## WEPEE573

Effects of financial facilitation of community health workers using mobile money services: experience from Teso region, Eastern Uganda, 2017-2023

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**Background:** Uganda relies upon community health workers (CHWs) to reach the most remote communities with primary health care services such as HIV prevention, care, and treatment services. However, they are not routinely paid salaries and mainly receive monthly stipends, transport facilitation and lunch allowances when engaged in community health activities. These allowances have traditionally been paid using cash-based systems. This has been laborious and risky, especially where bulky cash is involved. The risks associated with bulky cash transactions include theft, fraud, delayed reporting, and non-accountability.

To mitigate these risks in a US Center for Disease Control and Prevention (CDC)-funded health system strengthening project in Teso sub-region during 2017-2023, we intro-

duced mobile money (cashless) payments of CHWs for all activities conducted in facilities and communities which required cash facilitation.

**Description:** To introduce mobile money facilitation of activities, we conducted a baseline sensitization of the beneficiaries on mobile money transactions, encouraged the CHWs to acquire registered mobile money numbers and provided a simplified attendance form to capture both mobile money number and registered names.

The activity lead created a mobile money wallet based on attendance, accompanied with a simplified activity report, for entry into the online mobile money payment system. The online approvals of transactions were done by the project managers simultaneously, transferring the money to the beneficiaries in only a few minutes. The proof of payments and activity reports were generated and stored as part of accountability for the funds.

**Lessons learned:** More than 1,000 CHWs in rural areas were able to receive their monthly payments promptly without moving to banks. The risk of fraud was minimized as there was no physical cash handling. Mobile money minimized complaints from CHWs. The major challenges encountered included inadequate mobile money agents in rural areas, instances of mismatch of registered mobile money names with the actual names of beneficiaries, and high mobile money charges.

**Conclusions/Next steps:** Use of mobile money transactions led to timely financial facilitation of CHWs, simplified instant accountability and reduction in fraud. Consideration could be given to adoption of mobile money transactions to facilitate health workers in similar settings.

## WEPEE574

Unveiling success: a case study of the influence of the integrated food innovation intervention on the well-being of 14 HIV-positive children with high viral load in Dar es Salaam, Tanzania

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**Background:** HIV-positive children with high viral load face multiple risks, including compromised immune systems, susceptibility to infections, and hindered growth and cognitive development, which affect their overall wellbeing. Addressing these challenges is crucial to promote the health and potential of children with living with HIV (CLHIV). The ACHIEVE project provides a comprehensive, household based CLHIV package to address barriers to ART uptake and ensure long term adherence and viral suppression in Tanzania.

**Methods:** Between September and November 2023, the project added specialized food support to 14 CLHIV <18 with high viral load due to food insecurity, including



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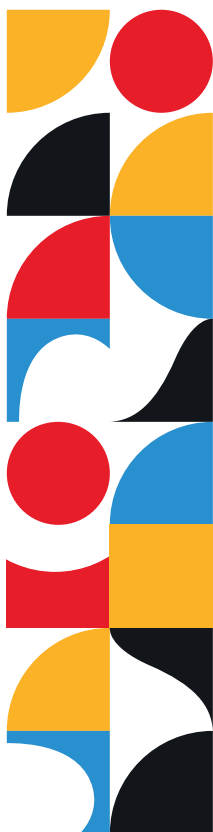
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one month emergency food support and engaging their caregivers in savings groups running income generating activities (IGAs) within food value chains. To ensure continuity of food support, the project provided capacity building on viable business along with seed capital to caregivers for their IGAs.

Data were collected at baseline and follow-up in terms of the core indicators assessed. Data analysis was conducted in Stata 17, examining the difference between baseline and follow-up statistics.

**Results:** The outcomes demonstrated significant health and wellbeing improvements across multiple domains between baseline and follow-up. Monthly ART adherence rates soared by 54.6% from 43.8 to 98.4, contributing to improved health stability and a notable 78.5% reduction in viral load from an average of 67995 to 14628 copies. School attendance increased from an average of 2.9 to 4.5 days per week, accompanied by enhanced academic performance from an average of 26.2 to 40.8.

The project successfully integrated 12 households into savings groups, initiating IGAs and substantially alleviating food insecurity. The caregivers' average savings per week increased by 247% from TZS 4,923 to TZS 17,077, and their CLHIV gained an average of 5.2 kg of body weight: from 54.5 to 59.7kg.

**Conclusions:** This preliminary pilot demonstrated comprehensive success in addressing the diverse needs of CLHIV households. The combined approach of nutritional support, healthcare collaboration, and economic initiatives proved effective in improving HIV and wellbeing outcomes for food insecure CLHIV with a high viral load. Based on the findings, ACHIEVE intends to scale up the approach to all food insecure CLHIV and continue monitoring its effectiveness.

## Costing, cost effectiveness and affordability

### WEPEE575

Sustaining and growing oral PrEP programming through use of lower costing tenofovir disoproxil fumarate and lamivudine for oral PrEP

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**Background:** The World Health Organization (WHO) first recommended oral pre-exposure prophylaxis (PrEP) for HIV prevention in 2012. UNAIDS has established ambitious targets to have PrEP available to 10 million people by 2025. Flatlining budgets for HIV programming demand creative approaches to sustain the gains and continue

scaling PrEP as part of combination HIV prevention. Globally, two products are primarily used for oral PrEP: tenofovir disoproxil fumarate (TDF) + lamivudine (3TC) and TDF + emtricitabine (FTC). The WHO considers these products interchangeable for HIV prevention.

An analysis Global Fund pooled procurement mechanism (PPM) reference pricing and current scale-up figures for oral PrEP in low- and middle-income countries (LMICs) explores savings which may be achieved by procuring the lower priced product.

**Description:** In October 2023, the Global Fund's PPM reference price for 30 tablets of TDF/3TC and TDF/FTC were \$3.20 and \$3.80 respectively ex-works (EXW). Among countries reporting to UNAIDS, there were 2 million people from LMICs who used oral PrEP in 2022. This results in an estimated consumption of 6 million bottles of oral PrEP (assuming each person used three bottles). Using Global Fund PPM reference prices, an EXW procurement of this size would cost \$19.17M and \$22.76M for TDF/3TC and TDF/FTC respectively, with TDF/3TC costing \$3.59M less.

This amount represents the maximum possible savings in 2022 but the likely number is to be less as some countries already use TDF/3TC for oral PrEP. As scale-up continued since 2022, the savings of procuring TDF/3TC instead of TDF/FTC would increase annually.

**Lessons learned:** LMICs and donors procuring TDF/FTC can achieve savings by procuring TDF/3TC for oral PrEP. Global Fund grant cycle 7 development have shown that LMICs can unlock budget efficiencies by planning for TDF/3TC procurement instead of TDF/FTC.

As many countries look to expand the PrEP private market, access to lower priced products may increase the number of people who are able to pay for oral PrEP on their own, reducing government and donor costs and contributing to sustainable private sector markets.

**Conclusions/Next steps:** Countries and donors can create opportunities for more affordable and sustainable oral PrEP programming by registering and procuring the lower priced products.

### WEPEE576

Cost and service utilization of online and in-person HIV services: a comparative analysis between Mali and Nepal

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**Background:** Telehealth is rapidly evolving in low- and middle-income countries (LMICS). Arguments that mobile and internet-based approaches cannot be successful in these settings persist. We sought to answer questions about cost and utilization of online services versus in-per-

son interventions in Mali and Nepal to dispel these arguments.

**Methods:** USAID's EpiC project in Mali and Nepal supports online and in-person HIV-related services including outreach and case management. A comparative descriptive analysis of cost, service utilization, and HIV case finding before and after the introduction of online interventions was conducted to quantify set-up, maintenance, and case finding costs.

Teams used activity-based costing to identify set-up costs for online and in-person activities, the resources required to support activities (labor, supplies, equipment), and the unit cost per resource.

Estimated costs were identified by multiplying the unit cost by the quantity of the resource required and then summing across all resources used.

Cost and utilization data were obtained from program records and the proportion of clients using online interventions was obtained from the online reservation and case management application used in each country.

Effectiveness was assessed by combining cost and HIV results data to estimate the cost per new HIV case found.

**Results:** Cost of set-up and new HIV case found are lower while monthly maintenance costs are higher for online services. Online interventions reached a larger proportion of individuals previously unreachable through in-person interventions in the previous 6-months, and a large proportion had never tested for HIV. HIV case finding was higher among those reached online compared to those reached in-person.

	Indicators	Nepal (before, all in-person)	Nepal (after, those reached online)	Mali (before, all in-person)	Mali (after, clients reached online)
Cost	Set up	\$40,020 (over 8 months during rollout)	\$15,122 (over 7 months during rollout)	\$14,890 (over 10 months prior to & during rollout)	\$31,872 (over 15 months prior to rollout)
	Monthly	\$3,728	\$10,881	\$1,450	\$6,018
	Online reach (% of overall clients)	N.A.	13,209 reached online (9.35%)	N.A.	987 online appts (2.6%)
Reach			6,873 online appts		
	Newly reached (Clients who are reached online and were not previously reached in the 6-month reporting period by another approach such as in-person outreach.)	N.A.	Among online appts, 90% newly reached; 81% unknown HIV status	N.A.	Among online appts, 80% newly reached; 47% never tested
Test	HIV case finding	1.9% online vs 0.48% overall program	10.1% online vs 3.6% overall program	10.4% online vs 6.6% overall program	15.6% vs 11.2% overall program
	Cost per new HIV case found	\$1864	\$914	\$1060	\$827

**Conclusions:** This work demonstrates the cost and effectiveness of online HIV services in LMICS. Online services in both locations reached more previously untested individuals and were able to detect a larger number of HIV-positive cases. Online services are an effective way to reach new clients in LMICS.

## WEPEE577

### Assessing the cost, affordability and cost effectiveness of innovative approaches for VMMC programming for improved sustainability in Zimbabwe

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**Background:** Population Services International (PSI), Population Solutions for Health (PSH) and the Ministry of Health (MOH) in Zimbabwe tested several sustainability approaches in the voluntary medical male circumcision (VMMC) programme to transition the programme from partner to MOH-led. This included piloting Shang Ring (SR) device circumcision alongside surgical circumcision and introducing VMMC into MOH quality-based results-based financing (RBF).

This study evaluated upfront and recurring costs and included budget impact and cost-effectiveness analyses (BIA; CEA) of various models implementing these changes.

**Methods:** Retrospective costing in 28 facilities across 8 districts employed ingredients-based and top-down methods to capture direct and indirect, financial and economic costs of surgical and SR circumcisions. These cost estimates were adapted for the BIA and CEA, considering different VMMC coverage and SR scale-up scenarios for 2023-2027, costs associated with introducing RBF and the programme's planned transition to the MOH. The CEA employed the Goals Age-Structured Model to estimate lifetime number of HIV infections and disability-adjusted life years (DALY) averted.

**Results:** We found the incremental cost attributable to the SR procedure to be US\$18.25 compared to surgical VMMC due to more expensive anaesthetics and consumables, including the device itself. Upfront training costs for SR introduction were on average US\$12,761 per district. Due to fiscal savings from the introduction of VMMC into RBF and the transitioning of VMMC roles from partner to MOH, 10% SR uptake results in the lowest fiscal impact, while 40% SR uptake has the highest impact. Based on an average unit cost of US\$ 101.17 per circumcision, 25% SR adoption in all districts from 2024 is the most cost-effective option for SR rollout, with an average cost per DALY averted of US\$492 across all 8 districts. However, in 4 of the 8 districts none of the modelled scenarios are cost-effective when considering a threshold of US\$500 per DALY averted.

**Conclusions:** Despite the higher per-circumcision cost of the SR procedure, limited rollout alongside the introduction of VMMC into RBF and partner transition can be cost saving and cost-effective, depending on various factors. Amid declining funding for VMMC, this combination of interventions can offer a more sustainable way forward.



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## WEPEE578

Cost effectiveness of Zvandiri, a community-based support intervention to reduce virological failure in adolescents with HIV in Zimbabwe: a decision analytical model

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**Background:** Improving ART adherence among adolescents living with HIV (ALHIV) improves outcomes but with resource implications. We extrapolate long term costs and benefits of a community-based peer-support intervention (Zvandiri) among adolescents living with HIV (ALHIV) in Zimbabwe.

**Methods:** A multistate Markov decision-analytic model simulates Zvandiri lifetime costs and benefits on viral suppression, death rates, life-years and quality-adjusted-life-years gained 40 years (2019-2058) beyond the cluster-randomised controlled trial (reported elsewhere). Taking the healthcare system perspective (in 2018 US\$) we estimate the incremental cost effectiveness ratio (ICER) per life-year-gained (LYG) and per quality-adjusted-life-year gained (QALY).

We compare the ICER to accepted thresholds for LMIC's of <\$500 and <\$700 per LYG or QALY gained. We explore parameter and decision uncertainty using probabilistic sensitivity analyses.

**Results:** Cohort-microsimulation suggests that after 40 years (up to 2058), under standard of care (SOC), 21% (59/280) of ALHIV have undetectable viral-load (VL), 12% (33/280) have low VL (<1000/ml copies/ml), 10% (27/280) have high VL (≥1000 copies/ml) and 57% (160/280) are dead. With Zvandiri, ART adherence improves, decreasing yearly probability of virologic failure or death. After 40 years 65% (183/280) have undetectable viral load, 23% (65/280) have low VL, 3% (8/280) high VL (table 3) and 9% (24/280) are dead. Zvandiri dominates SOC with 1,345 life-years gained at incremental cost of \$500,587, yielding a discounted ICER of \$372 per LYG. Zvandiri also results in 1,246 QALYs at incremental cost of \$123,645, yielding a dis-

counted ICER of \$99 per QALY. The ICER is highly sensitive to programme costs, health-related utilities, and the discount rate.

	Standard of Care		Zvandiri		Difference	
	Life years	Cost	Life years	Cost	Life years gained	Incremental Costs
Deterministic results – LYG	4,642	\$822,553	5,787	\$1,323,140	1,345	\$500,587
	QALYs	Cost	QALYs	Cost	QALYs Gained	Incremental Costs
Deterministic results – QALYs	3,731	\$822,553	4,977	\$946,198	1,246	\$123,645

Table 1. Cost-effectiveness modelling outputs (Life years and QALYs gained)

**Conclusions:** Zvandiri is highly cost-effective at reducing virological failure and death when compared to commonly accepted cost-effectiveness thresholds. Our cohort microsimulation model likely underestimates cost-effectiveness resulting from higher virological suppression as would be observed in full transmission models.

## WEPEE579

The cost of inaction of failing to meet global Targets to end the AIDS epidemic: looking beyond 2030

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**Background:** For several years, the financing of the HIV response is facing competing priorities and countries are requested to increase their domestic financing. We estimated the cost of inaction, i.e. the human and economic cost of failing to meet the AIDS targets for each of the 114 countries to the 2050 horizon.

**Methods:** We first estimated the incremental costs, benefits, and economic returns (RoI) of a scenario that fulfils the 95-95-95 AIDS Targets, compared to a business-as-usual scenario maintaining coverage of HIV-related services at 2020 levels every year until 2050. The benefits are calculated using the full-income approach, which values both the change in income and mortality.

We estimated the value of the projected reduction in the mortality rate of the HIV programmes as the amount an average person would pay to reduce their risk of death by one in 10,000 for one year to 1.2% of GDP per capita.

We allowed the income-elasticity of the willingness to pay for mortality risk reduction to decline at either 0.8% or 1.2% for every percentage decline of the country's income. We computed the cost of inaction (CoI) as the incremental net foregone benefits in only fulfilling the business-as-usual scenario compared to the 95-95-95 one.



**Results:** Failing to meet the 95-95-95 AIDS targets entails substantial human and economic consequences. The human cost represents 34.9 million new infections and 17.7 AIDS-related deaths between 2021 and 2050. The economic cost of inaction represents US\$ 8,291 [5,821-13,680] per person among all low- and middle-income countries by 2050, with an average cost of inaction per capita of US\$ 670.

Country-specific analysis supports the relevance of considering both the RoI and the CoI in the economic analysis of the AIDS response. For example, South Africa has the CoI, whereas countries like Kenya and Haiti have a higher RoI.

**Conclusions:** The cost-benefit analysis of the AIDS response using a full-income approach enables measuring the return on investment and the cost of inaction of meeting or failing to meet the 95-95-95 AIDS Targets. Failing to meet these targets bears a tremendous human and economic cost. The idle position is not an option.

## WEPEE580

PrEP combined with other prevention measures is saving money within 5 years according to different HIV incidence rates scenarios: a budgetary impact analysis in Ecuador

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**Background:** In Ecuador, the HIV epidemic is concentrated in men who have sex with men (MSM) and trans women (TW), being the province of Pichincha the one with the highest prevalence: 18.32% and 28.05% respectively. These populations are more likely to benefit from pre-exposure prophylaxis (PrEP), a highly effective HIV prevention strategy for key populations. To this extent, we analyzed the budgetary impact of adding PrEP to other prevention measures (condoms, lubricant, and health education) according to different HIV incidence rates scenarios within 5 years.

**Methods:** The PrEP needs and cost were estimated with the Pan American Health Organization (PAHO) tool. A budgetary impact analysis (BIA) was developed from the third payer perspective with a 5 years' time horizon. The modeled scenarios were based on the epidemiological characteristics of the population joining the program, intention to use prevention measures including PrEP and availability of resources. The eligible population was 4043 for year 1 and would reach 4291 in year 5. Each scenario was analyzed with an three different annual incidences. Due to the lack of information in Ecuador, regional data was used: 2.6%, 4.3% and 7.35%. The BIA was estimated by imputing the total target population, for each year by the individual costs, in each scenario.

**Results:** Under the lower incidence limit of 2.6% no savings were made within 5 years. A scenario with an incidence of 4.3% generates savings in year 4 (-3% of annual budget) and year 5 (-10%). In the upper limit model of a 7.35% incidence, savings were made from year 2 (-4%) and reached 31% in year 5. The trend of increase budget in the PrEP scenario is 6% between for year 1 and 5, while in the current -without PrEP- scenario it is 59% in the same period.

**Conclusions:** PrEP combined with other prevention measures is saving money within 5 years according to different HIV incidence rates scenarios, different populations groups. It is expected that combined prevention programs for MSM and TW might generate savings for the health system in the medium term.

## Health systems, health systems strengthening and partnerships

## WEPEE581

Early registration of HIV-exposed infants: a strategy to increase uptake of early infant diagnosis in Tanzania from 2022 to 2023

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**Background:** Prior to 2022 in Tanzania, a substantial number of HIV-exposed infants (HEI) remained unidentified and untracked. Most HEI starting at aged 6 weeks were registered on paper-based tools, which was a barrier to accelerating early infant diagnosis (EID) of HIV within 2 months of birth, early access to HIV treatment services, and improved health outcomes. The national 2-month EID coverage was below 80%.

**Description:** We assessed the process flow of pregnant women living with HIV from the first antenatal visit to 18 months post-delivery. The assessment revealed missed



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opportunities for testing HEI and inspired policy change discussions in February 2022 that culminated in revised national guidelines in September 2022. The policy change aimed to register all HEI within 7 days of birth by linking HEI registration to the infant's first immunization doses. The policy guidance also renewed emphasis on using the national HEI card for registering HEI and entering data into the national HIV client electronic record system.

We analysed data from over 3,000 facilities that provide services to nearly 80% of all pregnant and breastfeeding women living with HIV to describe trends in early registration and 2-month EID coverage, which is the proportion of blood samples collected among eligible infants at aged 2 months between October 2021 and September 2023.

**Lessons learned:** Registration of HEI within 7 days improved from 7% in July-September 2022 to 66% in July-September 2023 (Figure). During the same period, 2-month EID coverage increased from 82% to 92%.



Figure. HIV-exposed infants' registration and early infant diagnosis coverage at aged 2 months in Tanzania, October 2021 to September 2023.

**Conclusions/Next steps:** Early HEI registration facilitates timely access to diagnostic and treatment services for all HEI and can support individually tailored care and effective monitoring of a HEI's well-being from birth until a final HIV status is ascertained. The process mapping exercise was a catalyst in promoting national policy change.

## WEPEE582

Breaking silos and expanding health system partnerships: an integrated response for the prevention of Hepatitis B through vaccination as a part of routine ART care, Andhra Pradesh, India-2023

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**Background:** The Government of Andhra Pradesh (GoAP) adopted the National AIDS Control Program's (NACP) principles to break the silos and build synergies. In December 2022, GoAP initiated a systematic process to integrate hepatitis B vaccination as a part of routine care at Antiretroviral Therapy (ART) clinics.

**Methods:** In collaboration with the GoAP, we identified stakeholders from National Viral Hepatitis Control Program, immunization program, NACP, hospital administrators and ART clinic staff from state and district levels. We developed; Information Education and Communication (IEC) materials to promote vaccine uptake; messages on vaccine hesitancy; standard operating procedures (SOP) for patient flow; and a real-time monitoring tool on vaccination status for 54 ART clinics and 26 districts. We conducted site-feasibility assessments, trained the health care staff, and strategized uninterrupted supplies including cold chain. People living with HIV (PLHIV) were screened for hepatitis B antibodies and if found negative, were vaccinated.

**Results:** In January 2023, we trained 184 health care staff from 54 ART clinics on the SOP, injection safety and patient flow for hepatitis B vaccination and disseminated IEC. During November 2021-November 2023, we screened 210,273 (44.8% male, 54.9% female, 0.3% transgender) PLHIV for hepatitis B and 3,702 (1.8%) were positive. During February-November 2023, we vaccinated 87.6% of the 206,571 who tested negative (38.6% male, 48.7% female, 0.3% transgender) with the first dose (Figure-1).



Figure. Hepatitis B vaccination coverage among PLHIV at ART centres, Andhra Pradesh, India - 2023.

We conducted 44 decentralized events to increase vaccine access for both children and key populations. In the first 90 days, we provided 100,000 vaccinations [mean: 1342 vaccinations/day across the state; 25 vaccinations/ART center/day] and observed no interruption in stocks or cold chain.

**Conclusions:** Integrated collaborative partnerships from concept to implementation resulted in rapid uptake and saturation of hepatitis B vaccination among PLHIV in AP. Real time monitoring supported seamless supply chain management and enhancing reach by site.

## WEPEE583

### Barriers to viral suppression in young children on dolutegravir-based antiretroviral therapy in Malawi, a mixed-methods study

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**Background:** Implementation of pediatric dolutegravir has improved viral load (VL) suppression of young children, though many still present with high VL (HVL) with limited insight about factors contributing to continued HVL in eastern and southern Africa. We sought to understand factors associated with HVL and barriers to adherence among Malawian children aged <10 years, using mixed-methods.

**Methods:** Between April-July 2023, we performed a retrospective observational cohort study, using medical records at 30 health-facilities in Malawi. We enrolled all children who were aged <10 years, on dolutegravir-based ART >12 months, and had a routinely collected VL test-result between January-December 2022 that was high ( $\geq 1,000$  copies/mL), or suppressed (VL <200 copies/mL). We used logistic regression, adjusting for age, sex, duration on current regimen and health-facility, to determine factors associated with HVL. To assess adherence barriers, we conducted in-depth interviews (IDIs) with caregivers of a random sub-set of children with HVL and with health-care-workers providing HIV care at study facilities. We used constant comparison methods to analyze qualitative data.

**Results:** We enrolled 538 children: 222-HVL and 316-suppressed. Being younger than 4-years and having treatment interruption (>28days) within a year prior to VL sample collection (Table) was significantly associated with HVL. We analyzed 54 IDIs (30-caregivers, 24-health-care-workers). Participants reported particular challenges with adherence for young children, as they transition from infancy to early childhood and assert independence. Major challenges included children resisting daily medi-

cation and difficulty managing multiple pills at once, lack of food, and fear that young children may unintentionally disclose their status by mentioning medication to others.

Variable (n=538)	Children with suppressed VL (<200 copies/mL) % (n = 316)	Children with HVL ( $\geq 1000$ copies/mL) % (n = 222)	OR	95% CI	aOR <sup>a</sup>	95% CI
Age at ART initiation in years, median (IQR)	1.8 (1.0-2.5)	1.7 (1.0-2.5)	1.09	(0.95-1.22)		
<4 years at VL sample collection	9.8 (31)	15.8 (35)	1.72	(1.03-2.89) **	2.75	(1.38-5.48) **
Female	55.4 (175)	48.7 (108)	0.76	(0.54-1.06)		
Medication dispensing interval						
1-month	20.8 (65)	26.2 (58)	Ref			
2-month	58.8 (184)	52.5 (116)	0.71	(0.46-1.08) *	0.73	(0.47-1.12)
3-month	20.4 (64)	21.3 (47)	0.82	(0.49-1.38)	0.89	(0.52-1.51)
Years on ART, median (IQR)	5.2 (3.7-6.5)	4.7 (3.1-6.6)	0.94	(0.86-1.02)		
$\geq 28$ days late for an appointment in the past 12-months	32.9 (104)	40.5 (90)	1.42	(0.99-2.02) *	1.48	(1.02-2.11) **

<sup>a</sup>Adjusting for age, sex, duration on current regimen and site. \*p<0.05, \*\*p<0.01, \*\*\*p<0.001

Table. Factors associated with high viral load among children aged <10 years at 30 health facilities in Malawi.

**Conclusions:** The youngest children and those experiencing treatment interruption are at increased risk of HVL in Malawi. Several challenges were identified explaining the underlying insufficient adherence, mostly related to developmental/behavioral, psychosocial and socio-economic factors. Interventions targeting these challenges are needed to improve young Malawian children's virological ART outcomes.

## WEPEE584

### Taking a proactive approach to quality: a case study of the National Microbiology Reference Laboratory HIV DTS proficiency testing programme

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**Background:** Provision of proficiency testing (PT) schemes for all tests is a requirement in ensuring quality testing for our population. The Ministry of Health and Childcare (MoHCC) has decentralised and task shifted rapid HIV testing services to all districts in Zimbabwe. It is therefore imperative that laboratory ensures quality results are being produced at all levels. The NMRL has introduced a PT scheme for rapid HIV testing using Dried Tube Specimens (DTS) to assess tester competencies and ensure quality testing.

**Description:** The NMRL produces DTS panels for distribution to HIV testers across the country using blood from the national blood bank. Panels are sent to testers in various districts using the existing sample transportation system. Reconstitution instructions and result sheets are also provided for standardisation. Results are entered into the ePT system by district data officers. NMRL analyses results and generate reports. Corrective action is done for testers who do not pass the proficiency testing cycle to close identified gaps.

**Lessons learned:** The number of testers assessed under the programme has increased from 300 in 2017 to 4000 in 2023. Tester pass-rates have increased to over 90% in



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2023 from 42% in 2017. Programme coverage increased to 43 Districts nationwide in 2023 from Harare metropolitan only in 2017. Survey turnaround time has increased from over 6 months to a 3 month-complete-cycle since inception. There is increased supervision of HIV testing services through introduction of the HIV rapid district focal persons. There has been increased gap identification through the targeted Corrective Action Preventive Action (CAPA) model which provides tailor made trainings for testers that do not meet the pass mark.

**Conclusions/Next steps:** The NMRL-coordinated PT scheme has proved to be a sustainable solution in the provision of HIV PT services as every CAPA cycle has numerous tester specific trainings to close identified gaps during programme implementation. The model can be and adapted to ensure quality of other task shifted tests such as hepatitis and syphilis.

Technology advancements can also be embraced to make the programme more effective by using automated systems for panel production and data management. ISO 17043 accreditation of the PT scheme must be prioritised.

## WEPEE585

The realities of community led monitoring:  
our experience from Zimbabwe so far!

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**Background:** People centeredness and putting communities in the lead for HIV and AIDS have been buzzwords in recent times. Community led monitoring (CLM) has offered an entry point for communities' participation and leadership in strengthening community health systems, enhancing community participation and fostering accountability in HIV and AIDS services delivery.

In this backdrop Family AIDS Caring Trust (FACT) Zimbabwe with financial support from the Global Fund to fight AIDS, Tuberculosis and Malaria through United Nations Development Program (UNDP) is among the spearheads of CLM in Zimbabwe since 2021.

**Description:** Since 2021 FACT implemented CLM in 20 districts of Zimbabwe, targeting 200 facilities through 600 community volunteers including people living with HIV and sex workers. Data collection, analysis and dissemination are done quarterly at facility and district levels. Policy issues are shared with the National Steering Committee for escalation. Objective is to monitor accessibility, availability, affordability, acceptability and appropriateness of HIV services.

**Lessons learned:** We noted attitudes changes as reduced stigma and discrimination was reported across districts. CLM is closing information gaps between facilities and communities through volunteers. Volunteers

are re-connecting antiretroviral therapy defaulters. CLM also brought out general health improvements issues like shortage of nurses to the attention of duty bearers.

We observed that CLM is effective where health authorities are responsive. Variations are notable across districts and are correlated to how CLM was embraced locally. Healthcare workers have been apprehensive of CLM as it was misconstrued as policing their work. Thus, CLM is not yet fully embraced in Zimbabwe resulting in low prioritization and resistance. Community capacities on CLM also plays a major factor on its effectiveness. However, the greatest controversy remains around definition of communities.

**Conclusions/Next steps:** CLM is generating undeniable evidence for policy advocacy to enhance access to HIV response services. It gives power to communities to influence HIV/AIDS response but only if duty bearers are responsive and communities are capacitated. Increased investments are required to build strong communities. We also ought to expand the definition of communities to place equal emphasis on prevention as with treatment and care for total epidemic control. The foregoing calls for revisiting the definitions of communities.

## WEPEE586

Prevent stockouts of HIV medicines and related commodities by using interactive decision-making tools

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**Background:** Although the Dominican Republic (DR) manages an efficient unified pharmaceutical supply system (SUGEMI, Spanish acronym), during 2020-2021 antiretroviral (ARV) stockouts have been attributed to international delivery delays and local logistics distribution difficulties due to the COVID-19 pandemic. The limited information and evidence available on these topics and the lack of coordination among decision makers: the Ministry of Health's (MoH) HIV Program and procurement department, and the network of health care providers (SNS, Spanish acronym) prevented local actors from anticipating the situation in time to perform rapid analysis and take effective actions to prevent stockouts.

**Description:** To avoid similar crises, in 2021 projects funded by the United States Agency for International Development (USAID) in the Dominican Republic supported the



MoH and SNS to develop a dashboard to analyze the availability of ARVs and HIV-related commodities to prevent stockouts. Primary data from SUGEMI information systems serve as the source for this dashboard.

A sequence of graphics displays availability and consumption information for ARVs and other HIV-related commodities at health facilities, and regional and central warehouses and tracks the procurement of products from international providers.

**Lessons learned:** From 2022 to date January 2024, this dashboard and the meetings organized for its analysis and decision-making have made it possible to prevent stockouts at the central warehouse, nine regional warehouses, and 101 facilities.

This analysis routine has also served to provide positive feedback to all SUGEMI operators to improve the timeliness and quality of primary data, its entry into databases, and the processing and presentation of supply indicators. The dashboard has allowed the government to make decisions based on evidence and redistribute 18 thousands ARV units and supplies between regional warehouses and facilities, advance purchase orders, and request emergency purchases.

**Conclusions/Next steps:** The periodic analysis of the information provided by the interactive logistics dashboard was included as a permanent routine in the health institutions responsible for managing HIV supplies in the Dominican Republic.

## WEPEE587

### Sustaining meaningful community involvement: strengths and vulnerabilities within network structures for a HIV collaboration

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**Background:** The Australian response to HIV has been characterised by collaboration and partnership. This includes a network of community organisations (established by people living with HIV, gay and bisexual men, people who inject drugs, sex workers) working with health services, government, and researchers. In the pursuit of elimination of HIV transmission and stigma, the network is needing to adapt to rapidly changing epidemiolog-

ical, policy, community and health technology contexts. During this time, we investigated the inter-organisational structures of this network to identify the strengths, weaknesses, and sustainability issues as the network responds to future challenges and opportunities.

**Methods:** Two rounds of the study were conducted in 2018 (n=27) and in 2022 (n=26), examining relationships between 48 government, health, research, and community organisations involved in Victoria's (a State of Australia) HIV and Hepatitis C response. We asked organisations about their sharing of information or advice, sharing resources, engaging in joint initiatives, and collaborating on advocacy, with other organisations in the network.

The data collected were analysed using exponential random graph models (ERGMs), identifying significant network characteristics and the social processes which produced the observed structure.

**Results:** Networks at both time points were most dense around the sharing of information, and least dense around collaborating on advocacy. Organisations were well connected to organisations of all other types (e.g. research organisations were connected with government, community, and health organisations). Smaller organisations (fewer than 11 staff members) were significantly more likely to nominate others across all relationships, indicating that small organisations had greater engagement in network relationships than their larger counterparts.

**Conclusions:** The results reflect an integrated network. The sharing of insights, joint work and influential community sector involvement were prominent types of engagement between actors. However, this involvement requires a high level of relationship work for small community and peer-led organisations to sustain and the density of relationships may place a barrier for newly emerging priority communities to become integrated within the network. Analysis of whole network structures provides useful new insights into the challenges of sustaining meaningful community participation and partnership within a network over time, identifying key pressure points and vulnerabilities.



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## WEPEE588

### Integration of Early Infant Diagnosis (EID) into routine immunization services increases EID coverage in two Burundi provinces

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**Background:** Integration of early infant diagnosis (EID) services for HIV-exposed infants (HEI) into immunization services can increase EID coverage and expedite timely HIV diagnosis. Burundi has >88% childhood immunization coverage, but variable EID coverage.

We describe findings from an intervention integrating EID into immunization services to improve EID coverage in Burundi.

**Description:** In collaboration with Burundi's national HIV/AIDS program, the USAID/PEPFAR-funded Reaching Impact Saturation and Epidemic Control (RISE) Project identified 56 sites with co-located immunization services in two provinces with the highest number of HEI: Kirundo (n=25 sites) and Gitega (n=31 sites).

Healthcare providers (n=149) from immunization, antenatal care, maternity, and HIV treatment services received a training package and sites received technical assistance (TA) in August-October 2022 (Fiscal Year [FY] 22 Q4 - FY23 Q1) on:

1. Reorganizing clinic flow to integrate EID/immunization;
2. Hands-on EID sample collection training;
3. Identification of HEI needing testing through verifying maternal HIV status in the mother-infant health booklet;
4. Documentation of EID testing via web-based platform to expedite results reporting from laboratory to site and client, and;
5. Ongoing mentorship and monitoring TA.

**Lessons learned:** Pre-implementation (FY22 Q1-Q3), 91/210 (43%) and 142/210 (68%) HEI had a sample collected for EID by <2m and 12m, respectively (Figure 1).

Post-implementation (FY23 Q2-Q4), 121/163 (74%) and 173/163 (106%) HEI had a sample collected by <2m and 12m, respectively, representing a coverage increase of 71% (<2m) and 57% (12m) compared to pre-implementation.

Observed knowledge gaps included the importance of evaluating HEI status at immunization and alignment of EID/immunization schedules.

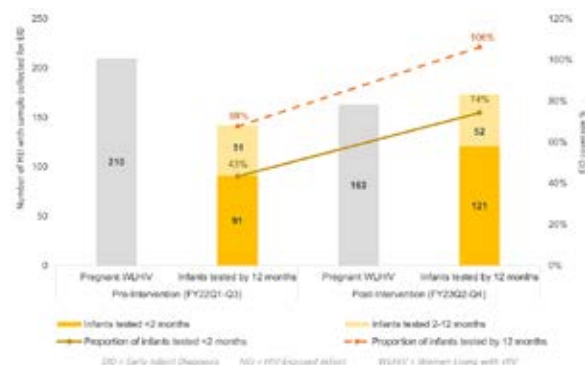


Figure 1. Number and proportion of HEI with a sample collected for EID by <2 and 12 months, pre-intervention (FY22 Q1-3) and post-intervention (FY23 Q2-4) in two Burundi provinces.

**Conclusions/Next steps:** Training package implementation and TA to integrate EID into immunization services was associated with increased EID coverage and the number of HEI with a sample collected for EID.

Next steps include collaborating with the Burundi National AIDS/STI Control Program to plan sustainable national expansion of the integration approach.

## WEPEE589

### Integrating HIV prevention services for people who use drugs into government hospitals in Bangladesh: a sustainable approach

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**Background:** Traditionally, HIV prevention services for People Who Use Drugs (PUD) in Bangladesh were delivered through drop-in centers (DICs) funded primarily by the Global Fund through Save the Children. These centers, external to public health facilities, addressed PUD needs in a culturally sensitive manner.

Recently, a strategic shift occurred, relocating DICs into public hospitals, supplemented with capacity-building, resources, and supervision from the Global Fund.

**Description:** Under the NFM3 phase (2021-2023) of the Global Fund, 12 out of 42 DICs were relocated to government hospitals. This process involved multiple stages: selecting hospitals based on various criteria, coordinating with the government's nodal body named AIDS/STD Program (ASP) for approvals, allocating space through formal requests, renovating spaces with Global Fund grants, and developing a comprehensive management plan. This plan, created collaboratively with multiple stakeholders, included mechanisms for monitoring and coordination.

Additionally, extensive training and orientation were provided to service providers and PUD for their readiness. Network of PUD were engaged in the whole process.

## Lessons learned:

- Hospital-based service delivery result in a 28% increase in general health service recipients in 2023, compared to the DIC model in 2022.
- Notable reduction in stigma and discrimination towards PUD, with 2,220 PUD got access to free medication which was rare before integration.
- Hospitals managed 248 complicated STI and 295 abcess cases with necessary medication, previously unaddressed in the DIC model.
- Monthly operational (house rent, electricity, water, medical waste disposal, guard, etc.) cost savings of approximately \$800 per DIC were realized.
- Mutual support between hospital authorities and NGO staff was established for efficient service delivery.

**Conclusions/Next steps:** While challenges remain in fully integrating PUD into the public health system, the transition from NGO-led to government-operated services is underway and shows promise for sustainability. Future efforts will focus on enhancing full readiness among both PUD and service providers to ensure seamless integration of HIV prevention services into the public health infrastructure.

## WEPEE590

Building sustainable district-based Quality Improvement (QI) capacity for HIV prevention in public health facilities in Blantyre, Malawi

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**Background:** The Malawi Government approved oral PrEP for prevention of HIV infection in 2019. However, at that time only 3 clients had been prescribed PrEP in public sector facilities in Blantyre, the district with the highest HIV prevalence. Through the Blantyre Prevention Strategy, led by the Government of Malawi in partnership with Georgetown University, a Quality Improvement Collaborative (QIC) was launched by the District Health Office to scale-up PrEP in 23 facilities in 2021, including 3 public hospitals and 14 district health centers. QI had not been routinely used as a strategy to improve PrEP uptake. To determine organizational and provider capacity to deliver PrEP services, we conducted a baseline assessment to identify areas for improvement with a follow up assessment after 24 months of implementation to assess change.

**Description:** Standardized tools were used to conduct assessments through interviewing an average of 5 health-care workers per facility focusing on PrEP services, uptake, provider competencies, supply chain management, documentation, and changes made to processes and systems to improve performance. Data were collected on a tablet-based platform and analyzed in Excel.

**Lessons learned:** QIC Implementation contributed to a significant improvement in PrEP uptake in Blantyre public health facilities with the proportion of those offering PrEP increasing from 18% to 100% resulting in the number of clients prescribed PrEP increasing from only 3 at baseline to a cumulative 10,128 after 24 months.

The proportion of facilities with cadres trained in PrEP guidelines increased from 72% to 100%, and 83% of the facilities had integrated PrEP into routine health services with STI, outpatient department (OPD), and ART being common entry points.

Common changes contributing to improved uptake in clinic systems include demand creation for PrEP services throughout the facility, redesign of flow to center on a status-neutral approach, incorporation of community insights from human-centered design (HCD) approaches, and peer-to-peer mobilization.

**Conclusions/Next steps:** QICs are an effective tool to improve PrEP uptake as part of combination HIV prevention. Building sustainable capacity for QICs in low-income settings with regular coaching is a feasible model that can be replicated with context-specific adaptation to increase PrEP uptake and other preventive health services.

## WEPEE591

Impact of the Service Delivery Framework implementation on children and adolescents living with HIV In Nigeria

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**Background:** Progress has stalled on the number of children and adolescents living with HIV who have access to lifesaving antiretrovirals (ARVs) despite improvements in childhood formulations and innovative diagnostics. As of 2019 ART coverage and viral suppression for children 0 – 14 years was 36% and 54% respectively, and 41% and 52% for adolescents 15 – 19 years, lagging behind adult ART coverage at 83% and viral suppression at 68%.

To address this, between 2020 and 2022, CHAI supported the National AIDS and STIs Control Programme (NASCP) to adapt the UNICEF Service Delivery Framework (SDF) which recommends age-specific and evidence-based interventions to accelerate progress for children and adolescents across the cascade.



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The SDF was incorporated into the National Acceleration Plan (NAP) to provide a policy framework for national implementation.

**Description:** Situational assessments including a review of new infections, MTCT rate, adolescent incidence, and geographic burden were conducted to determine national and 36 state's typologies and prioritize interventions that would have the greatest impact based on a Solutions Matrix.

CHAI supported the capacity building of healthcare workers to implement the SDF, institutionalized the role of pediatric and adolescent HIV focal persons to coordinate SDF implementation, and provided technical assistance for monitoring and scale-up at the national level. Data was collated from national HIV program monitoring tools and NAP assessment surveys.

**Lessons learned:** At the end of 2021, NAP assessment revealed 25 states (70%) with 996 (88%) ART sites reported roll-out of the SDF with index testing (96%), alternate entry point testing (92%) and Differentiated Service Delivery (88%) being the most widely implemented strategies.

This greatly contributed to national pediatric and adolescent ART coverage increase to 48% and 68% respectively. Viral suppression rates also improved to 81% and 85%. The outcomes indicated that scale-up of these high-impact interventions could have the largest contributions to rapidly improving pediatric and adolescent HIV outcomes.

**Conclusions/Next steps:** National adoption of the SDF within the NAP and subsequent scale-up of strategies tailored to local epidemics have proven invaluable in contributing to strengthening Nigeria's pediatric and adolescent HIV response. Optimal implementation by MOH and partners is encouraged in line with the current global alliance.

## WEPEE592

Implementing an integrated community model addressing vulnerabilities affecting HIV epidemic control in Uganda: a case study of Acholi region

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**Background:** Uganda has made progress towards achieving the targets for epidemic control. However, gaps persist in the first 95 (80.9%) and the third 95 (92.2%). With a national HIV prevalence of 5.3%, the Ministry of Health rolled out the integrated community service delivery model (ICSDM) to address HIV epidemic control at the community level by addressing the determinants of new

infections and advanced HIV disease. We implemented the ICSDM to address vulnerabilities affecting HIV epidemic control in the Acholi sub-region.

**Description:** The pilot implementation of the ICSDM was at 70 public health facilities in 8 districts. Mapped out 3,519 non-suppressed persons living with HIV (PLHIV) with VL  $\geq 1000$  copies/mL by village/parish and sub-county and subsequently mapped 667 Community Health Workers (CHWs) by the same criteria. Attached CHWs to PLHIV by proximity, attaining an average attachment ratio of 1:4 for children ( $<20$ ) and 1:10 for adults. Mapped CSOs and distributed directories for linkage to social services.

Oriented CHWs on the basic integrated service package, including assessment of determinants of vulnerabilities, HIV testing, linkage and combination prevention, advanced HIV disease screening, linkage to social support, client literacy, and Directly Observed Treatment Support (DOTS). CHWs provided integrated package services at every household visit.

**Lessons learned:** Between September 2022 and November 2023, there were 3,683 (98.8%) biological children and siblings of unsuppressed PLHIV offered HIV testing services (HTS), and 139 (3.8%) were tested positive.

Similarly, 1,399 (96.1%) partners of unsuppressed PLHIV ( $>20$  years) were offered HTS, and 176 (28.5%) were tested positive and initiated treatment. Reached 61.8% (2174) of unsuppressed PLHIV with CD4 testing for advanced HIV disease screening, and 92.8% of unsuppressed CALHIV eligible for social services were identified and linked.

Among the 846 ( $<20$  years) unsuppressed CALHIV who received DOTS, 86% achieved VLS after 90 days. Improved VLS among CALHIV ( $<20$ ) from 67% to 76% in the same period.

**Conclusions/Next steps:** The ICSDM provides a holistic human perspective of client care and improves the optimization of CHWs in integrated HIV service delivery. The integrated differentiation in the community allows multi-stakeholder engagement in addressing client needs and vulnerabilities affecting epidemic control and could be explored in similar settings.

## WEPEE593

Strengthening national monitoring and evaluation systems for community HIV prevention in Zimbabwe

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**Background:** The Zimbabwe National AIDS Council (NAC) coordinates the multisectoral response to HIV and AIDS and manages One country level M&E system. In this regard, a generic Demographic Health Information System

(DHIS2) was developed to collect, analyze and report real time data on AGYW and KPs HIV prevention interventions from community level.

**Description:** In 2019 NAC in partnership with Oslo University sought to strengthen a community focused monitoring and evaluation system embedded within DHIS2.

A unique interfacing DHIS2 tracker was customized for Zimbabwe to capture data on mobile devices for eight HIV prevention models viz, Sista2Sista, Brotha2Brotha, Peer Led, DREAMS, Key Populations, SASA, CATS and CATFs across Zimbabwe. The system was developed through analysis of various source documents and communications from system conceptualization through to production.

These include data collection forms, risk assessment forms, HIV service referral booklets, programmes implementation manuals, meetings with project staff, marking transitions in the process of development.

Testing was done iteratively to get user acceptance and the system was piloted in two Provinces, urban and rural to test performance and acceptability.

**Lessons learned:** DHIS2 offers expanded monitoring and evaluation utility for the National HIV prevention program in Zimbabwe, facilitating access to data across the HIV cascades for decision making at community, district, provincial and national levels.

The DHIS2 generates a unique identifier for each individual client to maintain confidentiality. Community Peer Volunteers enroll peers into DHIS2 using a mobile tablet as they provide community-based HIV/SRHR services.

The system allows client registration, calculating risk levels for targeted HIV prevention interventions, capturing data on specific HIV prevention session conducted with peers and facilitates for linkage to differentiated HIV prevention and treatment services.

**Conclusions/Next steps:** While DHIS2 customization offers viable solutions to optimizing monitoring and evaluation for community focused HIV prevention interventions, there is need to strengthen harmonization and interoperability of all DHIS2 user platforms.

Routine training of community peers that collect data should be embedded in local technical experts for program sustainability.

There is need for improved device management strategies for the 5000+ mobile devices deployed in an environment with power challenges, erratic internet connectivity and high risk of data and device loss.

## WEPEE594

### Building local capacity for improved HIV treatment safety in Mozambique

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**Background:** More than 2 million people in Mozambique are living with HIV, about 60% of them women. In 2018, Mozambique adopted the WHO-recommended Tenofovir/Lamivudine/Dolutegravir (TLD) regimen as first line HIV treatment. However, the country's national medicines regulatory authority, the Autoridade Nacional Reguladora de Medicamentos, Instituto Publico (ANARME, IP) did not have an active surveillance system to carry out the WHO-recommended safety monitoring for adverse events (AEs).

**Description:** ANARME, IP and the HIV program in collaboration with the USAID Medicines, Technologies, and Pharmaceutical Services (MTaPS) Program designed and implemented an active surveillance system to study TLD's safety profile.

This included the adaptation and deployment of the online Pharmacovigilance Monitoring System (PViMS) tool for patient enrollment, and data collection and analysis to support active surveillance at nine study sites. Support also included strengthening healthcare workers' capacity to conduct active surveillance and use PViMS.

**Lessons learned:** The successful implementation of the active surveillance for TLD underscored the critical importance of fostering local ownership. This experience allowed Mozambique to extend its achievements to initiating active surveillance for other new treatment regimens. The collaboration with ANARME, IP and the public health programs facilitated strengthening partners' capacity to conduct active surveillance.

Facility staff may not have the bandwidth to assume the additional tasks involved, so it is essential to engage sufficient human resources. Regular supervision, conducted by ANARME, IP, the Provincial Directorate of Health and Ministry of Health with MTaPS technical support helped to ensure compliance with the protocol, and was also important to identify and troubleshoot challenges, validate data quality, and strengthen compliance with established procedures at the facility level.

**Conclusions/Next steps:** Mozambique now has locally relevant data to assess the overall safety of the TLD regimen and demonstrated experience implementing an active surveillance program. The findings will inform country clinical guidance and help to identify TDL-associated AEs



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in patients. The government may also consider leveraging the PV experience with TLD to benefit patients outside of the HIV program.

## WEPEE595

South African Department of Health applies a systems approach to quality improvement to address systems challenges in the HIV programme

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**Background:** The HIV/AIDS epidemic and weaknesses in the health system in South Africa, paired with the global focus on ending AIDS as a public health threat by 2030, drove the National Department of Health to move away from vertical programming to a systems level improvement strategy.

The Nerve Centre Approach (NCA) guides health care workers at all levels of the health system to improve service delivery through the adoption of standardised, problem-focused and improvement-driven platforms and tools.

**Methods:** Nerve Centres are uniquely adapted structures, equipped with tools and activities centred on using data and teamwork to identify and drive change for all health care managers. The Operation Phuthuma team, a project management and technical support structure of the national HIV programme, facilitated implementation of the NCA across the country. Early in implementation, we recognised that introducing all components of the approach across multiple programmatic areas was too complex for management structures to implement at all facilities simultaneously.

Instead, we defined a phased approach starting with 100 priority facilities that could yield results, provide an opportunity to implement the approach at a smaller scale, and leverage lessons at the most local level to prepare for future scale up and expansion to additional program areas.

**Results:** In provinces where the NCA was widely rolled out, including Gauteng, Eastern Cape, North West, and Free State provinces, the number of people on ART increased by a greater proportion than the national average. For example, between March 2022 and October 2023, the number of people on ART increased by 7% in Gauteng Province, compared to a growth of 5% nationally. At the 100 priority facilities, the number of people on ART increased by 2,216 from 693,064 to 695,280 in a single month.

Province	NCA Start Date	Increase in # on ART	% Increase on ART	National Growth (Same period)
Gauteng	February 2022	79,328	7%	5%
Free State	May 2022	13,744	4%	4%
Eastern Cape	June 2022	37,253	7%	4%
North West	June 2022	16,542	5%	4%

**Conclusions:** The approach has been widely endorsed, accepted, and acknowledged as a South African data driven Quality Improvement approach that is showing significant outcomes in the achievement of the number of people on ART at provincial level.

## WEPEE596

Incidence of loss to follow-up and its predictors among persons receiving HIV treatment in private mine hospitals and clinics in Copperbelt Province, Zambia

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**Background:** The private sector is a key participant in the fight against HIV/AIDS worldwide. However, information on the incidence of loss to follow-up (LTFU) among persons receiving treatment in private health facilities is scarce.

We report the 10-year LTFU rates for persons initiating antiretroviral therapy (ART) at privately owned mine hospitals and clinics supported by the USAID Zambia Accessible Markets for Health Project in Copperbelt Province, Zambia.

**Methods:** This was a retrospective cohort study of persons who initiated ART between 2005 and 2013 at five project-supported mine hospitals and clinics in Copperbelt Province, Zambia. Kaplan-Meier survival analysis was performed to compare the LTFU of various client groups. The Cox proportional hazards model was used to identify factors influencing LTFU rates.

**Results:** Of the 7,533 persons who initiated ART, 58% (n=4,427) were female, the median age was 35 years, and the baseline median CD4 count was 483 cells per cubic millimeter (interquartile range, 332). Ten years after ART initiation, 5,397 (72%) persons were alive in care, 379 (5%) were dead, 885 (12%) were lost to follow-up, and 872 (11%) had transferred to other facilities.

The overall incidence rate of LTFU was 2.0 per 1,000 person-years of observations (95% CI=1.7 - 2.3). Characteristics associated with higher risk of LTFU were ages 15-24

years (AHR=1.3, 95% CI=1.1-1.7), and 25-34 years (AHR=1.2, 95% CI=1.1-1.4), compared to those aged 35 years and above, and WHO stages one (AHR=3.0, 95% CI=1.2-7.1) and two (AHR=2.9, 95% CI=1.1-7.7), compared to those in WHO stage III/IV.

**Conclusions:** The incidence of LTFU among persons receiving ART in private health facilities was lower than that in the public sector. Clients younger than 35 and those in WHO stages I and II were at an elevated risk of LTFU. Interventions to prevent LTFU among ART clients in private health facilities should address these predictors

## WEPEE597

**PUTTING PEOPLE FIRST: 24 years of implementing the Total Control of the Epidemic (TCE) model. People at the heart of changing the course of the epidemic**

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**Background:** As HIV spread in Sub Saharan Africa (SSA) in the 1990s, the Humana People to People (HPP) Federation – a network of local organizations in 46 countries – developed its flagship Total Control of the Epidemic (TCE) model. Funded by PEPFAR, Global Fund, and others over 24 years, TCE has been implemented in 12 countries in SSA, working with communities to co-create a locally-led HIV response putting **people first**.

**Description:** Rooted in the understanding that ‘Only the people can liberate themselves from the epidemic,’ locally recruited Field Officers build knowledge and ownership among PLHIV and key populations to take charge of their health, break down stigma and discrimination, and reduce barriers to health services.

**Lessons learned:** Since 2000, TCE has reached 22 million people across 12 countries. While TCE originally focused on total mobilization of whole communities to address epidemic needs, the model was quickly adapted to the evolving epidemiology, adding targeted services, strengthening community-facility integration, and addressing the 95-95-95 targets. TCE’s impacts are evident in many countries.

In **Zambia** – where TCE is implemented by local NGO DAPP in four of Zambia’s ten provinces with funding from PEPFAR/CDC and US Department of Defense – TCE has demonstrated a **31% HIV positivity rate in index testing in Lusaka** and a **99.5% ART initiation rate** among PLHIV (2021).

In **Namibia**, DAPP has implemented TCE for more than a decade with CDC support. Results include **100%** of babies born HIV free from HIV-positive mothers (2021) and sup-

porting the country to nearly surpass the UNAIDS 95-95-95 goals in 2022, with **94%** of PLHIV knowing their status, **97%** of those on treatment, and **93%** of those achieving VL suppression.

In **DRC**, TCE is implemented by local NGO HPP-Congo in Kinshasa with PEPFAR/CDC support. Between 2019-2023, the TCE model has supported identification of **32,000 PLHIV** with **98%** linked to ART.

**Conclusions/Next steps:** For 24 years, TCE, with the people-to-people principle at its core, has been utilized as an **evidence-based, scalable, and sustainable model** to attain epidemic control. As countries achieve epidemic control, TCE is being adapted to address broader primary health care needs and support countries to move towards universal health care.

## WEPEE598

**Improving ART recipients of care satisfaction and healthcare providers' efficiency through Community Score Card (CSC)**

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**Background:** Recipient of care (ROC) satisfaction is a significant factor in whether people living with HIV adhere to treatment and therefore directly affects their health outcomes. So is health care providers' efficiency. Late opening and early closing of ART clinics, is one of the markers in service satisfaction and provider efficiency.

**Description:** Community Score Card, a two-way, ongoing participatory tool for the assessment, planning, monitoring and evaluation of services has been instrumental globally.

In Malawi, the community-led ART service CSC activities – bring together the ART demand side (“service users”) and the supply side (“service providers”), advocating to improve the service to facility, district or national authorities. Focus group discussions with the users and the providers were undertaken by trained community members.

Generated issues, were scored by both sides before interface meetings where providers gave commitments which were then followed up by community members.

**Lessons learned:** CSC has proven to improve ROCs' ART service satisfaction, specifically- clinic opening and closing time. This has led to an increase in clinic use, and ensured adherence to ART, with expected improved health outcomes. The providers also felt empowered, when prior to CSC, their behaviours and efficiency were not satisfying the ROCs.

From April 2023 to date, the satisfaction of ROCs at 15 of the 40 ART clinics where CSC was done, improved significantly. In the November 2023 follow-up, after the interface meetings, ROCs reported that the clinics were opening



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and closing at the right time in 13 of the 15 facilities that had the mentioned issue. A repeated follow-up is planned for February 2024.

**Conclusions/Next steps:** CSC can support improve health care providers' efficiency and in turn improve ROC satisfaction with expected consequent improvements of ROCs' health over time.

## HIV and development synergies

### WEPEE599

Private-public partnership supporting sexually exploited minors and young women selling sex to launch microenterprises: lessons learned from Enhanced economic strengthening implementation within DREAMS in Zimbabwe

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**Background:** The Determined, Resilient, Empowered, AIDS free, Mentored and Safe (DREAMS) program aims to reduce new HIV infections among sexually exploited minors (SEM) and young women selling sex (YWSS) aged 15 to 24 years. YWSS/SEM received need-based-integrated technical skills trainings to alleviate poverty which exposes YWSS/SEM to HIV as they transact sex for income.

**Description:** In July 2021 a vulnerability assessment tool was used to identify YWSS/SEM eligible for enhanced economic strengthening (EES) based on economic vulnerability and willingness to participate in long term EES projects. Ministries of women affairs, youth, agriculture, and social development were approached to conduct two days skills trainings for YWSS/SEM on projects that were deemed viable through community engagement.

Trained YWSS/SEM received \$100 each as a starter-up pack to start, improve or enhanced their businesses. Supported skills in this program included making liquid-laundry soap and petroleum jelly, poultry breeding, crop pro-

duction, bookkeeping, hairdressing, and catering. To ensure project sustainability support and mentorship visits were conducted by DREAMS and related ministry officials. YWSS/SEM participating in EES projects were linked to markets through synergies between public and private partnerships.

**Lessons learned:** This multi-sectorial approach resulted in relevant training, mentoring, and support that enabled YWSS/SEM to launch business. Private-public synergies enabled resource mobilization to supplement DREAMS efforts. Need-based-integrated technical skills transfer economically empowered YWSS/SEM leading to an increase in disposable income and reduced reliance on transactional sex.

Continued support, mentorship and look and learn visits for YWSS/SEM impacted hands-on knowledge and eagerness to continue with businesses. YWSS/SEM showcased handmade products at international fairs, opening doors for long-term business opportunities. Starter-up packs enabled YWSS/SEM to build and own businesses.

Economically supported YWSS/SEM verbalized reduced dependency on transactional sex as time was spent on business management, significantly reducing chances for new HIV infections.

**Conclusions/Next steps:** DREAMS and other district stakeholders will continue supporting YWSS/SEM to showcase products at local and regional business market fairs. YWSS/SEM will be encouraged to engage in Internal-Savings-And-Lending-Scheme for access to sustainable financing, to boost their business.

Business diversification will help expand YWSS/SEM product market. YWSS/SEM to mentor and problem-solve with other entrepreneurs.

### WEPEE600

Strengthening primary health care systems to respond effectively to post violence care

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**Background:** In South Africa, the Gender-based Violence and Femicide (GBVF) pandemic is a national crisis. Survivors of GBV access post violence care services (PVCS) through Thuthuzela Care Centres (TCC) that are one-stop facilities that provide comprehensive support for victims of GBV. With notoriously high rates of GBV the current number of TCCs (63) are not enough. Poverty, inequality, geographic location and vastness, impact the ability to access timely services at TCCs.

Inaccessibility of GBV services can result in HIV or STI infection, pregnancy, symptoms of stress, anxiety, depression, risky behaviour, substance abuse and mental health challenges. Integrating comprehensive PVCS at primary and community health care facilities improves accessibility of services for vulnerable and hard to reach communities.



**Description:** NACOSA's GBV programme worked to integrate PVCS into primary and community healthcare facilities in 5 provinces in South Africa through:

1. Training healthcare providers to render the minimum package of clinical PVCS;
2. Providing mentoring support for clinicians;
3. Developing case management guidelines and algorithms for effective PVCS;
4. Placing social workers and linkage officers at facilities for psycho-social support and to support improved health outcomes;
5. Deploy GBV Ambassadors in communities to support pathways into PVCS;
6. Training community stakeholders and healthcare providers in receiving and responding to disclosures of GBV, using the World Health Organisation's LIVES model.

**Lessons learned:** Trained 110 clinicians and 25 Health Department operational management staff in PVCS; 132 community leaders and 116 GBV frontline brigades trained in the LIVES model. Facilities capacitated on PVCS increased from 84 in 2020 to 116 in 2023.

As a result, the programme noticed a 98,5% increase in survivors accessing PVC services – from 146 72 in 2020 to 29 117 in 2023. In 2020, 6928 survivors were Young Women between the ages of 10-24 years, this increased to 13 904 in 2023 (101%).

**Conclusions/Next steps:** There is continued need for expansion of the integration of PVCS in primary and community health care settings to make PVCS more accessible at community level. Timely PVCS significantly improve health outcomes for survivors of GBV.

## WEPEE601

Enhancing economic resilience as an HIV prevention strategy for adolescent girls and young women: lessons from private sector engagement in DREAMS

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**Background:** In Zambia, HIV prevalence among women aged 20-24 is four times higher (5.9%) than males (1.8%) in the same age group<sup>[1]</sup>. This is because women are more susceptible to HIV compared to men in the same age group.

To address vulnerability of Adolescent Girls and Young Women (AGYW), Zambia, through the USAID funded DREAMS (Determined, Resilient, Empowered AIDS-free, Mentored, and Safe) program is addressing dimensions of vulnerability through economic strengthening activi-

ties targeting AGYW aged 15-24 and linking them with the private sector.

[1] Zambia Population Based HIV Impact Assessment (ZAMPHIA), December 2021

**Description:** The USAID Controlling HIV Epidemic for Key and Underserved Populations (CHEKUP) I Project is implementing economic strengthening activities aimed at reducing vulnerability of AGYW to acquiring HIV infection in seven (7) districts of Zambia.

The project has been providing economic strengthening interventions such as advanced financial literacy, digital literacy and training in savings skills targeting AGYW aged 15-24 since October 2021. Further, the project partnered with private sector to provide business start-up kits, internship, and employment to AGYW.

**Lessons learned:** Empowering AGYW through economic support is very crucial towards building their economic resilience, for long-term prevention of HIV. From October 2022 to September 2023, 11,103 AGYW were provided with economic strengthening services.

In partnership with the private sector, 174 AGYW were provided with vocational skills training; 162 were offered internships and employment; and 3,561 started their own businesses. Local entrepreneurs provided business mentorship to the AGYW running their small businesses; private sector entities were periodically engaged to identify internship and employment opportunities; and vocational skills training institutions provided enrolment spaces for AGYW.

**Conclusions/Next steps:** Empowering AGYW economically by creating synergies between the DREAMS program and the private sector can foster resilience and building a future where young women can navigate life's challenges and reduce their vulnerability to HIV infection.

Creating synergies with the private sector requires strong and constant engagements and creating win-win situations.

## WEPEE602

Taking best practices to scale: implementing national clinical and policy guidelines for Intimate Partner Violence in HIV/STI settings in Trinidad and Tobago

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**Background:** Intimate partner violence (IPV) may deter engagement and retention in HIV/STI prevention, care and treatment. On May 21 2022, the Government of Trinidad and Tobago adopted the World Health Organization (WHO) practice recommendations and launched its



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first National Clinical and Policy Guidelines documenting quality standards in care for IPV and Sexual Violence. The Guidelines outlined steps in the pathway of care to include,

1. Identification of violence;
2. Immediate care;
3. Additional care, and
4. Referrals.

Routine clinical inquiry is recommended only as part of HIV testing and counselling and antenatal care for women. There is a lack of discussion on implementing quality standards in care for IPV in HIV/STI settings in Trinidad and Tobago.

**Description:** We aimed to identify gaps in current practices and barriers to implementing quality standards in care for IPV in HIV/STI settings. Using an Implementation Science approach, key evidence-based recommendations for IPV were included in a six-week consultation process with a multidisciplinary team of 14 healthcare workers from HIV/STI sites across the country.

The process included an overview of the Implementations Science approach, a review of data on the prevalence and health impact of IPV, and progress toward implementing quality standards in care for IPV.

Barriers to implementation were identified to include, inadequate attention to clients with elevated risks for IPV to include those with history of treatment interruptions; virally unsuppressed, LGBTQI+ individuals; youths; migrants; and persons with mental health disorders.

There was also lack of established protocols and systematic documentation of IPV cases resulting in under-reporting of IPV. Inadequate training of healthcare and lay workers also hindered effective IPV case identification.

**Lessons learned:** Using Implementation Science to assess progress and barriers to implementing quality standards in care for clients at elevated risks for IPV has the potential to translate evidence-based recommendations in routine practice and hence its adoption in HIV/STI care settings.

**Conclusions/Next steps:** Healthcare practitioners in HIV/STI settings should be meaningfully engaged in the design of appropriate, sustainable IPV protocols. receive training to strengthen IPV case identification, immediate and additional care, and the referral pathway for IPV, hence improving retention on treatment and health outcomes for IPV survivors.

## Integration of HIV services with other health and support services

### WEPEE603

Navigating facilitators and barriers to establishing chemsex services in Thailand – qualitative findings from the CLYMAX study

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**Background:** Despite the growing prevalence of chemsex, there remains a lack of dedicated services for people who use chemsex and those involved in chemsex use in Thailand.

We explored facilitators and barriers to establishing and accessing comprehensive chemsex services encompassing physical, mental, and social health aspects for men who have sex with men (MSM) in Thailand.

**Methods:** Semi-structured, in-depth interviews were conducted with 60 key informants, comprising 40 MSM aged 16-35 who use chemsex, 10 peers/family members, and 10 healthcare providers. Interviews were conducted in person, recorded, and transcribed verbatim.

A codebook was developed integrating a priori themes from the interview guide and emergent themes identified from transcripts. Analyses were conducted using Dedoose software.

**Results:** All informants highlighted stigmatization, discrimination, and the uncertainty of law enforcement practices related to chemsex as key barriers to establishing or accessing comprehensive chemsex services.

The feeling of intersectional stigma – being a person who use drug, a gender minority, and, for some, living with HIV – along with anticipated discrimination in healthcare settings, legal uncertainties, and fear of arrest were reasons why people who use chemsex may hesitate to access chemsex services.

For healthcare providers, barriers included a lack of knowledge and confidence in providing care, particularly due to the variety of substances used and multifaceted chemsex-related harms, and competing priorities within health centers.

Disparities in views on harm reduction between informants and the country's policy, which focuses on abstinence, were another crucial barrier. Facilitators included integrating technology for online-based services and



public campaigns to destigmatize chemsex. People who use chemsex and peers/family members emphasized the benefits of including former users in consulting sessions and the importance of legal services and protection to make clients feel safe accessing services.

Healthcare providers expressed a strong willingness to move forward with the services, highlighting the need for well-established training and specialist consultation to build confidence in providing chemsex services to their clients.

**Conclusions:** Establishing comprehensive chemsex services presents a challenging yet crucial task to improve the health of people who use chemsex. Addressing identified barriers is essential to enhance and expand chemsex services tailored to the needs of this population.

## WEPEE604

**Integrating non-communicable disease screening and treatment into HIV services: programmatic results on hypertension and diabetes mellitus screening and care within HIV clinics in Littoral and South regions of Cameroon, 2023**

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**Background:** Integrating non-communicable diseases (NCD) services into HIV clinics is among the new strategies to improve patient-centered care and reduce mortality among people living with HIV (PLHIV).

We report the experience of integrating hypertension and diabetes mellitus (DM) screening into HIV program in Cameroon.

**Description:** We analyzed program data from selected high-volume hospitals integrating Hypertension and DM screening from April to September 2023. Integration strategy included refresher trainings on blood pressure measurement (BPM) and capillary glycemia check, adapting the client's flow, providing glucometers, tensiometers and reagents. Hypertension and DM were defined as two consecutive abnormal blood pressure (>140/90mmHg) and

glycemia (>1.26g/dl if fasting or >200mg/dl random blood glucose) measures. We described screening and treatment cascades using frequencies and percentages and identified gaps.

**Lessons learned:** Overall, 120 healthcare workers were trained during 14 theoretical and practical sessions in seven HIV clinics. Of the 18,220 PLHIV enrolled, 8,713 (47.8%) were screened and had a first BPM, including 386 (4.4%) with chronic hypertension and 8,327 (95.6%) unaware of their status; 2,403/8,327 (28.9%) had a high BPM; 561/2,403 (23.3%) returned for second BPM, and 310/561 (55.3%) were diagnosed with hypertension, of whom 230 (74.2%) classified mild, 54 (17.4%) moderate, and 26 (8.4%) severe.

Among the 386 with history of hypertension, 138 (35.8%) classified mild, 81 (21.0%) moderate, 63 (16.3%) severe, and 104 (26.9%) had a normal BPM. Treatment documentation was available for 217 of 696 known/newly diagnosed hypertension, including 139 (64.1%) receiving anti-hypertensive drugs.

Of the 8,990 PLHIV screened, 7,859 (87.4%) had glycemia measurement, including 150 (1.9%) with chronic DM and 7,709 (98.1%) unaware of their status. Among them, 193/7,709 (2.5%) had high glycemia, of whom 49/193 (25.4%) returned for second measurement, 11/49 (22.4%) were diagnosed with DM.

Additional workload for healthcare workers, stock out of reagents and low return for second measurements due to long waiting time and transportation fees are among the challenges identified during integration.

**Conclusions/Next steps:** While NCD service integration into HIV clinics increased access to hypertension and DM diagnosis, there is a need to address low return for blood pressure controls or glycemia check, to reduce the missed opportunities for diagnosis and treatment.

## WEPEE605

**Integrating mental health into HIV programmes using collaborative, stepped-care, task-sharing approaches and telemedicine**

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**Background:** This abstract presents results from a mixed-method pilot study of the *Building Resilience and AIDS Care through mental health Valor and Empowerment (BRAVE) project*, launched in December 2023, which integrates mental healthcare into HIV services in Nigeria using the culturally adapted World Health Organization's



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mental health gap action plan-intervention guide (mhGAP-IG) a validated, widely used tool to scale up mental health services into no-specialist setting.

**Methods:** We used *mixed-method* and *hybrid type 1* implementation research design to implemented mhGAP-IG training for non-specialists to assess, diagnose, and treat mental disorders in HIV clinics; and make referrals and consultations to collaborating specialists as clinically indicated using VULA telemedicine app in Imo State, Nigeria.

**Results:** 27 clinicians from 10 HIV clinics completed the WHO's mhGAP-IG 5-day training with modules on *essential care and practice, depression, psychosis, substance use disorders and suicide prevention*. Paired sample t-test of pre and post knowledge test scores showed significant knowledge improvement in knowledge (Table 1 and Table 2). BRAVE was successfully rolled out in the 10 HIV clinics.

4 weeks post rollout, 72 PLWHA have been screened for depression, psychosis and anxiety using the PHQ-9 and BPRS. 15% had moderate depression, 10% had moderate rating on the BPRS. A 100% received psychosocial support, and/or pharmacological treatments. 2% were referred to specialists.

Qualitative interviews with stakeholders (n=20) elicited barriers, facilitators, and opportunities for mental health integration of mental health into HIV clinics (Table 3).

Variable	Characteristics	n	%
Gender	Male	8	29.63
	Female	19	70.37
Age	Median	45 years	
	Mean	43.4 years	
Marital Status	Married	20	74.07
	Not Married	7	25.93
Highest Educational Qualification	RN	2	7.41
	BSc	11	40.74
	MSc	3	11.11
	PhD	2	7.41
	Others	9	33.33
Current role	CHW	3	11.11
	Nurse	11	40.74
	Public Health	1	3.70
	Medical Laboratory	1	3.70
	Doctor	7	25.93
	Others	4	14.81
Born in	Rural	16	59.26
	Semi – Urban	2	7.41
	Urban	9	33.33
Live in	Rural	4	14.81
	Semi – Urban	6	22.22
	Urban	17	62.96

Table 1. Trainee HIV clinicians sociodemographics.

mhGAP Module	% Mean Pretest Score	% Mean Posttest Score	P-value
Essential Care & Practice	45.13	66.92	0.0000008
Psychoses	57.64	74.36	0.0002
Disorder due to Substance Use	70.83	69.55	0.417
Self-harm/ Suicide	68.27	84.13	0.00005
Depression	70.0	85.38	0.000251

Table 2. Pre-post knowledge test scores.

Theme	Sub-Themes	Summary
Opportunities/need for integration of mental health care into HIV	High perceived need	Stakeholders perceive high and increasing prevalence of mental illness and substance use disorders in the society in context of high stress and poverty and insecurity. Additional impact for people living with HIV due to stigma
	Clinician awareness	High levels of awareness among stakeholders about co-existence and relationship of mental illness and HIV
	System/Agency support	State health agencies support integration of mental health into HIV clinics. Administrators are aware of benefits of integration
Barriers to integration of mental health into HIV clinics	Paucity of mental health specialists/services	Very few mental specialists relative to the population HIV clinics have no formal access to mental health specialists No outpatient services within health centers where HIV clinics located. Referrals sent to specialist centers in and out of state
	HIV clinicians not trained to manage mental illness	Though they can identify some mental and substance use disorders, HIV clinicians have not had formal training to treat them.
	Stigma/lack of awareness by patients/families	High levels of stigma and negative attitudes in the population about mental illness leading to low detection and low treatment.
	Potential impact of mhGAP-IG intervention integrating MH into HIV clinics	Capacity building An improved knowledge of mental illness, and common treatments among clinicians They can treat patients and referred difficult or complex cases to specialists
Clinical impact on patients	Clinical impact on patients	Patients can have 'better' recovery for both HIV and mental disorders Patients can 'fully' function in society
	Research evidence	Knowing how best to treat patients with mental illness in HIV clinics. Gathering real life research evidence

Table 3. Themes from the qualitative interviews with key stakeholders on integration of mental health into HIV clinics in Imo State, Nigeria.

**Conclusions:** Integration of mental health into HIV clinics in resource-limited settings like Nigeria is feasible.

## WEPEE606

**Integrative health: a unified approach to cardiovascular diseases, hypertension, diabetes, and HIV services at Anti-Retroviral Treatment Center in Delhi, India**

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**Background:** Anti-retroviral therapy (ART) has transitioned HIV into a chronic condition, coinciding with a global rise in longevity for people living with HIV (PLHIV) and increased susceptibility to comorbidities. These include cardiovascular diseases (CVDs), depression, cancers, and metabolic conditions like diabetes. The escalating prevalence of non-communicable diseases (NCDs) among PLHIV results from factors like aging, heightened traditional NCD risk, direct HIV-related effects, and exposure to specific antiretrovirals.

Our project aims to seamlessly integrate and evaluate CVD risk factors, hypertension, and diabetes prevalence while estimating the 10-year CVD risk among PLHIV under routine programmatic settings.

**Description:** Initiated in November-2023, this ongoing initiative screens all adult PLHIV aged ≥ 18 years at the ART center. An expert committee established a screening pro-



tolocol aligned with prevailing national guidelines, and ART center staff received specialized training for streamlining participant flow. PLHIV are screened for CVD risk factors—tobacco use, alcohol consumption, physical inactivity as well as measurements of weight, height, blood pressure, blood glucose, and lipid levels.

Utilizing this data, PLHIV are categorized into risk groups using the Framingham risk score, facilitating targeted intervention strategies.

**Lessons learned:** Between November-2023 and January-2024, 1,500 adult PLHIV underwent screening. The mean age was 43 ( $\pm 11$ ) years, with 45.2% belonging to the 30–45 age group; majority being males (64%). Prevalence rates among PLHIV were 37.8% (567/1500) for obesity, 17.8% (266/1500) for hypertension, 10.7% (160/1500) for diabetes, and 55.5% (667/1500) for dyslipidemia. The 10-year CVD risk estimates revealed 69.2% (1026/1482) at low risk, 19.7% (292/1482) at moderate risk, and 11.1% (164/1482) at high risk.

Due to this screening initiative, 64.3% (171/266) of hypertensive cases and 22% (35/160) of diabetic cases were newly identified. Age, gender, BMI, alcohol, tobacco, duration of disease were identified as factors significantly associated with an elevated risk for CVD event ( $p < 0.5$ ).

**Conclusions/Next steps:** Our observations indicate that integration of HIV and NCD services is feasible and enhances accessibility to timely screening and management, potentially reducing mortality in PLHIV.

Facilitating integration across national programs and service levels is pivotal for advancing this objective. The results support the inclusion of risk assessments in routine HIV programs, ensuring a comprehensive healthcare approach for PLHIV.

## WEPEE607

### Strengthening integrated HIV/STD testing services among MSM in China: qualitative findings from co-creation groups

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**Background:** Despite the need for integrated HIV and other sexually transmitted disease (STD) testing services, many clinical services remain siloed. Co-creation is a par-

ticipatory research method that brings community perspectives into public health research. We used co-creation involving different stakeholders involved in sexual health and HIV prevention of men who have sex with men (MSM) to promote integrated chlamydia (CT) and gonorrhea (NG) testing services within existing HIV testing services at community-based organizations (CBOs) in Guangdong Province, China.

**Methods:** We conducted formative research for a cluster randomized trial to promote STD testing among MSM. From August 2021 to August 2023, we held 10 one-hour co-creation sessions involving 2 doctors and 15 MSM community members, including 5 CBO representatives.

The purposes of FGDs were to:

1. Understand their experiences of integrating CT/NG testing within existing HIV testing services and;
2. Explore barriers and facilitators of HIV/STD integrated service delivery.

All co-creation sessions were conducted in Mandarin and documented through audio recordings or written meeting notes. Qualitative data were analyzed through rapid inductive thematic analysis.

**Results:** The co-creation sessions elicited three key themes related to integrated services: lack of integrated testing, limited knowledge of STDs other than HIV, and the need for policy advocacy.

1. The limited availability of CT/NG self-testing options complicates HIV/STD services integration. Co-creation participants iterated that decentralized testing options like HIV/syphilis self-testing and CT/NG self-sampling could facilitate service integration.
2. Most MSM presenting for testing had limited knowledge of CT/NG compared to HIV. CBO representatives highlighted the need for developing educational materials that emphasize the relationship between CT/NG acquisition and HIV risk to promote HIV/STD awareness.
3. Without research funding, CBOs and the government lacked CT/NG testing funds as it is not a national priority area. It was suggested that researchers should advocate for including CT/NG in the national STD screening guidelines for MSM.

**Conclusions:** Our study revealed through co-creation that lack of access, education, promotion, and policy advocacy hampered the development of integrated HIV/STD testing. Further research and development of interventions to address these areas are warranted.



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## WEPEE608

Integration of screening, care, and treatment for cardiometabolic non-communicable diseases into the national HIV treatment program in Lusaka, Zambia: results from a pilot 'mini' stepped-wedge trial

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**Background:** Despite increasing hypertension, diabetes, and dyslipidemia prevalence among people living with HIV (PLHIV) in sub-Saharan Africa, health system capacity to address these cardiometabolic non-communicable diseases (NCDs) is limited. We developed an evidence-based intervention using the WHO Package of Essential NCD interventions, coined 'TASKPEN,' that applies a multi-faceted implementation strategy to integrate HIV and cardiometabolic NCD care through task-sharing, practice facilitation, and health system resourcing. We conducted a pilot, 'mini' cross-sectional stepped-wedge trial to estimate preliminary TASKPEN effects on clinical outcomes(#NCT05005130).

**Methods:** We performed serial surveys among PLHIV ≥18 years accessing routine HIV services at two PEPFAR-supported clinics between 1 March 2022–23 December 2022. Surveys were conducted ~3 months apart at baseline, midline, and endline to estimate cardiometabolic NCD prevalence and our primary outcome—'dual control' of both HIV and blood pressure according to WHO-recommended thresholds.

We introduced TASKPEN in a stepwise fashion, first at site A following the baseline survey and then site B following the midline survey; both sites continued TASKPEN implementation through the endline survey. We compared the

proportion of participants with dual control between intervention and control periods using Pearson's chi-square test.

**Results:** We enrolled 1,090 participants, of whom 25.7% and 3.2% had a history of hypertension or diabetes, respectively (Table 1).

The proportion of participants with dual control was significantly higher after (60.1%) versus before (51.6%) the TASKPEN intervention(p=0.005), with improvement in dual control underpinned by increases in both viral suppression and blood pressure control (Table 2).

Average hemoglobin A1c decreased after the intervention for participants with elevated random or fasting blood glucose.

Characteristic	Control (N=634) n (%)	Intervention (TASKPEN) (N=456) n (%)	Total (N=1,090) n (%)	p-value
Age (Year), median [interquartile range]	46 [38, 53]	45 [38, 52]	45 [38, 53]	0.853
Sex				
-Male	166 (26.2)	136 (29.8)	302 (27.7)	0.185
-Female	468 (73.8)	320 (70.2)	788 (72.3)	
Body Mass Index (kg/m <sup>2</sup> )				
-Underweight (<18.5)	53 (8.4)	41 (9.1)	94 (8.7)	<0.001
-Normal weight (18.5-<25)	257 (40.5)	246 (54.7)	503 (46.4)	
-Overweight (≥25-<30)	178 (28.1)	107 (23.8)	285 (26.3)	
-Obesity (≥30)	146 (23.0)	56 (12.4)	202 (18.6)	
History of Hypertension				
-No	483 (76.2)	327 (71.7)	810 (74.3)	0.095
-Yes	151 (23.8)	129 (28.3)	280 (25.7)	
History of Diabetes				
-No	610 (96.2)	445 (97.6)	1,055 (96.8)	0.205
-Yes	24 (3.8)	11 (2.4)	35 (3.2)	
Time on Antiretroviral Therapy (years)				
<1	26 (4.1)	17 (3.7)	43 (3.9)	0.661
1 - <5	113 (17.8)	70 (15.4)	183 (16.8)	
5 - <10	141 (22.2)	111 (24.3)	252 (23.1)	
≥10	354 (55.8)	258 (56.6)	612 (56.1)	

Table 1. Background sociodemographic and clinical characteristics of participants (N=1,090).

Outcome	Control (N=634) n (%)	Intervention (TASKPEN) (N=456) n (%)	p-value*
Dual control <sup>1</sup>	327 (51.6)	274 (60.1)	0.005
HIV control <sup>2</sup>	542 (85.5)	406 (89.0)	0.086
Blood pressure control <sup>3</sup>	395 (62.3)	311 (68.2)	0.044
Hemoglobin A1c, n; mean% (SD) <sup>4</sup>	48; 7.3% (2.6)	23; 6.1% (2.1)	0.055

<sup>1</sup>Dual control defined as HIV control (i.e., viral load <1,000 copies/ml for those with a documented viral + evidence of 6-month multi-month dispensing for those with a missing viral load) + Blood pressure control (systolic blood pressure <140 mmHg AND diastolic blood pressure <90 mmHg);

<sup>2</sup>HIV control (i.e., viral load <1,000 copies/ml for those with a documented viral + imputed viral load for stable clients with documented evidence of receipt of 6-month multi-month dispensing);

<sup>3</sup>Blood pressure control (systolic blood pressure <140 mmHg AND diastolic blood pressure <90 mmHg);

<sup>4</sup>Hemoglobin A1c measured for participants with an elevated screening random (≥11.1 mmol/L) or fasting blood glucose (≥7.0 mmol/L).

\*Pearson's chi-square for categorical variables, Student t-test for continuous variables SD= standard deviation

Table 2. Comparison of primary and secondary clinical outcomes between control and intervention periods (Intention-to-Treat Population, N=1,090).



**Conclusions:** Our preliminary findings suggest an integrated, task-shifted WHO-endorsed service package can improve control of both HIV and blood pressure for PLHIV.

## WEPEE609

Horizontal integration of mental health and psychosocial support services (MHPSS) into HIV care for key populations (KP) among USAID projects in Myanmar

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**Background:** Despite challenges in obtaining mental health data among KPs in Myanmar, the figures published in **BMC Public Health (2020)** and the **Asian Journal of Psychiatry (2021)** reported that Mental distress ranges from **18.0% to 27.2%** of depressive symptoms and a rate of **9.4% in suicidal ideation**.

This indirectly indicates the importance of integrating MH assessment and treatment into HIV service in Myanmar since the complex relationship between HIV and Mental Health can hinder both individuals' adherence to treatment and the overall well-being of their families.

**Description:** With the support of **USAID**, the AIS project works to assess the alarming mental health signs and symptoms among KPs in Myanmar while reaching out and providing HIV prevention services through trained community workers using **Psychological First Aid (PFA)** techniques. They then refer and link the clients with suspected signs and symptoms to the nearest service centers (KPSC) where trained MOs and counselors provide relevant and evidence-informed intervention: **Problem Management Plus (PM+)**. **Safety planning and suicidal prevention** plans are also incorporated at all levels of care for both beneficiaries and service providers by **outsourcing psychiatric care**.

**Lessons learned:** From 2022 to 2023, the project succeeded in equipping multiple skill training to 101 healthcare workers for PFA support in the community setting and PM+ service provision in the KPSCs. A total of **243 KPs received PFA support** in the community HIV prevention setting during 2023 August and September, and the support is increasing over time. In the meantime, at the facility HIV care setting, a total of **922 PWIDs** were screened using **PHQ 4**, and **526 clients were indicated for further assess-**

**ment**. Of these, **17 KPs were diagnosed with Psychosis, 14 with Depression, and the remaining 505** clients did not require any interventions.

### Conclusions/Next steps:

The task shifting and stepped interventions of the MH-PSS integrated care model prove to enhance the quality of life for individuals living with HIV and mental health conditions. Ensuring the **biannual screening, promoting MHPSS awareness, and strengthening integrated care** with a **robust referral system** will contribute to improving the HIV outcome by identifying MH concerns early and enhancing adherence to HIV treatments.

## WEPEE610

Integrated HIV/HTN care model improves individual level blood pressure reduction among adults with HIV in Uganda

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**Background:** Globally, the prevalence of hypertension (HTN) among people with HIV has increased dramatically over the last decade. In a cluster randomized trial (NCT04624061), we demonstrated that a multicomponent, integrated HIV/HTN care intervention model improved uptake of HTN screening by 55% over the standard-of-care. Within the intervention arm, we evaluated longitudinal changes in blood pressure (BP) control.

**Methods:** The integrated HIV/HTN trial enrolled adults (≥18years) with HIV from 52 health centres in 26 districts of rural Southwestern Uganda. The intervention included: 1. Health-worker training on integrating HTN care into HIV services, 2. Promoting HTN screening and treatment; 3) improving records, 4. Availing essential equipment and consumables; and 5. WhatsApp messages for coordination among providers.

Among participants with hypertension at baseline, we measured change in proportion with BP control (<140/90mmHg) from baseline to 12-months of follow-up, overall and by subgroup, and the proportion with improved systolic BP by ≥10mmHg.



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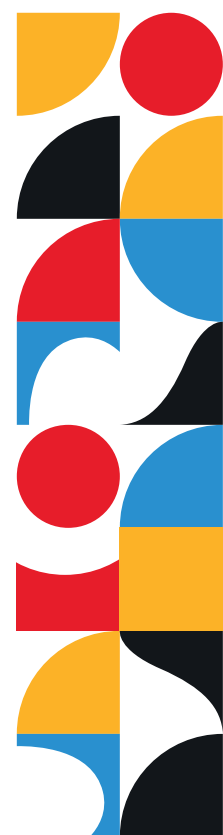
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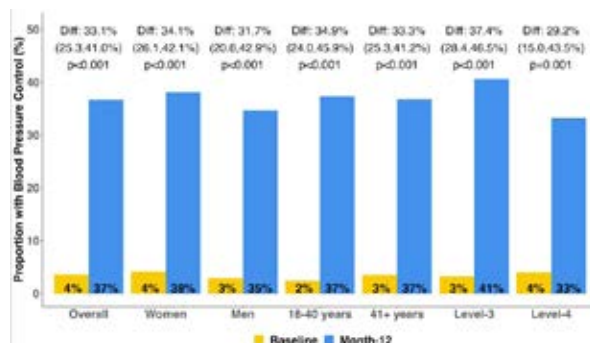


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**Results:** Of the 1200 HTN participants enrolled from the 26 intervention health centres 60% were female, of median age 49 years. At baseline, only 3.6% of participants showed BP control but after 12-months of the intervention, 36.7% had achieved control, corresponding to an absolute increase of 33.1% (95%CI: 25.3-41.0%;  $p<0.001$ ). Significant increases in BP control were observed within subgroups of age, sex and level of health centre (Figure). In addition, 70% of all participants had reduced their BP by  $\geq 10$ mmHg, including 54% of participants who never achieved WHO-level control. Among these; 74% had WHO Stage-2 HTN (160/100mmHG) and 79% had WHO Stage-3 HTN (180/110mmHg).



**Conclusions:** The integrated HIV/HTN care model improved long-term BP control by ~30% overall in both men and women, older and younger persons. Most participants in WHO stages 2 and 3 achieved more than 10mmHg reduction in systolic blood pressure.

## WEPEE611

Qualitative assessment of client and provider experiences with an integrated HIV-Hypertension intervention to improve screening and care for persons with HIV in southwestern Uganda

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**Background:** Integrating hypertension (HTN) screening and care into HIV care services presents a unique opportunity for improved treatment outcomes among people with HIV (PWH). We introduced a multi-component inte-

grated HTN/HIV intervention in HIV care services in public health facilities to address barriers to HTN screening and care. We assessed client and provider perspectives and experiences of HTN screening and care following the integrated HTN/HIV intervention.

**Methods:** This descriptive qualitative study was conducted among PWH and providers in 10 intervention facilities in southwestern Uganda (INTEGRATED HIV/HTN; NCT04624061). We conducted in-depth interviews with 20 PWH and 15 providers from January to February 2023. Interview audio recordings were transcribed verbatim and translated to English for thematic analysis using Dedoose software.

**Results:** Providers revealed that integrated HTN screening and care services resulted in;

1. Optimization of time, finances, and other resources;
  2. Increased HTN screening, and early detection and management of HTN;
  3. Increased knowledge of HTN and HTN screening, including interpretation of blood pressure readings.
- For PWH, including HTN in client-provider interactions, enabled adoption of lifestyle modification practices and increased desire to control or prevent HTN.

The availability of HTN services within HIV care clinics plus inclusion at lower Health center IIIs, where HIV care services already existed cut down the cost of multiple clinic visits for PWH. Intervention success was attributable to provider experiences with training, enhancing peer educator support amidst health work force challenges, and bolstering drug supplies to reduce the gap of drug shortages. Persistent obstacles included intermittent distribution of HTN drugs, clients' unmet need for screening diabetes, and poor utilization of data collection tools due to insufficient provider training and workload.

**Conclusions:** Routinizing HTN screening within HIV care settings serves as an opportunity for reducing the burden of comorbidities among PWH. For this to be successful, it would require well-aligned policies and guidelines. Leveraging peer educators could potentially promote continuity of services amidst healthcare workforce challenges.

## WEPEE612

Building out from the HIV response to drive broad-based health gains: six country case studies

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**Background:** The HIV response is a pathfinder in global health equity, helping to advance progress towards Universal Health Coverage. This study looks at how diverse countries and communities are innovating to "build out" from the HIV response to build stronger health and com-

munity systems that are capable of expanding access to integrated, people-centred care, and sustainable care, community-led and reach the most vulnerable, to respond to broader health and development threats.

**Description:** Friends of the Global Fight and UNAIDS partnered to do six case studies in Colombia, Côte d'Ivoire, Jamaica, South Africa, Thailand and Uganda.

The case studies are based on a desk review and key informant interviews. They identify commonalities and unique experiences in building out from HIV programming with the simultaneous goals of ending the HIV epidemic and advancing toward Universal Health Coverage.

**Lessons learned:** In diverse settings, substantial progress is being made to build out from HIV investments to strengthen health systems. HIV platforms are being used for the delivery of integrated, holistic, people-centred care for people living with HIV and others. HIV infrastructure, such as laboratories, diagnostics, human resources and other services are being utilized in broader health services.

The community services infrastructure built through HIV investments is yielding wide health benefits, particularly for key population groups. The resilience, flexibility and community engagement in HIV platforms makes them useful in broader health.

**Conclusions/Next steps:** Policy makers should be more purposeful in leveraging HIV platforms in order to create win-win scenarios for broader health systems.

Greater flexibility in use of donor funds should be considered. Building out from HIV services must be done carefully to identify synergies and strengthen HIV responses themselves.

The HIV ethos of community-led response, reaching the most vulnerable and access for all should be incorporated into broader health and community systems and policy.

## WEPEE613

### Feasibility and early outcomes of the SEARCH multi-disease population-level community health worker-led intervention for integrated HIV and severe hypertension services in rural East Africa

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**Background:** We previously demonstrated that person-centered multi-disease community health campaigns improved hypertension control and reduced mortality at a population level, with greatest benefit among those with severe hypertension. Because health campaigns require additional resources, we sought to determine if existing community health workers (CHWs) could be leveraged to improve hypertension cascade outcomes among persons with severe hypertension in rural Kenya and Uganda, using an integrated community-based hypertension/HIV service model.

**Methods:** In an ongoing cluster randomized trial of a population-level hypertension/HIV intervention, the hypertension intervention includes blood pressure (BP) screening by CHWs and clinic referral for BP  $\geq 140/90$  mmHg (three-measure average).

Following initial clinic-based evaluation, persons  $\geq 40$  years with severe hypertension ( $\geq 160/100$  mmHg) are offered clinic-based or telehealth (CHW home visit with clinician telehealth evaluation and medication delivery) follow-up care.

We conducted case-based CHW training on BP measurement with quality assessment and used smartphone app to facilitate screening and workflow. The app syncs with electronic clinic records, prompts follow-up visits/default-tracing, and facilitates clinician telehealth assessment/medication prescribing.

We report intervention-arm hypertension care cascade outcomes, estimating cumulative incidence of hypertension control ( $<140/90$  mmHg) with Kaplan-Meier and using log-rank to compare hypertension control by follow-up location choice.

**Results:** Across eight rural communities in Kenya and Uganda, 198 CHWs conducted hypertension screening among 36,484 of 40,701 adults  $\geq 18$  years (90%).

Among adults screened, 55% were female and 11% were living with HIV ( $n=4,000$ ). Of 14,046 adults  $\geq 40$  years, 1,267 (9%) had severe hypertension; of these, 996 (79%) linked to clinic, and 876 had persistent hypertension and enrolled in the study.



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At enrollment, 69% (n=607) selected telehealth and 31% (n=267) clinic-based follow-up. During early follow-up (median 196 days; 90% range 89-246 days), 93% received  $\geq 1$  antihypertensive medication. Cumulative incidence of hypertension control (<140/90mmHg) 90-days post-enrollment was 57% (95%CI 54-60%) overall, 65% (95%CI 53-74%) among people with HIV (n=91), and higher among those choosing telehealth follow-up (61% telehealth vs 50% clinic, log-rank p=0.0001).

**Conclusions:** Within the context of large-scale multi-disease HIV status-neutral population-level screening (n=36,484), CHW screening and treatment support can effectively extend the health system to improve hypertension cascade outcomes among individuals with severe hypertension and is feasible at scale.

## WEPEE614

### Non-communicable diseases service integration with a community-based HIV care and treatment activity in Ethiopia

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**Background:** Non-communicable diseases (NCDs) pose an increasing health challenge to people living with HIV (PLHIV) in developing countries. Despite PLHIV have a higher risk of developing NCDs, clinical follow-up visits are often limited due to the use of differentiated ART refilling models.

In Ethiopia, the USAID-funded Community-based HIV Care & Treatment (CHCT) activity integrated NCD services to provide an innovative and cost-effective approach to early detection and mitigation of NCDs among PLHIVs. We analyzed the pilot integration services with CHCT activity in community settings.

**Description:** Project HOPE trained the community health-care workers (CHWs), provided technical assistance to local implementing partners, and distributed NCD screening kits. Between January 2023 to January 2024, CHWs provided risk screening to PLHIVs during home visits, service provision, group sessions and community ART refills.

Clients identified with NCD risk factors were enrolled into community NCD service package and clients had High BP & BS level were referred to HF for NCD diagnosis.

Client-level data were collected using CommCare and descriptive analysis was conducted using SPSS software version-21.

**Lessons learned:** A total of 9,674 PLHIV were screened for NCD risk factors, of which, 946 (10%) were positive. The mean age was 41.7 years(SD=9.9) and 76% were female.

Almost all (895/946; 95%) were enrolled into the NCD service package. Of which, 178 clients (19%; 95% CI: 18.1-19.5) had high blood pressure (HBP) and/or high blood sugar (HBS). Among these, 82% had HBP, 11% had HBS, and 7% had both.

The proportion of PLHIV with HBP and/or HBS increased to 10%, 22%, and 50%, for age groups 18-39, 30-49, and 50+, respectively.

Majority, (139/178, 78%) were referred to HFs for NCD diagnosis and treatment where 85% were confirmed for hypertension, 12% for diabetes mellitus, and 3% for both.

**Conclusions/Next steps:** The combination of screening for NCD risk factors, taking BP, and testing BS levels was a feasible and accurate strategy to identify NCDs. The approach was cost effective, increased access for prevention, early detection and community level NCD service provision. We recommend the scaleup of the NCDs service integration with the CHCT activity to improve health outcomes and retention in care among PLHIV in Ethiopia.

## WEPEE615

### Stepping Stones: a content analysis exploring beneficiaries and implementers perceived effectiveness of the 13-week HIV education program in Zambia

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**Background:** Adolescent girls and young women (AGYW) in Zambia are at high risk of acquiring HIV due to gender-inequitable relationships, compounded by social, cultural, and economic factors that increase susceptibility to early and unprotected sexual activity. Stepping Stones, the DREAMS initiative's 13-week HIV education package,



provides safe spaces for AGYW to explore gender norms, relationships, sexual health, and life skills. This abstract presents the perceived effectiveness of Stepping Stones among DREAMS beneficiaries and implementers.

**Methods:** Between March and July 2023, semi-structured interviews, focus groups and community/program observations were conducted with DREAMS beneficiaries (n=55) and other AGYW (n=11) ages 16-21, and program implementers (n=51) across three purposively selected sites in three DREAMS districts.

We used content analysis to identify preferences, perceived effectiveness, and implementation challenges of Stepping Stones. Data were analyzed using Atlas.ti (Version 23).

**Results:** Stepping Stones was generally well-received by beneficiaries who highlighted it provided needed sexual and reproductive health (SRH) information (e.g., HIV, pregnancy prevention); exposed them to content not learned elsewhere in the community (e.g. safer sex, gender-based violence); helped build communication skills, and plan for their future.

Beneficiaries found the modules Planning My Future, Gender Based Violence, and Let's Communicate most helpful. Implementers resoundingly felt that Stepping Stones improved beneficiary's SRH knowledge, and helped beneficiaries open up to implementers, thus allowing them to be connected to other needed services.

Beneficiaries who could not relate the content to their life, already knew the content, or felt that the services were not needed were less attentive or appreciative of Stepping Stones.

Implementers reported challenges with delivering content on contraception and sexuality to younger girls, and fear of being accused of teaching younger kids about "adult topics." Implementers recommended boys would also benefit from this program, as it would help them, and improve the impact for AGYW.

**Conclusions:** Stepping Stones was perceived to be an effective package in improving SRH knowledge and skills; as it prepared AGYW to self-identify what is right for them and for their future.

Looking ahead, implementers suggested the overall benefit would be more sustainable if Stepping Stones also included boys and young men.

## WEPEE616

### Enhancing HIV care: insights from integrating mental health into HIV care in Nepal

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**Background:** People living with HIV (PLHIV) experience higher rates of mental health disorders than the general population. The 2019-2020 WHO Nepal mental health (MH) assessment reported that 3.6% had major depressive disorder and 4.2% had alcohol use disorder.

To address this, the Meeting Targets and Maintaining Epidemic Control (EpiC) project, supported by the U.S. President's Emergency Plan for AIDS Relief (PEPFAR) and the United States Agency for International Development (USAID), implemented mental health services for key populations (KPs) and PLHIV in Nepal.

**Description:** Trained peer outreach workers used the locally adapted Kessler scale (K6) to identify psychological distress during HIV education in the community. Clients with severe psychological distress were referred to the facility for further assessment using the Patient Health Questionnaire-9 (PHQ-9) for depression and Alcohol Use Disorders Identification Test - Concise (AUDIT-C) for harmful alcohol use. Those with high scores ( $\geq 15$  in PHQ-9 and  $\geq 3$  in AUDIT-C) received psychosocial interventions, counseling, and psychiatrist referrals.

**Lessons learned:** From July 2022 to November 2023, we conducted 30,382 K6 assessments. Of these, 15,437 (51%) were males at birth, 20,734 (68%) were KPs, and 9,648 (32%) were PLHIV. Among those screened, 1% (291) had severe psychological distress, 85% (173/202) exhibited some level of depression (mild, moderate, severe), and 71.2% (62/87) showed harmful alcohol use.

Among those with depression, 46% (80/173) required treatment, and 87% (70/80) received it. Major challenges included low case detection, inadequate awareness, and high staff workload.

**Conclusions/Next steps:** Our study shows a small proportion of clients with severe psychological distress, possibly due to community venues not being conducive for screening, and inadequate post-training monitoring of outreach workers. Recommendations include conducting a formative assessment to understand clients' needs and preferences for MH service, evaluating service delivery experiences of outreach workers, identifying inclusive screening tools before integration, and emphasizing awareness programs and staff motivation for successful integration.



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Moreover, a higher proportion of clients reported mild to severe depression and harmful alcohol use compared to the national survey, though our analysis included a smaller sample of clients already reporting severe psychological distress. Hence, we recommend reviewing the MH service delivery model to reach more clients.

## WEPEE617

### Considerations for integrating community HIV and Non-communicable disease care within microfinance groups in western Kenya

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**Background:** Integrated HIV and non-communicable disease (NCD) facilitates more comprehensive care to people living with HIV (PLWH) with comorbidities. Microfinance groups have been shown to be effective in promoting better care outcomes by addressing the economic challenges PLWH face, engaging in care and maintaining adherence with treatment. Delivering integrated HIV+NCD care within existing microfinance groups may be an efficient approach to providing care at the community level.

We explored considerations for implementing this multi-level approach under real-world scenarios using the consolidated framework for implementation research (CFIR).

**Methods:** We conducted a qualitative study (March-May 2023) among PLWH enrolled in the Harambee cluster randomized trial in western Kenya. Trial participants were adult patients receiving care through the Academic Model Providing Access to Healthcare program and actively engaged in a microfinance group. Convenience sampling identified a sub-sample of 40 trial participants (24 PLWH and 16 PLWH with diabetes and/or hypertension) for in-depth interviews. A thematic analysis focusing on the CFIR implementation process domain was conducted using Nvivo software.

**Results:** Six implementation process constructs emerged as important considerations for integrating HIV+NCD care within microfinance groups:

**1) Teaming:** a) Strong cohesion among microfinance group members, primarily PLWH, b) Efficient financial management by group members, c) Clear conflict resolution mechanisms;

**2) Assessing needs:** Determine contextual needs for community-based integrated HIV+NCD care.

**3) Assessing context:** a) Delivering integrated care to existing and stable microfinance groups, b) Linking community-based services to facility support.

**4) Planning:** a) Provider training in community HIV+NCD care b) Mechanisms for proper packaging and delivery of HIV+NCD medication and tests, c) Accurate capture and integration of patient data across electronic care systems,

**5) Tailoring strategies:** a) Frequency of HIV+NCD care monitoring in line with care protocols, b) Better alignment of microfinance group meeting and care schedules.

**6) Engaging:** a) Sustaining individual provider-patient relationships within group settings, b) Maintaining confidentiality when delivering community HIV+NCD care with a group setting.

**Conclusions:** Our study identified six implementation process constructs needed to successfully integrate HIV+NCD care within microfinance groups at the community level. The opinions and support of key stakeholders is therefore fundamental to identifying the appropriate implementation process.

## WEPEE618

### Community contribution to Hypertension screening through lay cadres: lessons from a programming perspective in Zimbabwe

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**Background:** Over the years, Zimbabwe expanded HIV treatment and care services beyond facility-based testing to the community in efforts towards reaching the UNAIDS 95-95-95 goals. This has been through recruitment of lay-cadres (community outreach agents, COAs) who work in partnership with community health nurses (CHNs) and have been trained to screen for HIV, track and trace defaulter clients and mobilise PLHIV for various due HIV services.

Given the demographic shift towards older ages among people living with HIV, there has been growing concern of non-communicable diseases (NCDs) such as hypertension.

**Description:** As part of hypertension screening programme in two urban districts of Chitungwiza and Bulawayo, a 150 high performing community outreach agents (COAs) were trained on integration of hypertension screening among PLHIV and at-risk adults from the general population. Screening was based on a decision-aid



screening tool administered through a DHIS-2 application on mobile electronic gadgets. This was coupled with deployment of digital blood pressure machines to COAs and to health facilities.

Hypertension screening involved 3 measurements taken 1 minute apart including weight, height measurement; risk assessment screening for alcohol use, smoking, physical activity and dietary patterns

**Lessons learned:** Between January -December 2023, 121,628 adult (>40 years) clients were screened of whom 44% were PLHIV. Overall 36% (n=43,858) were screened by COAs of whom 85% (n=37,503) had blood pressure reading taken and 38% were hypertensive with prevalence being higher among PLHIV in ART care (43.1%) versus the general population (36.7%).

Overall, there were 53,622 hypertension clients diagnosed of whom 27% (n=14,569) were diagnosed through COAs in the community.

**Conclusions/Next steps:** Community NCD screening approaches are vital in diagnosis and referral of clients with hypertension who may potentially be missed at the health facilities. Training coupled with the use of an electronic decision-aid screening tool ensures standardized screening through lay cadres resulting in increased community contribution towards diagnosis of NCDs.

## Innovations in data collection, monitoring and evaluation

### WEPEE619

Time matters: leveraging longitudinal, person-centered data to understand interruptions and re-engagement in HIV treatment in Malawi from January 2020 to September 2023

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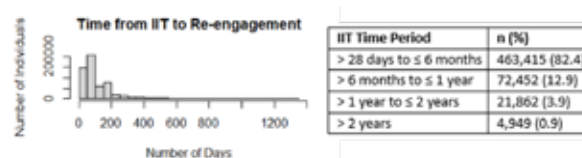
**Background:** Interruptions in HIV treatment (IIT) pose a critical threat to individual and public health. Electronic medical record (EMR) data from Malawi's Ministry of Health can be leveraged to conduct analyses using its national central data repository (CDR) which integrates

individual-level data from EMR systems. The CDR includes over 750 antiretroviral therapy (ART) facilities covering 98% of individuals on HIV treatment in Malawi.

**Methods:** Data was extracted for 1,146,215 individuals attending clinic between January 2020 through September 2023. IIT was defined as ≥28 days between expected and actual visit dates. This analysis focuses on the first re-engagement visit, even if the individual had multiple occurrences of IIT. The estimation of IIT assumes appropriate scheduling of the next appointments based on newly dispensed and remaining tablets at each visit.

**Results:** Over sixty percent (60.4%) of all individuals experienced at least one IIT episode during the study period, of which 562,678 (81.3%) re-engaged in care.

Of those who re-engaged, 82.4% re-engaged within six months; 12.9% re-engaged after six months and up to one year; 3.9% re-engaged after one year and up to two years; 0.9% re-engaged after two years.



**Conclusions:** Over 80% of individuals identified as IIT returned to the ART clinic within six months of their missed appointment, consistent with the Malawi national HIV treatment program efforts to support re-engagement. Measurement of successful re-engagement outcomes will allow for further refinement of re-engagement interventions and will permit a more targeted approach to individuals who have interrupted therapy to mitigate consequences of viral non-suppression.

### WEPEE620

Aging out of reported cohorts for the national HIV program in Mozambique

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**Background:** The National STI-HIV/AIDS Control Program is responsible for the continuous monitoring and program implementation of the prevention and care of people living with HIV/AIDS in Mozambique. To do this the NACP relies on data from the over 1,700 national health facilities that report monthly HIV data into the local DHIS2 platform, SIS-MA. The quality of data reporting is important for tailored monitoring and implementation strategies that impact HIV care delivery nationally.

**Description:** From July to October of 2023, the ninth round of data quality assessment (DQA) was conducted in the country, with the aim of better understanding the chal-



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lenges and impact of data quality. One of the numerous analyses that were conducted was the comparison of the reported HIV data in the national system, of which the counting is done manually, with the same report generated in the OpenMRS Electronic Patient Tracking System (EPTS) disaggregated by <15 and 15+.

When comparing across the two age groups, there is a clear challenge in the aging out of <15 beneficiaries for the older cohorts.

Overall, in the 51 health facilities where the analysis was conducted, there was a 6% difference between the electronic and manual report for 15+. However, for the <15 numbers, that difference was 26%, approximating that ¼ of the total children on ART in the national system are incorrectly reported.

**Lessons learned:** When designed, the HIV treatment instruments included a component of monthly register cleaning and recount. If implemented with fidelity, the missed opportunity of aging out children into older cohorts would be resolved on a continual basis. In addition to the record cleaning, the use of EPTS for national reporting could improve these data.

**Conclusions/Next steps:** A round of register cleaning and recounting is planned to finish by the end of February. Using the standardized national tools, health facilities are expected to review and correct their monthly report with justifications if needed.

The next round of DQA is planned to start in March, 2024 where the same analysis will be conducted, and it will be possible to see the impact of this cleaning and better understand the reasons behind remaining differences.

## WEPEE621

Using Large Language Models (LLM) to generate insights from unstructured datasets and reports for HIV Community Lead Monitoring (CLM) programs

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**Background:** One method to ensure HIV local accountability within HIV programs involves community-led monitoring (CLM). Local, community-based organizations lead and execute CLM and methodically gather both qualitative and quantitative information about HIV service provision.

However, given the qualitative-dominant nature of that data, extracting insights from CLM data is a labor-intensive process. To automate this work, we created a Retrieval Augmented Generation (RAG) model using open-source large language models (LLM).

This model has the advantage of analyzing different types of data, such as images, text, and tabular data, and can produce a more holistic evaluation of HIV programs.

**Methods:** LLMs present a great opportunity to extract insights from disparate, unstructured data such as text, audio, and images, and RAG is a key method for getting LLMs to answer questions over a user's own data. User queries trigger information retrieval by searching user-provided collections of documents for passages or documents that are likely to contain useful information.

Next, text responses are generated using open-source LLM augmented with the information retrieved in the previous step. For this, we built a pipeline using the Llamaindex Python framework to embed, store, retrieve, and submit data to an LLM.

We chose OpenAI's GPT-3.5-turbo to take advantage of OpenAI's agents, which use LLMs to perform tasks like segmenting complex questions into sub-questions for sequential response generation, generating comparisons between activities, or analyzing a given activity over time.

**Results:** We created a web-based application where users can interact with the back-end RAG model. Users can ask questions about HIV programs, and the model generates responses based on the CLM-specific documents we have integrated with the RAG. The model tracks key metrics for HIV programs such as what is effective, what isn't, and areas needing enhancement, offering specific recommendations for actions to better outcomes.

**Conclusions:** Generative AI holds immense potential for public health programs by allowing us to combine disparate non-traditional data in our routine analytics and provide more holistic insights.

Customizing open-source LLMs to work with program-specific documents and datasets through a RAG pipeline is the way to use these powerful technologies and automate manual qualitative analyses.

## WEPEE622

Using Citizen Journalism to explore real-time challenges of Recipient of Care in accessing HIV and AIDS services in South Africa and Malawi

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**Background:** As the global HIV response moves increasingly toward reaching the "last mile" of Recipients of Care (ROC), qualitative research approaches are required to pinpoint the specific factors that hinder access to quality HIV services. ROC have a critical role in exploring and documenting the real time barriers and challenges they face, and use to influence positive change through advocacy, policy, and program change. The purpose of this research project is to empower ROC to document their lived experiences; identify key themes in the barriers that

hinder their access to HIV services; and offer an advocacy platform to share their truth with a broader audience, including policymakers.

**Methods:** Citizen Science Life Maps (CS-LM) is a three-year qualitative, longitudinal project in South Africa and Malawi. It employed a collaborative and participatory research method utilizing digital storytelling to document peoples' daily lives. Thirty-nine participants, including people living with HIV, key populations and youth were recruited in 2022. The participants were given mobile phones and training to document barriers to HIV services. Data was analyzed using thematic analysis approach.

This abstract will report on stigma and discrimination and experiences of privacy and confidentiality.

**Results:** Themes like mental health, food insecurity, water and sanitation, privacy and confidentiality and stigma and discrimination were key barriers that were reported. However, a key theme that emerged was stigma and discrimination;

65% of participants reported different forms of stigma and discrimination in health facilities attributed to their HIV status. Intersectional stigma at health facilities was exacerbated for individuals of the LGBTQI community.

58% reported stigma and discrimination at health facilities was deemed difficult due to overworked staff and unwillingness to change.

67% reported unpleasant experiences related to privacy violation including being rude, disrespectful and breaching confidentiality when accessing ARVs. Through these lived experiences participants were afraid to access HIV services at healthcare facilities.

**Conclusions:** This research study provides nuance and in-depth insight into communities and brings to light the real-time barriers to access of HIV services. Photos and narratives are a powerful form of visual communication and should be better integrated with quantitative community data for more effective advocacy.

## WEPEE623

### Using mystery client surveys to assess the effectiveness of a comprehensive program to improve person-centered care in HIV clinical settings in Haiti

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**Background:** Clients seeking HIV services, including testing, prevention, and treatment, often experience stigma and discrimination in places they should feel safest: healthcare settings. USAID-supported RISE-Haiti SPOTLIGHT implemented several anti-stigma interventions to improve care in 124 HIV clinics in five departments in Haiti. These included training healthcare staff in person-centered care, on-site mentorship, supportive site evaluations, and waiting room improvements.

We conducted two rounds of mystery client surveys (MCS) to evaluate the interventions' effect on the client experience in HIV clinics in Haiti.

**Methods:** The first round of MCS was conducted in July 2022, prior to the start of RISE interventions to improve care. 80 MCS visits were conducted in 31 sites in five departments of Haiti. RISE-supported interventions, including provider training and mentorship visits, commenced in September 2022. The second MCS round was conducted in July 2023. 108 visits were conducted in 36 HIV facilities across the same five departments.

The mystery clients (MC) evaluated the site on environmental comforts, client education, staff courtesy, and discriminatory or stigmatizing behaviors via a survey completed immediately after the visit. The two surveys were compared and analyzed with a two-proportion t-test

**Results:** Results were compared across several areas of client-provider interaction. Counsellor-initiated dialogue about HIV risk and prevention increased from 68% in 2022 to 81% in 2023 ( $p=0.08$ ). In 2023, 95% of clients reported that lab technicians responded to them respectfully, up from 80% in 2022 ( $p=0.009$ ), and 96% of clients received referrals to direct clinical care compared to 68% in 2022 ( $p=0.004$ ). The percentage of waiting rooms that had protection from the sun and rain increased from 21% in 2022 to 85% in 2023 ( $p<0.001$ ).

**Conclusions:** Overall, clients reported more respectful attitudes from staff, more respectful attitudes from staff, and more referrals to care after the RISE-Haiti SPOTLIGHT training and mentorship program. The RISE-Haiti SPOTLIGHT interventions contributed to improved person-centered care on multiple levels, from environmental considerations to client-provider interactions.



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## WEPEE624

### Mapping the way towards zero new HIV infections: an interactive tool to guide HIV prevention and care in the Netherlands

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**Background:** The Netherlands aims to end HIV transmission within the country by 2027. Although significant progress has been made, new innovative approaches are needed to reach this goal. We present an online, interactive tool that was developed using an existing research platform and allowed a low threshold, workable interface for use in HIV prevention and care.

**Description:** We built an online dashboard using data from the ATHENA cohort, an ongoing observational nationwide HIV cohort in the Netherlands (Figure). We generated yearly statistics on the number of people with HIV, number of new HIV diagnoses, disease stage, number of people at each step of the HIV care continuum conform UNAIDS definitions, prevalence of chronic hepatitis B and C virus infection and prior PrEP use.

All statistics can be stratified by region and key population (e.g., women, men who have sex with men), and viewed over time from 2010 to 2022. The dashboard was developed in collaboration with the Amsterdam Health & Technology Institute using R shiny.

The first version of the dashboard was made available online in November 2023 (<https://www.hiv-monitoring.nl/nl/resources/hiv-dashboard>).



Figure. Screenshot of dashboard.

**Lessons learned:** The current dashboard provides national and regional insight into the evolution of the HIV epidemic in the Netherlands, and supports health care providers and community groups in more appropriate assessment of HIV elimination goals in key populations in their region or city.

**Conclusions/Next steps:** With the goal of ending the HIV epidemic in mind, this dashboard could support regions in evaluating existing and developing new strategies for prevention and care and strengthen more collaborative prevention strategies.

More in-depth information on socio-demographic and -economic factors will be added to further inform gaps in HIV prevention and treatment.

The dashboard will be further developed and updated regularly in close collaboration with stakeholders in HIV prevention and care.

## WEPEE625

### ZAZIC consortium at 10 years: do mature voluntary medical male circumcision programs maintain client safety?

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**Background:** Voluntary Medical Male Circumcision (VMMC) for HIV prevention reached over 29 million males in 15 countries in Eastern and Southern Africa by 2022. VMMC is safe with reported adverse events (AE) rates of <1% from routine programs at scale. However, AE rates of 2% are expected within high quality VMMC programs, indicating that complications are identified, managed, and treated.

Prior studies suggest that reliance on passive surveillance alone is insufficient. The ZAZIC consortium in Zimbabwe employed active AE surveillance to help ensure client safety.

**Description:** ZAZIC proactively identifies, treats, and manages AEs as part of routine quality assurance (QA) efforts. From October 2021 to March 2023, ZAZIC implemented three additional approaches for AE surveillance.



First, as part of productivity verification, ZAZIC contacted VMMC clients via phone or home visit to assess VMMC status and complications. Across 17 sites (412 males), one additional severe AE (bleeding) was identified for an AE rate of 0.24%.

Second, tandem reviews paired an expert ZAZIC clinician with a site-based clinician to jointly conduct post-operative visits 7 days post VMMC. Across four sites, 41 clients were reviewed with no AEs reported.

Third, ZAZIC implemented two-way texting (2wT) follow-up for VMMC clients with mobile phones, communicating over the first 14 post-operative days. Among the 31,000 males followed-up by 2wT, 0.04% had a documented AE.

**Lessons learned:** ZAZIC employs multiple QA approaches for AE identification across its national program, including verification, tandem reviews, and 2wT. These routine interventions serve as a proxy for AE active surveillance, strongly suggesting a safe VMMC program.

However, continued low ascertainment of AEs, with observed AE rates below the expected 2% threshold, suggests that additional ZAZIC vigilance is warranted. Although costly, increased investment to ensure safety of VMMC services are essential for safe services.

**Conclusions/Next steps:** Given the continued low reported AE rates, it is important to maintain investment in rigorous program evaluation, including QA activities and active AE surveillance, to ensure VMMC program safety. With follow-up rates less than 100%, and the limitations of passive surveillance for AEs, combinations of active surveillance activities should be required for VMMC programs at scale.

## WEPEE626

### Assessing HIV prevention effective use in routine service settings: a methodology using self-report at last sex

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**Background:** Daily pill taking during periods of exposure is required for oral PrEP to be effective in preventing HIV acquisition. However, oral PrEP use may be cyclical, used during periods of risk. Other prevention methods such as condoms may be effectively used to prevent HIV acquisition, in addition to expanding options of new PrEP methods.

We propose a simple method of assessing HIV prevention effective use, that could be used in routine services.

**Methods:** We analysed self-reported data on PrEP and condom use at last sex, from a cohort of participants enrolled in a PrEP implementation science study, accessing prevention services and using oral PrEP, who attended follow-up visits between August and November 2023. Us-

ing our proposed methodology, we determined whether their last sex act was protected by PrEP, condoms, or both. Condom protection was defined as having used a condom at last vaginal and/or anal sex; Oral PrEP protection was defined as having taken PrEP for seven days prior, on the day of, and 7 days after sex (or if sex was  $\leq 7$  days ago, every day since last sex).

**Results:** Data for 272 follow-up visits, among 241 oral PrEP users were analysed, after excluding observations among participants missing a recorded date of last sex ( $n=64$ , 18.6%), for whom type of sex at last encounter was missing ( $n=1$ , 0.3%) or who reported only oral sex ( $n=8$ , 2.3%). Participants with missing data on PrEP use ( $n=39$ , 14.3%) or condom use ( $n=1$ , 0.4%) were classified as not effectively using PrEP or condoms respectively. Of 272 sex acts reported, 21.0% ( $n=57$ ) were protected by condoms and PrEP, 53.3% ( $n=145$ ) by PrEP only, 9.6% ( $n=26$ ) by condoms only and 16.2% ( $n=44$ ) were not protected.

**Conclusions:** With the availability of multiple HIV prevention options, self-reported PrEP and condom use at last sex may serve a useful indicator of effective prevention use in routine service settings. In our setting, participant recall of date of last sex, condom and PrEP use was high, although not complete.

Going forward, adaptation to this method to calculate effective dapivirine ring and cabotegravir use, by sex type, will be made and evaluated.

## WEPEE627

### Predictors of waiting time at public health facilities in South Africa: evidence from Ritshidze's community-led monitoring

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**Background:** In South Africa, critical gaps persist in retaining individuals at risk for or living with HIV in care. Extensive wait times at public health facilities are an essential contributing factor to dissatisfaction with services. Better understanding challenges and facility characteristics related to wait time presents opportunities for tailored responses aimed at improving quality of care related to HIV services.

**Methods:** The Ritshidze Community-Led Monitoring Programme collected electronic survey data at public health facilities in eight provinces from October 2022 - September 2023. Descriptive statistics were calculated for indicators related to wait time. A multivariate linear regression model predicting wait time was built, incorporating indi-



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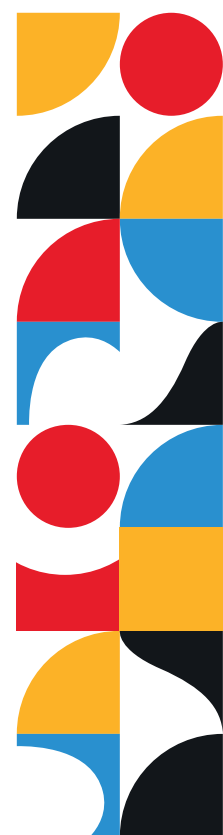
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cators hypothesized to impact wait time and fixed effects for time and facility. Likelihood-ratio tests were used to assess model fit.

**Results:** Surveys from 62,040 health service users at 456 public health facilities were included in the sample. Median wait time was 180 minutes (IQR 120-240). 19% (n=12,026) of service users reported there were never enough staff at the facility, 8% (n=4,998) reported the appointment system was never functional, and 26% (n=16,177) reported that the facility is not open for enough time.

In a multivariate model including facility-level and temporal effects, never having enough staff was associated with, on average, a 16 minute increase in wait-time compared to always enough staff ( $p<0.001$ ).

Service users reporting a non-functional appointment system relative to a functional one was associated with, on average, a 24 minute increase in wait-time ( $p<0.001$ ). Service users reporting facilities were not open enough hours was associated with, on average, a 9 minute increase in wait-time ( $p<0.001$ ).

**Conclusions:** Wait times at public health facilities remain long, and non-functional appointment systems represent a particular area that may be of use to target with interventions. Community-led monitoring data provides key insights into day to day experiences and of health service users in South Africa.

## WEPEE628

Self-care digital solutions for improved HIV prevention programming: evidence from a voluntary medical male circumcision program in a low resource setting

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**Background:** Client self-care using digital innovations is increasingly becoming important in health service delivery to reduce care burden. Population Solutions for Health (PSH) and Population Services International (PSI) in collaboration with the Ministry of Health and Childcare (MoHCC) are implementing the Workforce App (WFA); a fully configurable progressive web application (PWA) for post-circumcision wound self-management.

We evaluated the feasibility and acceptability of this innovation to inform scale-up by validating post-circumcision outcomes reported by the client via WFA with those reported in person by the same client in the study.

**Methods:** A mixed methods study was conducted in May 2023 with recipients of care (RoC) opting in for WFA between March 2022 to May 2023 in the five biggest districts

of Zimbabwe. Data sources were from program data (38,384 circumcised RoC), survey data (286), key informant interviews (10 clinicians) and 6 focus group discussions with RoC. Quantitative data were collected using Survey ToGo and analyzed in STATA. Qualitative data were tape-recorded and analyzed using N-VIVO.

Point estimates for individuals reporting "feeling ok" via WFA were compared with routine program outcomes for the same individuals and statistical differences between proportions were plotted at 95% confidence levels.

**Results:** Since WFA introduction, from 2021 to May 2023, 66% (25,335/38384) of all circumcised individuals opted into WFA. Out of the 286 respondents recruited in the study, 87.3% (95% CI: 81.4-91.9) reported feeling ok at physical post-procedure follow-up compared to 85.1% (95% CI: 83.5-86.6) reported via WFA. Scale-up of WFA was supported by most service providers as they observed a reduced workload at the health facility since most individuals opted for self-care via WFA.

Additionally, the occurrence of adverse events (severe and moderate cases) reduced from 16/10,000 (95% CI: 9-26) persons for the period before WFA introduction to 1/10,000 (95% CI: 1-2) persons after WFA deployment.

**Conclusions:** Person-centered digital innovations have shown to be effective in post-circumcision self-wound management as outcomes reported via the application were validated. Healthcare providers and VMMC RoCs showed high acceptability of this innovation and the post-WFA period was associated with fewer occurrences of adverse events. This digital innovation should therefore be scaled up.

## WEPEE629

Using natural language processing and audio-based machine learning models to characterize youth-friendly HIV prevention services to adolescent girls and young women in Tanzania

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**Background:** Understanding of the nature and experience of youth-friendly HIV prevention services is limited, hampering interventions, such as HIV testing and pre-exposure prophylaxis, that would otherwise be generally efficacious. Objectively measuring quality of care is diffi-

cult – provider assessments or aggregate measures on service uptake neglect subjective user experiences and include only those undeterred from seeking care.

**Methods:** We used natural language processing (NLP) and audio-based machine learning to identify features of youth-friendly HIV services, leveraging data from mystery client visits conducted to assess the fidelity of a girl-friendly drug shop intervention among shops enrolled in a cluster-randomized trial (NCT05357144).

Trained actors following a standardized script sought HIV self-testing and contraception and audio-recorded the interactions, which were transcribed and translated into English.

We conducted classical NLP pre-processing techniques:

- Generating regularized expressions from text;
- Tokenizing and extracting stems of words; and,
- Generating embeddings using Term Frequency-Inverse Document Frequency (TF-IDF).

We then estimated unsupervised learning models including k-means and spectral clustering using the embeddings. To account for additional non-text features (pauses, intonation, and interruptions), we analyzed recordings in Swahili directly using spectrograms and Mel-frequency Cepstral Coefficients (MFCC).

**Results:** From N=44 interactions, k-means with 2 clusters successfully distinguished the shopkeeper from the actor based on the TF-IDF vector embeddings of key terms from the transcripts, validating the unsupervised model against a known truth.

We successfully extracted features directly from the audio recordings to capture information that is exclusive only to the audio signal (Figure 1).

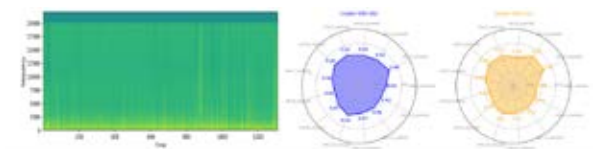


Figure 1A (left) shows a 2-D visual representation of the spectrogram generated directly from audio recordings of the interactions using Fast Fourier Transforms. Figure 1B (right) shows k-means clustering of the audio recordings from 27 patient-provider interactions based on Mel-frequency Cepstral Coefficients (MFCCs). Both figures are examples of features that are extracted from the audio data to complement our understanding of the interactions from the text transcripts.

**Conclusions:** Novel machine learning techniques have the potential to identify new aspects of youth-friendly HIV service provision and generate ideas for future implementation research.

Ongoing analysis will advance natural language processing using a custom GPT to take advantage of existing large language models and include supervised learning techniques using customer-reported and/or expert-coded service quality as target parameters.

## WEPEE630

### Qualitative results from a pilot study of an automated directly observed therapy intervention using artificial intelligence with conditional economic incentives among young adults with HIV

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**Background:** Antiretroviral therapy (ART) adherence challenges are common among youth with HIV (YWH), increasing drug resistance and poor clinical outcomes. Monitoring and supporting ART adherence is a promising strategy for enhancing ART adherence. We implemented an innovative mobile app-based intervention that included automated directly observed therapy (aDOT) using artificial intelligence, dose tracking, medication reminders, and conditional economic incentives (CEIs) to improve ART adherence and viral suppression among YWH. This intervention used facial recognition to track and record daily adherence and CEIs were given based on confirmed daily adherence.

**Methods:** A pilot study was conducted among YWH (18–29) of the aDOT-CEI intervention, informed by the operant framework of Key Principles in Contingency Management Implementation. We recruited virally unsuppressed YWH from AIDS Healthcare Foundation clinics in California and Florida, who used the aDOT+CEI app for 3 months.

We report qualitative feedback from 13 participants and 5 providers regarding motivators and deterrents of the use of the app and the helpfulness of the aDOT-CEI intervention.

**Results:** Overall, the intervention was found to be helpful by participants and providers in improving adherence. Participants found the CEIs facilitated adherence; however, most participants did not find the incentive amount sufficient to substantially motivate behavior, and desired more reassurance and explanation around app privacy features. The primary motivator for the participants to use the app consistently was to improve their health, and the reminders from the app were the most helpful component to improving adherence. Providers said they would recommend the app and suggested incorporating the app into counseling for newly diagnosed patients to help facilitate adherence at ART initiation.

**Conclusions:** Participants found the intervention helpful in reminding them of and tracking their ART adherence. They suggested refinements that may further improve



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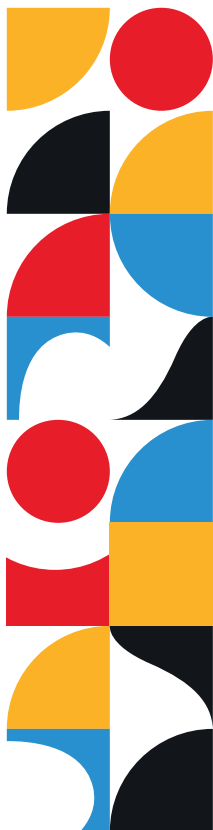
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adherence and the app, including increasing the incentive amount and providing more details about app privacy features. Providers suggested incorporating the app into counseling for newly diagnosed patients to facilitate adherence at the start of treatment. Additional research is recommended to test the efficacy of a refined aDOT-CEI intervention to improve viral suppression in a larger sample.

## WEPEE631

Community-led monitoring (CLM) contributed to improving HIV and related services for people living with HIV (PLHIV) and key populations (KP), in Cambodia

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**Background:** Gathering evidence from Key Populations (KP)/ People Living with HIV (PLHIV) communities about service gaps that can be used to lobby government and key stakeholders for better services remains challenging. Limited capacity, tools, and resources for KP/PLHIV representatives to collect and analyze data from communities are constraints.

**Description:** To address this need, an online Community-Led Monitoring (CLM) system led by KP/PLHIV networks was established that serves as a community-friendly data collection tool. KP/PLHIV communities meet and provide their feedback systematically every quarter in seven HIV high-burden provinces with large KP populations. Data is automatically incorporated into dynamic dashboard (PowerBI) available for network representatives to lobby/advocate for service strengthening. The CLM tool has seven thematic areas, including Prevention and HIV Testing; Pre-exposure Prophylaxis; Sexually Transmitted Infections; Social Protection; Care and Treatment; Gender-based Violence; and Stigma and Discrimination.

**Lessons learned:** Provincial Fora of People Living with HIV and most at-risk Population and District Fora of People Living with HIV and most at-risk Population were established in 2011 but were refunctioned in 2021 by HACC with financial and technical support from UNAIDS, National

Center for HIV/AIDS, Dermatology and STD and FHI 360. The CLM system collects feedback and challenges from KP/PLHIV, and the results compiled and presented to Provincial AIDS Authority and other partners quarterly. In 2023, approximately 3,100 KP/PLHIV CLM respondents provided feedback, far exceeding expectations. KP/PLHIV representatives used the CLM dashboard to present results in several key fora in the country to advocate for better health and non-health services for KP/PLHIV.

CLM advocacy around social protections to the National AIDS Authority resulted in the Royal Government of Cambodia providing universal health insurance coverage for PLHIV and KPs. The Global Fund, impressed by CLM results, approved the request to expand CLM activities from seven to 12 provinces in 2024-2026.

**Conclusions/Next steps:** CLM is an effective tool to collect feedback from KP/PLHIV systematically and produce friendly, dynamic, and convincing dashboards that allow KP/PLHIV representatives to use their data to inform agencies and stakeholders of their needs and necessary quality improvements of both health and non-health services for KP/PLHIV. The CLM system should be scaled up to 25 provinces.

## WEPEE632

Deduplication of patient data in the electronic medical records in Uganda June - November 2022: a comparison of three classification algorithms

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**Background:** Duplicate patient records pose a significant challenge to healthcare registries and electronic medical record systems (EMR) in Uganda, primarily due to the absence of a national unique patient identifier. This can lead to issues like unnecessary testing of clients previously diagnosed with HIV or overestimating the population receiving antiretroviral therapy.

This research aims to improve the accuracy of health data to uniquely identify clients, thereby aiding in epidemic control and service delivery. It explores different algorithms for matching patient records to reduce duplications.

**Methods:** We used a dataset from UgandaEMR from 15 health facilities across six districts in Rwenzori Region to train three algorithms. Due to the absence of a ground truth dataset, we used synthetic test dataset for evaluation [dataset]. Variables included names, sex, age, birth-date, address, and phone number.

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After data pre-processing, the indexed records were compared to each other using Jaro-Winkler and Levenshtein methods to calculate similarity scores, which were then classified. Three classification algorithms were used—a threshold-based algorithm (TBA), a weighted average score-based (WASB) algorithm, and a decision tree (DT) algorithm—to classify scores as matches, potential matches, and non-matches.

TBA aggregates similarity scores, while WASB assigns varying weights to similarity scores of different variables before aggregating.

We evaluated algorithms using sensitivity, specificity, and F-score metrics. Finally, we applied the best algorithm on the facility dataset to estimate duplicates.

**Results:** The WASB algorithm exhibited superior performance on the synthetic test dataset (99.0% sensitivity, 98.8% specificity, 98.9% F-score). TBA demonstrated slightly lower metrics (95.3% sensitivity, 89.1% specificity, 92.1% F-score), while DT had 92.3% sensitivity, 93.9% specificity, and 93.1% F-score. The facility dataset included 44,717 records, including 28,619 (64%) females.

When applied back to the facility dataset, the WASB algorithm categorized 2,594 (5.8%) of records as duplicates and 4,472 (10%) as potential duplicates.

**Conclusions:** The study establishes the WASB as the most effective method for matching and deduplicating UgandaEMR patient records compared to TBA and DT algorithms. Its adoption could improve accuracy and reliability of UgandaEMR, improving data for action and enhancing the healthcare service quality.

Future initiatives might refine these algorithms by expanding the dataset to include more regions.

## WEPEE633

[Demonstrating the success of a case management information system in large-scale, longitudinal client-level data management for efficient, HIV-sensitive case management for orphans and vulnerable children in Zimbabwe](#)

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<sup>4</sup>International Business & Technical Consultants, Inc., Vienna, United States

**Background:** The PEPFAR/Zimbabwe OVC program delivers family-based and child-centered comprehensive community case management to children and households affected by HIV. Under the OVC program, four implementing partners support children living with HIV (CLHIV) and their caregivers to access and adhere to antiretroviral therapy (ART) and to partake in education, protection, and economic strengthening services to en-

sure continuity of treatment, retention in care, viral load suppression (VLS), and enhanced quality of life. Previously, these partners relied on disparate and paper-based systems to record, track, and report OVC data, resulting in service delivery gaps and data inconsistencies.

**Description:** The United States Agency for International Development (USAID) Mission in Zimbabwe, through the Data for Implementation (Data.FI) project, successfully developed an OVC case management information system (OVC MIS) using the District Health Information Software version 2 (DHIS2)'s Tracker to manage individual-level client data for OVC populations.

The system tracks OVC eligibility, enrollment, case management, and graduation for over 120,000 beneficiaries, as well as referral to (and completion of) 90 OVC services. The system also longitudinally monitors HIV status, VLS, and early infant diagnosis of HIV.

**Lessons learned:** The OVC MIS is an integral part of monitoring, evaluation, learning, reporting, and adaptation in Zimbabwe's OVC program. Program managers use OVC MIS data to determine when households are due for case management visits and assessment and when individual CLHIV need viral load testing.

Following rollout of the OVC MIS and increased access to real-time data, local partners achieved 97% of the service delivery target of 192,000 beneficiaries, reached 95% of enrolled children with risk assessment or HIV testing and, as of September 30, 2023, 97% of the nearly 19,000 CLHIV who received a test were virally suppressed.

**Conclusions/Next steps:** The OVC MIS provides a platform for evidence-based decision-making that complements community-based support services to enhance the effectiveness of the country's HIV response.

As Zimbabwe seeks to achieve epidemic control across all age groups and populations, OVC programs provide crucial assistance to the most vulnerable and hard to reach, helping children adhere to treatment and achieve viral load suppression.





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## WEPEE634

Metrics that matter: developing quality standards to measure friendliness of integrated key populations focused HIV service delivery in the public health sector in Zimbabwe

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**Background:** Zimbabwe has reached epidemic control, surpassing the UNAIDS 95-95-95 targets among the general adult population. Key populations in Zimbabwe, however, perform dismally against these targets and contend with disparate health equity gaps that preclude access to friendly, and comprehensive HIV services. With a paucity of programmatic monitoring and evaluation tools to measure the impact of structural barriers to HIV service access, we set out to develop a KP friendliness tool and to determine domains that measure facility KP friendliness in the public sector.

**Description:** We developed a KP friendliness tool anchored in the World Health Organizations' quality standards including accessibility, community participation and linkages, provision of an appropriate package of services, provider competencies, facility characteristics, equity, data and non-discrimination.

We piloted the tool across 10 public sector facilities among men who have sex with men, sex workers, and transgender persons in Mutare, Masvingo, Bulawayo, Chitungwiza and Gweru districts in Zimbabwe.

The tool was administered with 10-15 members of health facility monitoring committees (HFMC) from each of the sites. Each rating was discussed, in instances where members were in discord, an average percentage score was applied.

Overall facility performance was scored as bronze (<60%), silver (60-79%), gold (80-94%) and platinum (95-100%).

**Lessons learned:** The KP friendliness tool was successful in eliciting reliable facility ratings on critical friendliness domains and facilitated robust discussions to identify areas of improvement.

This methodology provided opportunities to nuance performance ratings with experiential evidence from community led monitoring (CLM) data. The tool was digitalized and scaled from 10 to 53 health care facilities.

Quarterly implementation of the tool and annual reviews provided opportunities to iterate and nuance relevance, importance, measurability, and improvability of domains, tracking of progress and use of results to improve the KP program.

**Conclusions/Next steps:** This tool provides reliable measures to monitor "KP friendliness". Its domains are critical in improving quality of care and provides a yardstick for incremental progress in addressing structural barriers to equitable access to differentiated HIV services for KPs in the public health sector. Triaging data from the KP friendliness tool with KP CLM feedback provides rich data for evidence informed quality improvement efforts.

## WEPEE635

Utilizing generative artificial intelligence -Gen AI (ChatGPT-4) for exploratory and advanced data analysis for clients currently on HIV/AIDS treatment in ten highest volume treatment facilities in Nigeria

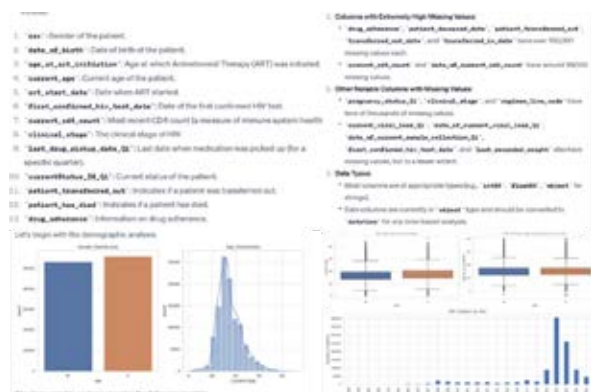
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**Background:** In HIV/AIDS treatment, data-driven decision-making is critical for improving client outcomes. Nigeria, with significant HIV burden, requires innovative approaches to analyze complex datasets related to treatment efficacy. This abstract explores the ability and application of Gen AI, specifically ChatGPT-4, for exploratory and advanced data analysis (EDA). The National Health Research Ethics Committee of Nigeria (NHREC) exemption approval was sought and received with anonymized and de-identified line list of client treatment records across ten highest volume facilities culled from the National Data Repository (NDR) and used for this analysis and study based on exploring the advanced data analytics features.

**Description:** ChatGPT-4, an advanced language model used to conduct EDA on a comprehensive dataset encompassing demographic, clinical, and treatment data of HIV/AIDS clients. The model was tasked with identifying patterns, anomalies, and correlations that traditional

analysis methods might overlook. Special emphasis was placed on descriptive analysis and treatment outcomes. The AI's capacity to process and interpret large datasets efficiently was leveraged to generate novel insights and hypotheses in a few minutes. With snapshot of the outputs below:



**Lessons learned:** GPT-4's analysis revealed nuanced patterns in descriptive, trend, correlation analysis, and treatment efficacy related to age, gender, and treatment outcomes. Notably, it identified previously unreported ART initiation and age distribution by gender and suggested potential areas for targeted interventions. These insights were validated against existing research and expert opinion, demonstrating the model's accuracy and reliability.

**Conclusions/Next steps:** The utilization of GPT-4 in EDA offers a novel approach to HIV/AIDS treatment analysis. Its ability to rapidly process vast datasets and uncover hidden patterns provides a valuable tool for researchers and policymakers. This could lead to more personalized treatment plans, efficient resource allocation, and ultimately, improved client outcomes.

Future research should focus on responsible and ethical use of Generative AI and expanding the use in other aspects of HIV/AIDS programming.

## WEPEE636

Responding to STI in key population: integration of key population classification into national routine STI services in Mozambique, 2023

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**Background:** Key populations (KP) are disproportionately affected by viral hepatitis and STI. Implementation of STI services in Mozambique with provision of KP-specific care has created an opportunity to collect timely national program data on KP, specifically for sex workers (SW), men who have sex with men (MSM), people who inject drugs (PWID), transgender people (TG) and prisoners. In Mozambique no national level data was available on STI among KP.

**Description:** In August 2022, the Ministry of Health updated STI data tools to enable collection of key population status at all public facilities in Mozambique (n = 1,634).

All providers who screen, diagnose, and treat STI were trained with the new package that included a risk behavior classification algorithm to identify and record KP status on STI paper-based forms, which are aggregated at the clinic level and digitized into a national database

**Lessons learned:** STI routine program data from January to December 2023 demonstrated 895,185 STI cases diagnosed and treated, of those 22,529 (3%) were identified as KP (57% were female and 43% male); 13,378 (59%) were SW; 2,160 (10%) MSM; 1,803 (8%) were PWID; 3,938 (17%) were prisoners and 1,252 (6%) were TG.

Among SW more female (10,379) was diagnosed with STI compared with men (3,080); also, more TG female (719) compared with TG men (614). Among PWID more men (1,151) were diagnosed compared with female (733) and more men (3,070) in Prisoners compared with female (940).

Data confirm the feasibility of capturing KP data in ITS services, furthermore, KP disaggregated data plays an important role in controlling the HIV epidemic

**Conclusions/Next steps:** In high HIV prevalence country, the diagnose and treatment for STIs in KP is central to the elimination of diseases as public health threats. Additionally, this evaluation provides a first time STI programmatic data among KP in Mozambique.

The granular level and timely information on KP at facility and national level can provide essential information for optimal prevention and treatment resources appropriately, programmatic decisions-making, and contribute to the body of knowledge on KP in the region



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## WEPEE637

### HIV drug resistance early warning indicators in Cameroon: lessons and challenges for achieving HIV elimination in low- and middle-income countries

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**Background:** Background: Monitoring early warning indicators of HIV drug resistance (EWI-HIVDR) in low-and middle-income countries (LMICs) is recommended by the World Health Organization (WHO). This relatively inexpensive, non-laboratory method for large-scale program monitoring is critical in preventing HIVDR emergence, ensuring the effectiveness of antiretroviral therapy (ART) programs, and achieving HIV epidemic control. This study aimed at evaluating the EWI-HIVDR in Cameroon.

**Methods:** Following WHO-methodology, a retrospective study was conducted in 69 ART sites from all 10 regions of Cameroon from January-December 2022. ART-sites were selected following a systematic-sampling (region, urban/rural, public/private), and seven HIVDR-EWI were collected: (EWI-1) total-attribution to ART; (EWI-2) viral-suppression (VS); (EWI-3) viral-load (VL) coverage; (EWI-4) appropriate second VL-testing; (EWI-5) drug-stockouts; (EWI-6) on-time drug pick-up; (EWI-7) appropriate switch to second-line

ART. Targets for each EWI was classified as poor-, moderate- or good-performance. Data were analyzed using Excel 2016.

**Results:** A total of 173,271 ART-experienced patients were enrolled. ART-attribution (EWI-1) was 5.7%, ranging from 3.6 to 9.6%, far within the target of <15%. VS rate (EWI-2) was 92.3% (110,672/119,904), with 30% of regions (Northwest, West, Southwest) reaching the 95% target (96.7%; 96.1%, 95.8% respectively). Regarding VL-coverage (EWI-3), the performance was 69.2% (n=119,904), ranging from 50.8-88.1%, below the expected 95% target.

Performance for second VL-testing (EWI-4) was just 39% (24.9-52.8%), mainly due to delayed prescription (>6months) of the second VL-testing after an unsuppressed VL. All (100%) ART-sites experienced at least one ARV drug-stockout (EWI-5) during the 12-months reporting-period, ranging from 58.3-100% months.

Timely ARV pick-up (EWI-6) was 68.4% (43-97%), with only the North-region having performance (97.0%) above 90%. Only 0.69% (0.00-2.38%) of patients with confirmed unsuppressed-VL (EWI-7) were switched to second-line ART within 6 months.

**Conclusions:** In Cameroon, EWI-HIVDR highlights acceptable performances for ART-retention and VS. Performances for VL-coverage, second VL-testing, ARV drug stockout, timely ARV pick-up and appropriate switch to second-line ART were very-poor. The findings suggest a need for optimizing ART procurement and supply-chain, increasing VL-testing coverage and strengthening the capacity to HIV clinicians for timely switch from failing-regimens. In LMICs sharing similar programmatic-challenges, such public-health actions will contribute in HIVDR-prevention, and ultimately in achieving HIV epidemic control.

## WEPEE638

### Improving decision making by minimizing non-response bias in HIV/AIDS health studies

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**Background:** Quality of Health interventions design, implementation and outcomes depend on quality of data. Study sample statistics should therefore be representative of estimated parameters. Non-response becomes critical when response rates fall below 70% (30% non-response). Ideally response should be 80% or more. However, this is difficult to achieve in practice. In Botswana, the main HIV response population-based survey, Botswana AIDS Impact Survey (BAIS) recorded a non-response as high as 34% in HIV Testing.

During its OVC Essential Survey Indicators to assess progress towards achievement of Essential Indicators ACHAP led field work for a study to obtain baseline measures with a minimal response rate.

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**Methods:** ACHAP collaborated with community structures and actors, co conduct a descriptive quantitative cross-sectional study using Simple Random Sampling design to select households' primary data respondents. The sample size was powered to test the difference between baseline and endline values of the selected indicators of the OVC Essential Survey in Botswana's.

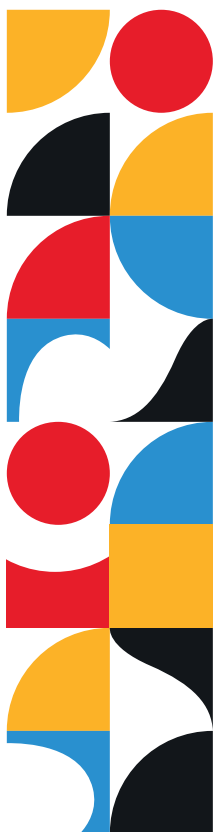
To manage non-response, community structures such as the tribal leadership, village development committees and the civil society organizations working with the target population were engaged and sensitized on the project prior to the fieldwork. They engaged the general community with particular attention to the target population to sensitize them on the value on the study.

This engagement made consenting easier as target population already had sufficient information for making informed consent in advance. Research assistants training emphasized boosting response rate.

**Results:** A total of 303 households were physically contacted and of these 297 of them had been interviewed following a successful consent process, making this 90.5% of the targeted sample of 328. The non-response is therefore 9.5% which is way less than the 34.4% nonresponse rate provided for in the sample size calculation.

Some of the contributing factors to the none response was mainly due to households not known by the collaborating Community Structures or Service Providers collaborated with, these constituted 65% (17/26) of the not interviewed households.

**Conclusions:** Collaborating with community structures for both data collection for studies can positively contribute to improved response rate.



### Political and legal factors affecting people living with, vulnerable to and affected by HIV

#### WEPEF639

##### No U-turns allowed: a roadmap to challenge criminalisation of HIV in Aotearoa New Zealand

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the, <sup>5</sup>Positive Women Inc., Auckland, New Zealand

**Background:** Aotearoa New Zealand (NZ) has one of the highest rates of HIV criminalisation per capita. HIV transmission, exposure, and non-disclosure during sex (if not using a condom) is prosecuted under the Crimes Act 1961 under charges of 'criminal nuisance', 'wounding with intent', 'wilfully infecting with a disease', and 'duty of persons in charge of dangerous things'.

There is no legal precedent to acknowledge U=U and PrEP, however a case being progressed would pose significant distress to the person being charged. U=U also places the burden on people living with HIV to prove they were undetectable at the time of sex. Community-based organisations explored what advocacy pathways might exist.

**Description:** Given HIV is criminalised under general law, decriminalisation cannot be done through a change in legislation, as the laws are not HIV-specific. We reviewed international best practice and tangible tools we could apply to NZ.

**Lessons learned:** Community-based organisations must continue to advocate strongly to police, corrections, lawyers, and media to prevent HIV cases from reaching the judicial system and raise greater awareness of the public health pathways for risk management. Strong relationships and targeted workforce education with police and corrections have been essential to manage cases as they arise. We will expand this work to the wider judicial system.

Close relationships with the media have allowed for some improved reporting of cases, but this requires vigilance and media guidelines. HIV-specific prosecutorial guidelines would establish what circumstances criminal charges could be brought forward and standardise practices on charging decisions.

We could also lobby for targeted reform of legislation to remove HIV from falling within the definition of grievous bodily harm.

**Conclusions/Next steps:** Criminal law is often applied inconsistently and overstates the burden of disease and risk of HIV transmission in the context of U=U. Application of criminal law should reflect a greater understanding of modern HIV science to limit unjust prosecutions and stigmatising practices.

A multi-pronged approach of targeted workforce education, lobbying, and advocacy is needed to lift the burden of criminalisation faced by people living with HIV, prevent cases from reaching the judicial system, and increasingly acknowledge the role of public health.

#### WEPEF640

##### The impact of criminal liability for HIV transmission on people living with HIV in Kazakhstan

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**Background:** Article 118 of the Criminal Code of the Republic of Kazakhstan mandates people living with HIV to disclose their diagnosis to every sexual partner. Consequently, people with HIV seeking treatment at the AIDS Center must sign a document acknowledging their awareness of Article 118.

While only 18 people in Kazakhstan have faced criminal convictions under Article 118, no study has examined the impact of this law on the lives of people living with HIV in the country.

**Methods:** In August 2023, the HIV community in Kazakhstan initiated a study to explore strategies chosen by people living with HIV in response to the legal obligations outlined in Article 118. An online survey was administered to 101 people living with HIV, comprising 58 women and 43 men. The sample was middle-aged, with women averaging 42.5 years and men 38.1 years. A majority (60.4%) had been living with HIV for more than 5 years.

**Results:** The study identified three primary strategies adopted by people with HIV who were officially informed about Article 118. Only 28.8% openly revealed their HIV status, with 5% documenting the disclosure (e.g., disclosing in the presence of witnesses or taking screenshots of correspondence). The largest group (45.5%) shared their HIV status with a small circle of trusted people (e.g., spouses, parents).

One in four participants (25.7%) chose to conceal their status from everyone, with 9.9% opting to abstain from any romantic or sexual relationships.

Common reasons for not disclosing their HIV diagnosis included the fear of violence and blackmail, concerns about relationship breakup, and fear of criminal conviction.

**Conclusions:** Despite the limited number of convictions under Article 118, the criminalization of HIV transmission had a detrimental impact on the quality of life for people living with HIV in Kazakhstan. It instilled fear and a sizable proportion of participants discontinued their romantic or

sexual lives - an especially noteworthy and novel finding. The study results offer support for community-based advocacy aimed at reforming legislation that needlessly criminalizes a medical diagnosis. Treating intentional HIV transmission as part of regular criminal offenses offers a more sensible and justice-oriented legal approach.

## WEPEF641

### Exploring the Regulatory Landscape on HIV prevention and control in Uzbekistan – a Migrant-centered Perspective

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**Background:** The Republican AIDS Center of Uzbekistan notes 48,418 people living with HIV being registered in Uzbekistan. The HIV epidemic is in a concentrated stage, with sexual transmission accounting for the majority of cases. Apart from key populations, migrant workers are of concern, as HIV prevalence has been gradually increasing since 2011 to 4.1% in 2022 (compared to 0.1% in the general population).

It is therefore important to understand how the population mobility is considered in the HIV related legislative and policy framework in Uzbekistan and countries of destination.

**Methods:** UNAIDS and IOM in Uzbekistan conducted a desk review of the existing legislative and policy framework on HIV and migration in Uzbekistan and major countries of destination such as the Russian Federation in August-December 2023 aimed at identifying and improving key government HIV strategies with a migrant-inclusive approach.

**Results:** The desk review revealed several gaps in the Uzbek legislative and policy framework regulating HIV prevention and service provision, compared to international standards. While the government has recognised Uzbek migrant workers as priority for effective HIV control and foresees increased coverage of migrant workers with voluntary HIV testing as well as awareness raising, legislation is insufficiently developed due to the absence of an effective migration law. As for regulations in the Russian Federation, the issue of deportation was highlighted as one of the key barriers for people living with HIV.

**Conclusions:** Based on the gaps revealed by this desk review, key recommendations for Uzbekistan are to:

1. Include HIV prevention measures targeting migrants in the basic law,

2. Develop roadmaps for future HIV prevention interventions and treatment access for migrants, and  
3. Develop standard operating procedures by the Republican AIDS Center and specialized non-governmental organizations for remote services (online registration, testing services, provision of antiretroviral therapy) to migrants living with HIV and their families.

International cooperation between the country of origin and the country of destination is also key for effective HIV c. In particular, the solution to the issue of deportation of migrants with HIV depends on changes in the legislation of the receiving country.

## WEPEF642

### TRIPS-plus provisions in bilateral agreements and national laws and their impact on access to HIV treatment: a review of the legislative framework in some EECA countries

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**Background:** TRIPS-plus provisions exceed the required WTO standards and have a negative impact on medicine availability. The percentage of HIV-positive healthcare clients in the Eurasian Economic Union receiving antiretroviral therapy of those knowing their status is still less than 90%, one of the reasons being high prices for key drugs, such as dolutegravir, caused by patent monopolies. Regular monitoring of TRIPS-plus provisions in the national regulatory frameworks and assessment of their impact on public health is required to ensure adequate treatment access.

We analyzed the national and the EEU regulatory framework to assess the scope of limitations imposed by specific TRIPS-plus measures on access to antiretrovirals and other drugs. These measures include patent linkage, data exclusivity, strict patentability criteria, and supplementary protection certificates.

**Methods:** For analysis, we used international regulatory framework (TRIPS Agreement and Doha Declaration); official national and regional legal databases (<https://online.zakon.kz/>; <http://cbd.minjust.gov.kg/>; <https://pravo.by/>; <https://www.aipa.am/hy/>; <https://eec.eaeunion.org/>); texts of Enhanced Partnership and Cooperation Agreements with the EU (Armenia, Kazakhstan).

The Russian and Armenian equivalents and variations of the following key words and combinations were used: indications of patents and licenses in drug registration applications, ban on original clinical trial data use for generic registration dossiers, ban on generic drug registration, patentability criteria, and extending the validity period of a patent for an invention.



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**Results:** Our analysis identified all four categories of the TRIPS-plus provisions referred to in Background in EEU country laws. The results are presented in Table 1.

Country	Data, Registration and Market Exclusivity	Patent Linkage in Drug Registration Application	Patentability Criteria	Extending the validity of patent
Armenia	8 years of data exclusivity; 10 years of market exclusivity	-	- molecule - composition - method of obtaining - mode of application	up to 5 years
Belarus	4 years of data exclusivity	- list of patents - guarantee of non-infringement	- molecule - composition - method of obtaining - mode of application	up to 5 years
Kazakhstan	6 years of data exclusivity	- list of patents and license agreements - guarantee of reliability of information and non-infringement of rights	- molecule - composition - method of obtaining - mode of application	up to 5 years
Kyrgyzstan	-	-	- molecule - composition - method of obtaining - mode of application	-
Russia	6 years of data exclusivity; 4 years of registration exclusivity	-	- molecule - composition - method of obtaining - mode of application - method of treatment	up to 5 years
Eurasian Economic Union Regulation	-	- list of patents - guarantee of non-infringement	- molecule - composition - method of obtaining - mode of application - method of treatment	up to 5 years

Table 1.

**Conclusions:** TRIPS-plus provisions are present in the legal framework of Armenia, Belarus, Kazakhstan, Kyrgyzstan and Russia, which limits opportunities for emergency country responses to closing treatment access gaps.

Of note are data and registration exclusivity provisions, soft patentability criteria, and Supplementary Protection Certificates. Some of the TRIPS-plus provisions have been imposed by Enhanced Cooperation and Partnership Agreements with the EU.

Countries are recommended to revise their regulatory frameworks and remove TRIPS-plus regulations, recognizing them as jeopardizing access to medical products.

## WEPEF643

**Building Resilience and Reducing Risk: sustaining safe and supportive community health outreaches among the key population (MSM) in a polarized security and transitional context**

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**Background:** In regions facing a polarized security and transitional context, stigma, discrimination, and violence against the Key Population (MSM) contribute to heightened risks of acquiring HIV and mental health issues. The

ruling by the Kenya supreme court in February of 2023 sparked an anti-LGBTIQ campaigns which resulted in protests, violent assaults, displacement, and the closure of community-led Drop-in-Centers, disrupting outreach and service delivery.

To mitigate risks, the Stawisha Pwani program transitioned from a Drop-In-Centre to a community outreach model, addressing challenges posed by security threats, doxing, and interrupted care services.

**Description:** The Stawisha Pwani program facilitated in participatory community consultations and risk assessments. Short-term strategies included leveraging peer educators, collaborating with local organizations to respond to emergency situations, and integrating services into public health systems.

Long-term measures focused on transitioning the program team and volunteers under Human Resources for Health, designing a community outreach model, and developing a comprehensive crisis and risk mitigation strategy.

The service delivery strategy prioritized a community health outreach model, ensuring continuity with minimal security exposure, and facilitating a seamless transition.

**Lessons learned:** Between April and October 2023, the program engaged 40 trained peer educators, extending HIV prevention and testing services to 2778 MSM. Of these, 240 (8.6%) were first-time participants, leading to the identification of 6 new KPLHIV (yield 2.50%). Additionally, 399 MSM enrolled in PrEP, with 255 actively on PrEP by October 2023.

However, challenges included the absence of a crisis and risk mitigation strategy, insufficient resources for remote work, and the need for a comprehensive violence response plan.

Slow response rates and suboptimal community resource connections hindered program adaptation, emphasizing the importance of continuous monitoring and paralegal engagement for participant safety.

**Conclusions/Next steps:** In navigating a hostile environment, the Stawisha Pwani program showcased resilience by transitioning to a community-based approach, sustaining essential services for the Key Population.

Despite challenges and ongoing threats, the lessons learned emphasize the imperative need for a crisis and risk mitigation strategy, resource optimization, and strengthened connections with community networks to ensure sustained support and resilience.

## WEPEF644

### Constitutional challenge of Canadian laws criminalizing sex work: community-led litigation as a necessary step to reach 10-10-10 goals

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**Background:** The current regime criminalizing sex work in Canada makes sex work a crime since 2014 despite a Supreme Court decision invalidating previous laws.

Sex worker and allies spent 6 years educating and advocating for the government to uphold sex workers' Charter rights to no avail. In March 2021, after years of inaction from Parliament to repeal the current sex work offences, sex workers were forced to go to court to challenge these laws to have their human rights protected under the banner of the Canadian Alliance for Sex Work Law Reform (CASWLR). The case, CASWLR v. Canada, is currently at the Appeal level.

**Description:** CASWLR v. Canada is led by an alliance of 23 groups, primarily by and for sex workers, as well as 6 co-applicants, supported by 7 fact witnesses speaking about the realities of sex workers, 7 researchers, and 10 intervenors representing a wide variety of groups, including related to HIV and sexual health, women, migrant, trans and queer, and Black communities.

This mobilization allowed sex workers to put forward arguments that went beyond basic health and security (i.e. the right to not be raped or murdered and to not be exposed to HIV) to include nuanced discussions of bodily autonomy and consent, as well as discrimination from an intersectional perspective.

This type of broad mobilization is the result of decades of work to build allyship, resist prohibitionist discourse and intrusions within movements such as HIV and meaningful engagement of sex workers through sex worker-led service provision and advocacy.

**Lessons learned:** For the purpose of this presentation, we will focus on

- methodology for constitutional challenges and the challenges encountered.
- how allies within HIV movements can take action towards 10-10-10 objectives.
- major threats to sex workers' rights, including anti-trafficking initiatives, lack of solidarity from intersecting movements.

**Conclusions/Next steps:** This presentation will provide concrete information to help criminalized communities engage with litigation and to help allies, especially those who can serve as experts, consider how they can support communities, consider future litigation needs when determining research priorities and connect litigation work as actions towards the 10-10-10 UNAIDS objectives.

## WEPEF645

### Assessing the impact of pharmaceutical patents on access to antiretroviral treatment in Africa: a review from 1990-2020

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**Background:** Globally, Africa bears the greatest burden of HIV/AIDS. Approximately 69% (23.5 million) of the 34 million people living with HIV worldwide, are located in Africa. Despite this, access to antiretroviral treatment (ART) in the continent for people living with HIV/AIDS (PLWHA) remains a significant challenge. One major factor contributing to this challenge is the issue of pharmaceutical patents, which limits the production and distribution of generic antiretrovirals in the continent.

This review was to assess the impact of pharmaceutical patents on access to ART in Africa from 1990-2020.

**Methods:** A comprehensive review of literature was carried out by searching databases such as PubMed, Google Scholar, and Cochrane with keywords: "pharmaceutical patents", "antiretrovirals", "Africa", "HIV/AIDS", and "people living with HIV/AIDS".

Supplemental data were also obtained from official directories of the International Federation of Pharmaceutical Manufacturers' Association and the World Health Organization.

Only papers published between 1990 and 2020 and those that reported country-specific evidence of the impact of pharmaceutical patents on access to ART were selected. Qualitative content analysis was then carried out on the resultant data extracted.

**Results:** Of 517 studies identified in the search, 201 reported country-specific cases. We found that between 1990 and 2020, cases where pharmaceutical patents significantly impacted the availability of and access to ART were reported in Botswana, Burkina Faso, Ethiopia, Ghana, Kenya, Liberia, Malawi, Mozambique, Nigeria, Rwanda, Senegal, South Africa, Tanzania, and Uganda.

Evidence from our study revealed that when these countries attempted to import or manufacture generic versions of antiretrovirals that will be affordable for PLWHA, legal charges and lawsuits were filed against them by pharmaceutical companies that held patents on the drugs.

**Conclusions:** This study has important implications for policymakers and stakeholders seeking to improve access to antiretroviral treatment in Africa. Our results suggest that the relaxation of patents on antiretrovirals could improve access to ART for PLWHA in the continent.

Furthermore, greater attention to the enactment of policies and flexibilities in international trade laws, such as compulsory licensing, to bypass pharmaceutical patents and produce or import generic versions of antiretrovirals at lower costs could improve access to ART for PLWHA.



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## WEPEF646

### Janssen renounced patents for tuberculosis life-saving drug within the territory of Ukraine

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**Background:** The most common co-infection for people living with HIV is tuberculosis. The primary patent on BDQ, a life-saving TB drug, expired in July 2023. Janssen, a subsidiary of Johnson & Johnson, held multiple patents on BDQ in Ukraine - a practice called evergreening, which allows patent holders to extend their monopolies even when the primary patent on an active pharmaceutical ingredient has expired.

On 13th July 2023, the GDF and Johnson & Johnson announced a deal that would enable 44 LMICs to access affordable generic versions of BDQ, but the deal excluded many of the countries that are most in need of this drug, including Ukraine, the country in the war.

**Description:** An estimated 31,000 people live with TB in Ukraine, making it one of the highest disease-burden countries in Europe. Johnson & Johnson's global announcement to not enforce secondary patents on BDQ came amid growing discontent among civil society and governments about the exclusion of Ukraine and many other high-burden countries from the voluntary license and follows negotiations between Johnson & Johnson's and Janssen's patent attorneys and 100% LIFE's lawyer.

These negotiations were held to settle two lawsuits that 100% LIFE launched in August 2023 against Janssen, to invalidate secondary patents on BDQ and their term extensions in Ukraine. As a consequence, Janssen renounced all challenged patents within the territory of Ukraine.

**Lessons learned:** The synergy of civil society, in particular within the Make Medicines Affordable campaign, in terms of jointly opposing BDQ secondary patents in different countries, has forced the big pharmaceutical player to meet the requirements of the patient community.

Internal and external policies of big pharmaceutical companies concerning life-saving drugs remain subject to potential changes at any time. Therefore, renouncing secondary patents is the only reliable resolution mechanism in this case.

**Conclusions/Next steps:** Experts estimate a generic version could be mass-produced for \$48 to \$102 per treatment course. As a result of the renouncing of BDQ patents, the Ukrainian market is guaranteed to be open for affordable generic versions of BDQ, which makes BDQ more accessible to all patients who rely on this treatment.

## WEPEF647

### Curbing sexual gender based violence among the key population

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**Background:** In disturbing trends of violence against the LGBTQ community in Kenya, activists Joash Mosoti, Sheila Lumumba, and Edwin Chiloba, were brutally murdered between May 2021 and January 2023, triggering widespread homophobic sentiments online and offline. This surge in hatred coincided with a conservative government aligned with religious leaders, fuelling anti-LGBTIQ discourse. Kenya saw proposals for anti-LGBTIQ legislation, endorsed by politicians and religious figures.

The situation reached tipping point when an MP sought to introduce the legislation, posing a threat to LGBTQ individuals, organizations, and healthcare programs.

Despite this, the Supreme Court delivered a ruling that LGBTQ communities reserved a right to form NGOs by right of association challenging discriminatory practices against the community.

**Description:** In March 2023, leaders from Key-population-led organizations in Kenya's coast region convened to address escalating challenges amidst anti-LGBTIQ campaigns. Issues discussed included anti-LGBTIQ rhetoric, legal resource gaps, evictions, violence, crisis response inefficiencies, and mental health concerns. To counteract these challenges, interventions such as engaging sensitized religious leaders, mapping legal advisors, establishing safe spaces, conducting community sensitization, and developing a coordinated crisis response framework were proposed. Additionally, strategies for mental health support, addressing evictions, and providing asylum information were outlined.

**Lessons learned:** Despite security risks from anti-LGBTIQ campaigns, critical services like ARV and PrEP uptake continued through innovative care models. Tele-consultation, online psychological aid, remote work, and door-to-door service delivery ensured continuity. Community-led programs activated grassroots paralegal, violence response mechanisms by monitoring campaigns. Limited emergency support from long-term donors hindered individual organizations. Absence of regional mitigation plans and limited financial pool delayed coordinated responses. Engagements with police, motorists, religious leaders, and health officials at regional levels provided opportunities for sensitization. Challenges included inadequate funding for emergency support and structural interventions. Nonetheless, relationships with law enforcement, motorists, bar/restaurant owners, and health committees were strengthened through collaboration.

**Conclusions/Next steps:** In many conversations with stakeholders, community leaders noted knowledge gaps and understanding of key-population, increased violence

and HIV scourge occasioning protests against funding key-population-led programs. Support and funding for community-led organizations to engage stakeholders, challenges the anti-right narrative and advocacy for inclusion are key determinants of sustainability of HIV response.

## WEPEF648

**Breaking barriers: success stories in access to medicines through strategic intellectual property advocacy a case study of make medicines affordable campaign**

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**Background:** Patents and other intellectual property (IP) rights constitute a major barrier for access to medicines. TRIPS agreement provides allowances for countries to adopt measures that can facilitate access to medicines. However, this is still under-used. The Make Medicines Affordable consortium (MMA) works across 17 countries to overcome IP barriers using different strategies.

The case study provides examples of successes related to bedaquiline (BDQ), dolutegravir (DTG) and tenofovir alafenamide/emtricitabine (TAF/FTC).

**Description:** BDQ, developed by Johnson and Johnson (J&J) to treat TB. As the patent expiry approached, J&J attempted to maintain the monopoly through evergreening patents. MMA launched 18 patent oppositions (POs) in countries including Belarus, Brazil, India, Kazakhstan, Kyrgyzstan, Moldova, Thailand, Ukraine, and Vietnam. Notably, three of these POs, in Brazil and Thailand, have already achieved success.

Fundación GEP in Argentina successfully opposed Gilead's patent application for tenofovir alafenamide/emtricitabine (TAF/FTC). This triumph enabled early access to affordable generic versions, marking a significant advancement in HIV prevention and treatment.

The ViiV/Medicines Patent Pool (MPP) voluntary license (VL) for dolutegravir (DTG), a WHO-recommended antiretroviral for HIV, initially excluded many LMICs, resulting in higher prices. MMA partners conducted campaigns advocating for compulsory licenses (CLs) in Algeria, Belarus, Kazakhstan, Libya, and Morocco. This strategic effort led to inclusion in the VL, expanding access to generic versions of DTG.

**Lessons learned:** MMA civil society partners initiated and implemented successfully a multifaceted approach that combines legal strategies, public awareness, and collaboration with various stakeholders. The consortium's, created significant savings in health budgets, enabling countries to increase coverage. In 2022, total price reductions for DTG in Belarus and Kazakhstan reached an estimated US\$ 43.4 million. Coordinating national interven-

tions through the consortium has had global impact: the 18 POs on BDQ contributed to J & J's decision in 2023 to stop enforcing BDQ patents in 134 LMICs.

**Conclusions/Next steps:** Sustained advocacy efforts can contribute significantly to creating an environment that prioritizes public health over strict intellectual property protection.

Total savings generated from the Project are being calculated and expected to increase in the coming months as POs currently examined become successful, indicating relevance of long-term approaches.

## WEPEF649

**Assessing the adoption of WHO TB prevention therapy (TPT) and TB-LAM in national guidelines in sub-Saharan Africa**

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**Background:** TB remains the largest killer among people living with HIV/AIDS (PLWHA), claiming 167000 in 2022. Urine lipoarabinomannan (TB-LAM) and tuberculosis prevention therapy (TPT) are key medical tools for screening, diagnosing and preventing TB/HIV coinfection.

TPT involves using one or more antitubercular drugs to prevent progression to active TB disease. 2020 WHO guidelines recommend TPT for PLHIV who test negative for TB and specify preferred TPT regimens: isoniazid preventive therapy (IPT) and rifamycin-based shorter regimes.

TB-LAM is the only point-of-care rapid test for diagnosing TB among PLWHA. WHO guidelines recommend TB-LAM in inpatient settings for PLWHA with TB signs/symptoms, severe illness, or CD4<200 cells/mm<sup>3</sup>. In outpatient settings, administer TB-LAM for those with TB signs, serious illness, or CD4<100 cells/mm<sup>3</sup>.

We evaluate the adoption status of TB-LAM and TPT in SSA by examining the national HIV and TB guidelines in sub-Saharan Africa (SSA), home to 22/30 high-burden TB/HIV countries (HBCs).

**Methods:** To identify the adoption status of TPT and TB-LAM recommendations in sub-Saharan Africa (SSA), we reviewed the most recent national strategic plans for HIV and TB, guidelines, and other relevant national documents and updates via desktop reviews or the document repository of the HIV Policy Lab ([www.hivpolicylab.org](http://www.hivpolicylab.org)). We analyzed where national policies aligned with WHO TB-LAM and TPT for recommendations for PLWHA.

**Results:** TB-LAM: Relevant guidelines were found for 45/48 countries. Among the 22 HBCs, at least 9 have adopted WHO TB-LAM recommendations in national guidelines. Of the remaining 23 countries in SSA not designated as HBC, only Rwanda has adopted optimal policies.



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TPT: Relevant guidelines were found for 43/48 countries in SSA. 37 countries provide TPT to children living with HIV and 27 countries offer TPT for PLHIV. Further, 29 countries include only IPT while 13 include shorter regimens. For 22 HBCs in SSA, at least 7 countries have adopted rifamycin-based regimes in national guidelines.

**Conclusions:** Despite the proven effectiveness of TB-LAM and TPT as screening, diagnosing and prevention strategy for TB/HIV coinfection, significant policy gaps remain that should be addressed to improve TB-related outcomes among PLWHA.

## WEPEF650

### HIV pre-exposure prophylaxis policies worldwide

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**Background:** Pre-exposure prophylaxis (PrEP) serves as a preventive measure to reduce the risk of HIV infection among vulnerable populations. PrEP is a highly effective prevention technology, and despite its success in countries with widespread PrEP usage and coverage, most countries still fall short of uptake targets. National policies may help explain why.

**Methods:** The HIV Policy Lab is a public dataset and visualization tool tracking 33 key indicators of HIV-related law and policy in 194 countries. HIV policies are identified and analyzed during a legal review of policy documents and a global survey of government officials, and benchmarked against global norms. A composite index measuring countries' alignment to international guidance was constructed that evaluates alignment with World Health Organization normative guidance on:

- Population-specific eligibility and;
- Regulatory approvals for PrEP technologies.

**Results:** As of 2023, 82 countries had adopted national policies that

- Confer PrEP eligibility to all populations at substantive risk for HIV, and;
- Have issued regulatory approval for at least one PrEP technology.

This is an increase from 2017, when only 19 countries had a WHO aligned PrEP eligibility-criteria and had at least one registered PrEP technology. Prior to 2015, many countries limited PrEP eligibility to specific high-risk groups such as serodiscordant couples (SD) or men who have sex with men (MSM). As of 2023, MSM were eligible for PrEP in 94% of countries with a PrEP policy, SD in 92%, and sex workers in

82%; PrEP was available upon request in 58% of countries with a policy. In 2017, only 26 countries had registered a PrEP product; by 2023, the number had increased to 105. This analysis will show the association between Prep uptake, controlling for population and HIV rate, and the robustness and alignment of prep policies compared with WHO guidelines.

**Conclusions:** Most countries have adopted a PrEP policy, yet variation exists in access to an approved PrEP technology. Despite widespread eligibility for MSM, just six out of 10 countries have adopted PrEP upon request for all at risk. Early PrEP policies qualified specific populations, which may have restricted enrollment and stigmatized the technology.

## Political drivers and policy contexts of HIV

### WEPEF651

#### Ryan White CARE Act collaborative governance and HIV/AIDS financing in the U.S.A.

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**Background:** The Ryan White Comprehensive AIDS Resources Emergency (CARE) Act of 1990 represents proactive approach to combating HIV/AIDS. The legislation enables health services planning councils in areas disproportionately impacted termed Eligible Metropolitan Areas (EMAs) to make implementation decisions using collaborative governance to promote care and treatment of infected and affected populations. The Health Resources and Services Administration (HRSA) which is a U.S. government agency is responsible for the Ryan White Program and doing so by working with EMAs. This research examines 30 years of HIV/AIDS financing to ascertain impact on care and treatment of target populations.

**Methods:** The study uses qualitative approach, specifically, content analysis of essential documents from 1990-2020 to buttress its argument. Sample compiled documents of HRSA such as 15 allocation priorities/budgets, 15 comprehensive/strategic plans, 15 needs assessment reports and 15 client utilization reports of the 24 EMAs are analyzed using ATLAS software for non-numeric data and Excel Spreadsheet software for numeric data. The data is coded and categorized into concepts, themes, service categories etc. in compliance with qualitative research protocols to enable reliable findings and interpretation

**Results:** The preliminary results indicate imperfect logic or inconsistent trend of allocation priorities to core medical services with observed changes in some categories.



Most of the allocations are associated with core categories such as outpatient/ambulatory health, aids pharmaceutical assistance, oral health care and medical case management.

Support service categories such as outreach, food bank/home delivered meals, legal services, transportation, non-medical case management appear inconsistent relative to allocation priorities.

About 500,000 target populations benefit from services each year, and over \$600 million out of \$2.39 billion in 2020 HIV/AIDS funding allocated for Part A alone.

**Conclusions:** The findings highlight relentless support for care and treatment of uninsured and/or underinsured PLWAs for the past 30 years with emphasis on core medical and support services despite variations in allocation priorities for categories.

Influential stakeholders such as grantees, council chairs, committee chairs and members including PLWAs drive collaborative governance. Local efforts via EMAs represent the frontline and lifeline of U.S. HIV/AIDS strategy and implementation actions for societal benefits.

## WEPEF652

### Communities taking the lead to mitigate against the impact of Cyclone Freddy on HIV service delivery for transgender and other sexual and gender minority groups in Malawi

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**Background:** Transgender individuals and other members of sexual and gender minority groups are at a significantly higher risk of experiencing violence and discrimination. In Malawi, such groups face numerous obstacles in obtaining basic human rights, including access to healthcare. People who identify as LGBTIQ are commonly stigmatized and discriminated against, leading to further marginalization and exclusion.

Disasters can exacerbate the vulnerabilities of key populations, who often face widespread abuse from members of the community in everyday life.

**Description:** In Malawi, Trans Initiative Group, an informal transgender group, conducted a study on the effects of Cyclone Freddy on the lives of transgender and sexual and gender minority groups in highly impacted districts of Mangochi, Blantyre, and Phalombe.

The group established the following 487 transgender individuals were affected by floods, resulting in 10 deaths and 477 displacements, with 177 in camps and 300 in damaged homes.

Among those displaced, 150 were barred from safety camps, exposing them to waterborne diseases due to poor sanitation.

Of the displaced, 192 were HIV-positive and receiving treatment, while 285 were negative, with 145 on PrEP. The floods washed away medication and hindered access to HIV services due to inaccessible roads.

**Lessons learned:** The group collaborated with the Ministry of Health to assist 154 HIV-positive transgender individuals with ART refills and reintroduced Oral PrEP to 130 HIV-negative individuals. They also distributed 1,000 HIV self-test kits, 10,000 condoms, and lubricants.

A documentary capturing the challenges faced by transgender and sexual minorities served as a resource for humanitarian aid mobilization. This effort enabled fundraising and material support for transgender individuals in camps and homes.

**Conclusions/Next steps:** Transgender individuals and sexual minority groups faced heightened vulnerabilities during Cyclone Freddy in Malawi. These challenges persist in various crises, yet these groups often are afraid to voice out.

Humanitarian organizations have overlooked the unique requirements of transgender individuals in such situations, potentially due to lack of information and deliberate invisibility by marginalized groups for survival.

Advocacy is crucial to include these communities in disaster and pandemic prevention preparedness and response efforts.

## WEPEF653

### Criminalization costs lives, harm reduction – saves: community-based assessment on criminalization costs in Central and Eastern Europe, and Central Asia region

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**Background:** Criminalization of people who use drugs in the Central and Eastern Europe, and Central Asia (CEECA) region does not deter people from the use of drugs; mostly, negatively affects the health and permanent socio-economic status of people who use drugs, increases the financial and social burden on the states.

This community-based assessment aimed to evaluate and compare costs of incarceration versus costs of health and social services for people who use drugs; as well, to analyse how incarceration and health costs changed in a few years (same assessment was conducted in 2019 and 2021).

**Methods:** Assessment was done in 2023, in 29 countries of CEECA region. Desk research was conducted, followed by verification of data with national partners, working in the harm reduction field. The cost of incarceration was calculated by multiplying 365 days to the cost of maintenance of one prisoner/per day. This sum doesn't include law enforcement work, court proceedings and lost taxes,



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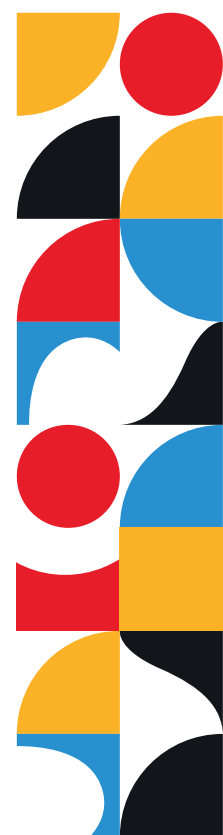
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which person cannot pay, because of the incarceration. The costs of health and social services included the cost of needle and syringe exchange services, opioid agonist therapy and unemployment benefit for one person per year.

**Results:** In most of countries of CEECA region, incarceration costs are 1,2 to even 15 times more than health and social services. The biggest difference of costs is assessed in Ukraine (15 times), Georgia (14 times), Romania (10 times), Albania (8 times).

Meanwhile the lowest difference of costs is assessed in countries, which has numerous and gross human rights violations in prisons - Belarus, Bulgaria, Kazakhstan, and Tajikistan. In comparison with 2021, few countries made improvements in increasing unit costs for health and social support: Croatia, Czechia, Estonia, North Macedonia, Slovakia.

**Conclusions:** Instead of investing into people health, governments are still applying repressive drug policies towards people who use drugs, by incarcerating them. Instead of providing social and health support, people who use drugs are left behind and punished for their health conditions or personal choices.

Assessment reveals missed opportunities for governments to reallocate money from policing, prosecuting, and incarceration of people who use drugs to community harm reduction and health services.

## WEPEF654

Resilience of HIV testing and treatment service availability in Ukrainian regions between April – September 2022: comparing availability and adaptations to sustain services in conflict-affected regions with community-led monitoring instruments

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**Background:** Since February 2022, armed conflict has challenged the Ukrainian health system to sustain delivery of HIV and related services. Through the USAID/PEPFAR-funded Community Action for HIV Control project, community-led monitoring (CLM) measures service availability and quality for key populations (KP).

We assessed the availability of four services against the number of conflict events to identify factors related to service resilience.

**Description:** We retrospectively compared CLM data for HIV testing services, pre-exposure prophylaxis (PrEP), antiretroviral therapy, and medication-assisted treatment (MAT) availability with the number of air and drone strikes, armed clashes, and shelling attacks from the Armed Conflict Location & Event Data Project in Kyiv city and 12 regions between April - September 2022. Community monitors recorded service availability reported by five or more clients each month, which was verified with other informants or service sites.

Generally, each region has monitors representing each KP community. Service availability was graded as available, available with barriers, or unavailable and color-coded on a CLM dashboard for rapid visual representation.

**Lessons learned:** Overall, regions with few or no armed conflict events (Cherkasy, Poltava, Ivano-Frankivska) had limited to no service interruptions. Of conflict-affected regions, Mykolaiv, Zaporizhia, and Dnipro had the fewest service interruptions or barriers. MAT and PrEP were services most frequently impacted in conflict-affected regions.

Service interruption patterns varied within specific regions (e.g., Donetsk), related to proximity to conflict and type of events (i.e., greater reported disruption with armed clashes).

Some regions (e.g., Lviv, Ternopil) with few events experienced barriers to or lack of services, partly attributed to internally displaced persons creating unexpected higher client flow. In conflict-affected regions, service availability was typically restored within one to two months of the highest conflict event numbers.

CLM data were shared with the Centre for Public Health (CPH), who coordinated a rapid response to supply chain and human resource issues across partners to restore services.

**Conclusions/Next steps:** While conflict-affected regions had more reported service interruptions or barriers, secondary effects of conflict, like displacement, created service disruptions in regions with fewer conflict events. Service availability recovered quickly due to CPH response to notifications from monitors and KP community members, including through social media.

## WEPEF655

Rights violations and health disparities of people who use drugs living with HIV in CEECA

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**Background:** In 2021 countries adopted 10-10-10 targets, pledging action to remove punitive and discriminatory laws, policies and practices that undermine HIV responses. As recognized in the report by the OHCHR, drug policy has had a significant impact on the enjoyment of human rights.



This abstract explores the multifaceted rights violations experienced by individuals who use drugs and are living with HIV across CEECA region drawing insights from consultations with civil society and community advocates.

**Description:** In 2022, UN CESCR initiated work on a new General comment on the "impacts of drug policies on economic, social and cultural rights." Considering CESCR's initiative, Drug Policy Consortium for the General Comment on the Impact of Drug Policies on Economic, Social and Cultural Rights was created. Within the framework of this project 9 consultations with representatives from 20 countries of CEECA took place.

**Lessons learned:** The denial of treatment due to geographical and structural barriers, as well as stigma emerges as a significant concern, exemplified by restricted access to ART and OAT for those incarcerated with drug use disorders. Disproportional sentencing for drug-related offenses not only impedes access to treatment but also hinders HIV and Hepatitis C prevention efforts.

Reproductive rights violations further compound the challenges faced by women who use drugs, with forced abortions, limitation of parental rights, limited access to contraceptive services, and various barriers to essential reproductive health services prevailing in many CEECA countries. Moreover, Tajikistan and Uzbekistan mandate forced HIV and drug tests before marriage, infringing upon the right to privacy and autonomy.

The region's prohibition of specific professions for PLHIV exacerbates social and economic inequalities, while mandatory HIV testing during job applications in Kazakhstan further compromises privacy and perpetuates discrimination.

The imposition of higher insurance prices in Ukraine based on drug use or HIV status creates additional barriers to comprehensive healthcare coverage.

**Conclusions/Next steps:** This abstract underscores the urgent need for policy reforms and advocacy to address the systemic rights violations faced by people who use drugs living with HIV in the CEECA region. It calls for collaborative efforts to ensure the realization of the right to health, family life, and overall well-being.

## WEPEF656

### Advancing Nigeria's HIV sustainability: domestic production of generic ARVs as catalysts

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**Background:** Nigeria currently manufactures less than 2% of its medicines, importing approximately 70% at a significant annual cost. The HIV and AIDS response in Nigeria has long been donor-driven, relying on Western and Asian pharmaceutical industries for 90% of drugs and commodities.

This import-dependent model, compounded by inadequate local production capacity, poses challenges to pharmaceutical sustainability, particularly in the context of HIV and TB services. This study explores the role of domestic production of generic ARVs in achieving Nigeria's HIV Sustainability Agenda. The pharmaceutical industry in Africa, notably in countries like Nigeria, South Africa, and Ghana, is rapidly growing. Leveraging on AfCFTA, Nigeria has a unique opportunity to boost intra-regional trade in pharmaceuticals, fostering local manufacturing, especially of ARVs.

**Methods:** The situational analysis reveals Nigeria's heavy reliance on foreign supplies, accounting for 70% of local drug consumption, with 90% of ARV needs imported. The COVID-19 pandemic has underscored the risks of this dependency, emphasizing the urgency for domestic production to achieve pharmaceutical self-sufficiency.

However, policy clarity and cohesive regulations across pharmaceutical regulators remain lacking, hindering the National Drug Policy's strategic intent.

**Results:** The selected problem highlights the vulnerability Nigeria faces due to its "pharma-dependent" status, risking out-of-pocket expenditures and weak health indices. The result emphasizes the importance of addressing access to essential medicines, as outlined in the Sustainable Development Goals. Policy options are proposed to commence domestic ARV production, aligning with AfCFTA provisions and the vision for sustainability in the HIV response.

Engaging pharmaceutical entities, financial institutions, and relevant stakeholders is crucial, with recommendations emphasizing a national strategic agenda, regulatory capacity enhancement, infrastructural development, and broad stakeholder involvement.

**Conclusions:** Achieving sustainability requires a clear strategic agenda, coordination framework, and enhanced regulatory capacity. The presentation highlights ongoing engagements by the government with stakeholders, who have shown interest in domestic ARV production.

The suggested actions emphasize the significance of fostering partnerships, facilitating technology transfer, and adopting a comprehensive approach that engages all stakeholders to promote domestic production of medicines, vaccines, and generic ARVs in Nigeria.



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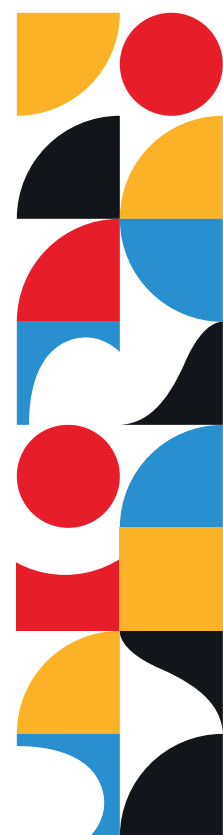
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## WEPEF657

Digital dilemma: navigating the intersection of national digital IDs and access to HIV services for key populations in sub-Saharan Africa

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**Background:** The adoption of national digital identity systems in sub-Saharan Africa has surged, with a majority of countries implementing these systems to streamline service delivery, including healthcare. However, this technological advancement coincides with the persistence of legal frameworks in several African nations that criminalize key populations (KPs). These populations are also disproportionately affected by HIV/AIDS.

Recent studies indicate that a lack of robust regulatory frameworks for digital IDs leads to "function creep," where data originally collected for identification purposes or healthcare service delivery are used for surveillance or law enforcement, exacerbating the vulnerability of KPs and potentially hindering their access to critical healthcare and HIV services.

**Description:** This abstract is based on literature review from an on-going study on the implications of national digital IDs for KPs' access to healthcare. It analyzes the current landscape of national digital IDs in sub-Saharan Africa and their intersection with healthcare access for KPs. It contrasts the growing number of African countries adopting national digital IDs as the single tool for accessing essential services including healthcare with those enforcing laws criminalizing KPs.

The analysis is grounded in recent studies and data, highlighting the absence of adequate regulatory frameworks to prevent misuse of digital ID data in most of the countries adopting these digital ID systems, and the resulting aversion to healthcare services by KPs due to fear of prosecution or discrimination.

The work of KELIN Kenya and others working with KP groups to raise awareness on the need for effective human rights and ethical guardrails to forestall further marginalising populations who have suffered the brunt of the HIV epidemic.

**Lessons learned:** Preliminary findings suggest a significant correlation between the adoption of national digital ID systems, the lack of data protection laws and reluctance among KPs to access healthcare services.

### Conclusions/Next steps:

The study underscores the need for a delicate balance between the use of technology in healthcare and the protection of human rights. It advocates for the centring of marginalised groups as well as collaborative efforts involving governments, international organizations, civil society, and KPs themselves designing inclusive digital ID systems that facilitate rather than hinder access to healthcare services.

## WEPEF658

Focused HIV Interventions among incarcerated population in prisons has influenced increased health outcomes: learning from prison intervention under National AIDS Control Program (NACP) in India

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**Background:** Inmates in prison are covered as one of the key population groups under NACP Phase V. The HIV Sentinel Survey Plus 2021 indicates that the HIV sero-positivity among prison population is around 1.93%, which is higher than the HIV sero positivity found among Female Sex Workers (FSW). During FY 2022-23, a total of 1260 prisons are covered and around more than 1.4 million populations are provided HIV Testing and Prevention services.

**Description:** A package of services is provided to the prison inmates which includes free HIV testing and counselling services, linkages to Antiretroviral Therapy (ART), management of Tuberculosis and referrals for accessing other health and social services. The distribution of year-wise program coverage of prison population through HIV testing and linkage to ART is placed below in the table:

Indicators	2020 - 21		2021 - 22		2022 - 23	
	Number	%	Number	%	Number	%
Inmates Admitted	22,61,780		18,89,531		21,25,147	
Inmates Covered	9,06,806	40.09	7,08,544	37.50	14,24,763	67.04
HIV Test	4,79,880	52.92	6,56,749	92.69	12,45,209	87.40
HIV Positive	2,122	0.44	2,886	0.44	5,894	0.47
Linked to ART	1,814	85.49	2,362	81.84	5,001	84.85

Coverage of inmates through interpersonal or behaviour change communication has increased from 0.9 million to 1.4 million. Simultaneously HIV testing coverage has increased from 52.92% in FY 2020-21 to 87.4% in FY 2022-23. The sero-positivity number has increased by 1.7 times in last three years. Linkages to ART of all identified cases has increased in the range between 81% - 85%.

**Lessons learned:** Building inter-departmental synergy, advocacy and sustained engagement has resulted rapid scale-up of interventions. Trained Prison Health Care Providers were instrumental in motivating inmates for HCTS testing and initiation and adherence to ART. Shortage of prison guards for escorting to services, unscheduled release and difficulty in tracing post-released inmates led to linkage loss.

Efforts are required to ensure 100% linkages of identified cases to ART to ensure adherence and prevent further infections.

**Conclusions/Next steps:** HIV AIDS Act, 2017 defines the right of incarcerated population towards HIV Prevention and Treatment service. Strengthening collaboration between NACO – MoHFW and Ministry of Home Affairs (MoHA) will further enhance health outcomes.

## WEPEF659

How the 13 states of Appalachia spend their opioid settlement dollars: a political process that must engage community stakeholders in order to impact the HIV epidemic

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<sup>1</sup>Community Education Group, Lost River, United States, <sup>2</sup>West Virginia University, Morgantown, United States

**Background:** The top 10 U.S. counties most at risk of an HIV outbreak are all in Central Appalachia, and of the 220 counties identified in Van Handel's 2016 study, 159 (72%) are in Appalachian states. The Appalachian region continues to be the location ripest for a repeat of the 2015 Scott County HIV outbreak, which is inextricably linked to the region's deeply entrenched opioid addiction crisis.

A series of settlements have been reached to resolve opioid-related litigation brought against pharmaceutical distributors, manufacturers, and retailers for their role in perpetuating the crisis, and the "pot" exceeds \$54 billion. Most of these funds must be spent on "opioid remediation," but this nebulous term means different things to various stakeholders.

**Description:** Community Education Group (CEG) has been investigating how the 13 states of Appalachia manage and spend their opioid settlement funds and sharing information to community serving organizations (CSOs) so they can access and/or advocate for funds to be used for evidence-based public health interventions.

CEG manages the Appalachia Opioid Remediation list-serve and spending database to assist in these efforts.

**Lessons learned:** CEG's investigation has revealed:

- Each state has a unique process for managing opioid settlement dollars and operates on independent timelines.
- Many CSOs do not have the time nor resources to work through required processes to access funds, and in some states there are few opportunities for public input.
- Many barriers exist to learning about/accessing settlement funds in Appalachia: lack of broadband for conducting research; lack of publicly accessible meeting minutes and recordings; local government websites are not updated or are defunct; local journalistic coverage of government meetings lack enough information for action by advocates; among other barriers.

**Conclusions/Next steps:**

- Funds can and should be spent on evidence-based public health initiatives including HIV prevention and treatment.
- CSOs need support to access settlement information and acquire funds for public health initiatives.
- Governments distributing settlement funds should create robust public engagement processes, widely advertised, for public input on fund prioritization.
- A system of community-led monitoring is needed to track how funds are spent and hold decision makers accountable.

## WEPEF660

Plans of safety and security for civil society organizations working on HIV in three countries in Latin America and the Caribbean

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<sup>1</sup>Vía Libre, LAC Platform, Lima, Peru

**Background:** In LAC, violence and rights violations not only affect key populations, but also people, organizations and HIV programs. It's necessary to strengthen the capabilities of organizations to improve security and protect implementers and programs.

**Description:** In 2023, Guatemala, Dominican Republic and Belize begin a process to evaluate risks and develop security plans. The evaluation included documentary review, application of instruments, field visits and interviews. Threats were identified in three categories, structural: stigma and discrimination, violence, organized crime, machismo, impunity and hate crimes; community: night activities in unsafe and difficult to access areas, harassment, raids and extortion by the police, sexual harassment of beneficiaries, theft of phones and work items, alcohol consumption and drug trafficking, presence of criminal gangs; and digital: vulnerability of information, lack of guarantee of confidentiality, cyber harassment; added to the naturalization of violence by implementers.

**Lessons learned:** Workshops were developed for the formulation of security plans, basic concepts and evaluation results were discussed and plans were developed for each organization. 110 leaders participated in the three countries. Currently, the participating organizations are implementing their plans that included security protocols, training, incident registration, mapping of risk areas, care of caregivers, alliances with key actors, uniforms and identifiers, security cameras, life insurances, computer security of social networks. The lessons learned highlight that security plans are an investment and a priority in the programs, they must be in all phases of implementation, they require the participation of field personnel, donors must be sensitive and guarantee resources for risk management, its development has a therapeutic effect on the participants, strengthens networking and denatures violence.



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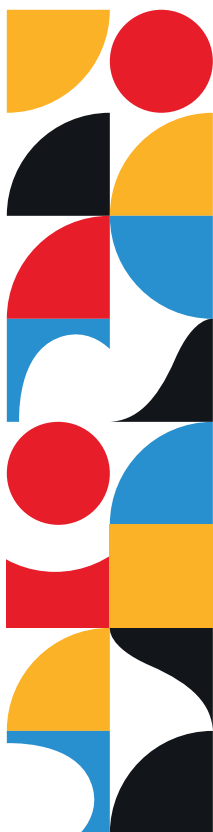
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**Conclusions/Next steps:** Making visible the vulnerability of people and organizations that implement HIV projects highlights the need to guarantee their safety and has a positive impact on the implementation of programs. Organizations and their staff have benefited, minimized risks and are able to handle emergencies.

Recommendations to improve safety and security conditions for HIV organizations, donors and decision makers were formulated. As next steps, the implementation of the plans and measurement of the impact on the reduction of security risks are considered.

## Human rights and responses to HIV

### WEPEF661

Human rights violations and barriers to HIV services among key populations in Uganda

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**Background:** Key populations including men who have sex with men, transgender people, and people living with HIV are affected by HIV and face numerous human rights violations that cripple their access to HIV prevention, testing, treatment, and care services.

This study aimed to document the types and extent of human rights violations faced by key populations in Uganda and to navigate how these violations affect their utilization of HIV services.

**Methods:** The study mixed quantitative and qualitative methods to examine the human rights and HIV service issues of key populations from four regions in Uganda. It surveyed 1200 key population members and interviewed 48 of them and 12 service providers. It analyzed the data on human rights violations and HIV service access and quality.

The interviews and discussions explored the experiences and perceptions of human rights violations and their impact on HIV service access and quality.

**Results:** The cross sectional survey revealed that human rights violations were very common and widespread among key populations in Uganda. The most common violations were verbal abuse (82%), physical assault (58%), sexual violence (42%), arbitrary arrest (38), and extortion (36). The main perpetrators were police officers, local authorities, community members, and intimate partners. These violations negatively affected the physical, mental, and social wellbeing of key population members including their access to and retention in HIV services. The qualitative data showed that key populations faced barriers to HIV services. These include:

- Lack of confidentiality, privacy and informed consent.
- Denial of services or provision of low standard services
- Harassment and mistreatment by service providers.
- Lack of tailored and friendly services that meet their specific needs and preferences.

**Conclusions:** The study shows the challenges and needs of key populations in Uganda regarding HIV services and human rights.

It urges the government to stop criminalisation of key populations but instead uphold their rights. It also calls for HIV service providers to respect and cater to the diversity of key populations.

It also advocates for the empowerment and participation of key population communities in HIV response in-order to hold the duty bearers accountable.

### WEPEF662

Rights of people living with HIV and key populations in Lesotho

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**Background:** Lesotho has one of the highest HIV prevalence rates in the world, with 22.7% of adults living with HIV. The epidemic disproportionately affects women, who have a prevalence of 27.4%, compared to 17.8% for men. Lesotho faces challenges in addressing the human rights and health needs of key populations affected by HIV. These groups face stigma, discrimination, and violence, as well as barriers to accessing HIV services.

With funding from Sweden, in October 2019 SADC Parliamentary Forum introduced SRHR, HIV and Governance project in Lesotho with the vision to increase access to integrated SRHR and HIV/AIDS services and related rights, including improved health and respect for human rights.

**Description:** Working in partnership with the National Working Group, existing policy gaps were identified, and Parliamentarians capacitated to come up with legislative interventions required to be made to comprehensively address the national SRHR and HIV/AIDS issues.

Parliamentarians were equipped with SRHR evidence-based information to escalate at the Parliamentary level, pass motions, ask questions in Parliament, advocate for amendments of laws and pass SRHR and HIV/AIDS related bills.

**Lessons learned:** Through to February 2020, motion to consider legislation on abortion in Lesotho was passed, March 2021 counter domestic violence bill was tabled in Parliament with more than 80% support from members of parliament, and in October 2022 this bill became law. This law affords equal protection and access to justice for all. In 2022, for the first time in Lesotho a transgender man was allowed to run for constituency elections. LGBTI and Abortion issues are now being discussed in Parliament



and the Parliament is considering amendment of Penal code to address issues of abortion and Child Protection and Welfare Act of 2011 to incorporate the rights of inter-sex children.

**Conclusions/Next steps:** Parliamentarians have a role in the promotion and protection of human rights, owing to its primary role in law-making, Parliament is best placed to give effect to human rights, take practical measures to prevent abuses and to ensure that law provides practical means through which remedies may be sought for alleged violations.

With the right information, Parliamentarians can execute their functions well and bring desired results.

## WEPEF663

### Unseen chains: human right violations fueling new HIV infections among key population In Nigeria

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**Background:** People living with HIV/AIDS confront pervasive discrimination and human rights breaches, including job loss, healthcare denial, and social discrimination. The Nigerian government has put in place legal guidelines and policies to protect the rights and dignity of its over 1.9 million HIV-positive citizens.

This study examined current control measures used by Nigerian authorities to address ongoing human rights violations against HIV/AIDS patients. The Integrated Biological and Behavioral Surveillance Survey (IBBSS) 2020 in Nigeria unveiled that among 1.9 million PLHIV, 3.4% are key populations, constituting 32% of new infections. In Nigeria, individuals with HIV/AIDS endure systemic human rights abuses, with disparities in prevalence among key populations such as Men who have Sex with Men (MSM), People Who Inject Drugs (PWID), Transgender people (TG), and Female Sex Workers (FSWs).

This abstract evaluates governmental interventions and human rights violations concerning Carriers with HIV/AIDS in Nigeria.

**Methods:** Retrospective data from the 2020 IBBSS in 12 Nigerian states informed this study, encompassing Abia, Anambra, Akwa Ibom, Rivers, Benue, Lagos, Oyo, Nasarawa, Kano, Kaduna, Gombe, and Taraba. A descriptive cross-sectional approach selected participants: MSM (4397), TG (4190), FSW (4974), and PWID (4414) across these states.

Also, key informant interviews with stakeholders in the arena of policies and programs regarding SRH/HIV-related issues facing key populations as well as legal experts, and leaders of community-based HIV advocacy groups were included.

**Results:** Respondents believed that existing laws and government control regulations did not support the young people living with HIV, as well as those engaged in same-sex behaviors, sex work, and injectable drug use. Stigma and discrimination rates were significant against FSW (46.8%), PWID (46.7%), MSM (48%), and TG (50.2%). Additionally, 16.6% of FSW, PWID, MSM, and TG reported harassment by law enforcement agencies.

**Conclusions:** The findings underscore widespread human rights violations against key populations in Nigeria living with HIV/AIDS, emphasizing the urgent need for targeted interventions and policy reforms to address systemic discrimination and enhance human rights protections for these vulnerable groups. The legal mechanisms for addressing HIV/AIDS discrimination in Nigeria should be enforced.

## WEPEF664

### HIV-related knowledge, stigma attitudes, and intent to discriminate in healthcare settings among medical and nursing students: a cross-sectional study in Bangkok

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**Background:** People living with HIV (PLHIV) globally report experiencing discrimination by healthcare providers. We assessed HIV-related knowledge, stigma attitudes (worries about getting HIV infection), and intent to discriminate (intent to modify behavior in unnecessary ways) among medical and nursing students in Bangkok.

**Methods:** A convenience sample was chosen to enroll 4<sup>th</sup> to 6<sup>th</sup> year medical and 3<sup>rd</sup> and 4<sup>th</sup> year nursing students from 2 institutions during a 24-week period in 2022/2023. Enrolled participants completed an online questionnaire using Google Form and Moodle after providing informed consent. Differences between nursing and medical students were assessed by Chi-square for categorical variables (attitudes and intent to discriminate) and independent t-test for continuous variables (knowledge scores) using R.

**Results:** The survey enrolled 570 students, comprising 204 (35.8%) medical and 366 (64.2%) nursing students. Overall, the median age was 21 years and 76% were female.



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Fifty-seven percent of medical students and 20.2% of nursing students had ever contacted/taken care of PLHIV ( $p<.001$ ). Of these, nursing students were more likely to use double gloves when caring for PLHIV than medical students (71.6% vs. 55.1%,  $p=.022$ ).

No significant difference in scores on HIV transmission knowledge (6.2/9 vs. 6.3/9,  $p=.12$ ) was observed by type of provider-in-training. Nursing students scored higher on standard precaution knowledge than medical students (8.8/11 vs. 8.4/11,  $p<.0001$ ).

Both groups reported that following standard precautions is very important. Most students (90%) in both provider-in-training groups reported not being worried or a little worried when performing non-invasive procedures (i.e., measuring blood pressure).

Eighty percent of the participants reported feeling a little or somewhat worried when performing invasive procedures and 85% reported having the intention to discriminate while performing such procedures (i.e., taking unnecessary precautions or avoiding physical contact).

No significant differences in stigma attitudes or intent to discriminate when providing care for PLHIV were found.

**Conclusions:** Medical and nursing students had moderate knowledge of HIV transmission and good standard precautions knowledge. Some students lacked experience in caring for PLHIV and showed intention to discriminate.

Future interventions for medical and nursing students are necessary to reduce stigma and discriminatory behavior when providing care to PLHIV in Bangkok.

## WEPEF665

Empowering transgender sex workers living with HIV: community-led legal advocacy in northeast China through support and workshops to evade punishment under the HIV transmission laws

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**Background:** This community-led initiative aimed to empower transgender sex workers living with HIV in northeast China. Resulting from collaborative efforts led by a trans-led community group, actively involving sister groups across different parts of China, the overarching goal was to mitigate the impact of punitive HIV transmission laws on this vulnerable population through legal advocacy, support, and workshops.

It sought to create a supportive environment fostering awareness, resilience, and legal literacy among transgender individuals facing the dual challenges of HIV and stigmatizing legal frameworks.

**Description:** Executed over 24 months, the program reached 200 transgender sex workers with HIV across urban and rural areas in northeast China and Guangdong province (for migrant trans sex workers). The initiative employed community-led legal advocacy, delivered tailored support services, and conducted 12 workshops.

Activities included providing legal counseling to 40 individuals, executing awareness campaigns reaching 5,000 people, and facilitating capacity-building workshops to equip participants with the knowledge and skills essential for navigating the complex legal landscape surrounding HIV transmission.

**Lessons learned:** The program yielded valuable insights into the intersection of legal frameworks and the lives of transgender sex workers with HIV. Findings indicated an increased awareness of legal rights among participants, leading to improved self-advocacy and reduced instances of unjust legal repercussions.

The community-led approach proved effective in fostering a sense of solidarity, resilience, and legal empowerment. Best practices included integrating legal literacy within broader community support structures, ensuring sustained impact beyond the program period.

**Conclusions/Next steps:** The findings underscored the critical role of community-led initiatives in addressing the unique challenges faced by transgender sex workers living with HIV. As punitive legal measures continued to impact this community disproportionately, the program highlighted the need for broader policy reform and advocacy efforts.

The success of the initiative emphasized the potential for similar interventions globally. Moving forward, scaling up this model and advocating for systemic change in legal frameworks would be crucial to advancing HIV prevention, treatment, and support for transgender populations.

The program's outcomes offered valuable insights for future initiatives aimed at mitigating the adverse effects of legal barriers on marginalized communities affected by HIV.

## WEPEF666

Navigating the shadows: delivering HIV/AIDS services to vulnerable women under the Taliban regime in Afghanistan

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**Background:** This comprehensive study addresses the formidable challenges and human rights issues in providing HIV/AIDS services to a highly vulnerable population: sex workers, women who use drugs, and women living with HIV in Taliban-ruled Afghanistan. It focuses on the



intersection of gender, healthcare access, human rights, and the unique difficulties faced by these marginalized groups.

**Description:** Over a period of two years in Taliban-governed regions of Afghanistan, the study engaged with 15 grass root healthcare providers and interviewed 400 women, including sex workers and women who use drugs, living with HIV.

The research utilized a mixed-method approach, combining quantitative data from healthcare services with qualitative insights from the target groups. It delved into the intricacies of healthcare provision in a clandestine environment, examining strategies for delivering services amidst severe restrictions.

**Lessons learned:** Key findings revealed that sex workers and women who use drugs experienced a 75% higher rate of barriers to healthcare access compared to other women. In response, our grassroots organization developed covert methods, such as hidden mobile site and discreet home visits, resulting in a 50% improvement in healthcare access for these groups. The use of encrypted communication channels led to a 60% increase in remote consultation and medication delivery.

Despite these efforts, 80% of the participants reported discrimination and violence, underscoring the critical need for enhanced protection and support mechanisms.

**Conclusions/Next steps:** This research underscores the vital role of innovative, rights-based healthcare delivery in environments hostile to women and marginalized populations. It advocates for international interventions to empower underground networks and enhance community resilience.

Future initiatives must focus on secure and accessible healthcare methodologies for high-risk groups in regions where human rights are grossly violated.

This study offers crucial insights into the complexities of providing healthcare in oppressive contexts, highlighting the necessity of global collaboration and creative advocacy in the realm of human rights and healthcare.

**Description:** We created Enabling environment for community through Stigma and discrimination reduction, Sensitization of Health care providers, Sensitization of lawmaker & Law enforcement, Legal literacy for community, Legal service for community, Monitoring of discrimination Law, reducing HIV related gender. Each district we work we have an infrastructure

1. Paralegal that providing legal assistance, information about legal & rights, sensitize mainstream people.
2. Community Based Monitoring Officer, who monitored logistic stock availability at healthcare service and liaison from community to healthcare provider.
3. Advocacy Officer that work for a macro issue in districts; monitoring the law/policy, advocacy to stakeholder.
4. District Taskforce, a community and government (multi stake holder) platform to meet each other to address the district issue, to clarify and support to provide mechanism of key population to public services.
5. The outreach worker conduct HIV screening required to carry out GBV screening.

**Lessons learned:** By this program, During 2022 – 2023 we working with National Human Rights Commission, 897++ Transgender get Identity card, 635 cases of (Discrimination, GBV, Human rights violation) documented in healthcare and public, then 54% follow up to legal redress, Community respond for ARV stockout immediately in districts, 23 Districts of health care monitored by community, 414 Health care sensitized by human rights and gender, Certified paralegals in Districts intervention, 84.195 Sex Workers were screening by Intimate partner Violence tools.

**Conclusions/Next steps:** At the national level, it is crucial to establish collaboration with governmental ministries and other agencies that are responsible for taking actions on gender and HIV concerns.

This collaboration should aspire to facilitate a more comprehensive understanding of the unique needs of people living with HIV and key populations, and to promote corresponding policies and initiatives.

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## WEPEF667

### Creating enabling environments for HIV & key population in Indonesia

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**Background:** HIV policies, strategies, programs to prevent and treatment, have been carried out by the government of Indonesia. however, stigma & discrimination, GBV, and violations of the right to health are still barriers for PLHIV and Key population to obtain their access of health.





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## WEPEF668

Access to justice and access to redress: training peers and paralegals in Kyrgyzstan, Indonesia, the Democratic Republic of the Congo, and Ukraine

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**Background:** The Global Fund's 2023-2028 Strategy recognizes that ending the HIV, TB and malaria epidemics requires scaling-up programs to remove human rights-related barriers to health services. Aligned with this goal, the "Breaking Down Barriers" (BDB) initiative has funded programs to address structural barriers to HIV, TB and malaria services in 20 countries, including support to community-led paralegals and other interventions for increasing access to justice.

**Description:** Progress assessments were conducted in 2023 and key themes were identified across national contexts. Access to justice programming took a step forward in multiple countries due to the training and deployment of peer educators and paralegals representing key populations.

**Lessons learned:** In Kyrgyzstan, Indonesia and the Democratic Republic of the Congo, paralegals and peer educators have played important roles in resolving issues through mediation. Kyrgyzstan developed a comprehensive certification course tailored for paralegals, in which over 40 paralegals – including those from key populations – enrolled in 2022.

Key populations reported feeling equipped with legal knowledge and skills to counter police harassment in a rapidly changing legal environment. In Indonesia, peer educators were trained in legal literacy and a notable area of impact for human rights programming was found in the integration of legal literacy and access to justice programs with HIV prevention programs for sex workers. Paralegal certification has also increased the ability to identify, refer and assist the sex worker community in resolving human rights violations perpetrated by clients, the police and intimate partners.

In the Democratic Republic of the Congo, peer educators and paralegals have played key roles to empower key populations on their rights. Legal clinics have provided legal, psychosocial and medical counseling to vulnerable groups since 2013, and have implemented awareness-raising and capacity-building activities on human rights related to HIV, gender, sexual violence and sexual and reproductive health. In Ukraine, the public legal aid

service complemented paralegal programming and facilitated sustainability of access to justice for key populations.

**Conclusions/Next steps:** Expanding access to peer educators and paralegals can increase legal literacy and empower key populations.

## WEPEF669

The role of faith-based organizations in combating HIV and tuberculosis stigma in Jamaica, Côte d'Ivoire and Ukraine

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**Background:** The Global Fund's 2023-2028 Strategy recognizes that ending the HIV, TB and malaria epidemics requires scaling-up programs to remove human rights-related barriers to health services. Aligned with this goal, the "Breaking Down Barriers" (BDB) initiative has funded programs to address structural barriers to HIV, TB and malaria services in 20 countries, including support to faith-based organizations for reducing stigmatizing attitudes toward PLHIV and key populations.

**Description:** Progress assessments were conducted in 2023 and key themes were identified across national contexts. Despite a complex relationship between faith-based organizations and key populations in many countries, those organizations demonstrated potential to play a significant role in combating HIV stigma.

**Lessons learned:** In Jamaica, the Jamaica Council of Churches (JCC) conducted a survey of attitudes toward HIV and key populations among church congregants and found high levels of misinformation and stigmatizing attitudes.

This led them to sponsor sensitization and education sessions challenging harmful myths and work with the AIDS Healthcare Foundation to develop policies to reduce stigma related to HIV and key populations for member churches. In Côte d'Ivoire, a "faith and communities initiative" involving religious communities was assembled to be actively involved in the fight against stigmatization. Caritas created a project titled GRAIL (Galvanizing Religious Actors for Better Identification and Linkage to Pediatric HIV), which mobilized priests and other religious leaders as "religious guides" to encourage families to seek testing and treatment for HIV-positive children.

A third coalition called ARSIP (Alliance des Religieux pour la Santé Intégrale et la Promotion de la Personne Humaine), mobilized religious organizations and leaders to promote



HIV-related health and services. In Ukraine, systematic work is ongoing with all the country's major faith groups, including the Orthodox Church, the Greek Catholic Church, Muslim communities, and Protestant churches, to raise awareness and support for HIV-vulnerable groups.

**Conclusions/Next steps:** Faith-based organizations can play an important role in national efforts to combat stigmatization and promote access to human-rights based interventions for HIV.

## WEPEF670

Breaking barriers: addressing stigma and discrimination in the MSM/TG population through the Importance of community-based ART services

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**Background:** MSM and transgender individuals face pervasive stigma, extending from family and society to healthcare barriers. Despite constitutional safeguards in Articles 12, 18, and 42 protecting their rights, grassroots implementation challenges persist. This deters MSM/TG PLHIV individuals from seeking services at ART Centers due to counselor unawareness about their issues.

Consequently, many MSM/TG individuals are lost to follow-up or not enrolled in ART programs. Community-based ART Services emerge as a crucial intervention, countering discrimination and enhancing accessibility and treatment adherence for these marginalized groups in Nepal.

**Description:** Sudur Paschim Samaj is implementing the ARV Dispensing Center focus on MSM/TG aims to mitigate pervasive stigma and discrimination faced by MSM/TG individuals at traditional ART Centers. The center has notably enhanced accessibility, providing ARV medications to 40 MSM/TG People Living with HIV, fostering increased checkups, and utilization of crucial services, including viral load monitoring and Mental Health Services. Challenges persist as enrollment in the dispensing center necessitates disclosing sexuality and gender at the ART Center, deterring some due to the fear of dual discrimination.

Consequently, only 40 out of over 100 MSM/TG individuals in community care have accessed services at the dispensing sites, underscoring the urgent need to address these barriers for comprehensive healthcare access in the MSM/TG community.

**Lessons learned:** MSM/TG PLHIV face challenges in accessing services at ART centers due to stigma and discrimination, leading to loss to follow-up or non-enrollment after diagnosis. Community-based ART becomes crucial for their enrollment, with ARV dispensing centers dedicated to MSM/TG showcasing improved service delivery. The most effective approach KP led CB-ART, demonstrating significant strides in enhancing services for MSM/TG PLHIV.

**Conclusions/Next steps:** In conclusion, the necessity for the Nepalese government to implement CB ART for MSM / transgender populations is evident.

This not only addresses their unique healthcare needs but also dismantles barriers to treatment access. Simultaneously, proactive measures, including reducing stigma and discrimination, must be taken within the general population and among healthcare providers.

Sensitizing authoritative bodies about the LGBTQIA+ community is vital for fostering inclusivity. By integrating targeted healthcare initiatives with broader societal awareness campaigns, Nepal can work towards creating an equitable and affirming landscape for all citizens.

## WEPEF671

Stigma and discrimination faced by people living with HIV in Portugal: what changed since 2013 (comparative analysis using Stigma index)

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**Background:** People Living with HIV Stigma Index is an international project that measures stigma and discrimination (S&D) experienced by people living with HIV (PLHIV). It was implemented in Portugal in 2013 and 2021/22, allowing to evaluate evolutionary trends.

**Methods:** *Stigma Index* was applied to 1062 PLHIV in 2013, and 1095 in 2021/22. Although the restructuring of questionnaire didn't allow the comparison of all items between data from 2013 and 2021/22, comparative analysis of the questions that were similar was made using hypothesis tests (Chi-square test and Fisher's exact test) with significance level of 5%.

**Results:** *S&D experiences:* Decreased (7% to 0.9%) people who were denied/dismissed from work, and those that experienced changes in functions (21.3% to 0.6%) in last 12m. Discrimination against family members dropped from 7.9% to 1.1%. In other experiences of social S&D (exclusion from social/religious/family activities, being verbally/physically assaulted) there were no differences.

*Internalized S&D:* Decreased people who avoided social events (19.3% to 8.7%), going to healthcare services (16.5% to 8.0%), applying for a job (12.6% to 8.1%), and that isolated from family/friends (25.0% to 14.8%). Also decreased guilt (55.5% to 30.5%) and shame (40.4% to 27.2%) for having HIV. There are no changes in % of people that decided not to have sex because of HIV.



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**Interaction with healthcare services:** Decreased the denial of healthcare services in last 12m (8,6% to 3,4%) as S&D related to pregnancy, childbirth, and breastfeeding. People tested without their knowledge increased (22% to 30%) as the respondents who state that their medical records are not kept confidential (from 5.3% to 9.5%).

**Human rights and effective change:** The percentage of people whose rights were violated (last 12m) decreased (6.2% to 1%), but fewer took action to seek justice (32% to 19%).

**Conclusions:** Comparing with 2013, there seems to be a favorable evolution in S&D in the workplace, in healthcare services, and internalized S&D. Other areas like social S&D, test without knowledge, confidentiality of medical records, and taking action when rights are violated seems to be the same or worse.

## WEPEF672

### Stigma and Discrimination Index 2.0 for people living with HIV in Peru

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**Background:** Studying the problem of stigma and discrimination towards people with HIV allows us to better understand its characteristics, facilitating the design of more effective interventions and addressing the various determinants that affect people with HIV and key populations.

Specific objectives

1. To understand the experiences of stigma and discrimination among people living with HIV, including specific populations.
2. To provide information to guide the development and implementation of national policies that protect the rights of people living with HIV.

**Methods:** The study is based on a quantitative and qualitative, descriptive and cross-sectional methodology. Data were collected between July 2022 and January 2023. Five cities were considered: Lima, Callao, Arequipa, Piura and Iquitos.

The participants were people with HIV with more than one year of diagnosis. The populations considered were: Men, Women, MSM/Homosexuals/Bisexuals, Trans Women, Sex Workers and drug users. The sample was 812 persons. Place-based sampling (75%) and reference sampling (25%) were considered. For the qualitative component, six focus groups and 72 interviews were conducted.

**Results:** 90% of people claim to have experienced internal stigma. Thirty-seven percent experience feelings of guilt. Internally displaced persons have a higher percentage of internal stigma, (94%), followed by those belonging to an "indigenous community" and young people between 18 and 29 years of age, with 81% in each case.

52% reported having suffered external stigma. 33% reported self-exclusion behaviors, the most recurrent being distancing themselves from friends and family (17%).

In HIV services, 32% of PLHIV have experienced discrimination, with a higher proportion among cis women (37%). 30% of trans women experienced some psychological problem in the last year. 18% mentioned having felt that their human rights had been violated.

**Conclusions:** Develop and implement programs to address the impact of stigma and discrimination on the mental health of PLHIV and key populations.

Review and update the HIV law to include the needs of PLHIV from a human rights approach.

Include in the national human rights policy multisectoral actions to address stigma, discrimination towards PLHIV and key populations.

Measure the different interventions related to the reduction of stigma and discrimination, through a multisectoral body such as CONACOD.

## WEPEF673

### Role of crisis management volunteers' team in preventing violence against vulnerable transgender communities in India

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**Background:** Even with progressive judgements and acts, Indian LGBTQ+ community, especially trans-persons, continue to face crisis situations, identity-based discrimination and violence. These crisis situations include social, emotional, physical, sexual and financial harassment, academic bullying, life-threatening hate crimes leading to mental health crisis and death by suicide.

**Description:** The Humsafar Trust's (HST), as a part of its crisis response & management formulated and built capacities of a crisis management volunteer team in 2022 representing the Pan-India PLHIV & LGBTQ+ community using a module developed to guide the use of a comprehensive processes.

These crisis management efforts using a multi-pronged approach empower the LGBTQ+ community to be able to fight for their rights.

#### Lessons learned:

- Collaborate with local LGBTQ+ organizations, health services and legal-aid providers, and other community groups to enhance the resources available to the support group and persons in need.
- Crisis response volunteers should have cultural competence to create an inclusive atmosphere.
- Enhanced legal literacy offers transgender persons in sex work an equitable platform to voice their rights.



- Public-Private partnerships for legal aid strengthens support provided to survivors.
- Owing to health disparity among the community, collaboration with queer-affirmative healthcare providers builds access to risk-reduction emergency health services such as PEP.
- Capacity Building on psycho-social care and mental health of crisis responders were important to sustain this community-led voluntary initiative.
- Empower participants with information that can help them make informed decisions about their safety and well-being.

**Conclusions/Next steps:** Empowerment and community-led approach is crucial to tackle the crisis and violence against the Indian LGBTQ+ community.

Although there are resources and services available for the community, but the community is reluctant to access them due to fear of further harassment.

However, support group formation among the community can lead to sustainable community-driven solutions for health and legal crisis management.

## WEPEF674

### The bottleneck of HIV responses in Indonesia: a study of media monitoring and documentation

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**Background:** The failure of Indonesia to achieve the 90-90-90 target by 2020, in which only 69.5% of people living with HIV know their status and 33.7% are on ARV treatment, is contributed by the major factor of the absence of an enabling environment. This study aims to look at and document various violations against people living with HIV and key populations.

**Methods:** News monitoring was carried out based on internet media in the period January 2021-September 2022. News searches using relevant keywords were carried out by enumerators. The news found would be classified based on predetermined variables, such as forms and patterns of violations, regions, perpetrators, victims, media reporting, and news sources, and analyzed.

**Results:** This study found that during January 2021-September 2022 there were 109 news reports with 187 cases of human rights violations consisting of 65 cases of stigma, 94 cases of discrimination, and 28 cases of hate speech. These violations are normalized in four forms which then hinder to creating an enabling environment.

First, raids perpetuated by the law with the main motive in the name of public order with its various law enforcement problems.

Second, the onslaught against LGBTQI+ and key populations through discriminatory policies ranging from the level of laws, local regulations, to rules in ministries/institutions.

Third, restrictions on the right to freedom of assembly of LGBTQI+ and key populations that echo classic narratives, exaggerating the threats to Pancasila (Indonesia's ideology), morality, and the nation's generation.

Fourth, discrimination on the right to education due to the failure to understand HIV in the context of human rights and public health as well as the wave of homophobia, transphobia, and biphobia in the education space.

The estuary of all these is that AIDS elimination in Indonesia not being carried out on the right track.

**Conclusions:** This study demonstrates the need for educating the public about HIV and human rights both in the form of reports and campaigns. Findings of this report became one of the sources of a report written by the Indonesian National Human Rights Commission on stigma and discrimination against people living with HIV and key populations.

## WEPEF675

### Investigating human rights violations against people who use drugs in Johannesburg Health District amidst and post the COVID-19 pandemic

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**Background:** Although South Africa has a progressive constitution, violations of the rights of people who use drugs (PWUDs) by public officials and others are common. To combat human rights violations, it is crucial to comprehend their nature and scope. In Johannesburg Health District, violations of PWUDs' rights have been recorded during and post the pandemic—from April 2020 to December 2023.

**Description:** We conducted PWUDs rights sensitization discussions with PWUDs, shelters, community leaders, community influencers and public officials, especially police and health workers and distributed information, education, and communication (IEC) materials.

With a systematic approach of detecting, investigating, analyzing information, responding, and reporting human rights violations, 803 cases were recorded during the COVID-19 pandemic period between April 2020 and March



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2022. Among them, 4% were refused services; 21% assaulted; 23% humiliated, 2% sexually assaulted, 32% had needles confiscated, 3% abused by public officials, 2% arrested without charge, 1% refused legal counsel, 1% forced to pay a fine, 10% unlawfully arrested and 1% case reported but no action taken by police.

In total, 969 cases were recorded after the pandemic between April 2022 and December 2023, of which 4% were refused services; 30% assaulted; 3% humiliated, 17% sexually assaulted, 41% had needles confiscated, 1% abused by public officials, 1% arrested without charge, 3% unlawfully arrested.

**Lessons learned:** A broad spectrum of issues and actions falls within the scope of human rights violations. Reported percentage of cases of confiscation of needles and assault remained high during and after the pandemic.

Targeted interventions reduced the percentage of PWUDs being humiliated, abused by public officials, and unlawfully arrested. But percentage of reported sexual assault cases were higher after the pandemic. The different types of cases reported necessitate effective sensitization of diverse actors.

Human rights violations, particularly refusing services, affect PWUDs engagement on treatment and care and ultimately the health outcomes of PWUDs. Hence, human rights monitoring must be integrated into harm reduction programs.

**Conclusions/Next steps:** Human rights violations and crimes against PWUDs are widespread. A resilient system of monitoring these is imperative. A focused advocacy team that addresses human rights violations is essential.

## WEPEF676

Lessons learned on addressing the psychosocial needs of human rights defenders

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**Background:** Human rights defenders (HRD) often face stress, trauma, security threats, and persecution, leading to psychological challenges such as anxiety, depression, and burnout.

This is even worse for HRD who work with communities that are criminalised due to status, such as LGBTIQ+ persons and People Living with HIV.

The constant risk of violence contributes to stress and trauma, and the type of community and advocacy work they engage in results in stigma, isolation, harassment, and threats.

**Description:** Over the past three years, SALC assisted human rights defenders with psychosocial support in Botswana, Eswatini, Malawi and Namibia, who either worked with criminalised communities or identified as a member of a criminalised group.

**Lessons learned:** Through our work it was apparent that psychosocial support and an understanding of mental health issues are equally important as they are underfunded. Many state-run institutions fuel the stigmatisation of marginalised communities, mainly due to the criminalisation of such persons, which has led to the community having little to no faith in these institutions. Private institutions prove to be inaccessible due to the financial tag that they come with.

This becomes problematic as there are not many donors who solely fund mental health or psychosocial support. Grassroots HRDs play a pivotal role, and supporting their initiatives ensures a more profound impact and empowering local communities to advocate for their rights fosters sustainable change.

To ensure an all-inclusive psychosocial support system for human rights defenders, governments are encouraged to abolish colonial anti-LGBTIQ+ laws to serve people equally and offer equal protection.

**Conclusions/Next steps:** There is a need to recognise the diversity of challenges faced by those on the forefront of human rights advocacy by reforming laws, policies and practices that result in leaving human rights defenders with trauma, anxiety and stress. There is a dire need for dedicated psychosocial support funding for HRDs.

## WEPEF677

*'We are treated as criminals, not as sick': insights from a thematic analysis of human rights violations in accessing HIV services from using Rights-Evidence-ACTION (REACT) in Lebanon*

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**Background:** Lesbian, gay, bisexual, transgender, and intersex (LGBTI+) individuals, prisoners, refugees, people living with HIV (PLHIV), people who use drugs, and sex workers are among the populations most vulnerable to HIV acquisition and disease. Structural barriers, including stigma, discrimination and criminalization prevent them from fulfilling their human rights and achieving their full potential. Rights-Evidence-ACTION ('REACT') is a human rights monitoring and response tool developed by Frontline AIDS, to support community-led documentation of human rights barriers to health, including gender-related rights violations. Generated data are used to inform rights-centered HIV programming and advocacy.

**Methods:** SIDC trained Lebanese AIDS Network Association (LANA) members to use REACT. Between July 2020 and December 2021, 150 cases of human rights violations were documented, many involving compound incidents. An additional 23 cases were reported between July and November 2023. A total of 164 clients were registered. The cases were thematically analyzed for recurrent patterns.



**Results:** Demographically, 62% of registered clients were aged between 19-35 and 79% identified as males. Furthermore, 55% identified as LGBTI+ (including 48 men who have sex with men (MSM)), 20% were former/current prisoners, 20% engaged in sex work, 18% were persons who use drugs, and 10% were PLHIV.

Overall, the most reported incidents were harassment, intimidation, and bullying, followed by assault, and discrimination based on sexual orientation. Perpetrators included 'police/law' (62 cases); 'state representative' (52 cases); and 'other perpetrator', including family (51), private employer (26), and private healthcare professional (14). Several cases involved multiple instances and/or perpetrators.

Population-based analysis found that male prisoners faced inadequate medical care, financial constraints, and bullying. Female sex workers and prisoners experienced poverty, sexual violence, and medical neglect. LGBTI individuals, especially MSM, faced homelessness, rejection, coercion, and workplace discrimination. PLHIV encountered healthcare accessibility challenges, stigma, and housing instability.

REAct enabled immediate responses including mental health support and emotional/psychological counseling, condoms and lubricants, and disclosure and stigma support.

**Conclusions:** Recommendations span legislative bodies, urging reviews of discriminatory laws, while governmental bodies are called to establish coherent policies addressing stigma. Ministries such as Interior, Public Health, Labor, Information, and Justice are specifically advised on implementing targeted measures.

## WEPEF678

### Exploring sexual health disparities: a Rwandan study on adolescents with and without disabilities

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**Background:** The study addresses the challenges faced by adolescents with disabilities in Rwanda in accessing and using sexual and reproductive health (SRH) services. While Rwanda has made progress in SRH for the general youth population, the specific needs of disabled adolescents remain under-addressed. This research evaluated their access to SRH services and information, highlighting a critical area in public health that requires more attention to ensure inclusive SRH programs.

**Methods:** We used mixed methods to collect and analyze the data. Both quantitative and qualitative data were collected from adolescents, with and without disabilities. The quantitative analysis included descriptive statistics, chi-square tests, and logistic regression; the qualitative analysis included thematic content analysis. Variables with  $p < 0.05$  were considered significant.

**Results:** The study found that 41.1% (444/1081) of adolescents had engaged in sexual activities, 31.9% (53/444) had hearing, visual, or speech disabilities, and 38.8% (170/444) had physical disabilities. 51.7% reported not using protection at their first sex, 55.9% (26/53) of those with physical disabilities, and 59.1% (80/170) of those with hearing, visual, or speech disabilities. 9.7% (105/1081) of all adolescents began childbearing, with 9.6% (42/438) among those with physical disabilities and 6.6% (11/166) among those with hearing, visual, or speech disabilities.

Among those who started childbearing, a high percentage of unintended pregnancies were reported: 72.7% (8/11) for adolescents with hearing, visual, or speech disabilities and 73.8% (31/42) for those with physical disabilities. STI prevalence was 11.1% (64/604) among those with disabilities, 2.4% (14/604) among those with hearing, visual, or speech disabilities, and 9.6% (58/604) among those with physical disabilities.

Only 19.9% (33/166) of adolescents with hearing, visual, or speech disabilities used SRH services, compared to 25.1% (110/438) of those with physical disabilities. Adolescents with disabilities reported barriers including distance to health facilities, inappropriate health infrastructure, unfriendly health care providers, self-marginalization, fear of judgment, and a lack of appropriate information.

**Conclusions:** The study identified challenges faced by adolescents with disabilities regarding Adolescent Sexual and Reproductive Health (ASRH). It revealed disparities in ASRH service access between adolescents with and without disabilities. This underscores the urgent need for tailored policies and programs for disabled adolescents in Rwanda.

## WEPEF679

### Rights for key populations? Mixed and decreased public opinion support for the basic rights of people living with HIV, MSM and trans women from 2016 to 2023 in Central America

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**Background:** In 2023 and in the context of the Prevention Services against HIV project implemented in Central America by the Pan American Social Marketing Organization (PASMO) with funds from the United States Agency for International Development (USAID), PASMO hired the CID Gallup Research Agency to conduct a fourth round of



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a public opinion poll in Guatemala, El Salvador, Honduras, and Panama with ten questions regarding stigma and discrimination towards men who have sex with men (MSM), transgender women and people living with HIV (PHIV) and their human rights.

**Methods:** Quantitative opinion poll with a representative sample of 1,200 face-to-face surveys conducted per country and with adult citizens over the age of 18 in Guatemala, El Salvador, Honduras, and Panama in September 2023. Margin of error +/- 2.8 (p=0.5). Statements were rated on a scale of strongly agree, agree, disagree, strongly disagree.

**Results:** "People living with HIV should have access to public spaces": strongly agree/agree 79% in 2016, 76% in 2019 and 2021, and 72% in 2023; "Women living with HIV have the right to pregnancy": strongly agree/agree 41% in 2016, 34% in 2019, 30% in 2021 and 2023; "A gay friend can live in my home": strongly agree/agree 63% in 2016, 60% in 2019, 59% in 2021, 54% in 2023; "Trans women have the right to documents that identify them as women": strongly agree/agree 43% in 2016, 41% in 2019, 38% in 2021, 36% in 2023; "People have the right to assault a trans person for who they are": strong disagree/disagree 89% in 2016, 85% in 2019, 86% in 2021, 89% in 2023.

**Conclusions:** Several stigmatizing public opinions towards MSM, trans women and PHIV have increased 2016 to 2023 in Central America, especially in aspects related to human rights (access to public spaces, pregnancy, ID, and non-violence).

With stigma and discrimination presenting important barriers to HIV prevention and treatment access among KPs, programs and partners working in the region should consider implementing human rights promotion activities and campaigns targeting the general population.

## WEPEF680

Navigating stigma and discrimination among key populations in Nigeria: a comprehensive analysis of challenges faced by men who have sex with men

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**Background:** Despite advancements in the global discourse on sexual and gender diversity, men who have sex with men (MSM) in Nigeria face enduring challenges, including stigma, discrimination, and mental health issues like depression. This is reflected in the disproportionately high HIV prevalence among this group, which increased from 13.5% in 2007 to 25% in 2020.

There is a need to identify contributing factors associated with experiences of stigma and discrimination faced by MSM.

**Methods:** This study conducted a secondary analysis of the Nigeria Stigma Index Report 2.0, encompassing 17 states across the six geo-political zones in Nigeria. Employing a cross-sectional descriptive approach, the study utilized both quantitative and qualitative data collection methods. Qualitative data were obtained through semi-structured Focus Group Discussions (FGD) to capture the experiences of stigma among MSM.

The quantitative aspect involved using the structured and standardized Stigma Index Survey 2.0 tool to interview the MSM respondents.

**Results:** The study involved 81 participants, with 35% aged between 25-34 years. Within the 12 months preceding the study, 14% reported experiencing physical harassment, while 11% faced blackmail due to gender identity. Additionally, 10% avoided seeking health services because of disclosure concerns. Verbal harassment was reported by 20% of respondents, and 9% felt excluded from family activities during the same period.

**Conclusions:** The pervasive obstacles of stigma, discrimination, and social marginalization significantly hinder the health and well-being of MSM in Nigeria.

The study emphasizes the imperative for increased collaboration among stakeholders to implement targeted interventions that challenge discriminatory norms, promote inclusivity, and ultimately create a more welcoming environment for Men who have sex with Men in Nigeria.

## WEPEF681

The intersection between migrant women living with HIV and gender-based violence, and the need for culture and gender specific legal services

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**Background:** Women living with HIV (WLHIV) face disproportionate rates of violence, including sexual abuse and partner infidelity. Migrant WLHIV who are currently experiencing, or have experienced, gender-based violence (GBV) have unique legal issues due to the intersection of their HIV status and experiences of violence, both of which can impact their visa outcomes. As all visas to Australia have a Health Criteria, there are only certain permanent visas available for PLHIV.

Given the uncertainty surrounding a migrant's visa status, WLHIV may fear accessing services if it will impact their visa outcomes, or if there are no specialist women legal services.

**Description:** From a limited funding grant, the HIV/AIDS Legal Centre, with support from Positive Life NSW (peer body), were able to have a female Solicitor dedicate a portion of her caseload to assisting WLHIV in NSW. From this, a monthly drop-in legal clinic was established that was a safe place for WLHIV to access legal advice, with

interpreter service available on call, and which operated outside standard work hours to accommodate for carer responsibilities.

**Lessons learned:** The majority of migrant WLHIV who sought assistance through the service were seeking advice to remain in Australia permanently, and all migrant WLHIV who accessed the drop-in legal clinic were currently experiencing, or had previously experienced, GBV. All migrant WLHIV who used the drop-in legal service were also from a culturally and linguistically diverse background.

It was found that many of the women were unaware of the Family Violence Provisions in the *Migration Act 1958* and how it may be applicable to their situation, as well as how their experience of being a WLHIV and victim/survivor of GBV may be a basis for seeking permanent protection in Australia.

**Conclusions/Next steps:** The drop-in service revealed that migrant WLHIV are experiencing disproportionate rates of violence compared to non-migrant WLHIV, and that they currently lack legal literacy as to their visa options, and how GBV may intersect.

As the service was advertised and tailored towards WLHIV, it meant that this uniquely stigmatised population felt comfortable to access it, and uncloaks the necessity for more culturally sensitive, women orientated legal services.

## Ethics and HIV

### WEPEF682

Barriers and facilitators to researcher-adolescent participant relationship building: perspectives from Kenyan children and adolescents living with HIV, their caregivers and subject matter experts

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**Background:** Health research with children and adolescents living with HIV (CALWH) is critical to improving clinical outcomes, particularly in high-burden countries. Unique vulnerabilities of this group, including their age, HIV status, and social contexts, raise bioethical considerations, including the ways in which CALWH build trusting relationships with research teams, especially in research

conducted over long periods. We evaluated perspectives on barriers and facilitators to researcher-participant relationship building.

**Methods:** In-depth, semi-structured interviews were conducted with Kenyan CALWH [ages 10-24 years, enrolled at Academic Model Providing Access to Healthcare (AMPATH) in western Kenya], caregivers of CALWH, and subject matter experts (SMEs). Thematic analyses were conducted to identify preliminary codes and themes.

**Results:** Interviews were conducted with 99 participants (53% male): 40 CALWH [median age 17.5 years, (range 11-24), 50% female], 20 caregivers (70% female), and 39 SMEs (33% female; 46% community leaders, 26% healthcare providers, 15% clinical researchers, 8% social scientists, 3% international research experts, 2% laboratory experts).

All groups indicated trust could be broken and built through research processes. CALWH and SMEs viewed participant identification and study recruitment through medical records as a violation of trust, indicating that their HIV status and other health information should remain confidential between themselves and their clinical team.

All three groups suggested ethical recruitment may instead occur through existing clinician-adolescent relationships, emphasizing the importance of privacy and confidentiality. Losses of confidentiality, and mistakes in sample collection that require participants to attend additional, unnecessary research visits or provide additional biological samples, were identified by all groups as additional barriers to relationship building.

CALWH and caregivers discussed researcher characteristics that support relationship building, with particular focus on the importance of a positive demeanor, without stigmatizing behavior. CALWH and SMEs discussed operational needs that foster relationship building, like ensuring proper communication of study procedures, results reliably reported to participants, and future benefits being received.

**Conclusions:** Researcher-participant relationships play an important role in conducting research with CALWH and should be considered a critical component in the development and success of research infrastructure. Perspectives from Kenyan CALWH, their Caregivers and SMEs highlighted opportunities to improve such relationships.



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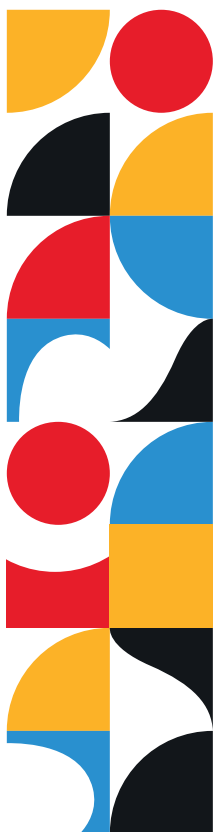
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## WEPEF683

HIV care provider awareness, attitudes, and willingness to support client outreach efforts for HIV cure-directed research in Philadelphia, Pennsylvania

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**Background:** Clinical trials are underway to develop HIV cure-directed strategies. Prior studies have shown high willingness among persons with HIV (PWH) to participate in HIV cure-directed trials. In recent surveillance of PWH in Philadelphia, PWH indicated that they were most likely to trust their medical provider to discuss participation in HIV cure-directed research. Providers are critical partners in supporting HIV cure-directed trials as participation may require analytical treatment interruptions (ATIs).

Our objectives were to:

1. Evaluate HIV providers' awareness, attitudes, and willingness to conduct client outreach for HIV cure-directed research; and,
2. Identify providers' preferences for HIV cure-related education.

**Methods:** The current study is a collaboration between the BEAT-HIV Delaney Collaboratory Community Engagement Group and the BEAT-HIV Community Advisory Board. We enrolled N=64 HIV providers (i.e., physicians, physician assistants, and nurses) across nine Philadelphia clinics and healthcare systems to complete a one-time web-based survey (2022–2023).

Providers self-reported their awareness of the current strategies towards HIV-1 cure, HIV cure education preferences, and attitudes and willingness to support client outreach for HIV cure-directed research.

**Results:** Most (84.4%) providers reported HIV cure-directed research awareness. Familiarity with HIV cure strategies ranged from 10–55%. Over 90% of providers reported that it was important for clinicians to assist with client outreach and that they were likely to recommend PWH to participate in HIV cure-directed research.

However, 51.6% of providers indicated less willingness to discuss HIV cure-directed research with their clients if ATIs were required. Client outreach willingness was positively correlated with research experience ( $r=0.31$ ), outreach experience ( $r=0.43$ ), and outreach self-efficacy ( $r=0.27$ ). Preferred resources (>70%) for HIV cure education were peer-reviewed publications and webinars with continuing education credit.

**Conclusions:** Client outreach is critical for ensuring diverse representation in HIV cure-directed trials. All-the-while, providers must maintain high-quality medical support for trial participants. Providers' willingness to assist with client outreach for HIV cure-directed research was diminished if ATIs were required.

Provider interventions should address ethical concerns regarding:

1. The necessity of ATIs in HIV cure-directed research;
2. Client outreach that maximizes individual autonomy and self-determination; and,
3. Ways to support PWH who participate in these studies and their sex partners.

## WEPEF684

Adolescent perspectives on HIV clinical research participation rules during pregnancy

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**Background:** Relative to pregnant adults, pregnant adolescents face increased risk of HIV acquisition, vertical transmission, and poor pregnancy outcomes. Addressing the ethical and regulatory barriers to HIV research with pregnant adolescents is crucial to providing safe and effective prevention/treatment.

We examined adolescent decision-making related to clinical HIV research participation during pregnancy to help develop ethical guidance for responsible inclusion of pregnant adolescents in clinical research.

**Methods:** Eighty in-depth interviews were conducted with ever pregnant adolescents (40 living with HIV, 40 at-risk) recruited from local clinics in Botswana and Malawi.

Questions in the semi-structured guide explored adolescents' views on study participation during pregnancy with reference to three common rules governing adolescent inclusion in clinical research:

1. Parental and non-gestational parental consent,
2. Disclosure of abuse, and
3. Two required forms of birth control (BC). Interviews were transcribed, translated to English and coded using NVivo, and emergent themes were identified.

**Results:** Thematic analysis revealed mixed support for the three common rules, with adolescents describing both risks and benefits. Although most adolescents expressed parental consent was a right/responsibility that could provide protection, some also noted that it could limit access to beneficial research. Some adolescents felt that pregnant individuals under 18 can provide independent consent.

Conversely, most adolescents were against non-gestational parental consent requirements because it infringes on adolescents' decision-making autonomy. Most favored disclosure of abuse, citing protection for the adolescent or fetus by authorities; however, some also noted this rule could increase risks for research participants. Some adolescents felt that tangible support (e.g. counseling) should also be provided when abuse is discovered.

Finally, supporters of the BC requirement indicated it provides contraception access and pregnancy prevention but noted that some may decline study participation if BC is required, due to side effects.

**Conclusions:** Adolescents identified advantages and disadvantages of common clinical research rules that would impact inclusion of pregnant adolescents in research, highlighting concerns specific to their social contexts and family dynamics.

These findings underscore the need to advance the interests of adolescent research participants in developing guidance for their ethical inclusion during pregnancy.

## Policy development, implementation and analysis

### WEPEF686

#### Analysis of HIV/AIDS patients switching to medical insurance ART: a cross-sectional study in six Chinese provinces

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**Background:** Antiretroviral therapy (ART) security policy in China has entered a new stage of diversification, and there are free ART, medical insurance ART, self-funded ART. In recent years, some HIV/AIDS patients have switched to medical insurance ART from free ART.

Therefore, this study analyzed the information of those HIV/AIDS patients to provide reference for improving ART security policy in China.

**Methods:** A cross-sectional survey was used to collect the general characteristics, economic status, and ART status of 1371 HIV/AIDS patients from 18 cities in 6 provinces. The Chi-square test was used to analyse whether the differences between HIV/AIDS patients who switched to medical insurance ART and those who did not were statistically significant. Multivariable logistic regression was used to analyse the factors associated with switching to medical insurance ART.

**Results:** Among the 1371 participants, 17.3% switched to medical insurance ART. The differences between HIV/AIDS patients who switched to medical insurance ART and those who did not were statistically significant ( $p < 0.05$ ) in education, occupation, type of basic medical insurance, average annual income of family members, personal annual income, changes in personal annual income, whether is the government medical aid recipient or households registered as living under the poverty line, year of initiating ART, level of ART hospital, distance to ART hospital, and whether adverse medicine reactions occur.

Government agency/public institution/state-owned enterprise employees (aOR=2.34, 95% CI: 1.29-4.26), basic medical insurance for urban employed (aOR=1.93, 95% CI: 1.28-2.90), average annual income of family members were  $\geq$  \$13,972 (aOR=2.12, 95% CI: 1.27-3.54), personal annual income were  $\geq$  \$13,972 (aOR=2.39, 95% CI: 1.43-4.00), initiated ART before 2012 (aOR=1.67, 95% CI: 1.02-2.75), provincial hospitals (aOR=2.00, 95% CI: 1.30-3.09) were factors associated with switching to medical insurance ART.

**Conclusions:** 17.3% HIV/AIDS patients switched to medical insurance ART, indicating the attractiveness of medical insurance ART. The characteristics of HIV/AIDS patients who switched to medical insurance ART and the factors asso-



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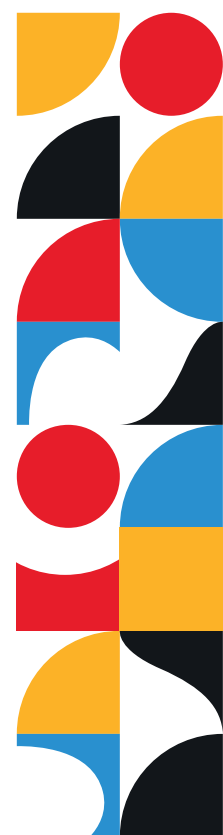
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ciated with switching should be fully considered, so as to provide targeted ART services and improve ART security policy in China.

## WEPEF687

Enhancing sustainability in the leadership and coordination of the national HIV response: a focus on transitioning state agencies for the control of AIDS (SACA) in the 36+1 States of Nigeria

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**Background:** The National Alignment Program, structured as a tripartite model involving the Global Fund, PEP-FAR, and the Government of Nigeria, aimed to enhance collaboration and efficiency in the national HIV response. Despite substantial investments from international donors, multilateral, and bilateral organizations, challenges such as limited coordination in states with multiple donors and data gaps persist.

The National Alignment 2.0 Programme, outlined in the New HIV Business Plan (NBM), seeks to establish an effective and locally-led HIV response in line with the Paris Declaration 2005.

**Description:** A three-day orientation and onboarding meeting, conducted in partnership with the Global Fund, World Health Organization (WHO), and State Agencies for the Control of AIDS (SACA), engaged participants from HIV/AIDS programs, Monitoring and Evaluation, Finance, and Procurement across 36+1 states.

The meeting assessed institutional and technical capacities, fostering agreement on coordination mechanisms for Grant Cycle 7 (GC7) through group work, brainstorming, and plenary sessions.

**Lessons learned:** The orientation reached 226 participants, providing insights into Global Fund project implementation processes. It facilitated the distribution of commodities for the 2023 World AIDS Day, disseminated the National HIV/AIDS Strategic Plan (NSP 2023-2027), and shared updates on the new business model for sustaining Nigeria's HIV response.

Preliminary reports on the assessment of SACA's institutional capacity were also presented.

**Conclusions/Next steps:** Conducting orientation meetings for key State HIV/AIDS program staff is crucial for optimizing available resources toward achieving the 2030 epidemic control goals. However, further actions are necessary, including training on policy brief development,

Global Fund guidelines for activity implementation, issuance of Terms of Reference for capacity building, and Electronic Reporting capacity enhancement.

## WEPEF688

Antiretroviral prices in light of international generics: how to ensure sustainable and universal access to dolutegravir in Brazil?

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**Background:** Since 1996, Brazil has had a federal law ensuring universal access to antiretroviral therapy (ART). Dolutegravir (DTG) is currently used by more than 580,000 people in the country, but its price can be a barrier to access.

This study aimed to analyze DTG public procurement in Brazil and compare prices with international generics in order to discuss access and sustainability.

**Methods:** This is a case study from 2017 to 2023 that investigated annual procurement of DTG 50 mg from the Brazilian government to identify: USD and BRL unit prices, volume of tablets purchased and donated, BRL unit price adjusted for inflation and percentage of the ART public budget consumed by DTG.

The Clinton Health Access Initiative's annual HIV market reports were used to compare prices of internationally available generics.

**Results:** From 2017 to 2021, GSK was the only supplier of DTG 50 mg in Brazil. GSK's unit prices were USD 1.50 in 2017, USD 1.17 in 2018 and USD 1.15 in 2019, 2020 and 2021, while the amount of purchased tablets increased continuously. From 2018 to 2021, GSK's donated tablets progressively diluted their price (USD 0.89 in 2021). In 2022, Brazilian public generic manufacturers Lafepe (USD 0.74) and Farman-guinhos (USD 0.98) were responsible for DTG supply.

However, due to legal issues, Farmanguinhos became the only supplier of DTG in 2023 (USD 0.83), when DTG consumed 51% of the ART public budget. BRL prices adjusted for inflation showed that the highest price drop happened in 2018. In 2021, DTG reached its highest price, despite the amount of tablets purchased (160,500,000).

Brazilian prices were 4.4 (2018) to 11.9 (2023) times higher than international generic prices during the period. The difference between Brazilian and international generic prices has grown since 2020.

**Conclusions:** Prices have an important impact on ensuring sustainable access to ART in Brazil and guaranteeing new ARV incorporation. Investigating factors that deter-

mine price variations, including costs of production, is key to understanding price differences between Brazilian and international generics.

## WEPEF689

Ensuring an engagement of women living with HIV in global fund is still HARD ROCK

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**Background:** Having specific objective to better understand on the GC7 process and how it supports women and girls living with HIV at the country level in Cambodia, India and Viet Nam. Through the support of UNAIDS and technical support team, ICWAP provided support on the enhancing knowledge, and engagement of women living with HIV in GF in-country processes including country dialogues, concept note developments and grant making to integrate women-led activities in the final Global Fund proposal and to influence to increase funding to support to women and girls with fact data after the assessment conducted in countries by and for women and girls.

**Description:** Activities included a survey targeted to women living with HIV to understand their involvement in Global fund Cycle 7 processes and focus-group discussions and key informant interviews in all three countries. 60 women responded to the survey from 3 countries. The survey questions focused on what are the emerging needs of WLHIV; what works for women in terms of interventions; how can they be scaled up and where would resource come from and what are the challenges in accessing the resources at country level for women led networks.

**Lessons learned:** Women urgently need their own space to talk about issues from violence against women to sexual and reproductive health and rights. Support ongoing collaboration between women's regional networks to provide specific technical support to networks of women living with HIV in countries. Review Global Fund grants to integrate specific gender sensitive activities into the programme along with disaggregated data collection. Create mechanisms and systems to better support meaningful and robust participation of women to participate in the Global Fund processes from concept note development, country dialogue, priority settings and proposal development stage at national level.

**Conclusions/Next steps:** Invest in medium to long term core funding for women living with HIV networks to enable them to hire skilled staff for programme management and resource mobilization, which in turn will lead to better functioning and long-term sustainability. UNAIDS and global/regional networks to develop a monitoring system for women's meaningful engagement and outcomes in the Global Fund process are essential to ensure gender equality.

## WEPEF690

The situation of children with HIV in Indonesia: analysis of policies, programs, and child rights protection

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**Background:** This research examines the situation of Children Living with HIV in Indonesia. It focuses on the evaluation and effectiveness of policies, ongoing work, and the rights protection. It aims to gain profound understanding of challenges and strengths that are faced by Children Living with HIV. This will involve analyzing policies, implementation, and rights protection.

**Description:** This research spans four months (June-October) focusing on Children Living with HIV. This will include 18 different areas in Indonesia. Combining quantitative and qualitative, It evaluates policy effectiveness and involve key activities such as surveys, document analysis, and group discussion.

This research examines the current situation of Children Living with HIV in Indonesia. The scope encompasses a thorough evaluation of policies, ongoing efforts, and rights protection measures.

**Lessons learned:** This research emphasizes the inadequate protection for Indonesia's Children Living with HIV, citing challenges such as conflicting school schedules, financial constraints, and children's expulsion due to parental HIV-related fears. Varied responses from school leaders, some favoring relocation and others stressing enhanced HIV education, exacerbate the situation. Engaging discussions with various groups reveal a conspicuous gap in preventing violence against Children Living with HIV, leading to student leaving their school and hiding their HIV status. Best Practices, like the "Hebat" program in Bandung and collaborative efforts in Medan, address HIV/AIDS issues.

Another best practice is new regulations in North Sumatra focus on testing, government-sponsored nutritional support, and delineating HIV-related responsibilities. In Surakarta, an orphanage's dialogues with schools aim to retain expelled children.

The findings emphasize the need for comprehensive measures, improved regulations, inter-ministerial collaboration, and targeted support to address the multifaceted needs of Children Living with HIV in Indonesia.

**Conclusions/Next steps:** This research suggests enhancing the protection of children with HIV in Indonesia through structured, holistic, and systematic approaches. Recommendations include a comprehensive child protection roadmap, ensuring healthcare and medication quality, robust education programs, and collaboration with national and international organizations.

It emphasizes improved regulations, inter-ministerial collaboration, and reliable data collection for successful interventions. The research highlights the critical impor-



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tance of addressing the multifaceted needs of Children Living with HIV in Indonesia through comprehensive and collaborative efforts.

## WEPEF691

Sustainability of health systems and services in EECA by building capacities for emergency preparedness with a focus on health service continuity in the face of ongoing instability

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**Background:** Public health emergencies, including pandemics and conflicts, pose significant threats to health systems. The Eastern Europe and Central Asia (EECA) region faces challenges in sustaining essential HIV services, exacerbated by weaknesses in health system functions and reduced financing. COVID-19 and the war in Ukraine further compound these challenges, affecting HIV responses and hindering access.

The purpose of the project was to build capacity for preparedness with a focus on health service continuity planning, in harness with emergency planning, in support of transitioning health systems for sustainability and resilience.

**Description:** Project focused on building capacity for emergency preparedness, specifically in Health Service Continuity Planning was initiated. Regional workshops were organized, involving stakeholders from nine countries.

The objective was to integrate continuity planning into the regional agenda and enhance its application in national HIV responses. Technical assistance was provided to strengthen health authorities and service providers.

**Lessons learned:** Project highlighted the need for a paradigm shift in sustainability, emphasizing preparedness, continuity, and recovery over a sole focus on transitioning to domestic funding. The "Triangle Framework" was introduced, advocating for a comprehensive approach addressing core sustainability pillars and critical enablers.

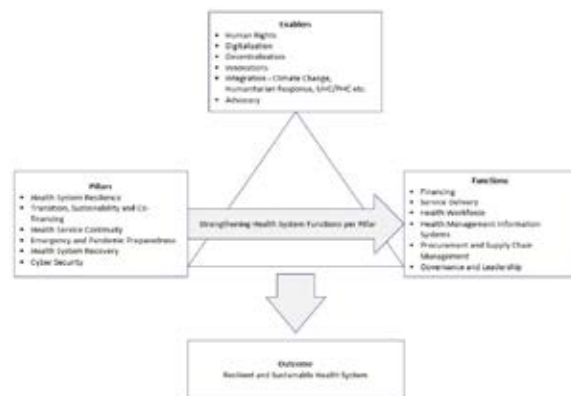


Figure. HIV-related health systems sustainability and resilience triangle framework.

**Conclusions/Next steps:** Identified challenges underscore the necessity for a comprehensive approach to enhance health system sustainability. The negative impacts of crises, coupled with reductions in funding, COVID-19 and war, emphasize the urgency of strategic interventions.

### Next Steps:

- Integrated Approaches: Incorporate health service continuity planning into the regional agenda, aligning with the evolving context.
- Technical Assistance and Capacity Building: Continue targeted assistance to strengthen health facilities and HIV service providers, focusing on robust health services and continuity systems.
- Paradigm Shift in Sustainability: Encourage a shift from a sole emphasis on transition to domestic funding to building resilient health systems.
- Adoption of the Triangle Framework: Implement the Triangle Framework as a guiding model for sustainable and resilient HIV-related health systems.

## WEPEF692

Harm reduction process implementation to decrease the occurrence of new infections in the people who inject drugs (PWID) population in Chiang Rai, Thailand

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**Background:** Harm reduction is applied in various contexts, including ending AIDS in People Who Inject Drugs (PWID), preventing the spread of bloodborne infections such as HIV and HCV, and reducing overdose deaths. PCG is a local organization in Chiang Rai that focuses on overcoming the challenges associated with connecting with PWID. The organization promotes behavior change in PWID to encourage safe drug use and reduce overall drug use. This includes facilitating methadone treatment at the PCG community methadone clinic.

**Methods:** PCG has set up 5 community methadone clinics. PCG outreach staff engage and recruit PWID clients in the community, healthcare services, methadone therapy, provision of needles set, condoms, and ongoing support, HIV screening tests. If HIV, STIs, or HCV yields reactive results, the clients will be referred to the hospital to confirm and for ARV Treatment, including TB prevention, psychosocial care, methadone therapy, and all with a harm reduction approach. The Community-Led Monitoring process is used to monitor and evaluate the client to measure behavioral changes before and after ingesting methadone.

**Results:** Currently, PCG recruited 1,168 PWID, with 243 cases receiving methadone treatment. The client data reveals that 141 continued drug use during methadone treatment, but in reduced doses, while 24 cases rely on metha-



done only. 91 cases reduced needle usage frequency and 54 cases reported no needle use. It also shows 31 cases showing a decrease in injection usage after treatment. Before starting methadone, 43 cases used drugs through both injection and smoking, which reduced to 16 cases after methadone treatment, indicating a reduction in both injection and smoking behaviors. Those who received methadone undergo health screening for HIV, HCV/HBV, sexually transmitted infections, and TB. After taking methadone, the clients say that their lives changed for the better, and improved their quality of life.

**Conclusions:** By integrating the Harm Reduction process to end AIDS, community methadone clinics are run by community outreach and NGOs. This effort helps prevent infections, ensures access to healthcare, and contributes to the overall goal of ending AIDS by reducing new HIV infections and lowering infection rates. As well as to improve the quality of life.

## WEPEF693

Forging consensus: advancing HIV person-centred care in Australia. Lessons learned, challenges addressed, and future directions

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**Background:** A high-level national roundtable conducted on August 28, 2022, by Australia's leading HIV community peak bodies, aimed to establish consensus on person-centred care (PCC). The objectives were to define, discuss best practices, and address challenges related to PCC, contributing to national and state-level advocacy, policy, and strategy development.

**Description:** The roundtable gathered clinicians, community members, government officials, researchers, and industry representatives from across Australia. Presentations from experts on PCC covered health systems, patient-reported outcomes, and community perspectives. Group discussions built on the presentations, identified themes including addressing barriers, partnerships, quality of life, stigma, and peer support, as well as moving beyond traditional disease-centric approaches to a holistic, person-centred paradigm. Following the roundtable, a Consensus Statement was developed that incorporated findings from the day. The draft statement was circulated to participants to review and feedback before consensus was reached on a final version.

**Lessons learned:** Key findings included the need to view HIV as a social phenomenon, incorporate diverse approaches, and recognise the role of peers. Results indi-

cated that PCC involves enabling people with HIV to articulate health priorities, necessitating cooperative decision-making between individuals and healthcare providers. The Consensus Statement highlighted that building a shared understanding of PCC is possible with diverse stakeholders. The Consensus Statement provides a foundation for advocacy, policy, and strategy development, and has informed significant shifts in Australia's HIV policy frameworks. A recent review of the National HIV Strategy drew on the Consensus Statement to support the prioritisation of person-centred approaches.

This included the importance of comprehensive, multidisciplinary, and non-stigmatising approaches to care that centre autonomy and life experiences and supporting the expansion of peer-led services.

**Conclusions/Next steps:** The diversity of stakeholders in the roundtable has helped ensured broad support for the Statement's principles. These outcomes demonstrate that consensus-building approaches with multi-sector stakeholders can support meaningful policy change to improve quality of life for people with HIV by envisioning a healthcare landscape that respects individual needs and fosters diversity and inclusion in the provision of quality person-centred healthcare by responding to community leadership in policy formulation processes.

## WEPEF694

Frequent visits and viral load timing delay differentiated service delivery enrolment and increase burden during the first year of HIV treatment: a policy review of 15 countries

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**Background:** The initial year of antiretroviral therapy (ART) involves frequent health facility visits increasing disengagement risk. With the adoption of dolutegravir-based regimens, the World Health Organization (WHO) recommends reviewing the first viral load result by month six after treatment initiation and reduced the "time on ART" eligibility criteria for less-intensive differentiated service delivery (DSD) to six months.

We conducted a comprehensive review of current national HIV policies in East, South, Central and West Africa to assess visit burden in the first year and the impact of visit frequency and viral load timing on access to less-intensive DSD.

**Methods:** The policy review covered HIV clinical and DSD guidance from 15 countries. Extracted data included:

a. The visit schedule for clinically stable individuals (clinical, ART refill only, and ART-only visits in DSD models),



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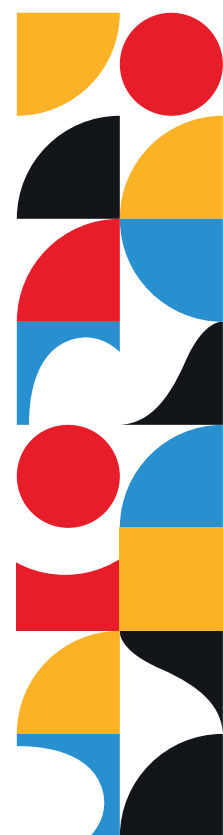
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b. Visits with routine viral load testing, and;  
c. The visit enrolment in less-intensive DSD models could occur based on "time on ART" and viral load suppression eligibility. Where guidance lacked explicit DSD assessment timing, we assumed this occurred after viral load result availability.

**Results:** Among the fifteen countries, ten require 6-7 visits, and five require 10-13 visits in the first ART year (Figure 1).

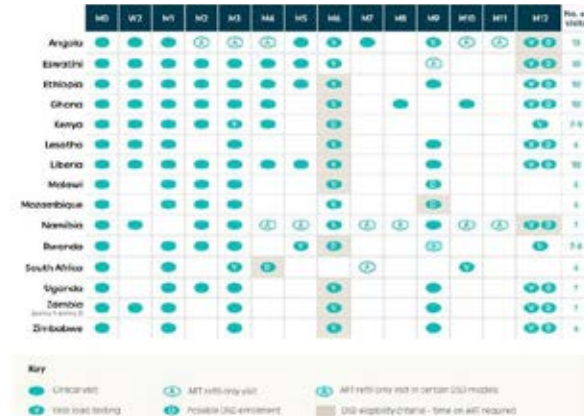


Figure 1. ART care visit schedules in the first year of treatment according to national policies.

In 12 countries, viral load is taken at month six. Access to less-intensive DSD models is feasible only from month 12 in ten countries. Kenya, Rwanda and South Africa, with earlier viral load assessment, enable less-intensive DSD model access by month six.

**Conclusions:** Despite treatment retention challenges, most countries delay viral load assessment and mandate frequent clinical visits in the first ART year.

Considering high rates of early disengagement and WHO guidance for earlier viral load and access to less-intensive DSD models, countries should consider shifting viral load assessment earlier and actively reducing the visit burden in the initial ART year.

## WEPEF695

### The expansion of supervised consumption services in Canada: progress and challenges

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**Background:** Canada has been experiencing a relentless overdose crisis since 2016. One response is increased access to supervised consumption services (SCS). In 2019, the HIV Legal Network (LN) published a report on SCS in Canada and concluded that there was an urgent need to remove legal and political barriers that prevented their expansion.

In 2023, the LN took stock of the progress made in the past four years and remaining challenges.

**Description:** Literature review supplemented by 11 interviews with key informants. An advisory committee of three Canadian experts in SCS reviewed the report.

**Lessons learned:** Canada is the country with the most SCS in the world. SCS have expanded rapidly in recent years, going from 2 sites in 2016 to more than 80 supervised consumption and overdose prevention sites by 2023 in 9 of the 13 provinces and territories. SCS take many forms: permanent or temporary services, and dedicated sites or integrated services.

The range of services offered at sites has also diversified with greater access to peer assisted injection and drug testing services, for example. But access to SCS remains limited to certain provinces and urban centers and does not meet the crying need for supervised inhalation services.

While the expansion of SCS has been facilitated by more flexibility by the federal government in providing authorizations for SCS (which offer protection against criminal prosecutions under drug-related legislation), new and restrictive provincial policies and legislation as well as lack of funding threaten and even prevent their implementation.

**Conclusions/Next steps:** Access to harm reduction remains largely dependent on the political context in Canada. Reforms and funding are needed at all levels of government to safeguard the gains made and meet the needs of people who use drugs. The Federal government must take measures to remove case-by-case exemptions for SCS, including through the decriminalization of activities related to personal drug use. Provincial authorities must refrain from imposing over stringent conditions for licensing and/or funding SCS.

Increased support for comprehensive and innovative programs that address the toxicity of the drug supply as well as for mental health, treatment and housing is also urgently needed.

## WEPEF696

### Beyond borders: Mercosur unified approach to quality control in HIV, syphilis, and hepatitis C rapid diagnostic tests

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**Background:** The Mercosur Intergovernmental HIV Commission (CIHIV) recognized an opportunity for member countries - Argentina, Brazil, Paraguay, and Uruguay - to share experiences in the External Quality Assessment (EQA) of diagnostic tests for syphilis, HIV and HCV infection. This collaborative effort aimed to facilitate knowledge exchange and expertise, specifically focusing on generating panels for EQA of rapid diagnostic tests (RDT) using the Dried Tube Specimens (DTS) methodology. Brazil's Ministry of Health (MoH) initiated the National Program of EQA-RDT in 2011, overseeing the quality of RDT ex-

ecution for HIV, Syphilis, and, in 2018, Hepatitis C. Despite the high performance of RDTs, inaccuracies can arise if procedures are not executed accurately, leading to false results, emphasizing the need for a shared methodology to ensure RDT quality.

**Description:** In Brazil, EQA-RDT rounds provide DTS panels to be tested in real life for more than 3 thousand health-care professionals. Financial support and program management from the Brazilian MoH have sustained EQA-RDT for 12 years. Argentina conducts annual EQA-RDT rounds in 23 health services. Argentina and Brazil took the lead, supporting the implementation of this methodology in Paraguay and Uruguay.

To standardize quality control in Mercosur countries, a protocol for DTS panels was created based on the protocol developed by Parekh et al (2010). The protocol covers biosafety standards, materials, sample selection, staining, packaging, storage, and result recording.

**Lessons learned:** During Brazil's pro tempore presidency in Mercosur, the unique protocol for DTS panels was finalized to guide the preparation of panels for quality control of RDTs. It was possible to establish a unique protocol, considering the differences in reagents and instruments available in each country.

This joint work process demonstrated the need to develop a unified system to record the results of the EQA-RDT, also work on standardizing the production of panels for other tests (such as the CD4+ test) and have moments to share evidence that supports the definition of diagnostic and monitoring algorithms for STIs.

**Conclusions/Next steps:** It is believed that the protocol and the joint work strategy can be shared and used in other countries, taking advantage of already available evidence, and avoiding unnecessary work.

## WEPEF697

Data-driven research to support ART optimization and «Undetectable Equals Untransmittable» (U=U) campaign in Tajikistan

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**Background:** In October-November 2022 UNDP supported assessment of ART optimization plan in Tajikistan by the experts of the Center of Excellence for Health, Immunity and Infections (CHIP). The research aimed at identifying existing gaps and providing recommendations for further improvement of HIV treatment for adults and children in Tajikistan with the ultimate goal of supporting the Republican AIDS Center in updating the national HIV Clinical Protocol.

The report was also focused on providing scientific evidence behind the «U=U» campaign to create enabling environment for HIV treatment and care in the country.

**Methods:** The first stage of the study was a desk review, covering both publicly available data and documents requested from UNDP Tajikistan and Republican AIDS Center. The in-country mission took place from October 24, 2022, to November 4, 2022, and included interviews with the key informants and health professionals, as well as on-site review of the primary documents.

The mission visited regional and city/district AIDS centers, NGOs, hospitals, narcology clinics and poly clinics in all regions of Tajikistan (except remote GBAO region).

**Results:** The final report was presented to key stakeholders in the country on December 16, 2022. It analyzes in detail the HIV epidemic in the country, summarizes the findings and provides 45 recommendations classified to aspects of ART optimization, such as treatment regimens, clinical management of adults and children living with HIV, opportunistic diseases and cancers, prevention of mother-to-child transmission and HIV testing approaches.

**Conclusions:** Report recommendations and evidence-based data, underlying them, were included to the updated HIV Clinical Protocol approved by the Ministry of Health on June 2, 2023.

Moreover, the updated protocol arguments in support of U=U campaign were subsequently used for the advocacy for the decriminalization of HIV risk exposure in Tajikistan. This resulted in the adoption on December 26, 2023 the Resolution of Supreme Court of Tajikistan acknowledging that people living with HIV with undetectable viral load do not pose a risk of HIV transmission to their sexual partners.

## WEPEF698

Enhancing access and accountability: the role of a policy table in addressing drug pricing disparities in Brazil

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**Background:** The trend of increasing drug prices compromises a significant portion of public and private budgets in Brazil. Patented medicines further accentuate these expenses, because their prices reflect the pricing power of the pharmaceutical industry and the buyer's willingness to pay. This is particularly important for several antiretroviral (ARV) drugs, which are or have been under patent protection. This study aims to develop a policy table as an analytical and strategic instrument for monitoring ARV drug prices in Brazil.

**Methods:** The treatment schemes and dosages were taken from the Brazilian HIV treatment guideline, the national prices and their suppliers were taken from a document received from the Ministry of Health through the Access to



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### WEPEF700

Community and civil society involvement in reporting cases of violence against LGBTQI+ populations in Mali: the case of the Anti-AIDS Coalition

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**Background:** Discrimination, harassment, persecution and denigration of the LGBTQI+ community have reached high levels in Africa in general, and in Mali in particular. LGBTQI+ have been forcibly evicted from their homes, arbitrarily arrested by the police, and/or imprisoned on suspicion of having had homosexual relations or because of their gender identity. According to the 2019 biobehavioral study in Mali, 24.5% of men who have sex with men (MSM) have experienced stigma, discrimination or violence (IBBS2019).

The Coalition Anti-Sida (CAS) is committed to promoting and defending the rights of LGBTQI+ communities despite a highly homophobic environment, through awareness-raising activities among LGBTQI+ members, reporting cases of human rights violations, and managing cases of violence.

**Description:** We conducted a descriptive, cross-sectional analysis of CAS's programmatic data on violence from January to October 2023. The aim was to demonstrate the effectiveness of CAS's interventions with LGBTQI+ members through the collection and analysis of cases of violence identified during educational talks and by denouncing them directly to peer educators.

**Lessons learned:** A total of 367 LGBTQI+ members were victims of violence, 49% (180/367) of whom were transgender, 25% (92/367) bisexual, 23% (84/367) gay and 3% (11/367) other members of the LGBTQI+ community. A total of 137 LGBTQI+ members were under the age of 25 (37%). Perpetrators of violence were dominated by neighborhood youth involved in 176 cases and family members involved in 75 cases or 48% and 20% respectively. All survivors received post-violence care.

**Conclusions/Next steps:** These results demonstrate the need to pursue our efforts in an environment of insecurity and multidimensional crisis that encourages acts of human rights abuse.

Also, programs in Africa should systematically ask questions about the types of violence suffered by their populations in order to provide supportive care and better monitor and control the growing number of human rights violations against LGBTQI+ people that we see in the region. **Keywords:** LGBTQI+, violence, CAS.

### WEPEF701

Entering a new normal: redefining HIV advocacy in a hostile political landscape

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**Background:** In September of 2023, the five year authorization of the President's Emergency Plan for AIDS Relief (PEPFAR) was set to expire. Typically, PEPFAR's U.S. legislative reauthorization is a "check the box" formality.

However, in the spring of 2023, there was a shift in the political discourse surrounding the program as U.S.-based right wing think tanks began a campaign disingenuously accusing PEPFAR of funding abortions. This put both U.S. and global HIV advocacy agendas at significant risk.

**Description:** Even as a few vocal decision makers broke from long-standing bipartisan support for PEPFAR, the community of champions and advocates stood unified in its defense. This diverse coalition – reproductive rights groups, LGBTQ activists, technical implementers, and faith-based organizations – along with key U.S. Congressional staff worked to counter the false narrative. Strict message discipline and aggressive media outreach began in the late Spring. In mid-September, the community launched an aggressive digital campaign, with a unifying theme of "Proud of PEPFAR."

Campaign assets included videos and messages lifting up the voices of individuals and groups in PEPFAR partner countries. The campaign yielded significant awareness including 580,000 impressions from paid advertising and over 1,300 uses of hashtag in a single week.

**Lessons learned:** There remains broad support for PEPFAR among the U.S. political class. However, the program is now open to more frequent attacks rife with misinformation. The only way to counter the combative environment is for advocates to maintain a disciplined, unified voice and conduct outreach using cohesive tools and messages over a prolonged period of time.

**Conclusions/Next steps:** The advocacy community must adapt to a new political environment where PEPFAR no longer benefits from its "special status" within the political class, who have previously been willing to support the program at all costs.

Though traditionally a "big tent" comfortable with diverging objectives, the newly combative environment requires PEPFAR advocacy to adhere to a greater alignment and closer collaboration.



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## WEPEF702

Advancing human rights to break the cycle of  
violence against PWIDs and TG in DRC

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Republic of the*

**Background:** Over the course of two years, Repro Justice Congo spearheaded a comprehensive initiative to dismantle human rights barriers hindering access to essential HIV services for two key population groups including people who inject drugs (PWIDs) and transgender individuals (TG) in the East of the Democratic Republic of Congo (DRC).

The primary focus was on ensuring these groups could adequately access stigma-free HIV prevention and treatment services, as well as facilitating their access to justice.

**Description:** Implemented in the Province of North-Kivu from January 2021 to December 2023, this initiative targeted key populations, namely PWIDs and TGs, recognized as pivotal contributors to the national response against HIV. The project focused on empowering paralegals, democratically elected from, within PWIDs and TGs communities, equipping them with knowledge on the collection, documentation, and reporting of human rights violation cases. Simultaneously, police officers, prosecutors, and lawyers, were provided with information essential to understanding the rights of PWIDs and TGs concerning access to HIV services. Weekly meetings between paralegals and human rights lawyers facilitated the discussion and screening of documented cases as well as evidences for further legal actions in courts.

**Lessons learned:** Over two years, the project documented and submitted 239 human rights violation cases, leading to 67 court submissions. Eight healthcare providers were found guilty of discrimination against PWIDs and TGs, resulting in compensation for two PWIDs and one TG. With 47 cases pending, the initiative prompted a positive shift in healthcare providers' attitudes, fostering the establishment of complaint boxes in five health facilities. A crucial lesson emerged, revealing disparities in understanding key populations' rights between trained prosecutors and non-trained judges.

**Conclusions/Next steps:** The project's outcomes are profoundly significant for HIV prevention, treatment, and care. Addressing 67 violation cases against key populations, especially PWIDs and TGs, the initiative not only rectified discrimination but affirmed the importance of safeguarding rights for effective HIV care. Prosecuting healthcare providers for discrimination highlights tangible impact on accountability. The establishment of complaint boxes signals a proactive approach within health facilities, fostering a supportive environment.

Lessons learned, especially the differing perspectives of lawyers and judges, underscore the ongoing need for further engagement with judges.

## HIV virology

## THPEA001

## Genetic determinants of HIV-1 subtype C Nef-mediated SERINC3 down-regulation

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**Background:** HIV-1 Nef is a small accessory protein that performs numerous functions contributing to viral pathogenesis, making it an attractive antiviral target. Nef-mediated down-regulation of the host restriction factors SERINC3 and SERINC5 is an important mechanism by which Nef enhances virion infectivity, however SERINC3 down-regulation is less well-studied than SERINC5 down-regulation, especially in HIV-1 subtype C.

This study therefore aimed to identify amino acids required for optimal SERINC3 down-regulation by subtype C Nef. In addition, the contribution of SERINC3 down-regulation activity to overall Nef function was investigated using Nef fitness model-derived E values as a proxy for overall Nef function *in vivo*.

**Methods:** SERINC3 down-regulation activity of 107 previously constructed patient-derived Nef clones was measured using a flow cytometry-based assay in a CD4+ T cell line. Specific Nef amino acids associated with a significant increase or decrease in SERINC3 down-regulation activity were identified using codon-by-codon Mann-Whitney U tests. A univariate linear regression was used to assess the contribution of SERINC3 down-regulation activity to dE0 and dE90 E values that were predicted for each Nef clone using Ising and Potts models of Nef fitness, respectively.

Since Nef-mediated CD4 and HLA down-regulation ability, alteration of TCR signalling ability, and SERINC5 down-regulation ability were previously measured *in vitro* for the same Nef clones, a multivariate quantile regression with all standardized Nef functions was performed to adjust for multiple Nef functions.

**Results:** Statistical analysis of sequences and functional data identified 30 amino acid variants associated with either increased (3G, 5W, 8S, 9S, 10I, 11V, 12G, 20I, 32A, 38D, 51T, 64G, 81F, 101V, 108E, 116H, 205D) or decreased (3N, 10K, 8R, 12E, 20M, 32T, 49P, 51N, 81Y, 108D, 116N, 188L, 205N) Nef-mediated ability to down-regulate SERINC3 ( $p < 0.05$  and  $q < 0.3$ ), with 63% in the N-terminal domain. SERINC3 down-reg-

ulation activity ( $p < 0.0001$ ) was a significant predictor of E values in univariate analyses and remained significant in multivariate analyses adjusting for other Nef functions ( $p < 0.02$ ).

**Conclusions:** The results suggest that SERINC3 down-regulation is a significant contributor to overall Nef function and identify amino acids associated with differential SERINC3 down-regulation ability, which may have relevance for therapeutic designs targeting Nef.

## THPEA002

## Comparison of HIV-specific broadly neutralising antibodies resistance prediction using plasma RNA, blood, and gut tissue HIV proviral sequences

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**Background:** HIV-specific broadly neutralising antibodies (bNAbs) such as 3BNC117 and 10-1074 have demonstrated long-term viral control, without anti-retroviral therapy. Screening potential participants for bNAAb resistance is common in clinical trials, however the optimal strategy to determine viral sensitivity, and whether plasma virus or proviral samples can be used is yet to be defined.

**Methods:** We analysed samples (PBMC-derived HIV DNA sequences and rebound plasma envelope sequences ( $n=17$ ), paired[SFI] baseline rectal biopsies ( $n=4$ )) from participants in the unblinded placebo arm of the RIO trial (RCT of 3BNC117-LS and 10-1074-LS in primary HIV infection; NCT04319367).

Single envelope sequences were amplified from proviral DNA (mean 18 sequences per person, range: 2-43) or from cDNA reverse transcribed from rebound plasma RNA (mean 6 sequences per person, range: 1-26). bNAAb resistance was predicted through bNAAb-rep (<https://github.com/RedaRawi/bNAAb-ReP/tree/master>) and an in-house algorithm (developed at Rockefeller University). Maximum likelihood trees with x1000 bootstraps were generated using R.

**Results:** Very similar sensitivity predictions were obtained from sequences from either plasma virus or provirus DNA using the Rockefeller algorithm (94.4%). Likewise, the mean difference in neutralisation probabilities between baseline and rebound sequences were -0.001 and -0.008 for 10-1074 and 3BNC117, respectively ( $p$ -value=0.35). All but one participant had baseline proviral sequences predicted as sensitive to both bNAAbs.

Of four participants with available baseline rectal proviral sequences, two individuals had rebound viruses that were more closely related to the rectal proviral sequences compared to PBMCs potentially supporting a gut source for the rebound virus. Median minimum pairwise distanc-



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es (mMinPD) between rebound viraemia, and baseline blood or gut samples were small (PBMC mMinPD=0.001, range: 0 – 0.011; gut mMinPD=0.00097, range: 0 – 0.0027).

**Conclusions:** HIV-1 envelope sequence-based bNAb resistance screening using proviral DNA from PBMC was consistent with predicted viral sensitivities from plasma virus at time of rebound.

This has implications for sample choice for bNAb screening. The study findings are limited by small numbers, and to participants with proviral sequences predicted as sensitive at baseline.

## THPEA003

Phenotypic characterization of subtype A and AC recombinant transmitted/founder viruses from a Rwandan heterosexual transmission cohort

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**Background:** Understanding HIV-1 transmission and early infection is key to successful approaches to prevent HIV-1 transmission. HIV-1 subtypes have distinct geographical distributions, with subtypes A, C, D, and inter-subtype recombinants circulating in sub-Saharan Africa. Subtype differences in disease progression have been observed in the IAVI early infection cohort (Protocol C), with individuals who had acquired subtype A viruses exhibiting slower CD4 decline and progression to AIDS diagnosis, as well as lower viral loads approximately two years post seroconversion. Despite this, there are few authentic infectious molecular clones (IMC) of subtype A and AC recombinant transmitted founder (TF) viruses.

**Methods:** We previously performed single genome amplification and sequencing of viruses isolated from the acutely infected Rwandan Protocol C cohort participants. In this study, 20 infectious molecular clones, derived from 16 subtype A1 and 4 AC unique recombinant TF sequences, were constructed using high efficiency strategies described previously. We have characterized these viruses phenotypically by performing in vitro replication assays in healthy donor CD4+ T cells. All viruses were characterized with regard to their sensitivity to neutralization by the broadly neutralizing antibodies VRC01, N6, PG16, PGT128 and 10E8.

**Results:** The replicative capacity of the viruses derived from the IMC in CD4+ T cells varied over 50-fold, as we have observed for subtype C TF viruses, and key amino acids linked to replicative capacity were identified. The replicative capacity of these viruses when compared with that

of subtype C TF viruses and was not significantly different. In neutralization assays, the CD4 binding-site directed N6 bNAb showed the most potent and broad neutralization of this panel of TF viruses, while 10E8 exhibited breadth but lower potency.

All viruses were inhibited by maraviroc but not AMD-3100, consistent with CCR5 tropism.

**Conclusions:** The lack of a difference in replicative capacity between subtype A and C TF viruses suggests that this is not the basis for differences in transmission and pathogenesis between these subgroups. This panel of well characterized authentic full-length subtype A and AC IMC will be critical for further experiments aimed at understanding the role of virus subtype in HIV-1 transmission and pathogenesis.

## THPEA004

Characterisation of foreskin tissue primary myeloid cells after ex vivo Subtype C and D HIV-1 infection

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**Background:** Despite subtype C accounting for more than 50% of global HIV infections and subtype D being associated with faster disease progression, there is little information describing the modes of subtype C and D mucosal transmission and the role of myeloid cells in HIV-1 infection. We therefore used primary foreskin cells to assess the susceptibility of myeloid cells to HIV-1 subtype C and D infections.

**Methods:** Foreskins were obtained from 15 HIV negative South African men, aged between 18-45, undergoing medical circumcision. Primary foreskin cells were harvested using previously established methods, followed by 24hr infection with virions generated from infectious molecular clones representing clinical isolates of HIV-1 subtype B, C and D at an MOI of 0.05. A 28-colour multiparameter flow cytometry panel was used to immunophenotype HIV-1 infected cells, identified as those expressing p24. Supernatants from infected cells were collected on 4- and 6-days post infection (dpi) to measure the amount of secreted nanoluciferase, indicative of infection and further confirmed by RT-qPCR.

**Results:** Median of 116 million (range: 80-150 million) foreskin cells with a viability of 60-70% were isolated. The median frequency of myeloid cells (CD14<sup>+</sup>CD11c<sup>+</sup>) was 9.5% (ranged: 1-15%) and T cells (CD45<sup>+</sup>CD3<sup>+</sup>) 2.3% (range: 1.5-5%) of the total number of foreskin cells. Using our mul-


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tiparameter flow cytometry panel, we identified macrophages (CD206<sup>+</sup>CD68<sup>+</sup>CD163<sup>+</sup>), dendritic cells (CD209<sup>+</sup>CD141<sup>+</sup>CD83<sup>+</sup>), Langerhans cells (CD207<sup>+</sup>CD1a<sup>+</sup>), CD4<sup>+</sup> and CD8<sup>+</sup> T cells in the foreskin tissue. Preliminary data shows on average, 1% of myeloid cells (CD14<sup>+</sup>CD11c<sup>+</sup>p24<sup>+</sup>) and 2% T cells (CD45<sup>+</sup>CD3<sup>+</sup>p24<sup>+</sup>) were infected with subtype B. After 4dpi, subtype C secreted nanoluciferase activity was 12,1- fold more than subtype B and 3,2-fold more subtype D. Nanoluciferase detection decreased on 6 dpi in both subtype C (0,5-fold) and D (0,9-fold) whereas a 1,6- fold increase was detected in subtype B supernatants, compared to 4 dpi.

**Conclusions:** These findings suggest that primary foreskin cells are differentially susceptible to HIV-1 infection. Our data suggest subtype differences in ex vivo cellular infection of foreskin cells, the site of predominant heterosexual HIV acquisition. Understanding the immunological niche within the foreskin will lead to a more holistic understanding HIV-1 acquisition in the male genital mucosa.

## HIV pathogenesis

### THPEA005

Deep phenotyping of immune cell populations in older PWH identifies a persistent immune dysfunction

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**Background:** The prevalence of age-related comorbidities is higher among people with HIV (PWH) on antiretroviral therapy (ART) than among uninfected individuals. We conducted a comprehensive analysis of T- B-, NK cells, and monocytes to evaluate age-associated immune defects in older PWH and HIV-negative individuals.

**Methods:** We included 29 PWH (OVER50 cohort, 85% males, median age 72 IQR [70-75] years) on suppressive-ART for a median of 16 IQR [8-20] years, and 24 age-matched HIV-negative controls (HNC). We characterize subset distribution, activation, senescence, exhaustion and telomeric size on T-cells by flow-FISH full-spectrum cytometry and studied monocytes, B- and NK cells by conventional flow cytometry.

**Results:** Several comorbidities were increased in the PWH (median of total comorbidities PWH 3.6 IQR [2-5] Vs HNC 3.25 IQR [2-5]), being only dyslipidemia significantly higher. Within the T-cell compartment, PWH exhibited a reduce frequency of CD4 T cells and a higher proportion of CD8 T cells compared to the HNC group (all p<0.01), but similar CD4 and CD8 T-cell subset distribution.

No differences were observed in the frequency of senescent T-cells between groups, but PWH showed shorter relative telomere length in the central (p=0.03) and transitional (p=0.05) CD8 memory T-cell subsets. PWH show a persistent activation across most CD4 and CD8 T-cell subsets and increased exhaustion in CD4 memory cells (p<0.01).

Regarding monocytes, we observed a similar distribution of subpopulations between groups. Surprisingly, CD14<sup>+</sup>CD16<sup>-</sup> subset from PWH showed lower expression of siglec-1 compared to HNC (p=0.01), suggesting a desensitization to Type-I IFN-signaling. As for NK cells, PWH had a higher proportion of the dysfunctional subset CD56<sup>-</sup>CD16<sup>bright</sup>, increased coexpression of NKG2C<sup>+</sup>CD57<sup>+</sup> (p<0.01) and Tim-3 (p=0.01) in total NK cells.

Finally, we found the B-cell compartment of PWH was enriched in CD27-IgD<sup>+</sup>Naïve (p=0.01) and mature (p=0.03) B cells in detriment of the IgD<sup>+</sup>CD27<sup>+</sup>Marginal Zone-like B and resting memory cells (p<0.001).

**Conclusions:** Despite long suppressive ART, older PWH have several distinct immune dysfunctions across cell types associated with HIV replication that do not totally resolve after ART initiation (HIV effect). Other well-described immune differences are not found to be significant in our study groups, suggesting that some dysfunctions equalize over time (age effect).

**Conclusions:** Despite long suppressive ART, older PWH have several distinct immune dysfunctions across cell types associated with HIV replication that do not totally resolve after ART initiation (HIV effect). Other well-described immune differences are not found to be significant in our study groups, suggesting that some dysfunctions equalize over time (age effect).

### THPEA006

Plasma levels of galectin-3 and -9 correlate with gut microbial dysregulation and the persistence of mucosal SIV reservoirs in rhesus macaques

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**Background:** Despite suppressive antiretroviral therapy (ART) in people with HIV (PWH), the gut mucosa is a site of HIV persistence, microbial dysbiosis, and immune dysregulation. Galectins (Gal) are  $\beta$ -galactoside-binding immunoregulatory proteins involved in gut mucosal inflammatory processes and host-microbiome homeostasis. In PWH, Galectin-3 and Galectin-9 have been associated







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with systemic inflammation and peripheral HIV reservoirs. Here, we investigated the dynamics of plasma galectins through the course of SIV disease and ART suppression in relation to gut microbial and viral patterns.

**Methods:** Nine rhesus macaques (RM)s were CD8-depleted and inoculated with SIVmac251. ART was administered starting at week 2 and discontinued (ATI) at week 14. From weeks 2 to 23, rhesus macaques received infusions of anti- $\alpha 4\beta 7$  mAb (n=5) or IgG (n=4) every three weeks.

Gal-1, -3, and -9 were measured in plasma (Luminex), and 16S sequencing and short-chain fatty acids (SCFA; liquid chromatography-tandem mass spectrometry) quantitation was performed in stool at baseline (weeks -3 to -1), peak viremia (week 2), ART suppression (week 14), and ATI (week 23).

DNA and RNA were isolated in the duodenum and ascending colon and quantified for SIV (ddPCR and qPCR, respectively). Longitudinal differences and associations were determined by adjusted mixed-effects modeling and Kendall rank correlations, respectively.

**Results:** Plasma Gal-9 was elevated during peak viremia, ART suppression, and ATI compared to pre-infection, while Gal-3 was elevated during viremia but lower during ART (all  $p < 0.05$ ). Higher Gal-3 levels correlated with changes in bacterial relative abundances, lower diversity (Simpson, Simpson Evenness, and Shannon indices; all  $\tau > .64, p < .012$ ), and higher levels of total SCFA, acetate, and propionate (all  $\tau > .64, p < .022$ ) during ART.

Notably, higher Gal-9 levels measured at viremia, ART suppression, ATI, and necropsy all positively correlated with increased SIVgag DNA levels in the ascending colon (all  $\tau > .56, p < .018$ ). No differences were found between groups in the above measures, and all differences and correlations were irrespective of infusion treatment.

**Conclusions:** Our data demonstrates whereas circulating Galectin-3 is linked to alterations in the gut microbiota, Galectin-9 consistently serves as a proxy for colonic SIV reservoir burden. Our findings potentially identify novel biomarkers of clinical relevance and warrant determining whether these disturbances are reflected in PWH.

## THPEA007

### Intracellular expression of Tat second exon in a T-cell *in vitro* model induces a global DNA hypomethylation

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**Background:** Different cohort studies have consistently shown that persons with HIV, have an increased risk of developing comorbidities even when virological suppression is achieved. HIV acquisition leads to epigenetic changes in immune cells that may trigger accelerated aging, but the underlying mechanism is currently unknown. The regulatory protein TAT (Transactivator of transcription) increases viral RNA elongation and transcription.

In addition, the full-length TAT, can alter host gene expression. Recent studies report that a general DNA hypomethylation process occurs during aging. Therefore, we aim to determine whether TAT may be altering the DNA methylation patterns, resulting in accelerated aging and to elucidate the role of TAT second exon.

**Methods:** Jurkat cells stably transfected with either full-length TAT (TAT<sub>101</sub>), the first exon (TAT<sub>72</sub>), or an empty vector (TEToff) were used. Changes in DNA methylation were analysed on bisulfite-converted DNAs using a MethylationE-PIC BeadChip microarray. We also identified genes both differentially methylated and expressed with transcriptomic data from RNA-seq.

Finally, the activity and abundance of DNMT proteins, which are responsible for adding methyl groups to DNA, were analysed.

**Results:** Methylation analysis showed 50 differentially methylated genes in TAT<sub>101</sub> expressing cells while only 1 were in TAT<sub>72</sub> when compared to TEToff. Overall, TAT<sub>101</sub> DNA was more hypomethylated than TAT<sub>72</sub> and TEToff DNA. A correlation between methylation and transcription was observed in 207 genes like CDK6, CD3D and RAB27A in TAT<sub>101</sub> but only 8 in TAT<sub>72</sub> when comparing with TEToff line. Functional analysis showed that changes in methylation pattern in the presence of TAT<sub>101</sub> correlated with modifications in pathways like T-cell activation and differentiation or lipid antigen binding. DNMT activity, was lower in TAT<sub>101</sub> (7,25 OD/h/mg) compared to TEToff (11,84) and was also compared to TAT<sub>72</sub> (9,11) (mean n=3), compatible with the hypomethylated DNA observed in TAT<sub>101</sub>.

**Conclusions:** These findings suggest that HIV-TAT protein, and specifically the full-length isoform, can induce changes in relevant biological pathways through epigenetic mechanisms. This may contribute to the observed accelerated aging in persons with HIV that can also be mea-

sured by some epigenetic clocks. Therefore, these results help to understand the mechanism by which accelerated aging occur, serving as a potential anti-aging target.

## THPEA008

### Characterization of proviral/human DNA crosstalk in the context of clonal cell expansion in chronic HIV-1 infection

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**Background:** The site of proviral integration within the human genome plays a principal role in crosstalk between proviral and human DNA. In acute infection, integration site choice is determined by genetic, epigenetic and mechanistic factors. However, during chronic infection, selective pressure can alter the initial integration site bias.

As a result, individuals with chronic HIV infection exhibit genomic hotspots or recurrently-detected integration genes (RdIGs) where proviral-derived sequences are preferentially located.

The general objective of this project is to examine the impact of proviral integration in chronic HIV-1 infection on the genome of target cells, and to explore a way to leverage this knowledge to improve clinical management for people living with HIV.

**Methods:** Published HIV integration sites from PLWH were collected and analyzed in silico and gene loci of interest for generation of chimeric transcripts were selected. PBMC samples from a cohort of PLWH on ART were obtained (source German Center of Infection Research) for screening of expression of candidate chimeric transcripts by RT-qPCR assays. Lentiviral expression vectors for chimeric transcripts were generated to assess functional impact of transcripts in primary CD4+ T cells. Downstream effects were assessed using transcriptome analysis, functional assays and FACS-based immune phenotyping.

**Results:** By meta-analysis of proviral integration sites in chronic HIV-1 infection, we identified RdIGs where proviral integration could lead to aberrant integration gene expression through LTR exaptation and chimeric transcription in chronic infection. Cohort PBMC samples were tested for detection of chimeric transcripts from these prime candidate loci, using ddPCR-based RT qPCR. We furthermore show that for a subset of candidates alternative start codons can give rise to proteins derived from

chimeric transcripts. We demonstrate the effect of chimeric transcript overexpression in primary CD4+ T cells using proliferation assays and immune cell phenotyping.

**Conclusions:** By identifying candidate genes, characterizing chimeric proviral/human transcription events, and analyzing how these events might impact on HIV-1 target cell physiology, this project aims to provide new insights into chronic HIV-1 infection that could lead to new parameters for disease monitoring and novel targets for therapeutic approaches.

## THPEA009

### Plasma markers of gastrointestinal mucosal barrier dysfunction in PLWH receiving cART

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**Background:** Despite effective cART people living with HIV (PLWH) still encounter elevated rates of morbidity and mortality. HIV-1 replication in the gastrointestinal (GI) tract leads to CD4 depletion and epithelial barrier disruption resulting in inflammation. The invasiveness of gut biopsies emphasizes the need for validated non-invasive plasma biomarkers to measure GI damage.

We analyzed possible links between structural and immune-related gene expression in colon mucosa with plasma biomarkers indicative of gut dysfunction and microbial translocation in cART treated PLWH.

**Methods:** Colonic mucosal biopsies and plasma from 40 cART responder patients were analyzed. Expression of 14 structural genes (*TJP1*, *TJP2*, *TJP3*, *OCLN*, *CLDN1*, *CLDN2*, *CLDN3*, *CLDN4*, *CLDN7*, *CLDN15*, *MMP3*, *MMP9*, *F11R*, *MYLK*) and 14 immune-related genes (*MAPK3*, *STAT3*, *STAT6*, *TGF-β1*, *IFN-γ*, *IL-1β*, *IL-6*, *IL-13*, *IL-17A*, *IL-22*, *TNF*, *SLPI*, *β-DEF1*, *β-DEF2*) was assessed by RT-PCR. Plasma biomarkers of intestinal damage (I-FABP, zonulin, OCLN, E-cadherin, REG3α, and TFF3), microbial translocation and systemic inflammation (LPS, LBP, sCD14, and IL-6) were measured by ELISA. Correlation analyses and multiple linear regression models were applied to verify possible associations between colonic and plasmatic markers.

**Results:** Spearman correlation analysis showed that:

1. Plasma OCLN positively correlates with *CLDN4* ( $r=0.362$ ,  $p=0.022$ ), *β-DEF2* ( $r=0.313$ ,  $p=0.049$ ), *IL-17A* ( $r=0.425$ ,  $p=0.006$ ), and *STAT3* ( $r=0.391$ ,  $p=0.012$ ) expression in biopsies, and



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with I-FABP ( $r=0.312$ ,  $p=0.050$ ), E-cadherin ( $r=0.902$ ,  $p<0.001$ ), TFF3 ( $r=0.347$ ,  $p=0.028$ ) and IL-6 ( $r=0.346$ ,  $p=0.029$ ) detection in plasma;

2. Plasma E-cadherin positively correlates with *CLDN4* ( $r=0.431$ ,  $p=0.006$ ), *IL-17A* ( $r=0.390$ ,  $p=0.013$ ), *STAT3* ( $r=0.515$ ,  $p=0.001$ ) and *STAT6* ( $r=0.314$ ,  $p=0.049$ ) expression in biopsies, and with OCLN plasma levels ( $r=0.902$ ,  $p<0.001$ );

3. Plasma IL-6 negatively correlates with *CLDN3* ( $r=-0.323$ ,  $p=0.042$ ), *CLDN15* ( $r=-0.480$ ,  $p=0.002$ ), *F11R* ( $r=-0.373$ ,  $p=0.018$ ), *OCLN* ( $r=-0.333$ ,  $p=0.036$ ), *TJP1* ( $r=-0.375$ ,  $p=0.017$ ), and *TJP2* ( $r=-0.330$ ,  $p=0.038$ ) expression in biopsies while positively correlate with plasmatic OCLN ( $r=0.346$ ,  $p=0.029$ ) and TFF3 ( $r=0.629$ ,  $p<0.001$ ).

Adjusted R square of multiple linear regression models showed a strong linear association between OCLN and E-cadherin (0.991).

**Conclusions:** Measuring OCLN, E-cadherin and IL-6 in plasma offers an indirect evaluation of gut barrier function. These results could help in developing non-invasive diagnostic strategies to assess GI integrity in virologically suppressed PLWH and might be useful to identify risk biomarkers for non-AIDS comorbidities.

## THPEA010

Quantification of HIV-1 RNA in purified plasmatic extracellular vesicles may inform on immune dysfunction in people living with HIV-1

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**Background:** HIV-1 infection causes an immune system dysfunction marked by its constant activation. Antiretroviral therapy (ART) suppresses viral replication in most people living with HIV-1 (PLWH), but the damages to the immune system are not fully restored despite many years on treatment. The mechanisms underlying the dysfunction are not yet elucidated, and identifying new biomarkers will help understand this phenomenon. Recent studies reported that extracellular vesicles (EVs) and their microRNA-155 content are biomarkers of immune activation and viral replication in PLWH.

Further analysis in a humanized mice model revealed the enrichment of HIV-1 RNA in plasma two EV subtypes, large and small EVs.

**Methods:** Our objective was to measure the distribution of HIV-1 RNA in large and small EVs purified from the plasma of ART-naïve and ART-treated PLWH. We also determined the value of EV-associated HIV-1 RNA as a biomarker of immune activation and viral replication in PLWH. Large EVs were purified from the plasma by centrifugation at 17,000  $\times g$ , and small EVs by precipitation with ExoQuick.

**Results:** Overall, large and small EVs contained a similar amount of HIV-1 RNA. In ART-naïve PLWH, large EVs contained more viral RNA than small EV. Plasma viral load had a stronger correlation with the large EVs viral RNA.

Small EVs viral load positively correlated with CD4/CD8 T cell ratio. In ART-treated PLWH, small EVs viral RNA was negatively correlated with microRNA-155 contents of EV. In ART-naïve PLWH, large EVs viral load was positively correlated with EV-associated microRNA-155.

**Conclusions:** In summary, a higher concentration of HIV-1 RNA in large EVs was associated with known biomarkers of viral replication and immune activation. HIV-1 RNA small EVs appears to be linked to immune restoration in PLWH receiving ART.

## THPEA011

Gut dysbiosis and systemic inflammation as obstacles for CD4 recovery in undetectable patients with HIV

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**Background:** A group of patients living with HIV (PLWH) fail to restore CD4 T cell count despite successful antiretroviral therapy (ART). We hypothesized that an altered gut bacteriome composition-driven pro-inflammatory state might hinder immune reconstitution following ART initiation.

**Methods:** We conducted a pilot cross-sectional study. Undetectable patients under medical surveillance at two HIV clinic centers in Santiago (Chile), and HIV-negative volunteers (HV) were invited to participate. Patients under treatment were divided into 2 groups: immune responders (IR) and immune non-responders (INR), according to their absolute CD4 count and to their CD4 count increase following 12 months of ART initiation. Gut bacteriome composition was analyzed using rectal swabbing to perform 16S rRNA gene sequencing. PBMCs were isolated from blood samples and CD4 T lymphocytes activation profiles were assessed by flow cytometry. Plasma cytokines and microbial translocation-associated markers were measured using a Luminex® kit.

**Results:** 21 IRs, 12 INRs and 20 HV were enrolled. Most of them were male (89%) and MSM (79%). HV were younger (28.5 vs 45 and 50 years,  $p<0.0001$ ), had lower BMI and consumed more alcohol and marijuana than PLWH. We found elevated pro-inflammatory cytokines (IL-1 $\beta$ , IL-6, IL-18) among PLWH, as well as elevated markers of gut dysfunction (MMP-7) and microbial translocation (soluble CD163), with no difference between IRs and INRs.

Also, we found increased abundance of IFN- $\gamma$ <sup>+</sup> CD8<sup>+</sup> T cells and activated CD4<sup>+</sup> T cells in INRs in comparison to the other two groups. Finally, when compared INR and IRs, an increased relative abundance of *Prevotellaceae* (16.5 vs 12.8%), *Oscillospiraceae* (12.7 vs 7.7%) and *Lachnospiraceae* (12.7 vs 8.4%) was seen, as well as decreased abun-

dance of *Peptoniphilaceae* (10.9 vs 17.6%). However, we did not find significant differences in alpha- and beta diversity among the groups.

**Conclusions:** Despite elevated proinflammatory cytokines, markers of microbial translocation and elevated IFN- $\gamma$ <sup>+</sup> CD8<sup>+</sup> and CD4<sup>+</sup> T cells, we did not find a relevant difference in gut bacteriome compositions of PLWH and HV. Some uncontrolled variables might explain this result (BMI, substance consumption, rectal douching). Further research is warranted to elucidate the role of dysbiosis as a driver for immune activation and inflammation.

## Host immune responses

### THPEA012

Recognition of a conserved HLA-C\*07 restricted CTL epitope in Nef is associated with lower CD4-counts in HIV-1+ individuals

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**Background:** HIV-1 can evade from HIV-1-specific cytotoxic T-cells (CTLs) by Nef-mediated downregulation of HLA-A and HLA-B. As HLA-C is not downregulated by Nef, HLA-C-restricted CTLs could play an important role in the control of HIV-1. The conserved HLA-C\*07-restricted Nef epitope RQDILDWIY (RY10) overlaps with the HLA-B\*13-epitope RQDILDWL which is associated with a better control of HIV-1.

To assess whether recognition of RY10 has a beneficial effect, we investigated recognition of RY10 in HLA-C\*07+ individuals living with HIV.

**Methods:** Recognition of RY10 was analyzed in 65 HLA-C\*07+ individuals living with HIV. All were on antiretroviral therapy (ART) for a median time of 163 months (range 1-403). The median CD4 count was 661/ $\mu$ l (range

23-1549). The median viral load was <20 copies/ml (range <20-720, suppression <20 copies/ml in 34/65, low-level viremia in 31). 10\*10<sup>6</sup> peripheral blood mononuclear cells (PBMCs) were stimulated with peptide RY10 and outgrowing cells were tested for peptide recognition in an IFN- $\gamma$  ELISpot assay.

**Results:** RY10 was recognized by 19 of 65 (29.2%) of the HLA-C\*07+ individuals. In univariate analyses (Spearman correlation, Man-Whitney-U-Test) recognition of RY10 was significantly associated with shorter time on antiviral therapy, lower CD4+ T-cell counts and lower percentages of CD16+ NK-cells, but not with lower viral loads or lower rate of low level viremia. Current CD4 counts correlated to higher pre-ART CD4 counts, lower pre-ART viral loads, longer treatment duration and higher current CD8 counts. Multivariate linear regression analysis adjusting for current CD4 counts, RY10-recognition, viral loads and treatment duration (confounders) demonstrated a significant association of lower CD4-counts with recognition of RY10 independent of treatment duration and viral loads. C7 homozygosity (10 subjects) showed no significant correlation to either parameter except for higher pre-ART viral loads.

**Conclusions:** Nef-RY10-specific T-cell responses could be detected in a subset of HLA-C\*07+ HIV-1+ individuals on ART. They were associated with lower CD4 counts, but not with a more efficient viral suppression.

Further studies are needed to investigate whether lower CD4 counts in individuals on ART with recognition of RY10 could be due to higher residual viral replication in lymphatic tissue despite viral control in peripheral blood.



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## THPEA013

### The impact of antiretroviral timing on the metabolic dynamics of NK cells in females living with HIV-1 subtype C infection

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**Background:** HIV-1 infection is characterized by generalized immune dysfunction, which in the natural killer (NK) cell compartment manifests in the accumulation of a functionally impaired CD56<sup>neg</sup> NK cell subset. Immunological damage is partially corrected by antiretroviral therapy (ART) and the timing of ART initiation may influence the restoration of optimal immune mechanisms. Although the specific mechanisms underlying differential immune reconstitution following ART are not well understood, emerging evidence suggests the role of immunometabolism as a critical determinant of antiviral immunity. We assessed the impact of HIV-1 and ART timing on the metabolic functions of NK cells.

**Methods:** Participants were 18–27-year-old females living with HIV-1 subtype C infection from Durban, South Africa who initiated ART either during hyperacute (before peak viremia; HHI) or chronic (CHI) infection. Nutrient uptake by NK cells was longitudinally assessed in PBMCs by flow cytometry using fluorescently labelled metabolite analogues.

**Results:** Viral suppression and CD4+ T cell recovery occurred rapidly in HHI-treated individuals but was comparatively slower in CHI-treated individuals. The NK cell compartment expanded during HHI and thereafter normalized following ART initiation in both HHI- and CHI-treated individuals. Significantly higher frequencies of the anergic CD56<sup>neg</sup> NK cell subset, accompanied by a decline of CD56<sup>dim</sup> NK cells, was observed in CHI and these perturbations in subset distribution persisted in CHI-treated individuals up to 12 months post-ART initiation. No significant changes to NK cell subset distributions were observed in HHI-treated individuals in comparison to uninfected individuals. The expanded CD56<sup>neg</sup> NK cell subset in CHI displayed a tendency for lower glucose

uptake compared to CD56<sup>dim</sup> NK cells prior to ART and up to 12 months post-ART initiation. In contrast, no evident changes in fatty acid and amino acid uptake were detected in CD56<sup>neg</sup> NK cells compared to CD56<sup>dim</sup> NK cells in CHI-treated individuals.

**Conclusions:** Glucose uptake by NK cells is reduced during untreated HIV-1 infection, primarily in the expanded CD56<sup>neg</sup> subset, and this impairment in CD56<sup>neg</sup> NK subset cells persists for at least 12 months in individuals initiating ART during chronic HIV-1 infection.

Importantly, initiating ART early during HIV-1 infection largely prevented the accumulation of CD56<sup>neg</sup> cells with altered glucose metabolism.

## THPEA014

### Early treated subjects who acquired HIV perinatally preserve ADCC activity similar to healthy controls: preliminary results from the LEUKOHIV cohort

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**Background:** Immunological characterization of long-term antiretroviral therapy (ART)-treated subjects is pivotal to understand the role of immune system once HIV reactivates. Here, we aimed at defining the innate immunological features of a selected group of 9 vertically acquired people living with HIV (PLWH) (age: 11.6–28.2 y) who initiated ART within the first year of life (age at ART start: 0.26–9.04 mo) with a history of suppressive ART > 2 years. This unique cohort of early treated subjects, named LEUKOHIV, has been deeply characterized for the viral reservoir, on large numbers of peripheral blood mononuclear cells (PBMCs) collected by leukapheresis, through Full Length Individual Provirus sequencing (FLIP-seq), Quantitative Viral Outgrowth Assays (QVOA) and Matched Integration site and Proviral sequencing (MIP-seq).

**Methods:** Antibody dependent NK cell activation (ADCC) assays were performed by measuring surface CD107a expression in PBMCs, used as effectors against HIV-1 infected 8E5/LAV targets cells in the presence or absence of heat inactivated HIV+ heterologous plasma. Moreover, in the same experimental condition, infected cell elimination assays were set up, being the % of killing calculated as loss of HIV p24+ cells.

**Results:** When compared with no plasma condition, the cohort demonstrated a significant ( $p = 0.0039$ ) ADCC response, with 7 out of 9 individuals displaying a 1.69-fold increase (fi)  $\pm 0.34$  SD in the frequency of CD107a+ NK, similarly to a control group of 7 healthy donors ( $p = 0.0156$ ,



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1.70-fi  $\pm$  0.63 SD). Likewise, 8 subjects exhibited a significant ( $p=0.0078$ ) responsiveness in infected cell elimination assays, having a % of killing mean value of 18.46-fi  $\pm$  9.96 SD. Overall, 6 PLWH showed a positive response in both assays, despite their heterogeneity in terms of ART initiation age (range 0.26-6 mo), presence of antibodies specific for 10 HIV antigens summarized in a Western Blot score (range 0-4.5) and TILDA outcome (3 detectable/3 undetectable).

**Conclusions:** These results suggest that the innate system of these early treated PLWH, that successfully controlled the virus, is able to mount an effective response upon rechallenge with HIV, as might occurs in case of viral rebound due to loss of ART adherence or ART treatment interruption.

## THPEA015

Anticancer treatment modifies the viral reservoir in people with HIV-1 and cancer six months after starting therapy

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**Background:** People with HIV (PWH) present disrupted immune surveillance of tumor antigens producing more susceptibility to develop cancer. We evaluated the impact of anticancer treatment on HIV-1 reservoir and antiviral response in PWH.

**Methods:** PWH diagnosed with cancer (PWHC) (n=11) were recruited for this longitudinal study and followed-up for 6 months. PWH free of cancer (n=5) were recruited as controls. Blood samples were collected before starting anticancer treatment, 3 and 6 months after. HIV-1 reservoir size was measured by ddPCR. Proviral reactivation (p24-Gag) and pSAMHD1 were analyzed in isolated CD4 cells. Release of IFN $\gamma$ , TNF $\alpha$ , and Granzyme B (GZB) was determined in response to HIV-1 peptide pool. Cytotoxic activity was determined in HIV-1-infected TZM bl cells co-cultured with PBMCs from the participants.

**Results:** 1. Table 1 shows baseline clinical and sociodemographic characteristics of all participants. 2. Proviral reactivation was increased in CD4 from PWHC ( $p=0.001$ ), and levels of pSAMHD1 were higher in TEM and TEMRA subsets, in comparison with PWH.

- PWHC showed higher levels of CD8 with higher capacity to release IFN $\gamma$  ( $p=0.0019$ ), TNF $\alpha$  ( $p=0.038$ ), and GZB. Despite CD4 cytopenia six months after treatment ( $p<0.001$ ), IFN $\gamma$  and TNF $\alpha$  production ( $p=0.0275$ ) was also enhanced.
- Levels of NK cells with higher capacity to produce IFN $\gamma$  ( $p=0.0273$ ) were increased in PWHC. NKT-like cells expressed more IFN $\gamma$  ( $p=0.0015$ ) and GZB ( $p=0.0007$ ).
- Despite the high cytotoxic response, antiviral activity was reduced in PBMCs from PWHC six months after starting treatment ( $p=0.001$ ).
- Proviral reservoir size increased 1.7-fold in PWHC six months after starting treatment ( $p=0.0391$ ).

	PWHC			PWH		
	n	CD4	%	n	CD4	%
WOMAN	3	320	100%	4	320	100%
AGE, years (Median)	61.7	53-65	—	60.9	51-65	—
TIME OF HIV INFECTION	25.6	3-32	—	24.6	6-32	—
CANCER RATIO (Median)	0.7	0-1.2	—	1.1	0-1.3	—
HIGH CD4 (Median)	95	52-121	—	409	252-515.5	—
CD4 COUNT (Median)	389.9	375-573.2	—	1174.0	827.5-1476.5	—
CD4 COUNT (Median)	310.6	264-327.8	—	1017.0	809.5-1176.5	—
VIRAL LOAD	Undetectable			Undetectable		
ANTICANCER TREATMENT						
2T/AR + S/P	3	—	8%	—	—	—
2T/AR + S/P/RTI	3	—	34%	—	—	—
2T/AR + S/T/AN	2	—	17%	—	—	—
1T/AR + S/P/RTI	3	—	17%	—	—	—
1T/AR	3	—	8%	—	—	—
TYPE OF CANCER						
PROSTATE LYMPHOMA	3	—	27%	—	—	—
CARCINOMA	4	—	36%	—	—	—
OTHERS	4	—	36%	—	—	—
ANTICANCER TREATMENT						
SURV/AB/CD/OL/RT/RY	3	—	36%	—	—	—
CHEMOTHERAPY	3	—	36%	—	—	—
BOTH	3	—	27%	—	—	—

Table 1. Participant demographic and baseline characteristics.

**Conclusions:** Anticancer treatment induced proviral reactivation and high levels of cytotoxic cells. However, antiviral response was impaired after six months of treatment, causing an increase in the proviral reservoir size. Monitoring of HIV-1 reservoir in PWHC is necessary during cancer treatment and more studies are necessary to determine the clinical impact.

## THPEA016

Analysis of ADCC responses against HIV Env and Tat proteins: implications for HIV vaccine development

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**Background:** Proper activation of the immune system and induction of cytotoxic responses are key for selective killing of infected cells to control viral infections. Antibody-dependent cell-mediated cytotoxicity (ADCC), which exploits the effector activity of macrophages, neutrophils, and, especially, natural killer lymphocytes, is important in HIV infection. In particular, ADCC against the HIV envelope was found to correlate with protection from infection in the RV144 Thai trial. However, the role of ADCC against HIV-1 Tat, which forms a complex with oligomeric Env and contributes to HIV acquisition and disease progression, is unclear.



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**Methods:** The capacity of antibodies against Env or Tat to mediate ADCC was assessed using the Rapid Fluorometric assessment of ADCC (RFADCC) assay, using peripheral blood mononuclear cells (PBMCs) from healthy donors as effectors and CEM NK<sub>CCR5</sub><sup>+</sup>, pulsed with Env or Tat and opsonized by specific antibodies, as target cells.

**Results:** We observed high ADCC activity (>40% killing) in target cells pulsed with the Tat protein and incubated with a hyperimmune serum from a rabbit immunized with Tat or with human sera positive for anti-Tat antibodies.

In parallel experiments, ADCC was measured in cells pulsed with a monomeric gp120 protein from clade B SF162, JR-CSF, or MN strain or with one clade C trimeric Env protein devoid of the V2 loop (DV2-TV1), and incubated with two monoclonal antibodies (17b or 48d) directed against the CD4-induced binding site or with a gp140-specific polyclonal rabbit serum. In ELISA assay, 17b bound to the three monomeric proteins better than 48d. However, of them, only SF162 was efficiently targeted by 17b in ADCC. In contrast, neither monoclonal antibody mediated ADCC against DV2-TV1.

Conversely, the anti-gp140 polyclonal rabbit serum bound both monomeric and trimeric Env and mediated the highest ADCC activity.

**Conclusions:** Overall, this study demonstrates, for the first time, that human anti-Tat antibodies mediate ADCC. In addition, while confirming Env-induced ADCC, the data show that different forms (monomeric versus trimeric) of the Env protein induce different levels of ADCC activity. These observations may have important implications for the development of novel effective HIV vaccines based on Env and/or Tat and to monitor correlates of protection.

## THPEA017

Long-lasting immune response against mpox was developed in people with HIV and PrEP users after natural infection but not in response to vaccination

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**Background:** Since May 2022, an outbreak of mpox was reported in several countries, including Spain. Although the outbreak was rapidly controlled, vaccination post-

and pre-exposition was recommended in people with HIV and PrEP users. However, cases of mpox have been reported in people previously vaccinated. We analyzed the immune response developed after vaccination in comparison with mpox infection.

**Methods:** People infected with mpox (mpox+) (n=30), people vaccinated against mpox (n=24; 4 of which were also previously vaccinated against smallpox), and people who were not in contact with mpox or smallpox (naïve) (n=38) were recruited for this study. Mpox peptides were used to stimulate CD4 and CD8+ T cells. Analyses were performed by flow cytometry.

### Results:

1) People mpox+ was infected a median of 258 days ago (IQR 255-285); people vaccinated against mpox was vaccinated a median of 341 days ago (IQR 283-352). People-mpox+ were 39 years-old (IQR 34.3-45.7), vaccinated people were 37 years-old (IQR 35-41), and naïve participants were 35 years old (IQR 28-46). All participants were male. There were 26 people with HIV (PWH) mpox+ (86.7%), 4 PWH vaccinated against mpox (16.7%), and 11 PWH naïve to mpox (28.9%).

2) Stimulation of CD4+ T cells with mpox peptides induced 1.5-fold more activation (CD25+) in mpox+ than in people vaccinated (p=0.0447) and naïve (p=0.0232). CD4 expressed 1.4-fold higher levels of IL-2 in mpox+ than vaccinated (p=0.0418) and naïve (p=0.0391) in response to mpox peptides.

3) Naïve CD4+ T cells from mpox+ expressed higher levels of IL-4 (1.7-fold; p=0.0234) and IFN $\gamma$  (2.0-fold; p=0.0025) in comparison with vaccinated individuals.

4) CD4+ TCM cells proliferated 2.1- (p=0.0003) and 2.8-fold (p=0.0013) more in people mpox+ in comparison with vaccinated and naïve, respectively.

5) CD8+ T cells stimulated with mpox peptides expressed 1.7-fold more IFN $\gamma$  and 2.5-fold more TNF $\alpha$  than vaccinated (p=0.0002; p=0.0026, respectively) and naïve (p=0.0033; p=0.0012, respectively).

6) We found no differences between responses in people infected with HIV and PrEP users.

**Conclusions:** People infected with mpox developed a potent and long-lasting immune response based on CD4 and CD8 that efficiently responded to mpox peptides. However, vaccination against mpox did not produce significant changes in the capacity to respond to mpox.

### THPEA018

#### Incident primary HIV infection during chronic treatment with imatinib: effect on reservoir dynamics

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**Background:** International guidelines advocate early cART initiation to reduce the HIV-1 viral load set-point and diminish the reservoir size. Tyrosine kinase inhibitors (TKIs), used for blood malignancies and able to interfere with T-cell activation and homeostatic proliferation, may aid in reservoir reduction. Ex vivo, TKIs dasatinib and ponatinib inhibit SAMHD1 phosphorylation, a key regulator of HIV-1 replication.

We report the case of a 37-year-old man acquiring primary HIV infection while on imatinib.

**Methods:** Through the GR-2018-12365699 study, enrolling ART-naïve patients with primary HIV infection in Milan, Italy, we were able to characterize the clinical evolution and quantitate HIV-1 DNA content in cells via digital droplet PCR targeting HIV-1 gag and human CCR5 as a control. In vitro assays for P-SAMHD1 were conducted additionally.

**Results:** The participant was treated with imatinib since February 2019 at 100 mg/day for a myeloproliferative neoplasm. In January 2022, he experienced acute retroviral syndrome and tested positive for HIV (Fiebig stage 5), with exceptionally high viremia at diagnosis ( $>10^7$  copies/ml, while median viremia for cohort participants with Fiebig stage 5 infection was 58400 copies/ml, IQR 26842– 931250); cART was started 7 days after diagnosis.

Viral load was  $10^2$  at 1 month from cART start, and reached undetectable levels by six months. HIV DNA levels in CD4 T cells dropped from  $3.7 \times 10^4$  to  $6.6 \times 10^2$  copies/ $10^6$  cells after one year of ART.

In vitro assays revealed that imatinib at 5  $\mu$ M concentration mimicking the standard 400mg/day dose, significantly decreased P-SAMHD1 levels in CD4 T cells stimulated with gc-cytokines, and impaired in vitro HIV infection.

However, imatinib at the 1.25  $\mu$ M concentration, which mimics the 100 mg/day dose, failed to significantly inhibit HIV replication.

**Conclusions:** To our knowledge, this is the first reported case of an individual contracting primary HIV infection under TKI therapy. These results suggest that the imatinib regimen administered may not have been enough to exert a noteworthy HIV resistance.

Nevertheless, exploring the use of tyrosine kinase inhibitors in conjunction with antiretroviral treatment presents a potential strategy to control CD4+ T cell activation, potentially mitigating the formation of viral reservoirs and enhancing the overall management of HIV-1 infection.

### THPEA019

#### Delineating the role of transcription factor BRD9 in HIV-1 latency reactivation

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**Background:** AIDS remains incurable owing to the HIV-1 latent reservoir in infected immune cells, especially in resting memory CD4+ T cells. The "Shock and Kill" strategy combines the administration of latency reversal agent (LRA) and anti-retroviral treatment (ART) to induce HIV-1 reactivation from infected cells and stimulate immune response against them. Since current LRA treatments in clinical trials are suboptimal, drug screening for novel LRA remains a promising strategy to eliminate HIV-1 latent reservoirs.

This study aims to reveal the potential of epigenetic drugs as new LRA specifically applicable in CD4+T cells.

**Methods:** We screened an epigenetic drug library consisting of 280 compounds using the latent HIV-1-infected T cell line and ranked the drugs according to their HIV-1 reactivation effects. Selected drug candidates were tested in different cell models. Measurements included qPCR, HIV-1 p24 ELISA and flow cytometry to identify the changes in HIV-1 production. Gene knockout experiment was utilized to elucidate the effect of losing the target genes in controlling HIV-1 gene expression. ChIP-qPCR experiment was used for identifying the DNA-binding regions of target proteins to confirm their interactions with HIV-1 genome. Cut&Run DNA sequencing and RNA sequencing experiments were performed to discover the gene sets under control of target proteins.

**Results:** We found the inhibitor of transcription factor BRD9, namely I-BRD9, was an encouraging LRA candidate. BRD9 belongs to the BET protein family that consists of BRD4 which is known to mediate HIV-1 gene expression. I-BRD9 could reactivate HIV-1 production in ACH2 T cells, infected resting memory CD4+ T cells and PBMC isolated from HIV-1 patients undergoing ART treatment. Further-



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more, knocking down BRD9 gene in ACH2 T cells increased HIV-1 production. ChIP-qPCR experiment demonstrated that BRD9 protein could bind to LTR and Gag gene region of HIV-1 genome, which integrated into host cellular genome. Cut&Run DNA sequencing and RNA sequencing experiments identified genes under direct control of BRD9 and their promising HIV-1 latency reactivation ability were reflected after respective drug treatment.

**Conclusions:** Our results demonstrated that I-BRD9 could become novel HIV-1 LRA in human CD4+ T cells and transcription factor BRD9 could suppress HIV-1 gene transcription via direct interaction with HIV-1 genome.

## THPEA020

### SQuHIVLa: Specific Quantification of inducible HIV-1 reservoir by LAMP

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**Background:** Despite the transformative success of combination antiretroviral therapy (cART) in managing HIV-1, a cure remains elusive, particularly in sub-Saharan Africa where treatment disparities persist. The pursuit of strategies leading to an HIV-1 cure hinges on the precise quantification of latent viral reservoirs, necessitating robust and scalable assays. This study introduces the Specific Quantification of Inducible HIV-1 by LAMP (SQuHIVLa), a novel assay utilizing the sensitivity of RT-LAMP to detect and quantify cells expressing Tat/Rev mRNA upon activation. Addressing the need for high-throughput and scalable tools, SQuHIVLa offers a unique approach for quantifying the inducible HIV-1 reservoir in individuals with diverse HIV-1 subtypes under combination antiretroviral therapy (cART).

**Methods:** The study included 34 individuals living with HIV-1, comprising subtypes B and C, all under fully suppressive cART. The SQuHIVLa assay, designed to quantify the inducible HIV-1 reservoir, underwent validation using in vitro transcripts, J-Lat 11.1 cells, and clinical samples, in order to demonstrate its specificity and applicability in reservoir quantification. The comprehensive methodology was further complemented with the comparison of SQuHIVLa with additional assays, including TILDA, IPDA, and total HIV-1 DNA quantification.

**Results:** RT-LAMP exhibited high sensitivity, detecting as few as 50 copies of Tat/Rev mRNA within 30.46 minutes, with a Limit of Detection-95% at 31 copies, using in vitro transcribed RNA. Subsequent experiments demonstrated the selective amplification of Tat/Rev mRNA, excluding intron-containing genomic DNA, and highlighted the robustness of RT-LAMP for rapid, sensitive, and specific de-

tection. Furthermore, SQuHIVLa exhibited accurate and reproducible quantification of the frequency of Tat/Rev mRNA expressing cells for a range of participants living with HIV-1 subtypes B and C with various clinical characteristics.

Additionally, SQuHIVLa demonstrated positive correlations with TILDA, total HIV-1 DNA copies, and intact HIV-1 DNA copies, with the latter exhibiting a significantly strong association.

**Conclusions:** The findings of this study hold significant implications for HIV prevention, treatment, and care, particularly in resource-constrained settings such as Sub-Saharan Africa. The development of the RT-LAMP assay, with its high sensitivity, cost-effectiveness, and user-friendly nature, addresses the critical need for reliable and scalable assays to assess intervention efficacy in clearing the viral reservoir.

## THPEA021

### Similar changes in proviral landscapes over 10 years in people with diverging HIV-1 reservoir dynamics

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**Background:** The HIV-1 reservoir, measured as total HIV-1 DNA, was recently shown to be increasing in >25% of people with HIV (PWH) over years on efficient antiretroviral therapy (ART). Reasons and potential clinical implications of this HIV-1 reservoir increase remain unclear.

In this study, we aimed to characterize the proviral landscape in four distinct groups of PWH, presenting either an increase or decrease of the HIV-1 reservoir over 10 years on ART and additionally experiencing or not experiencing intermittent viremia, to find potential differences explaining the contrasting long-term dynamics of the HIV-1 reservoir.


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**Methods:** Near full-length HIV-1 proviral NGS in bulk was applied to four longitudinal PBMC samples from 40 well characterized participants enrolled in the Swiss HIV Cohort Study (SHCS). After removing hypermutated reads, genetic distances and diversities were calculated and drug resistance mutations were assessed. Intact HIV-1 DNA and HIV-1 transcripts were quantified using digital PCR.

**Results:** A decrease of intact proviruses was observed independent of HIV-1 reservoir size dynamics. Genetic distances and diversities of individuals' proviral sequences did not increase over time in any group. While some non APOBEC-induced drug resistance mutations (DRMs) could be observed in proviral DNA of individuals in all groups, numbers were not significantly different among the groups. Low numbers of unspliced and multiply spliced RNA were detected at low levels in all groups.

**Conclusions:** Our results show no evidence of evolution of the HIV-1 reservoir, regardless of HIV-1 reservoir size dynamics and intermittent viremia over a follow-up period of 10 years on ART.

These findings suggest that the increase of the HIV-1 reservoir size, measured as total HIV-1 DNA and observed in a substantial fraction of individuals is driven by an increase of defective proviruses, and that not low-level replication but other mechanisms, e.g. clonal expansion, are more likely responsible for the HIV-1 reservoir increase, largely independent of intermittent viremia.

## THPEA022

### Dasatinib interferes with HIV-1 nuclear import and proviral integration in monocyte-derived macrophages

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**Background:** While ART effectively controls HIV-1 acquisition, viral persistence in long-lived reservoirs (CD4+T cells and macrophages) prevents eradication. CPSF6 is a 3'-RNA cleavage and polyadenylation factor that interacts with HIV-1 capsid to facilitate the pre-integration complex nuclear import and proviral integration. Dasatinib, a tyrosine kinase inhibitor, interferes with HIV-1 acquisition in CD4+T cells by preserving SAMHD1 activity.

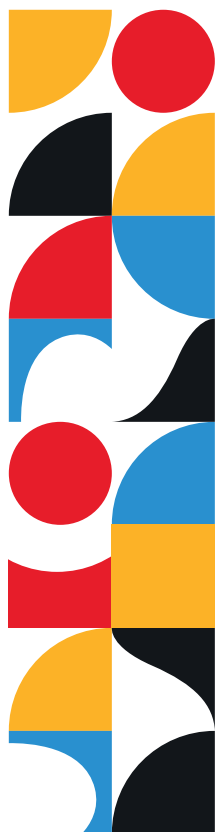
Our objective was to determine if dasatinib interferes with HIV-1 acquisition in macrophages via SAMHD1 and/or CPSF6, which regulates HIV-1 nuclear import in macrophages.

**Methods:** 15 ART-treated PWH were recruited for this study. CD14+ cells were isolated from PBMCs, differentiated to MDMs and infected in vitro with JR\_FL\_Renilla and DHIV3-GFP strains in the presence/absence of dasatinib 75nM. SAMHD1 phosphorylation at T592 and expression of p24-gag were analyzed by flow cytometry after HIV-1 acquisition.

Reverse transcription (RT), 2-LTR circles, and proviral integration were determined by ddPCR. Expression levels and subcellular localization of CPSF6 was determined by confocal microscopy.

#### Results:

- 1) HIV-1 acquisition was reduced 2.7-fold ( $p=0.0001$ ) in MDMs from PWH after treatment with dasatinib.
- 2) In correlation, dasatinib reduced 1.8-fold ( $p<0.0001$ ) SAMHD1 phosphorylation in MDMs.





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3) Time-lapse microscopy in living, dasatinib treated-MDMs infected with DHIV3-GFP virus showed an averaged 22-hour delay in the detection of GFP expression, which was nearly undetectable ( $p=0.0032$ ).

4) MDMs pre-treated with or without dasatinib exhibited no differences in the formation of early and late RT 5 hours after infection with pJR-FL\_Renilla. However, dasatinib reduced 3.9-fold ( $p=0.0259$ ) the formation of 2-LTR circles in MDMs during the first 48 hours of infection, and the proviral integration was 1.6-fold ( $p=0.0467$ ) lower in MDMs pre-treated with dasatinib.

5) In dasatinib-treated cells, CPSF6 showed a predominant cytoplasmic localization, with reduced levels in the perinuclear region.

**Conclusions:** Dasatinib disrupted HIV-1 proviral integration in macrophages, but not as efficiently as in CD4+T cells after short-treatment, likely due to MDMs presenting higher basal levels of pSAMHD1 than resting CD4+T cells. Changes in CPSF6 expression and subcellular localization by dasatinib may impair the nuclear import of HIV-1 capsid, despite RT levels.

More studies are necessary to validate the use of dasatinib in combination with ART to impede reservoir formation and maintenance in both CD4+T cells and macrophages.

## THPEA023

Targeting Ikaros and Aiolos with pomalidomide increased expression of stress ligands on HIV-infected cells but did not induce apoptosis or reverse HIV latency

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**Background:** HIV persists in people living with HIV (PLHIV) on antiretroviral therapy (ART) in long-lived and proliferating latently infected CD4+ T-cells. The Zinc finger proteins, Ikaros (IKZF1) and Aiolos (IKZF3), are transcriptional repressors and have recently been implicated in maintaining HIV latency and are over-expressed in both the latent and active reservoir.

In this study, we investigated whether pomalidomide, an immunomodulatory drug that induces the degradation

of Ikaros and Aiolos, could sensitise HIV-infected cells to immune-mediated clearance, apoptosis and/or reverse HIV latency.

**Methods:** CD4+ T-cells were infected with a green fluorescent protein (GFP) expression virus and treated with pomalidomide at concentrations that are therapeutic *in vivo* (0.25 $\mu$ M) or DMSO control for 5 days. Expression of surface and intracellular markers on GFP+ and GFP- cells was quantified by flow cytometry. HIV-infected CD4+ T-cells were also treated with DMSO or pomalidomide, and the frequency of productively-infected (GFP+) cells was quantified following co-culture with the NK cell line, KHYG1. Finally, peripheral blood mononuclear cells from ART-suppressed PLHIV were treated with pomalidomide or DMSO *ex vivo*, and HIV transcription and frequency of intact HIV DNA (IPDA) were quantified by qPCR. The proliferation of CD4+ T-cells was measured using CellTrace Violet, and activation quantified using flow cytometry.

**Results:** Pomalidomide increased the expression of the stress ligands, CD155 and ULBP, on productively-infected (GFP+) cells, but there was no significant decrease in GFP+ cells following co-culture with the NK cell line, KHYG1. Pomalidomide did not change the expression of active caspases-3,-7, and -8 in productively-infected CD4+ T-cells. In contrast, we noted an increased expression of the pro-survival protein, B cell lymphoma (BCL)-2. Pomalidomide *ex vivo* increased expression of the activation marker HLA-DR but did not induce CD4+ T-cell proliferation. Finally, in CD4+ T-cells from ART-suppressed PLHIV, the addition of pomalidomide *ex vivo* did not lead to a change in the cell-associated unspliced or multiply-spliced HIV RNA, nor a reduction in IPDA.

**Conclusions:** In conclusion, despite increasing stress protein expression on HIV-infected cells, we found no evidence that pomalidomide *ex vivo* directly promoted apoptosis, latency reversal or impacted the latent HIV reservoir and may enhance HIV persistence through increased expression of BCL-2.

## THPEA024

### Isolation of replication incompetent HIV-1 primary isolate from CNS-derived microglia of a person living with HIV rapidly after medically assisted death

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**Background:** HIV-1 RNA, DNA, and proteins persist in the brains of persons living with HIV (PWH) despite ART. The intact provirus accounts for 10-15.5% of proviral genomes in the brain. However, the replication status of these proviruses is uncertain. HIV has been recovered from the brains of ART-treated PWH after exposure to latency-reversing agents. It is crucial to determine if the brain's HIV reservoir is capable of activation by cytokines present in the brain, prompting viral replication and dissemination.

**Methods:** We isolated autopsied microglia from the brain of a PWH who was on suppressive ART. Microglia were harvested from different brain regions by mechanical and enzymatic dissociation followed by density gradient cell isolation. Microglial cultures were exposed to TNF- $\alpha$ , and the supernatants were collected 3-, 5-, and 7-days post-exposure.

Healthy PBMCs were co-cultured with microglia-derived supernatants and viral titer was determined using ddPCR and p24 ELISA. HIV-1 RNA and total DNA were measured in each brain region by ddPCR.

**Results:** Viral RNA and DNA quantities were higher in the gray matter compared to white matter. Gray matter from the striatum had the highest quantities of viral RNA, followed by the cerebellum, occipital, and frontal lobes ( $1.2 \times 10^5$ ,  $1.1 \times 10^5$ ,  $0.92 \times 10^5$ , and  $0.7 \times 10^5$  copies/gram of tissue, respectively). Viral RNA copy numbers were similar throughout the white matter (mean-  $0.3 \times 10^5$  copies/gram of tissue). HIV total DNA was highest in striatum at  $0.8 \times 10^5$  copies/gram of tissue, which was on average 4-fold higher than total DNA from gray matter in other regions. The HIV-1 RNA from striatal microglia at 3 days post-TNF-exposure was highest compared to the frontal lobe and cerebellum at  $5 \times 10^3$  copies/ml. ELISA detected viral p24 from the supernatant of TNF-exposed striatal microglia after being co-cultured with healthy PMBCs. *De novo* infection of PBMCs and attempts to passage the recovered virus resulted in loss of the viral replication.

**Conclusions:** Absence of viral production without cytokine stimulation underscored the notion that the HIV brain reservoir is latent. Thus, in the absence of a brain-associated cytokine, this reservoir remains dormant. Cytokine exposure induced viral production from microglia highlighting the potential for viral persistence in the brain.

## Novel treatment and prevention strategies, vaccines and immunotherapies

## THPEA025

### Nonclinical pharmacology profile of GS-1720, a novel highly potent once-weekly oral HIV-1 integrase strand transfer inhibitor in clinical development

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**Background:** Integrase strand transfer inhibitors (INSTIs) are the cornerstone of current HIV therapies, but their oral dosing options are limited to daily administration. Herein we describe the nonclinical pharmacology profile of GS-1720, a potent and selective investigational INSTI with Phase 1 data supportive of once-weekly oral dosing.

**Methods:** Inhibition of integrase strand transfer activity was evaluated using a biochemical assay. Anti-HIV-1 activity was determined in primary immune cells. Cytotoxicity was assessed in human cell lines and primary cells. Antiretroviral 2-drug combinations and drug resistance by dose escalation selections were assessed in HIV-1-infected MT-2 cells. Safety pharmacology and toxicology profiles were evaluated in nonclinical species following oral administration.

**Results:** GS-1720 inhibited recombinant HIV-1 integrase strand transfer activity with an  $IC_{50}$  of 6.2 nM and HIV-1 replication in primary human CD4<sup>+</sup> T-lymphocytes and monocyte-derived macrophages with mean  $EC_{50}$  and  $CC_{50}$  values of 0.8 nM and  $>10 \mu M$ , respectively. In human PBMCs, GS-1720 was 7-fold more potent than bicitegravir against a multiclude panel of HIV-1 clinical isolates. GS-



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1720 maintained full antiviral potency against a panel of HIV-1 mutants resistant to other antiretroviral classes. When tested against a panel of INSTI-resistant HIV-1 mutants, the EC<sub>50</sub> fold-change range relative to wild-type virus for GS-1720, bictegravir, and elvitegravir was 0.9 to 8.5, 0.6 to 4.0, and 5.1 to >86, respectively.

Similarly, in vitro resistance selections with GS-1720 progressed at a rate comparable to bictegravir and significantly slower than elvitegravir, without emergence of primary INSTI resistance-associated mutations after 16 passages (>300 days) in culture. GS-1720 demonstrated no antiviral antagonism when combined with other antiretrovirals, including lenacapavir, and showed no activity against HBV, HCV, HSV-2 or SARS-CoV-2 and low cytotoxicity in all tested human cell types. In nonclinical safety studies, GS-1720 was nongenotoxic, showed minimal off-target effects potential, and the in vivo no-observed-adverse-effect-levels were established at the highest doses tested.

**Conclusions:** GS-1720 is a novel oral INSTI with significantly improved antiviral potency compared to bictegravir and a similar nonclinical virology, pharmacology and safety profile. Overall, these data support the ongoing clinical development of GS-1720 as a component of a novel once-weekly oral regimen for HIV-1 treatment.

## THPEA026

### Induction of Autologous Tier 2 HIV-neutralizing Antibodies in Rabbits by Heterologous Combinations of the Viral Vector VSV-GP and Next-generation Native-like Trimers

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**Background:** So far, an effective HIV vaccine could not be developed, mostly because it has been extremely difficult to induce antibodies that can broadly neutralize the wide range of human immunodeficiency virus (HIV) variants. Next-generation antigens resembling the HIV envelope (Env) glycoprotein in a native-like trimer closed conformation offer hope to evoke such antibodies.

The objective of this study was to evaluate the immunogenicity of a chimeric vesicular-stomatitis-virus-based vector, VSV-GP, encoding clade C membrane-tethered native-like trimeric Env.

**Methods:** Cells were infected with VSV-GP-Env and characterized regarding cell surface expression and antigenicity of Env. Incorporation of Env into VSV-GP particles was assessed. Finally, immunogenicity of VSV-GP-Env was assessed in mice and rabbits in heterologous prime/boost combinations with the autologous protein.

**Results:** Cells infected with VSV-GP-Env vectors expressed high amounts of native-like trimers on the surface in a favourable conformation and native-like trimers were efficiently incorporated into VSV-GP particles. Heterologous vector/protein immunizations induced high titers of Env-specific binding antibodies in mice and rabbits and were superior to four homologous vector immunizations. The order of vector and protein administration in the heterologous combinations did neither influence titers nor quality of Env-specific antibody responses. In rabbits, tier 1 and autologous tier 2 neutralizing antibodies were induced. Tier 2 neutralization was limited to the pseudoviruses matching the engineered Env immunogen with sera failing to neutralize pseudoviruses displaying the parental Env.

**Conclusions:** In conclusion, VSV-GP is well suited to display native-like Env trimers on virus and cell membranes. Thus, recombinant VSV-GP-Env vectors qualify as promising vaccine candidates in prime-boost vaccination schedules against HIV.

## THPEA027

### Effect of hypoxia on the potency of antiretroviral drugs

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**Background:** Antiretroviral drugs (ART) have been effective in delaying the progression of HIV to AIDS. However, cellular proteins such as multidrug-resistance-protein 1 (MRP1) and P-glycoprotein, can confer resistance to ART treatment. Some of these proteins are regulated by hypoxia, which suggests that hypoxia may affect the potency of ART by altering cellular proteins involved in ART drug transport and metabolism.

Therefore, we aimed to study the effect of hypoxia on the expression of putative host modulator of ART activity, and on the potency of different ART drugs.

**Methods:** We first investigated the effect of hypoxia on the expression of hypoxia response genes, and genes involved in the homeostasis and metabolism of ART drugs. To that aim, Jurkat-E6, C20 microglia, and primary CD4<sup>+</sup>T cells, were treated with a hypoxic-mimetic agent (DMOG)

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for 72 hours, collecting samples in 24-hour intervals. Then, mRNA levels of Glucose-transporter-1 (GLUT1), Prolyl-hydroxylase-2 (PHD2), Multidrug-resistance-protein-1 (MRP1), and Cathepsin-A (CTSA), were measured using qPCR. Additionally, the potency of Tenofovir and Dolutegravir was evaluated, following *in-vitro* spinoculation of Jurkat-E6 cells with a HIV-1-GFP reporter virus under hypoxic conditions, by analyzing the cellular GFP expression using flow cytometry.

**Results:** In response to hypoxia, Jurkat-E6 cells exhibited a rapid upregulation of the canonical hypoxia response gene; GLUT1 within 24 hours, followed by a decrease in expression over the remaining time course. A similar pattern was observed for PHD2 expression.

However, MRP1 expression increased in microglia after 48 hours and in primary CD4<sup>+</sup>T cells after 72 hours of hypoxic induction ( $p < 0.01$ ), while it remained suppressed in Jurkat-E6 cells throughout the time course.

To assess the potency of the ART drugs under study, we monitored Tenofovir's half-maximal inhibitory concentration ( $IC_{50}$ ), which was significantly reduced ( $p < 0.05$ ) in hypoxic Jurkat-E6 cells compared to normoxic controls, while the potency of Dolutegravir remained unchanged under the same hypoxic conditions.

**Conclusions:** Our study provides first glimpses in differential potency of various ART drugs at hypoxic conditions. Our preliminary data indicate that Tenofovir is more susceptible to the effects of hypoxia than Dolutegravir. Therefore, targeting hypoxia may be a potential strategy to overcome resistance mediated by MRP1.

## THPEA028

LS-variant anti-CCR5 monoclonal antibody provides long-lasting protection against intrarectal SHIV acquisition in rhesus macaques

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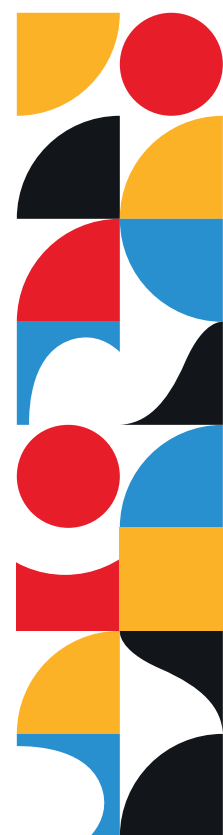
**Background:** Development of pre-exposure prophylaxis (PrEP) agents that provide long-acting, effective protection from HIV acquisition is a promising approach to bolster PrEP usage and adherence and slow the HIV epidemic. Anti-CCR5 monoclonal antibody Leronlimab blocks CCR5-mediated HIV entry, and has previously been shown to be an effective agent for HIV suppression in PLWH and for SHIV suppression and PrEP when administered to rhesus macaques weekly or biweekly. Here, we tested the ability of a long-acting variant of anti-CCR5 blocking antibody Leronlimab to protect against intrarectal SHIV acquisition in rhesus macaques.

**Methods:** A macaque-ized, long-acting, Fc-silenced, and heavy-chain-stabilized version of anti-CCR5 monoclonal antibody Leronlimab, termed "macLS Leronlimab", was developed by exchanging the human IgG4 Fc portion for rhesus IgG4 Fc and adding M428L and N434S (LS), L234A and L235A (LALA), and S131C (SC) mutations. Rhesus macaques received either a single ( $n=6$ ) or double ( $n=6$ ) 10 mg/kg subcutaneous dose of macLS Leronlimab, or served as untreated controls ( $n=10$ ).

One week after the last macLS dosing, all 22 macaques underwent weekly intrarectal SHIVsf162p3 challenges until infection was confirmed in all study animals. Macaques were monitored for Leronlimab CCR5 receptor occupancy on blood CD4<sup>+</sup> T cells, Leronlimab concentrations in plasma, Leronlimab-directed antibody drug antibodies (ADAs), and SHIV plasma viral loads.

**Results:** Three macLS-dosed macaques (2/6 single-dosed, 1/6 double-dosed) developed Leronlimab-directed ADAs, resulting in incomplete CCR5 occupancy on blood CD4<sup>+</sup> T cells, clearance of plasma Leronlimab, and subsequent SHIV acquisition. The remaining 9 macLS-dosed macaques retained complete blood CD4<sup>+</sup> T cell CCR5 blockade for 12-18 weeks and detectable plasma Leronlimab for 10-22 weeks after dosing. SHIV acquisition was significantly delayed for macLS Leronlimab-dosed macaques ( $p=0.0142$ , log-rank test), with a median of 11 weekly challenges until viral acquisition in dosed macaques compared to 2.5 weekly challenges in control macaques. While there was a trend toward enhanced protection in the double-dosed versus single-dosed macLS Leronlimab groups (median 13 versus 7.5 weekly challenges), this did not reach statistical significance ( $p=0.5641$ , log-rank test).

**Conclusions:** These data demonstrate the ability of LS-variant Leronlimab to provide long-term protection against intrarectal SHIV acquisition and support development of long-acting CCR5 blockade for HIV PrEP.





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## THPEA029

**A first-in-human phase 1 trial of PGT121.414.LS administered alone and in combination with VRC07-523LS: safety, tolerability, pharmacokinetics, and neutralization activity (HVTN 136/HPTN 092)**

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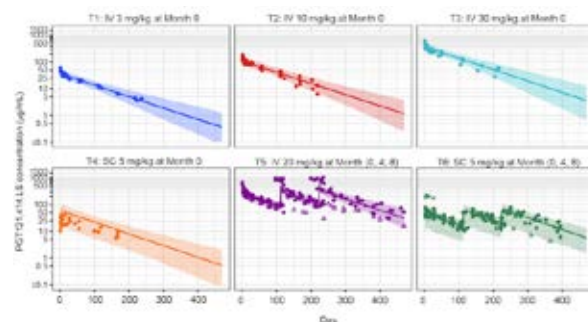
**Background:** Antibody-mediated prevention of HIV-1 acquisition will require combinations of broadly neutralizing monoclonal antibodies (mAbs) to optimize efficacy against circulating strains. Characterizing engineered mAbs for such combinations is a high priority.

**Methods:** During November 2020 to October 2021, Phase 1 HVTN 136/HPTN 092 study assessed safety, pharmacokinetics (binding antibody multiplex assay) and neutralization activities (TZM-bl assay) of first-in-human administration of PGT121.414.LS alone and in combination with VRC07-523LS among adults without HIV.

Single intravenous (IV) or subcutaneous (SC) dose-escalation infusions of PGT121.414.LS were assessed in four groups: 3 mg/kg IV (n=3), 10 mg/kg IV (n=4), 30 mg/kg IV (n=3) and 5 mg/kg SC (n=3). Then, repeated combination administrations with VRC07-523LS were given via IV (20 mg/kg each; n=10) and SC (5 mg/kg each; n=10) at days 0, 112 and 224.

**Results:** Median participant age was 31 years (range 22-48); 52% were assigned female sex at birth, and 82% were White. Median weight was 76 kg (range 46-109). IV and SC infusions were safe and well-tolerated, without serious adverse events. Dose escalation of PGT121.414.LS from 3 mg/kg to 30 mg/kg demonstrated a linear increase in serum concentration.

Estimated elimination half-life was 71 days (95% CI: 66-75) for PGT121.414.LS and 53 days (95% CI: 49-58) for VRC07-523LS. Relative to IV, SC bioavailabilities of PGT121.414.LS and VRC07-523LS were 86.1% (95% CI: 64.0-95.5) and 61.9% (95% CI: 45.5%-75.9%), respectively. Neutralization coverage against a multiclade panel of 12 Env pseudoviruses was greater in higher-dose and dual-combination IV groups. Predicted prevention efficacy based on predicted ID80 titer of 16-weekly PGT121/414/LS+VRC07.523LS (IV 20 mg/kg each) infusion was 90% and 84% against clade B and C circulating viruses, respectively.



Observed serum concentrations of PGT121.414.LS with 90% prediction interval from the population PK model. Observed (symbol) and predicted (line) serum concentrations of PGT121.414.LS are shown for each of the six treatment groups. Filled circles indicate observed concentrations from participants who received all intended study product administrations. Open triangles indicate subsequently observed concentrations from participants who missed the prior study product administration; crosses indicate concentrations that were excluded from the population PK modeling based on pre-specified model diagnosis rules.

**Conclusions:** First-in-human IV or SC infusions of PGT121.414.LS were safe and well-tolerated, alone or in combination with VRC07-523LS. These findings support additional evaluations of PGT121.414.LS in combination with other mAbs for HIV-1 prevention.

## THPEA030

**Potential novel vaccine adjuvant to enhance ADCC-mediated NK cells in the HIV preventive vaccines**

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**Background:** The RV144 trial, with ALVAC-HIV and alum-adsorbed AIDSVAX B/E gp120, remains the only HIV vaccine providing partial protection. Notably, correlations between V2-specific antibodies and Natural killer (NK) mediated antibody-dependent cytotoxicity (ADCC) emerged as significant immune correlates of protection. NK cells play a pivotal role as primary mediators of ADCC against HIV-infected cells. Augmenting ADCC becomes crucial for enhancing vaccine efficacy. Aryl hydrocarbon receptor (AHR) is a ligand-activated transcription factor, and its signaling shapes the immune responses of NK cells.

**Methods:** C57BL/6 mice were categorized into two groups and administered either ALVAC-SIV+gp120 alone (n=6) or the vaccine with daily oral administration of indol-3-car-



binol (I3C) (n=6), a naturally occurring AHR agonist. Immune signatures were compared using high-dimensional flow cytometry. Bulk RNA-sequencing of splenocytes was used to compare changes in the transcriptome. Data were compared using Wilcoxon rank-sum test.

**Results:** The expression of KLRG1, known to enhance ADCC in NK cells, increased in NK cells from the spleen, blood, bone marrow, and lung in mice that received ALVAC-SIV and alum-adjuvanted gp120, together with I3C. When comparing KLRG1+ and KLRG1- splenic NK cells in the vaccine+ I3C group, we observed heightened expression of Ly6C (facilitating effective and robust responses to infection) and CD11b (indicating mature cytolytic activity) in the KLRG1+ subset.

Furthermore, IL1 $\beta$  and TNF $\alpha$ , crucial for the lytic mechanism during ADCC, were produced at increased levels in this subset. Transcriptomics revealed an upregulation of fcgr3, which encodes for FC $\gamma$ RIII in NK cells and is essential for ADCC, in the vaccine+I3C group ( $p < 0.05$  for all).

**Conclusions:** The findings suggest that I3C modulates NK cells to enhance ADCC, indicating its potential as an adjuvant in HIV vaccine platforms such as RV144, with the capacity to improve HIV vaccine efficacy.

## HIV-associated viruses, co-infections and co-morbidities

### THPEA031

#### Impact of dolutegravir with tenofovir and emtricitabine on maternal metabolism in pregnant C57BL/6J mice

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**Background:** As dolutegravir (DTG) has been associated with metabolic complications that could potentially influence birth outcomes, our study examined the impact of DTG on maternal metabolism during pregnancy and its potential effects on fetal development.

We report on metabolite changes in maternal plasma and liver with DTG-based treatment in mice.

**Methods:** Pregnant C57BL/6J mice were divided into control (water, N=10), 1x-DTG (2.5mg/kg, N=10, therapeutic dose), and 5x-DTG (12.5mg/kg, N=11, supratherapeutic dose), with DTG administered alongside 50mg/kg tenofovir disoproxil fumarate and 33.3mg/kg emtricitabine (TDF/

FTC). Metabolic analytes were measured in plasma and liver using liquid chromatography-mass spectrometry, with Welch's t-test identifying significant biochemical differences between groups.

**Results:** Compared to control plasma from 1xDTG+TDF/FTC group had 73 (24 upregulated, 49 downregulated) and from the 5xDTG+TDF/FTC group 385 (264 upregulated, 121 downregulated) metabolite differences. Liver from the 1xDTG+TDF/FTC group had 80 (22 upregulated, 58 downregulated) and from the 5xDTG+TDF/FTC group 315 (74 upregulated, 241 downregulated) metabolite differences. In the one carbon metabolic pathway we observed higher plasma choline phosphate, betaine, adenosylhomocysteine, and cysteine levels, while choline phosphate, betaine, and cystathionine levels were lower in the liver in the 5xDTG+TDF/FTC group versus control. In carbohydrate and energy metabolic pathways, plasma glucose and pyruvate levels were significantly higher in the 5xDTG+TDF/FTC group versus control, while fructose 6-phosphate, dihydroxyacetone phosphate, and pyruvate were higher in liver of the 1xDTG+TDF/FTC group versus control. In lipid metabolic pathway, phosphatidylethanolamine levels were higher while free fatty acids were lower in the 5xDTG+TDF/FTC plasma and liver versus control. Dicarboxylate fatty acids were lower in the liver of both DTG groups, but higher in the plasma of the 5xDTG+TDF/FTC group versus control. Markers of microbial metabolic pathways were also altered; ferulic acid 4-sulfate was significantly higher in the plasma and liver of both DTG groups, whereas indoleacetate, 4-hydroxycinnamate sulfate, and 3-indoxyl sulfate were significantly higher in plasma and liver of the 5xDTG+TDF/FTC group only compared to control.

**Conclusions:** Plasma and liver from pregnant mice receiving DTG demonstrated dose-response alterations to metabolic pathways associated with one carbon, carbohydrate and energy, lipid and microbial metabolism. Further studies are warranted to understand the clinical significance of these differences.



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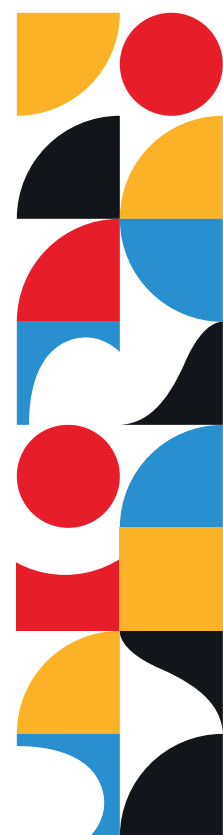
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## THPEA032

Interplay between plasma endocannabinoidome and fecal microbiome in people with HIV (PWH) under antiretroviral therapy with subclinical coronary artery disease: results of the Canadian HIV and Aging Cohort Study

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**Background:** HIV acquisition is associated with accelerated coronary artery disease (CAD) due to chronic inflammation. Lipid mediators from the expanded endocannabinoid system (endocannabinoidome; eCBome) and gut microbiota modulate each other and are key regulators of cardiovascular functions and inflammation.

We thus investigated the plasma eCBome and gut microbiota in PWH with subclinical CAD.

**Methods:** Antiretroviral therapy (ART)-treated HIV+CAD+ (n=87), HIV+CAD- (n=69), HIV-CAD+ (n=22) and HIV-CAD- (n=30) individuals were enrolled. CAD was assessed using cardiac computed tomography angiography. Plasma levels of endocannabinoids and their congeners were quantified using liquid chromatography coupled to tandem mass spectrometry. Bacterial composition of stools from n=107 participants was assessed by 16S rDNA sequencing and amplicon sequence variants identified to determine relative abundances of bacterial taxa and community diversity.

**Results:** The endocannabinoid *N*-arachidonylethanolamine (AEA), and its *N*-acylethanolamine (NAE) congeners, *N*-eicosapentaenylethanolamine (EPEA), *N*-linoleylethanolamine (LEA), *N*-docosahexaenylethanolamine (DHEA), and *N*-docosapentaenylethanolamine (DPEA) (n=6), were significantly lower in PWH compared to HIV-participants.

EPEA, DHEA and *N*-palmitoylethanolamine (PEA) were significantly reduced in HIV+CAD+ compared to HIV+CAD- individuals, while HIV-CAD- individuals had higher plasma levels of AEA, EPEA, LEA, DHEA, and DPEA(n=6) than HIV+CAD+. Plasma levels of monoacylglycerols (MAGs), including 2-eicosapentaenoylglycerol, 2-linoleoylglycerol, 2-docosapentaenoylglycerol, and 2-oleoylglycerol (2-OG), were significantly elevated in PWH compared to HIV- con-

trols. Moreover, the endocannabinoid 2-arachidonoylglycerol, and 2-docosahexaenoylglycerol, were increased in PWH compared to HIV- controls. While trends for increased relative abundance for several bacterial families in the faeces of HIV-CAD+ vs. controls were observed, only *Marinifilacea* was significantly increased ( $p=0.02$ ), and no such changes were observed in HIV+ individuals.

Likewise, many alterations in genera abundances in CAD+ individuals without HIV were absent in HIV+ individuals. However, some genera were found to be altered only when both CAD and HIV were present, and others by HIV alone.

**Conclusions:** Plasma eCBome is perturbed in PWH. Inverse associations between the CAD and HIV status with NAEs or MAGs point to these mediators as biomarkers of CAD in PWH. CAD-associated taxonomic alterations in faecal bacterial were not found in PWH.

## THPEA033

Differential effects of TAF, TDF and 3TC on murine weight, body composition and adipocyte differentiation

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**Background:** Studies report moderate weight gain in PLWH starting antiretroviral therapy with tenofovir alafenamide (TAF), particularly when switching from tenofovir disoproxil fumarate (TDF)-containing regimens. However, the underlying mechanisms remain unclear. We evaluated the effects of TAF and TDF on weight and body composition *in vivo*, and the impact of these drugs and 3TC on adipocyte differentiation *in vitro*.

**Methods:** TDF (50mg/kg), TAF (5mg/kg), or vehicle (Vh) were orally administered to C57BL/6J mice for 16 weeks (17/group). Doses were calculated by allometric scaling and were equivalent to those used in humans. Weight gain was monitored weekly, and body composition assessed using a DXA analyzer. *In vitro*, murine 3T3-L1 preadipocytes underwent standard 7-day differentiation protocol and were treated with TDF, TAF (0.5-5μM), 3TC (1-20μM), or Vh throughout. Differentiation was characterized by assessing intracellular lipid accumulation with Oil Red O staining, mRNA expression analysis of differentiation markers (RT-qPCR) (days 3, 5, 7), and morphological analysis of cell populations by size and granularity (flow cytometer, day 7). Statistical analysis (n≥5) was performed by one-way ANOVA.


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**Results:** TDF-treated mice exhibited significantly lower weight gain area under curve (AUC) than Vh or TAF groups ( $Vh_{AUC}=1824\pm10.76$ ,  $TAF_{AUC}=1818\pm11$ ,  $TDF_{AUC}=1793\pm10.19$  [week-weight gain];  $p<0.0001$ ), a slight decrease in bone density and an increase in body fat percentage relative to Vh ( $Vh_{\%FAT}=14.41\pm2.63$ ,  $TAF_{\%FAT}=14.79\pm3.23$ ,  $TDF_{\%FAT}=16.85\pm2.58$ ;  $p=0.0462$ ).

*In vitro*, TAF significantly reduced lipid accumulation in 3T3-L1 cells from day 5 ( $28\pm7\%$  less than Vh;  $p<0.01$ ) until the end of differentiation ( $43.5\pm6\%$  less than Vh;  $p=0.01$ ); neither 3TC nor TDF altered this parameter. TAF's inhibitory effect was accompanied by a reduced expression of genes associated with adipocyte differentiation at days 3, 5, and 7, affecting both early (*Ppar $\gamma$* , *Fabp4*) and mature (*Lpl*, *Adipoq*) adipocyte markers. Similarly, on day 7, TAF treatment exhibited higher percentage of cells with morphology resembling undifferentiated preadipocytes.

**Conclusions:** Our findings indicate that sustained TDF administration affects body composition and weight gain in mice, whereas TAF, but not TDF nor 3TC, inhibits preadipocyte differentiation *in vitro*. These distinctive effects of these prodrugs may be involved in the weight differences observed in clinical practice, providing insights to improve HIV treatment.

## THPEA034

Differences between integrase strand transfer inhibitors on glucose tolerance: a role for mitochondrial stress

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**Background:** An association between integrase strand transfer inhibitors and metabolic alterations has been suggested. This study assesses the impact of these drugs on glucose metabolism *in vitro* and *in vivo* and evaluates mitochondrial stress as a plausible underlying mechanism.

**Methods:** C57BL/6J mice received 16-week oral treatment, with doses equivalent to those used in humans, of dolutegravir (DTG, 10mg/kg), bictegravir (BIC, 10mg/kg), or vehicle (Vh), and glucose tolerance tests (GTT) were performed thereafter. RNA-seq was conducted on mice liver samples, and the enrichment analysis was carried out using bioinformatics. *In vitro* studies were conducted with the human hepatoma cell line Hep3B exposed to clinically relevant concentrations (1, 10, 20  $\mu$ M) of DTG or BIC for 48 hours.

The assessments included glucose uptake, gene expression of enzymes related to glucose homeostasis (RT-qPCR), viability (mitochondrial dehydrogenase activity, acid phosphatase assay), and mitochondrial stress (membrane potential, ROS production; by flow cytometry). Statistical analysis used one-way ANOVA ( $n\geq5$ ).

**Results:** Mice treated with BIC exhibited higher glucose levels and a slower decrease of glucose during GTT compared to DTG-treated mice or vehicle ( $AUC_{BIC}=20857\pm2957$  versus  $AUC_{DTG}=15185\pm2463$ ; or  $AUC_{Vh}=16538\pm2877$  min-mg/dL;  $p=0.001$ ). In the Gene Ontology pathway analysis of mouse liver samples, both drugs affected metabolism-related processes.

However, only BIC altered insulin cellular response ( $p=0.0009$ ), linked to changes in the expression of *Pdk4*, *Sgk1*, *Lpin1*, *Pck1*, *Cish*, *Cpeb2*, and *Pcsk9*. *In vitro*, BIC induced a significant concentration-dependent reduction in hepatocyte glucose uptake, both in basal conditions ( $48\pm4.6\%$  less;  $p<0.0001$ ) and post-insulin stimulation ( $33\pm5.0\%$  less;  $p=0.0015$ ), while DTG induced no significant changes. BIC-treated Hep3B exhibited significant alterations in mRNA expression of enzymes related to glucose metabolism (*G6PC1*, *GKC*, *GLYS2*), whereas DTG only down-regulated *GKC*. Both drugs reduced mitochondrial dehydrogenase activity, without affecting lysosomal acid phosphatase activity. BIC, but not DTG, increased ROS generation, mitochondrial membrane potential, and cellular granularity, indicating mitochondrial stress.

**Conclusions:** Sustained administration of BIC induces gene alterations in the cellular response mechanism to insulin and impairs glucose tolerance in mice. Furthermore, it also exerts a more significant influence than DTG on glucose metabolism and mitochondrial function in hepatocytes *in vitro*. These results may help clarify clinical reports associating BIC with changes in glucose metabolism.

## THPEA035

Bictegravir and Dolutegravir modify leukocyte and endothelial cell adhesion molecules

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**Background:** Clinical data suggest an association between integrase strand transfer inhibitors (INSTIs) and cardiovascular diseases, but the underlying mechanism is unclear. The interaction of endothelial cells with leukocytes, which is mediated by adhesion molecules, is impli-





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cated in vascular inflammatory and thrombotic processes. This study analyzed the effects of four INSTIs [dolutegravir (DTG), bicittegravir (BIC), raltegravir (RAL) and cabotegravir (CAB)], a non-nucleoside reverse transcriptase inhibitor (NNRTI) doravirine (DOR) and a nucleoside reverse transcriptase inhibitor (NRTI) abacavir (ABC, known to produce cardiovascular toxicity) on the expression of leukocyte and endothelial cell adhesion molecules.

**Methods:** Whole blood (4h) or umbilical vein endothelial cells (HUVEC, 24h) obtained from healthy human donors (n<sup>35</sup>) were treated with vehicle or clinically relevant concentrations (2.5–20mM) of DTG, BIC, RAL, CAB, DOR or ABC. Flow cytometry was employed to compare the effect of each drug with that of the vehicle on the expression of the two subunits of the integrin Mac-1 (CD11b and CD18) in neutrophils and of P-selectin and ICAM-1 in HUVEC.

**Results:** BIC and ABC, but not DTG, induced a significant increase of CD11b and CD18 in neutrophils. DTG, BIC and ABC enhanced the expression of ICAM-1 and P-selectin in HUVEC (Table 1). DOR produced a slight rise in the expression of ICAM-1. None of the other drugs evaluated had effect on the adhesion molecules appraised.

Cell type	Molecule	DTG 20μM	BIC 20μM	RAL 20μM	CAB 20μM	DOR 5μM	ABC 20μM
	CD11b	105.0 ±6.7	145.9 ±11.3****	98.4 ±8.1	103.7 ±6.3	89.9 ±9.0	131.5 ±7.4****
Neutrophils	CD18	101.4 ±4.7	123.9 ±7.4**	94.1 ±5.7	111.5 ±7.9	105.4 ±4.8	117.4 ±10.1*
HUVEC	ICAM-1	118.2 ±3.9**	123.3 ±7.7*	99.5 ±5.6	104.7 ±5.1	113.8 ±4.1*	114.9 ±3.4**
HUVEC	P-selectin	119.9 ±2.8***	117.9 ±6.3*	105.6 ±2.6	98.8 ±2.4	107.0 ±4.4	109.7 ±3.3*

Table 1. Effects of different antiretrovirals on the expression of adhesion molecules in HUVEC and leukocytes.

Data are represented as mean ± SEM of the percentage of the median fluorescence intensity of each molecule vs vehicle (100%). Data were analyzed using a Kruskal-Wallis test. \*p<0.05, \*\*p<0.01, \*\*\*\*p<0.0001 vs. vehicle.

**Conclusions:** The abovementioned actions of DTG and BIC are compatible with the inflammatory vascular environment that precedes cardiovascular issues, which has been described in PLWH treated with either drug, as reported for ABC. However, it is not an effect that can be attributed to the entire INSTI family.

## THPEA036

HIV subtypes seroprevalence and their association on occurrence of Ois among the PLHIV who are on HIV-1 ART treatment regime in Njombe and Dar es Salaam, Tanzania

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**Background:** HIV-1 and HIV-2 is globally known HIV types with 55% genetic differences that resulted to difference in ART treatment clinical outcomes. HIV-1 is worldwide spread compared to HIV-2 that dominated partly in Europe, USA and west Africa. Current studies shown spreads of HIV-2 to other countries due to immigration and social economic activities interactions.

This study was aimed to determine Seroprevalence of HIV-1, HIV-2 and HIV1+2 dual infection and their impacts on occurrence Opportunistic Infections (OIs) among the PLHIV who are on HIV-1 ART treatment regimen in Njombe and Dares salaam, Tanzania.

**Methods:** A retrospective cross sectional study was conducted from January 2020 to December 2021 at eight HIV Care and Treatment Centers in Njombe and Dares salaam regions Tanzania. A total of 300 participants who are on ART treatments from 2017 to 2019 were randomly selected and re-tested for HIV to determine their HIV types The patient history of OIs were taken through interview. SPSS version 26.0 were used for analysis whereby Percentages, Odds ratios (OR), 95% confidence intervals (CIs), and p-values of ≤0.001 were used for interpretation. Ethical clearance was sought from KNCHRE. All participants were provided with informed consent

**Results:** The mean age of the participants were 35.0 (SD ± 0.24) year. The general prevalence was 69%,for HIV-1 . 15% for HIV- 2 and 16% for HIV-1+2 . In stratification by region the prevalence of 25(17%) HIV-2 and HIV 1+2 dual infection 26(17%) was high in Njombe compared to Dares Salaam 23(15%) p=0.64.Tuberculosis, PCP and Esophageal candidiasis were common OIs to PLHIV with HIV-1+2 (p<0.001, 0.02, 0.02). PLHIV with HIV-2 and HIV1+2 had two times higher



risks to OIs. [(RR: 1.69, 95% CI, 1.39 - 2.07),  $P < 0.001$ , (RR: 1.78: 95%CI, 1.51-2.10  $P < 0.001$ . The study confirmed the presence of HIV-2 and HIV 1+2 infections which previously not found in Tanzania. Also the study show high risks of occurrence OIs among the PLHIV with HIV-2 and HIV1+2 infections.

**Conclusions:** Therefore the urgent intervention on initiation of HIV-2 ART regimen in Tanzania should be in-place to reduce risks of poor clinical treatment outcomes of PLHIV with HIV-2 and HIV 1+2 infections.

## SARS-CoV-2 virology, pathogenesis, host immune responses, vaccines and immunotherapies

### THPEA037

Risk of SARS-CoV-2 infection in association with HLA-I type and recognition of common cold coronaviruses cross-reactive T-cell epitopes in SARS-CoV-2 replicase in HIV-1 positive individuals

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**Background:** T-cells with cross-reactivity between SARS-CoV-2 and common cold coronaviruses (CCoVs) may influence the susceptibility to SARS-CoV-2. As the SARS-CoV-2 replicase 1ab contains sequence areas with homology to CCoVs, we analyzed recognition of potential cross-reactive epitopes in a large cohort of HLA-I-typed HIV-1-positive individuals.

**Methods:** T-cell recognition of 21 homologous peptides with a length of 11 to 22 amino acids from the SARS-CoV-2 replicase 1ab sequence was analyzed in 177 HIV-1+ donors. PBMCs from 133 subjects without prior and from 44 subjects with prior SARS-CoV-2 infection were stimulated with

four peptide pools containing 5-6 peptides each. Outgrowing cells were tested for peptide recognition in an IFN- $\gamma$  ELISpot assay. Fine mapping of epitopes was performed using truncated peptides.

**Results:** A T-cell response to at least one peptide pool was observed in 84 of the 133 (63%) SARS-CoV-2 nucleocapsid antibody negative donors and in 32 of 44 (73%) donors with a prior SARS-CoV-2 infection. We could define several cross-reactive epitopes within those SARS-CoV-2 replicase peptides. The B\*35:03 restricted epitope CoV-YL8 and the C\*07-restricted peptide CoV-NM20 could be identified in donors without prior SARS-CoV-2 infection. In COVID-19 convalescent donors four additional HLA-I-restricted T-cell epitopes could be defined. Cloning of a CoV-YL8 specific TCR and the validation of its functionality in-vitro after orthotopic TCR replacement revealed better recognition of CoV-YL8 on HLA-B\*35:03 positive cells than on HLA-B\*35:01 positive cells. CoV-YL8-specific T-cells could be observed in HLA-B\*35:03+ subjects but not in HLA-B\*35:01+ donors. Analysis of the association of HLA-I alleles with the occurrence of SARS-CoV-2 infections revealed that the alleles HLA-B\*35:01 and HLA-C\*04 correlated significantly with a higher rate of SARS-CoV-2 infection, while HLA-B\*35:03 was significantly overrepresented in the SARS-CoV-2 uninfected group.

**Conclusions:** The high prevalence of SARS-CoV-2/CCoV replicase cross-reactive T-cells in our study suggests an important role of cross-reactive T-cells in SARS-CoV-2 immunity. Although HLA-B\*35:01 and HLA-B\*35:03 differ only by one amino acid, they were associated with opposing effects on the risk for SARS-CoV-2 infection. Further studies are needed to delineate whether the different effects of HLA-B\*35:03 and HLA-B\*35:01 can be explained by differences in the recognition of cross-reactive SARS-CoV-2 T-cell epitopes.



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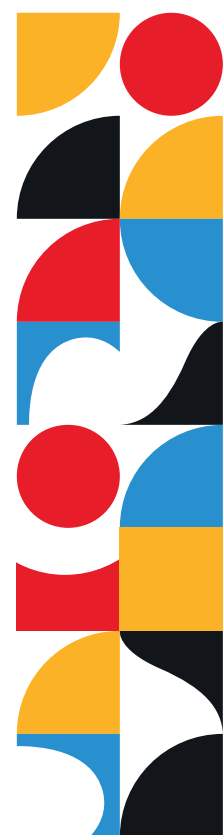
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## THPEA038

People living with and without HIV show similar polyfunctional T-cell responses to spike after vaccination with the mRNA-1273 COVID-19 vaccine

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**Background:** Cellular responses to COVID-19 vaccination in people living with HIV (PLWH) are understudied in large vaccine trials. CoVPN 3008/Ubuntu, an efficacy study of the mRNA-1273 vaccine, enrolled 14,237 people living with and without HIV (PWoH) in seven African countries during the Omicron BA.4/5 wave. An immunogenicity subset of 300 volunteers (150 PLWH) provided specimens to assess cellular responses. Among the PLWH in this subset, 75% had an HIV viral load <50 copies/mL and the median CD4 count was 647 cells/mm<sup>3</sup>.

**Methods:** Participants were divided into six groups defined by SARS-CoV-2 prior acquisition status, HIV status and receipt of one/two doses of mRNA-1273 one month apart. T-cell responses to ancestral and BA.4/5-matched spike peptide pools were characterised at baseline and one-month post-vaccination by validated 27-color intracellular cytokine staining. A pre-specified covariate-adjusted comparison of T-cell response magnitudes based on IFN- $\gamma$  and/or IL-2 expression was performed. Polyfunctionality was evaluated on the expression of eight functional markers.

**Results:** Response magnitudes were higher in CD4+ than in CD8+ T-cells. Among PLWH, T-cell responses to ancestral spike in SARS-CoV-2-negative (SARS2-) individuals after two vaccinations were similar to those in SARS2+ individuals after one vaccination. A second vaccination in SARS2+ individuals elicited higher CD4+ responses than one vaccination (0.1%; 95% CI [0.05%,0.17%]). Among PWoH, SARS2-individuals with two vaccinations showed higher CD4+ responses than SARS2+ individuals with one vaccination

(0.08%; [0.04%,0.15%]); a second dose in SARS2+ individuals increased CD4+ responses (0.07%; [0.01%,0.12%]). In both SARS2- and SARS2+ individuals, similar CD4+ response magnitudes were observed between PLWH and PWoH after two vaccinations. CD8+ responses to BA.4/5 spike were marginally higher in SARS2+ PWoH after one dose (0.04%; [0%,0.09%]) than PLWH. CD4+ polyfunctionality scores were higher in SARS2+ volunteers at baseline before any doses (FDR<0.05) and increased to similar levels across all groups after vaccination.

**Conclusions:** mRNA-1273 vaccination elicited similar spike-specific CD4+ T-cell responses in PLWH as in PWoH. Differences in CD8+ T-cell responses were BA.4/5 driven and likely due to exposure to the circulating strain at the time of enrolment. These findings enhance our understanding of T-cell responses to mRNA-based COVID-19 vaccines in PLWH and PWoH.

## THPEA039

Impaired BlyS/APRIL pathway in people with dysautonomia associated to post-COVID cCondition

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**Background:** Dysautonomia is a clinical term used to describe several conditions that cause malfunction of the Autonomic Nervous System (ANS). Diverse origins have been described for dysautonomic alterations and has been observed that Post COVID-19 condition (PCC) is responsible for triggering dysautonomic manifestations closely related to Systemic Lupus Erythematosus (SLE), involving alterations in the immune system and, particularly, in the humoral immune response and BlyS/APRIL pathway that activates B cells.

We analysed immunological parameters associated with SLE-related changes in the humoral response to unravel possible similarities in molecular basis underlying dysautonomia in PCC.

**Methods:** Comparative, observational and transversal study involving 26 participants with PCC and dysautonomy symptoms, and 11 healthy donors. Plasma cytokine levels were analysed by Luminex and total IgG and antiphospholipid antibodies were determined by ELISA. PB-MCs were analysed by flow cytometry.

**Results:**

1) Median age of PCC participants with dysautonomia was 47 years-old (IQR 45-52), and 90% were female. Median age of healthy donors was 28 years-old (IQR 25-40), and 80% were female.

2) Although CD19+ cells were 1.6-fold ( $p=0.0395$ ) higher in dysautonomic PCC participants than healthy donors, total IgGs levels were lower in these individuals (-1.8-fold,  $p=0.0026$ ).

3) Accordingly, levels of B-Lymphocyte Stimulator (BLyS) and A-Proliferation-Inducing Ligand (APRIL) were also lower in dysautonomic PCC (-1.2-fold;  $p=0.0287$ ; and -1.2-fold;  $p=0.0342$ , respectively). Therefore, CD19-APRIL+ cells were 2.0-fold lower in dysautonomic PCC ( $p=0.0014$ ).

4) On the other hand, the levels of CXCL10, which are generally increased in people with inflammatory and autoimmune diseases such as SLE, were 1.5-fold ( $p=0.0469$ ) higher in dysautonomic participants than healthy individuals. CXCL10 has a significant role in inflammation.

5) Two participants of PCC with dysautonomia were positive for anti-phospholipid antibodies.

**Conclusions:** Dysautonomia is characteristic in people with SLE, in which the BLyS/BAFF/APRIL pathway is usually enhanced. Although some parameters in PCC with dysautonomia resembled SLE, the humoral response was generally impaired by through downregulation of BLyS/APRIL pathway. These results counters the hypothesis about the autoimmune origin of PCC.

## THPEA040

### Longitudinal assessment of SARS-CoV-2 immunogenicity in people with HIV stratified by CD4+ T-cell count: a two-year follow-up study

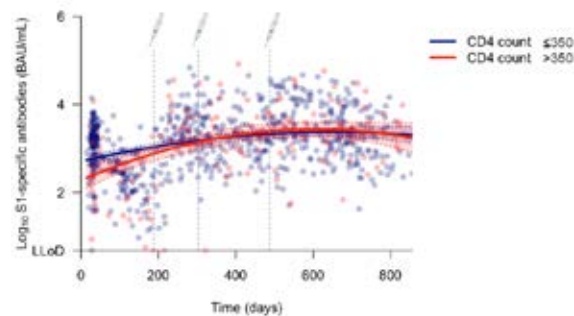
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C.H. GeurtsvanKessel<sup>2</sup>, P. Miranda Afonso<sup>3</sup>, B.J. Rijnders<sup>1</sup>, K. Brinkman<sup>4</sup>, C. Rokx<sup>1</sup>, A.H. Roukens<sup>5</sup>

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**Background:** We hypothesized that people with HIV (PWH) with low CD4+ T-cells have lower SARS-CoV-2 antibody responses over time compared to PWH with normal CD4+ T-cells.

**Methods:** The primary endpoint was the SARS-CoV-2 S1-specific antibody level in PWH with baseline CD4+ T-cell counts  $\leq 350$  versus  $>350$ . We used a mixed-effects model to compare the longitudinal evolution over two years between these groups. The secondary endpoint was the incidence of self-reported breakthrough infections, confirmed by a positive PCR or rapid antigen test.



Longitudinal dynamics of S1-specific antibodies in PWH with CD4+ T-cells  $\leq 350$  ( $N=35$ ) versus  $>350$  ( $N=137$ ), by using mixed-effects regression. Shading indicates the 95% confidence interval and the median time points of the first, second, and third SARS-CoV-2 booster vaccinations are graphically indicated.

**Results:** In total, 175 PWH were included, of whom 38 had CD4+ T-cells  $\leq 350$ . Sex and age were comparable between both groups; PWH were predominantly male (89%) with a median age of 58 years (IQR 49-66). In the  $\leq 350$  CD4+ T-cells group, most recent and nadir CD4+ T-cells were 260 (IQR 189-295) and 50 (IQR 19-115), respectively, with plasma HIV-RNA  $<50$ copies/mL in 89%. In the  $>350$  CD4+ T-cells group, most recent and nadir CD4+ T-cells were 780 (IQR 560-980) and 230 (IQR 150-345), respectively, with plasma HIV-RNA  $<50$ copies/mL in 97%. The breakthrough infection rate was 57% in PWH with CD4+ T-cells  $\leq 350$  and 53% in those with CD4+ T-cells  $>350$ . Over the two-year follow-up,



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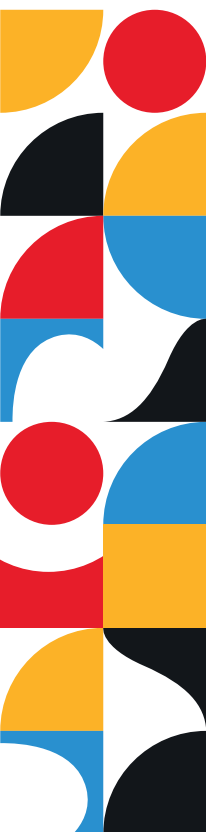
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both groups received a median of four vaccinations (IQR 4–5). Although PWH with CD4+ T-cells  $\leq 350$  exhibited lower S1-specific antibodies one month after primary vaccination ( $p=0.006$ ), this difference disappeared at month six, when most participants had received a first booster vaccination. Between six months and two years after primary vaccination, dynamics of S1-specific antibodies were comparable between PWH with CD4+ T-cells  $\leq 350$  and  $>350$ .

**Conclusions:** Although PWH with CD4+ T-cells  $\leq 350$  showed diminished antibody responses one month after primary vaccination in comparison to PWH with CD4+ T-cells  $>350$ , this difference disappeared over time, leading to a similar humoral response from six months onwards.



## THPEB041

## Cause specific mortality incidence in the Thai National AIDS Program: 2008-2023

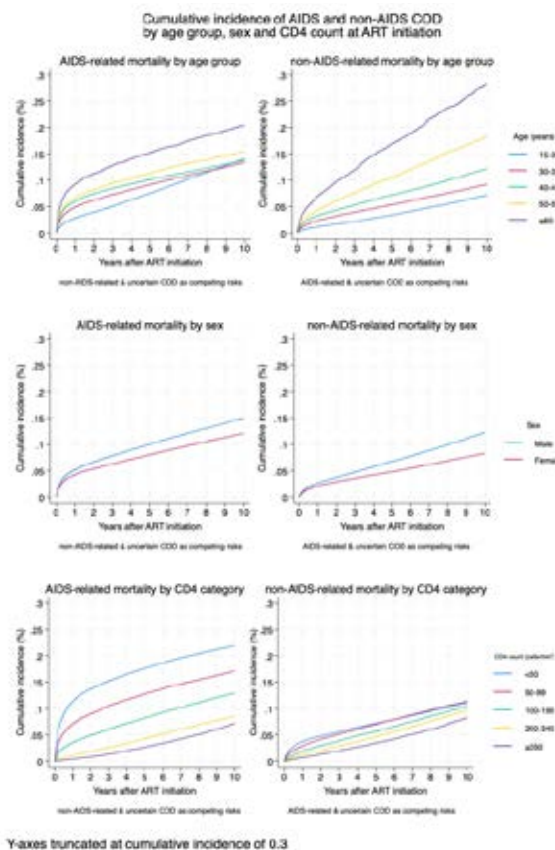
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**Background:** Access to antiretroviral therapy (ART) changed cause of death (COD) in people living with HIV (PLH). We assessed cause specific mortality incidence in PLH who started treatment under the Thai National Universal Treatment program.

**Methods:** PLH aged ≥15 years starting antiretroviral therapy (ART) in the Thai National Treatment program from January 2008 – December 2021 were studied. Data was censored in January 2023. COD was broadly categorised as AIDS-related, non-AIDS-related or uncertain. Competing risk models were used to calculate the cumulative incidence (CI) of each COD, with other COD as competing risks.

**Results:** 385,344 PLH (63% male, 37% female, median (10<sup>th</sup> – 90<sup>th</sup> percentile) age 36 (23-50) years initiated ART. Median (Interquartile range ([IQR]) follow-up duration was 5.1 (1.9 – 8.8); years. Baseline CD4 counts were the closest in a window 1 year before to 45 days after ART start. Although guidelines recommended initiating ART at any CD4 count from 2014, >25% of participants in most subsequent years started ART with CD4 <100 cells/mm<sup>3</sup>. Over 2,145,488 person years, 72,225 people died: 40,338 (55.85%) from AIDS-related, 29,000 (40.15%) from AIDS-unrelated and 2,887 (4%) from uncertain COD. The 3 most common AIDS-unrelated COD were infectious (8.5%), cardiovascular disease (6.3%) and non-AIDS-related cancers (6.5%). Both AIDS- and non-AIDS COD increased with lower baseline CD4 counts

(Figure). The 10 year CI of AIDS-, non-AIDS- and uncertain COD were 13.8%, 10.6% and 1.0%, respectively. Men had a higher 10 year CI of AIDS (15 vs 12.1%) and non-AIDS (12.3 vs 8.4%) COD than women. Like non-AIDS COD, AIDS-related COD initially highly correlated with increasing age, but the AIDS-related CI in adults aged 15-29 rapidly increased and became similar with that of adults aged 30-49 after 7 years.



**Conclusions:** Further efforts are necessary to reach PLH in Thailand who continue to present late for treatment, with adverse impacts on survival.

## THPEB042

## A long-term follow-up of 36 HIV elite controllers not on ART- A single institutional experience

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**Background:** HIV elite controllers naturally have undetectable viral loads and show lack of infection progression over extended periods. Use of ART in these individuals is subject of controversy. Test and treat strategy without baseline viral loads misses elite controllers.

While recent data indicates ART might reduce immune activation and risk of complications, its benefit on clinical outcomes has not demonstrated. Long-term follow-up of elite controllers not on ART can help answer these questions.



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**Methods:** Baseline viral loads were available for 2125/4030 persons living with HIV in our prospectively maintained database of 4030 individuals enrolled for care at our comprehensive HIV clinic in Mumbai from January 2001 through December 2023. 36/2125 (1.7%) were elite controllers and had annual follow-up for at least 5 years. We did retrospective analysis of medical records with respect to clinical and laboratory parameters at three time-points: HIV diagnosis/baseline, 5 years follow-up and last follow-up visit.

**Results:** 32/36 (89%) had HIV-1 while 4/36 had HIV-2. 77% were females(n=28). The median age at diagnosis was 32 years (range:7-62 years). The mean duration of follow-up was 15 years 2 months (range: 5 years 2 months to 22 years 8 months). The reason for HIV testing were partner or parental notification (24/36), pre-surgical testing (8/36) and self-suspicion (4/36); none for clinical signs or symptoms. The mode of transmission was sexual in 30, MTCT in 4 and infected blood products in 2. The mean CD4 levels were 719 at baseline (range: 352-1217), 708 at 5 years (range: 444-1534) and 811 at last follow-up visit (range: 453-1288). All participants were alive and without OI or STI, apart from one participant with pulmonary tuberculosis. There was one pregnancy each in three participants without MTCT, despite not receiving ART. 4/36 (11%) were eventually initiated on ART (table).

Gender/Age in years at diagnosis	Duration from diagnosis to ART initiation	Reason for initiation	CD4 at ART initiation	VL at ART initiation (copies/ml)
Female / 32	11 years	Immune thrombocytopenia	713	<400
Female / 7	7 years	Viremia	930	22,700
Male / 29	6 years	Pulmonary tuberculosis	427	<34
Female / 25	9 years	Pregnancy	618	<400

**Conclusions:** There was a relatively higher percentage of elite controllers (1.7%), with a striking female preponderance. Infrequent long term complications, relatively high CD4 counts and no MTCT in this cohort indicate a distinctive immunology that needs to be further evaluated. Presence of elite controllers, although uncommon, makes it pertinent to do baseline viral load testing to identify them and reassess need for ART.

## THPEB043

### An analysis of outcomes of Uganda's response to Advanced HIV Disease (AHD) in selected health facilities in Central Uganda

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**Background:** An estimated 1,400,000 million people in Uganda live with HIV/AIDS. Of these 15%-25% of present with Advanced HIV Disease (AHD) upon diagnosis or re-engagement in HIV care. One in three people with AHD die on hospitalization or after discharge within a year, even after starting ART. Common AHD-related conditions include TB, cryptococcal meningitis (CM) & and cancers. A national AHD response was set up in 2017. Package of care includes:

- (i) PoC screening for CD4 counts, TB & CM,
- (ii) rapid ART initiation,
- (iii) updated prevention/treatment protocols for AHD, and
- (iv) enhanced adherence counseling.

AHD is defined as living with HIV and CD4 cell count of <200 cells/mm<sup>3</sup> or WHO stage 3 or 4 in adults and adolescents, and all children living with HIV younger than 5 years.

The goal of the national AHD program was to reduce morbidity and mortality related to AHD among People Living with HIV (PLHIV). We present an analysis of Uganda's AHD program in selected health facilities in Uganda between 2020-2023.

**Methods:** Data was extracted from the District Health Information Software (DHIS)2 for 15 selected health sites in Central Uganda. We analyzed secondary data for 11,572 ART clients between 2020-2023. For this analysis we included all clients including children and adults on ART.

**Results:** We noted Improvements in screening for AHD from 15 in 2020 to 73% in 2023 and there was a reduced percentage of HIV-positive clients with AHD from 27% in 2020 to 18% in 2023. The percentage of Serum Cryptococcal Antigen (CrAg)-positive clients initiated on fluconazole improved from 84% in 2020 to 91% in 2022. TB-LAM screening improved from 57% in 2020 to 73% in 2023 with a Positivity yield of 19% while TB-LAM positive clients initiated on TB treatment improved from 83% in 2020 to 91% in 2023.

**Conclusions:** There is awareness and implementation of screening protocols for AHD in health facilities. There is need to ensure consistent availability of commodities and supplies for AHD care. Conduct data-driven initiatives at the facility level to continuously monitor AHD trends, identify emerging challenges, and inform tailored interventions.

### THPEB044

#### Factors associated with viral load suppression in pregnant and postpartum women living with HIV in Rwanda: an open-observational cohort study

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**Background:** Ensuring HIV viral load suppression (VLS) in pregnant and postpartum women living with HIV (WLHIV) is crucial for their health and preventing mother-to-child transmission (PMTCT). Despite a scale-up in viral load (VL) testing in Sub Sahara Africa, there are limited data on VL monitoring among pregnant WLHIV.

This study aimed to assess VLS prevalence and associated factors among pregnant and postpartum Rwandan WLHIV by 12 months following registration in antenatal care (ANC).

**Methods:** We designed an open observation cohort study, utilizing clinical data from ten Rwandan HIV clinics in the Central Africa International epidemiology Databases to Evaluate AIDS (CA-leDEA). We extracted information from WLHIV on antiretroviral therapy (ART) who became pregnant and were referred to PMTCT services at leDEA sites between 2012 and 2020.

We examined the proportions of WLHIV with at least one available VL result, and the proportion achieving VLS (<1000 copies/mL), within 12 months of pregnancy documentation. Logistic regression models were fitted to assess associations between socio-demographic, HIV-related, and obstetrical factors and VLS.

**Results:** Out of the 1002 eligible WLWH, 53% (532) with documented viral load (VL) results were analyzed. Among them, 60% were aged 25-34, and 21% were ≤ 24 years. The majority (84%) were primigravida, and 67% had initiated ART before pregnancy. About 90% were in WHO stages 1 or 2, with 57% having a CD4 count ≥500 cells/uL.

At 12 months after pregnancy registration, 92% achieved VL <1000 copies/mL. WHO stage 3 or 4 was associated with lower odds of VLS at thresholds of <1000 copies/mL (aOR 0.43 95% CI: 0.19, 0.98) compared with WHO stage 1 or

2. Similarly, CD4 counts <200 (aOR: 0.26, 95% CI: 0.08, 0.82), and CD4 counts between 200 and <500 (aOR: 0.42, 95% CI: 0.21, 0.86) compared to CD4 counts ≥ 500.

**Conclusions:** Nearly half of pregnant and postpartum WLHIV in the CA-leDEA HIV clinics in Rwanda lacked recorded VL results from 12 months post-ANC registration. Among those with results, nine out of ten achieved VLS, but advanced disease stages were linked to lower VLS odds, underscoring the need for targeted monitoring.

### THPEB045

#### Use of "client services Audit tools" to promote patient centered monitoring for provision of all HIV services. A case of 130 public health facilities in Ankole region, Uganda

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**Background:** WHO Consolidated Guidelines 2022 on person centered strategic Information defines person-centered monitoring refers to a shift from monitoring measuring services (e.g., the number of HIV tests or people on treatment) to monitoring people at the center of their access to linked HIV and health services.

In essence, this marks a shift to better support the clients accessing services by focusing more on their individual health outcomes.

USAID Local Partner HIV Services - Ankole worked with 130 public health facilities to optimize use of "Client services Audit tool", focusing on ensuring that no client misses services they are eligible to receive during their routine clinic visits

**Description:** Using audit tools, held pre-clinic micro-planning meetings to review clients who are on scheduled appointment at ART clinics by retrieving files and flagging the services that are missed using a masking tape and there after attach a Community Health Workers who take record of all the services their clients are due for and updates the details on file and removes the mark

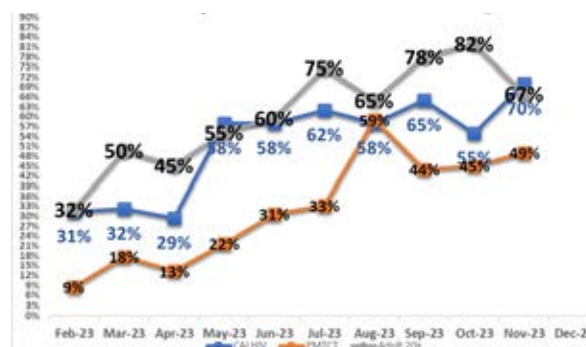


Figure. All services provision trends for different categories.

**Lessons learned:** Adult clients 20+ years that receive all services that they are meant to receive at each clinic visit in Ankole region improved from 32% (Feb 2023) to 70%





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(Nov 2023), Children living with HIV (CALHIV) getting all services they are meant to receive improved from 31% (Feb 23) to 67% (Nov 23) whereas PMTCT pregnant and lactating mothers receiving all services improved from 9% (Feb 23) to 49% (Nov 23)

#### Conclusions/Next steps:

- Patient level monitoring using "Audit tools" helps to track provision of all services to clients comprehensively with focus on children, adults and PMTCT separately
- Optimization of audit tools helps clinic staff to focus on each individual client.
- Micro-planning at clients helped teams to identify clients who missed services during routine clinic visits

## THPEB046

**Diagnostic accuracy of point-of-care VISITECT CD4 Advanced Disease compared to Alere Pima CD4, performed at point-of-care within the advanced HIV disease care package**

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**Background:** People with advanced HIV disease (AHD) (CD4 <200 cells/ $\mu$ L or World Health Organization stage III/IV conditions in those >5 years) have high mortality. CD4 testing is needed to implement the AHD care package. VISITECT® CD4 Advanced Disease (VISITECT; AccuBio Limited, UK) is a semi-quantitative test showing a CD4 result of  $\leq$ 200 cells/ $\mu$ L or >200 cells/ $\mu$ L. VISITECT had a 95% (95%CI 92-97%) sensitivity and 85% (95%CI 83-86%) specificity when tested on venous blood in laboratory conditions. We assessed VISITECT's diagnostic accuracy compared to Alere PIMA CD4 (PIMA, Abbott, US), during pragmatic implementation at point-of-care, within the AHD care package.

**Methods:** During community-based active tuberculosis case-finding trial (TB TRIAGE+ TRIAL, NCT05526885), we are testing a subset of PLHIV in South Africa with PIMA (reference test, gives exact CD4 count) and VISITECT (index test, requires visual comparison of test line to 200-reference line) (recruitment ongoing until sample size of 611). Nurses performing clinical evaluations and TB triage tests, also perform the two CD4 tests on the same venous blood sample, and if PIMA indicates a CD4 $\leq$ 200cells/ $\mu$ L, urine tuberculosis lipoarabinomannan and cryptococcal antigen testing.

**Results:** Between August 2023 and January 2024, 163 PLHIV had a VISITECT and PIMA result (Table).

Variable	Category	n	%	PIMA CD4 $\leq$ 200 cells/ $\mu$ L (n, %)	PIMA CD4>200 cells/ $\mu$ L (n, %)	p-value
Gender	Ambiguous / intersex	1	0,6%	0	0,0%	1
	Female	107	66,0%	0	0,0%	107
	Male	54	33,3%	5	9,3%	49
Median age (years) [IQR]		42	[35-50]	42	[35-50]	43
HIV status	Known positive on ART	155	95,7%	3	1,9%	152
	Not on ART	7	4,3%	2	28,6%	5
VISITECT	CD4 $\leq$ 200	41	25,2%	5	12,2%	36
Result (cells/ $\mu$ L)	CD4>200	122	74,8%	122	100,0%	0

p-values: Fisher's exact or Wilcoxon rank sum test\*. IQR=interquartile range, PIMA= Alere PIMA CD4, VISITECT= VISITECT CD4 Advanced Disease

Table.

Among them, 3.1% (5/163, 95%CI 1.0-7.0%) had a CD4 $\leq$ 200 cells/ $\mu$ L on PIMA and 25.2% (41/163, 95%CI 18.7-32.5%) on VISITECT. Compared to PIMA, the sensitivity of VISITECT was 100.0% (5/5, 95%CI 47.8-100), the specificity 77.2% (122/158, 95%CI 69.9-83.5%), the positive and negative predictive value 12.2% (5/41, 95%CI 4.1-26.2%) and 100.0% (122/122, 95%CI 97.0-100.0%), respectively. VISITECT misclassified 22.1% (36/163, 95%CI 16.0-29.2) of tests as CD4 $\leq$ 200 cells/ $\mu$ L (median CD4 585 (IQR: 435-747 cells/ $\mu$ L)).

**Conclusions:** During pragmatic implementation, VISITECT's sensitivity was optimal, but specificity was low compared to PIMA. Thus, the cheap and instrument-free VISITECT could be considered as CD4 triage test before using other CD4 tests.

## THPEB047

**Implementing a multipronged approach helped improved viral load testing coverage in Nepal**

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**Background:** At the end of 2020, in Nepal viral load (VL) sample collection was not systemic, eligible PLHIV were not followed individually, machine maintenance and supply related challenges were present and test results were not reported timely. As the result, only half of the eligible people living with HIV (PLHIV) on treatment had documented VL test result.

The objective of the abstract is to share the lessons learned from the implementation of multipronged approach to improve VL coverage.

**Description:** In Dec 2020, EpiC Nepal project developed a case management guide with defined responsibilities of staff; trained the case management team and provide supports virtually. In Oct-Dec 2021, the project prioritized 12 of 56 sites with high patient load (85% of total on treatment) but low VL testing coverage using color-coded

tracker and monitoring the progress against fixed weekly targets for sample collection. Machines maintenance, reagents supply, sample transfer and reporting were strengthened. In Oct-Dec 2022, viral load surge activities were implemented strengthening previous interventions by supporting at the national, facility and in the community level for improving VL coverage.

**Lessons learned:** With introduction of case management guide, training, and virtual call support increased VL coverage from 54% to 76%. Prioritization of VL sample collection sites with color coded tracker, monitoring the progress, improving supply and maintenance increase overall coverage to 80% and implementing viral load surge activities increased the viral load coverage to 89%. Positive correlation and statistically significant relationship were observed between reporting year and viral load uptake ( $P < 0.001$ ) with correlation coefficient of 0.857. For details see Figure 1.

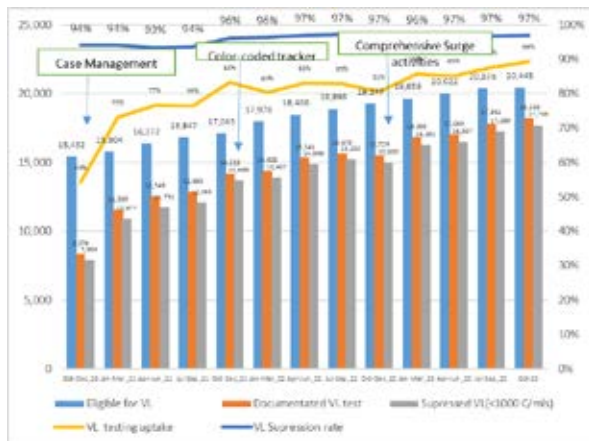


Figure 1.

**Conclusions/Next steps:** Multipronged approach with use of case management guidelines, color coded tracker and comprehensive surge activities contributed to rapid increase in VL coverage. These interventions can be replicated in other projects.

## THPEB048

### Evaluation of tubular renal parameters and of a panel of biomarkers of tubular injury in people living with HIV

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**Background:** There are scarce data about the role of different tubular renal parameters and renal biomarkers in people living with HIV (PLWH), and the expected changes after combination antiretroviral therapy (ART) including tenofovir disoproxil fumarate (TDF).

**Methods:** Prospective cohort study of 284 PLWH (19% females) who had sequential urine samples after inclusion for evaluating changes in the estimated glomerular filtration rate (serum creatinine -eGFR-scr-), 5 tubular parameters (proteinuria, albuminuria, phosphaturia, uricosuria, glycosuria) and 4 urinary biomarkers (low weight molecular proteins, LWMPs) of tubular dysfunction ( $\beta$ -2 microglobulin -  $\beta$ 2M, retinol binding protein -RBP-, urinary cystatin C -uCysC-, N-acetyl- $\beta$ -d-glucosaminidase -NAG).

**Results:** Median age was 47 yrs (range, 23-74). HCV coinfection, HBP and diabetes were observed in 30%, 9% and 3%, respectively. Nadir CD4+ count was 257/mm<sup>3</sup> (IQR, 150-365). After 59.8 months on TDF, despite a significant decrease (-4.5 ml/min/1.73m<sup>2</sup>,  $p < 0.01$ ), median GFR-scr was 91 ml/min (CKD 5%), tubular parameters alteration was correlated and it was frequently observed (proteinuria  $\geq 100$  mg/g in 40%, microalbuminuria in 6%, phosphaturia  $\geq 20\%$  in 52%, uricosuria  $\geq 10\%$  in 19%, glucosuria 8%) and tubular dysfunction ( $\geq 2$  abnormalities) was present in 30%. LWMP were closely correlated ( $\rho = 0.973$ ;  $p < 0.01$  B2M and uCysC), directly correlated with tubular parameters, and inversely correlated with eGFR-scr ( $p < 0.01$ ). Importantly, LWMP were not associated with nadir or current CD4+ count but were mildly correlated with age. In a ROC analysis, LWMP were increased in those PLWH with concomitant tubular dysfunction (B2M 0.73) or CKD (B2M 0.77; RBP and uCysC 0.71), and they were predictive of tubular dysfunction (NAG 0.73) and CKD (B2M 0.77; NAG 0.7) in a sequential evaluation after 9.2 months (4-13).

**Conclusions:** This is the first study showing the usefulness of different biomarkers of TDF-associated toxicity, such as uCysC or NAG. Specifically, these LWMP were correlated with changes in tubular parameters, and were associated with further tubular dysfunction and eGFR decrease. Thus, this study confirms that LWMPs in urine could be used as non-invasive biomarkers for the detection of renal toxicity associated with TDF.



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## THPEB049

### Optimization of HIV testing algorithms: results of verification studies of HIV testing algorithms in 9 countries

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**Background:** WHO recommends countries use a verified testing strategy whereby only three consecutive reactive results are used to provide a positive diagnosis. Verifying algorithms are critical as it identifies risks shared false reactivity between tests which is known to contribute to misdiagnosis.

We present results from 9 country-led verification studies, as well as their impact on national policy decisions.

**Methods:** Between 2020 and 2023, WHO, in partnership with countries, implemented 9prospective cross-sectional studies using characterized venous blood samples. HIV-negative samples were selected and tested on two lots of HIV rapid diagnostic tests (RDTs) which were pre-selected by countries.

Anonymized results were pooled and analyzed to investigate shared false reactivity between tests and the rate of false reactive (FR) per RDT. We further assessed national policy changes as of January 17 2024.

**Results:** The number of samples per country ranged from 100 to 300. The number of RDTs examined ranged from 4 to 13 (median=8), depending on the country, with a total of 18 different RDTs examined. The number of countries examining the same RDT varied from 2 to 6, depending on the RDT. Across all countries, a total of 1,6174 RDT results were included in the analysis. The total number of FR was 139, and the proportion of FR per RDT ranged from 0% to 4%. Only one RDT, in one country, showed an FR > 5%.

Among RDTs examined, 3 countries showed no shared FR. Among the remaining 6 countries, between 1 and 4 samples showed FR on at least 2, and up to 6, tests.

All 9 countries used these data to update existing testing algorithms. Of the 6 countries using RDTs prior to the study, two-thirds (4/6) reported that they introduced at least one new test.

**Conclusions:** FR rates, as well as shared false reactivity between tests, vary from country to country. Verification studies are important for delivering accurate HIV testing services and can also help countries update national testing algorithms and accelerate market entry for new products .

## THPEB050

### Long acting Cabotegravir/Rilpivirin therapy resulting in insufficient drug levels with the risk of resistance development observed in routine laboratory analysis

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**Background:** The relatively new therapy form of injectable drugs (cabotegravir and rilpivirine, CAB and RPV) is enjoying increasing popularity. It is especially aimed at people living with HIV for whom regular daily administration is difficult or burdensome. To improve adherence to therapy in these cases this new treatment form is seen as particularly advantageous.

We have investigated the plasma drug levels of individuals on long acting therapy.

**Methods:** We measured the plasma levels of 68 adjusted clients by LC/MS/MS based on physician requests. At a dosage of 1x600 mg CAB every 2 months, a trough level (Ctau) of approx. 1600 ng/ml should be reached. For the injection of RPV every 2 months at a dosage of 900 mg, the Ctau target is 65.6 ng/ml ([www.hiv-druginteractions.org/prescribing\\_resources/hiv-pk-cabotegravir-im;SmPC](http://www.hiv-druginteractions.org/prescribing_resources/hiv-pk-cabotegravir-im;SmPC)). Sequencing was performed with the Sentosa® SQ HIV Resistance NGS-Assay, Vela diagnostics, Singapore.

**Results:** Of 68 measurements, 45 were diagnosed with a value below the target trough level for RPV; in addition, no RPV was detectable in the plasma of five clients (detection level 25 ng/ml). 23 samples showed CAB levels below the target level; 16 of them also had reduced RPV levels. In four clients with low drug levels, HIV-1 viral load could be detected in parallel; for one client, resistance to both drugs was detected: Integrase L74I, S119P, G140AG, Q148R and Reverse Transcriptase E138K in an HIV-1 subtype A6.

This client should not have been treated with CAB according to the recommendations. In another client with low RPV levels and suppressed viral load, proviral analysis revealed an emerging Y181C mutation alongside the wild type, apparently an evolving resistance to RPV.



The integrase was still wild-type and showed no L74I mutation in an A1 subtype. In a third sample with low RPV-levels and low VL no resistance-relevant mutation could be detected in a subtype B virus.

**Conclusions:** We strongly recommend checking drug levels when administering long-acting therapies to avoid clients with insufficient levels. But what are inadequate drug levels, do we have the right limits, and how long will this therapy tolerate lowered levels before resistance develops? Questions that need urgent clarification for the benefit of clients.

## THPEB051

Use of Tuberculosis Lipoarabinomannan (TB-LAM) to improve management and avert mortalities among newly diagnosed people living with HIV (PLHIV) with advanced HIV disease (AHD): findings from Kakamega County, Kenya

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**Background:** Mortality among PLHIV newly initiated on antiretroviral treatment (ART), due to Immune Reconstitution Inflammatory Syndrome (IRIS), remains a major concern in managing AHD. Pre-existing latent opportunistic infection with a high antigenic burden increase the risk and severity of IRIS. Deliberately delaying ART initiation among newly-diagnosed PLHIV with AHD based on results from additional clinical/laboratory testing is a promising strategy to reduce early mortality (within three months of ART initiation).

PATH, through the USAID/Nuru ya Mtoto project, tested this strategy to assess whether use of TB-LAM as part of clinical decision-making to delay ART initiation was effective at averting early mortality among PLHIV with AHD in Kakamega County.

**Description:** Due to an average 14-day turnaround time for CD4 and GeneXpert testing and frequent commodity shortages, clinical teams relied on World Health Organization (WHO) staging to determine whether to delay in ART initiation among newly diagnosed PLHIV to prevent IRIS-related mortality.

With the availability of TB-LAM in western Kenya beginning October 2022, clinic teams used TB-LAM results (coupled with WHO staging) to enable timelier decision-making in delaying ART initiation.

Duration of ART delay was between two and five weeks. We collected and analyzed data from 11 facilities in Kakamega County to understand if use of TB-LAM results in clinical decision-making for delayed ART initiation led to decreased mortality among PLHIV with AHD 100 days after ART initiation.

**Lessons learned:** Between October 2022 and September 2023, 777 newly diagnosed PLHIV were recorded at these facilities, 214 (28%) of whom were classified WHO stage 3 or 4 and presumed to have AHD. 105 (49%) received TB-LAM testing, with 63 (60%) receiving a positive TB-LAM result. ART initiation was delayed at least 2 weeks for 57 (90%) of PLHIV with a positive TB-LAM result, among whom 52 (91%) were still alive 100 days following ART initiation.

**Conclusions/Next steps:** Use of TB-LAM to delay ART initiation was effective at preventing IRIS-related mortality among PLHIV with AHD. This strategy should be further tested and expanded to improve clinical management and prevent mortality among PLHIV with AHD, particularly in HIV/TB endemic areas with poor CD4 and GeneXpert capabilities and as TB-LAM is available.

## THPEB052

Achieving and sustaining HIV viral load suppression among children 0-9 years: a case study of Mbarara Regional Referral Hospital, South Western Uganda

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**Background:** Reducing morbidity and mortality among children living with HIV (CLHIV) is hinged on achieving and sustaining a suppressed viral load. In Uganda, this has not been optimally achieved and remains a challenge with viral load suppression (VLS) in children 0-14 years at 82.8% by 2020 (UNICEF-VLS-Trends-ESA-2023). In 2020, only 92% of the CLHIV attending Mbarara Regional Referral Hospital (MRRH) had a suppressed VL which is below the 95% UNAIDS target.

The major gaps identified included missed appointments as result of separate appointments for the child and the care giver; We report the interventions implemented to address this gap and the observed impact on the overall VLS rates among CLHIV.

**Description:** HIV care and treatment at MRRH follows the ministry of health guidelines for HIV prevention and treatment. The hospital applies continuous quality improvement principles to address performance gaps.

We conducted a case-study and a historical audit in MRRH in South-Western Uganda in a cohort of 760 active CLHIV who had been on ART for a minimum of 6 months. We documented the interventions implemented to improve and sustain VLS in this cohort of CLHIV and analysed the VLS rates across quarters from 2020 to 2023.

**Lessons learned:** The interventions implemented were: synchronizing the child's visit with the care taker's on a family clinic day; providing non-clinic day psychosocial



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peer support in small group meetings; purposefully befriending children to enable them open up about their barriers to adherence and general care; involving the youth peer leaders in health education and promotion; deliberately engaging with the difficult care-givers physically or by phone call and introducing a male figure for the male children; intensifying adherence counselling for all children with VL <400C/ml (low viremia); creating a counsellor-parent-school nurse relationship; collaborating with OVC partners (USAID and non-USAID); and utilization of data to monitor performance. The ranges of VLS rates by year were; 91-92%, 91.4-95.0%, 95.6-97.8%, and 96.1-96.6% in 2020, 2021, 2022 and 2023 respectively.

**Conclusions/Next steps:** Achieving and sustaining VLS among CLHIV requires a mix of age tailored interventions which synergize each other to address co-existing adherence barriers.

## Co-infections (including opportunistic infections)

### THPEB053

Study of the effectiveness of HCV treatment among PLHIV in Tajikistan

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**Background:** According to the latest Republican AIDS Center data around 18-20% of PLHIV are living with HCV in Tajikistan. The hepatitis C is the second biggest (after TB) cause of mortality among PLHIV accounting to about 10,1% of deaths. This underscores the importance of access to early diagnostics and treatment of HCV among PLHIV.

To reduce burden of HCV, in 2021-2022 UNDP Tajikistan on the request of Republican AIDS Center supported PCR testing and treatment of HCV among PLHIV.

**Methods:** All PLHIV over 18 years old on ART with HCV underwent PCR diagnostics for HCV viral load to determine further treatment tactics. As a result, 1198 PCR tests were performed, of which 851 people began antiviral treatment of HCV with Sofosbuvir/Velpatasvir (400/100 mg). Among 347 people not receiving treatment 210 people had an undetectable viral load, which is not an indication for treatment and 137 people with a detectable HCV viral load did not appear for receiving treatment due to various reasons (e.g., migration).

Data regarding the implementation of antiviral therapy for HCV among PLHIV on ART in the period 2021-2022 was analyzed based on medical records and data from the HIV electronic case management system.

**Results:** The results of the treatment were as follows:

	Total	Below 350 cells/ml	351-500 cells/ml	Above 500 cells/ml
CD4 before treatment	851	296	221	334
HCV-treatment was interrupted (death and other reasons)	27	9	7	11
Achieved complete viral suppression HCV (among 824 people who completed treatment)	779 (94,5%)	267 (93,0%)	202 (94,4%)	310 (96,0%)
Have not achieved complete viral suppression (among 824 people who completed treatment)	45	20	12	13

Table. CD4 indicators in people treated for HCV

	Total	Below 1000 copies/ml	Above 1000 copies/ml
HIV VL before starting HCV treatment	851	776	75
HCV-treatment was interrupted (death and other)	27	22	5
Achieved complete viral suppression HCV (among 824 people who completed treatment)	779 (94,5%)	723 (95,9%)	56 (80,0%)
Have not achieved complete viral suppression (among 824 people who completed treatment)	45 (5,5%)	31 (4,1%)	14 (20,0%)

Table. HIV VL rates in people treated for HCV

**Conclusions:** Antiviral therapy for HCV among PLHIV can be effective regardless of the level of CD4 cells and HIV viral load. The effectiveness of HCV treatment among PLHIV was 94.5% (779 out of 824 who received the full course of treatment).

Based on this, it is necessary to continue expanding access to timely and high-quality testing of PLHIV for HCV and provide antiviral therapy for those with confirmed HCV.

### THPEB054

Prevalence of TB infection and factors associated with indeterminate values of QuantiFERON TB Gold Plus test in PWH in Northern Italy

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**Background:** In recent years, the progress in containing tuberculosis (TB)/HIV coinfection in Europe has come to a halt. Our study aims to assess the current prevalence of TB infection in people with HIV (PWH) in Northern Italy and to evaluate differences between positive (PQ) and negative (NQ) versus indeterminate (IQ) values of QuantiFERON TB Gold Plus tests (QFT).

**Methods:** Prospective study including PWH tested with QFT between December 2021 and December 2023 at the Infectious Diseases Unit of San Raffaele Scientific Institute, Milan, Italy. QFT determination includes two antigenic tests: TB1 and TB2. QFT values were defined as PQ if


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>0.35, NQ if <0.20 and IQ if >0.20 and <0.35 in one/both TB1 or TB2. CD4+ and CD8+ T-cells and HIV-RNA were tested simultaneously with QFT. Differ+y of AIDS (35.7% vs 18.4%,  $p=0.01$ ), lower median CD4+% [28.2 (19.0-35.7) vs 33.8 (25.7-41.2),  $p=0.06$ ] and lower CD4+/CD8+ [0.74 (0.37-0.95) vs 0.87 (0.57-1.28),  $p=0.016$ ].

	(N=12)	IQ	PQ/NQ	p-value
Sex				
Female	104 (10.0%)	9 (2.4%)	145 (17.3%)	0.700
Male	884 (82.0%)	33 (78.0%)	861 (82.7%)	
Age	54.4 (94.2-80.0)	48.0 (38.0-58.0)	54.0 (39.0-69.0)	0.002
Ethnicity				0.000
White	932 (87.9%)	30 (69.0%)	945 (89.1%)	
Asian	9 (0.7%)	2 (5.0%)	9 (0.8%)	
Black	37 (3.5%)	8 (20.0%)	33 (3.2%)	
Latinoamerican	38 (3.5%)	2 (5.0%)	34 (3.2%)	
Other	71 (6.6%)	9 (20.0%)	70 (6.6%)	
History of HIV	204 (19.1%)	10 (23.0%)	194 (18.3%)	0.004
History of HCV	80 (7.6%)	1 (2.3%)	79 (7.5%)	1.000
Years from HIV diagnosis	10.1 (0.42-27.7)	11.7 (0.71-28.0)	10.1 (0.42-27.7)	0.001
Notes	50 (4.7%)	9 (20.0%)	50 (4.7%)	0.002
Years of ART regimen ongoing	15.0 (0.00-34.7)	18.0 (0.00-35.0)	15.7 (0.18-34.3)	0.020
Previous ART diagnosis	208 (19.1%)	10 (23.0%)	198 (18.4%)	0.000
HIV-RNA (copies/mL)	0.30 (0.00-1.9)	0.30 (0.00-2.0)	0.30 (0.00-1.9)	0.000
CD4+ (cells/mm <sup>3</sup> )	722 (607-960)	688 (308-896)	728 (502-971)	0.003
CD4+%	33.7 (25.4-41.1)	28.2 (19.0-35.7)	33.8 (25.7-41.2)	0.006
CD8+ (cells/mm <sup>3</sup> )	819 (594-1100)	799 (500-1270)	860 (590-1140)	0.000
CD8+%	29.5 (21.0-40.0)	41.5 (25.0-61.0)	29.4 (21.7-40.0)	0.107
CD4+/CD8+	0.87 (0.58-1.28)	0.74 (0.37-0.95)	0.87 (0.57-1.28)	0.016

Table 1. Characteristics of PWH with indeterminate QuantiFERON (IQ) versus positive/negative QuantiFERON (PQ/NQ), CD4+ and CD8+ T-cells and HIV-RNA were tested simultaneously with QFT.

**Conclusions:** In our cohort of PWH in Northern Italy, prevalence of TB disease and TB infection were 1.9% and 5.3%, respectively. 3.9% subjects had indeterminate QFT value. IQ was associated with a more frequent history of AIDS and lower CD4+% and CD4+/CD8+ ratio, suggesting functional immune system impairment despite current CD4+ values.

## THPEB055

Immunological and virological outcomes of integrase inhibitors based regimens for people with tuberculosis and HIV coinfection: a real-life study in Brazil

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**Background:** In recent years, a twice-daily dolutegravir (TD-DTG) based regimen has emerged as a promising approach for people living with HIV/AIDS (PLWH) and tuberculosis coinfection (HIV/TB-CI). In Brazil, lamivudine and tenofovir as a backbone (3TC+TDF) plus TD-DTG is the preferential regimen recommended for HIV/TB. This study aims to compare the hazard ratios (HR) to HIV viral load

suppression (VLS) and CD4 cell count recovery after ART initiation with TD-DTG, dolutegravir (DTG), raltegravir (RAL) and efavirenz (EFZ) based regimens among TB/HIV-CI.

**Methods:** We conducted a retrospective cohort analysis of ART naïve TB/HIV-CI aged 18+, who initiated ARV treatment (ART) between January/2019 and December/2022. Programmatic data were extracted from national systems which gather information related to: HIV/AIDS and TB cases notification; results of CD4 and viral load exams; and ART dispensation. We included individuals who started ART using 3TC+TDF associated with TD-DTG, DTG, EFZ, or RAL; had at least 90 days of treatment; and had at least two VL and two CD4 - at baseline (up to -180 days), and up to a year after treatment initiation. Cox regressions were used to estimate HR for VLS (VL<50copies/mL) and CD4 count recovery (increase up to 100%), controlling for baseline exams results.

**Results:** We included 3,864 individuals who was diagnosed with HIV/TB in 2019-2022; 2,062(53%) initiated ART using TD-DTG, 646(17%) RAL, 609(16%) DTG, and 547(14%) EFZ. Cox regression showed that the HR for VLS were 1.454(IC95%:1.296-1.631) among TB/HIV-CI who initiated ART using TD-DTG, 1.170(IC95%:1.014-1.350) using RAL, when compared to who started using EFZ. The HR for CD4 recovery were 1.299(IC95%:1.124-1.501) among those who initiated ART using TD-DTG, and 1.504(IC95%:1.273-1.776) using RAL, when compared to who started with EFZ. DTG were not statistically different from EFZ for both VLS and CD4 recovery.

**Conclusions:** TB is the leading cause of death among PLWH. Our study showed that TD-DTG and RAL presented better immunological and virological response when compared to EFZ among ART naïve TB/HIV-CI. Furthermore, 80% of them started ART with TD-DTG or RAL based regimens. The expansion of the use of integrase inhibitor can contribute to ART adherence, reduce adverse events, ARV resistance, and HIV/TB related mortality.





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## THPEB056

### HIV and Hepatitis C co-infection among people who inject drugs in Unguja, Zanzibar, 2023

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**Background:** People who inject drugs (PWID) are at higher risk of hepatitis C virus (HCV) acquisition due to needle or syringe sharing. We conducted a bio-behavioural survey to assess HCV antibody prevalence, chronic HCV acquisition, and HIV-HCV co-infection among PWID in Unguja Island, Zanzibar, in 2023.

**Methods:** We used respondent-driven sampling (RDS) to recruit individuals aged ≥15 years who had lived in Unguja for ≥3 months and injected drugs in the past 3 months. Participant information was collected through an interviewer-administered questionnaire, and HIV testing was offered on site per national testing guidelines. HCV status was assessed using a rapid antibody test, and reactive specimens were tested for HCV Ribonucleic acid (RNA) levels. Current or prior diagnosis was defined as a positive antibody result, and current diagnosis was defined as a positive antibody result and detectable HCV RNA.

We produced weighted point estimates, reported as percentages with 95% confidence intervals (95%CI). The F-test was used to test differences in adjusted proportions with  $P < .05$  considered significant.

**Results:** We surveyed 455 PWID with a median age of 38 years (interquartile range: 32–45 years). Among all PWID, 43.5% (95%CI: 38.2–48.4) had ever shared a needle/syringe whereby 43.5% (95%CI: 35.7–49.5) of them shared a needle/syringe in the past month. HCV antibody prevalence was 30.3% (95%CI: 25.6–35.1) and 72.5% (95%CI: 64.8–80.2) of them had detectable HCV RNA.

Among all PWID, 22.0% (95%CI: 17.9–26.2) had detectable HCV RNA. HIV prevalence among all PWID was 9.3% (95%CI: 6.1–12.5) and 5.8% (95%CI: 3.6–8.1) of PWID were both HCV-antibody positive and HIV positive. Among HIV-positive PWID, 63.1% (95%CI: 48.5–76.8) had HCV antibodies compared to 27.0% (95%CI: 22.4–31.7) of HIV-negative PWID ( $P < .001$ ).

Among HIV-positive PWID with HCV antibodies, 60.7% (95%CI: 45.0–76.6) had detectable HCV RNA compared to 75.4% (95%CI: 66.4–84.9) of HIV-negative PWID with HCV antibodies ( $P = .05$ ).

**Conclusions:** We identified high levels of HCV exposure and current HCV diagnosis among PWID. HCV exposure level among HIV-positive PWID is significantly higher than among HIV-negative PWID. These findings indicate a need for routine HCV screening among PWID especially those living with HIV, harm reduction services and HCV treatment among PWID in Zanzibar.

## THPEB057

### Risk factors for and patterns of oral shedding of Kaposi's sarcoma-associated herpesvirus – a systematic review

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**Background:** Despite improved access to antiretroviral therapy, Kaposi's sarcoma (KS) remains a major public health concern in high HIV prevalence populations. KS is AIDS defining and is associated with high mortality. Kaposi's sarcoma-associated herpesvirus (KSHV) is the underlying necessary cause of KS. Identifying the risk factors for KSHV DNA detection in saliva (oral shedding) is critical to stem transmission since saliva is the primary route of transmission for KSHV. We conducted a systematic review delineating risk factors for, and shedding patterns of KSHV in the oral cavity.

**Methods:** This systematic review was based on Preferred Reporting Items for Systematic Reviews and Meta-Analyses (PRISMA) guidelines. We systematically searched PubMed, Embase and Cochrane databases using a specified inclusion criterion to identify risk factors for and patterns of oral shedding of KSHV. We applied a stepwise title, abstract and full text review process to select the final articles that were included in the qualitative synthesis.

**Results:** We included 33 studies in the quantitative synthesis. Sixty one percent of the studies were conducted in countries outside of Africa, 79% were among adults and 52% were cross-sectional. Sample size of studies ranged from 14 to 5092 participants with 60% having less than 100 participants. 73% studies focused solely on identification of risk factors for KSHV shedding in saliva. Despite considerable heterogeneity of results among studies regarding risk factors, there was consensus on association between male sex and between younger age and increased probabilities of oral KSHV shedding. Notably, all studies on shedding patterns (21% of all studies) determined KSHV shedding in the oral cavity to be intermittent in all sub-population groups and across geographical regions.

**Conclusions:** There was heterogeneity of the studies by populations, study design, and geography. There was discordance in associations of identified risk factors for


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KSHV oral shedding but consensus on the lack of a shedding pattern in saliva. This highlights the need for larger context specific research on risk factors for KSHV shedding in saliva. This will inform potential tailored intervention strategies for the control of KSHV transmission.

## THPEB058

Life After Mpox (LAMP): post-mpox clinical sequelae with associated psychosocial sequelae persisting >10 months after mpox at two U.S. sites

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**Background:** Monkeypox virus is the only orthopoxvirus that commonly causes human disease in the United States. We sought to characterize post-mpox sequelae with risk factors and social/functional impact following the 2022 outbreak.

**Methods:** Adults in New York City and Houston completed self-assessments and clinician exams >10 months after symptomatic probable or confirmed mpox diagnosed 5/17/2022–1/15/2023. We assessed associations between HIV status or sociodemographic factors at mpox diagnosis and clinician-documented post-mpox sequelae (chi-square tests).

**Results:** LAMP assessed 154 adults aged 20–57 (median 35) years at 11–18 (median 15) months after mpox, self-identifying as Black/African American (34%), White (31%), and/or Hispanic/Latino (49%); and as male gender (89%; 88% reporting male-to-male sexual contact), female gender (3%) or transgender (3%). At diagnosis, 66% were living with HIV. During mpox, 47% had ≥10 lesions and 51% received tecovirimat. Clinicians identified ≥1 mpox-related persisting sequela in 53%, including skin lesions or tissue loss (49%) and anorectal (7%) or urinary (4%) dysfunction but ≤2% frequency of any other deficit (e.g., neurologic, range of motion); 10% had ≥10 scars or chronic skin color changes. Most dermatologic sequelae/tissue loss affected the upper extremities (22%); groin, perineum, external anus, or buttocks (21%); face (15%); torso (14%); or genitalia (13%). Nearly half (48%) reported ongoing negative im-

pact of mpox on social (45%) or sexual interactions (18%). Some experienced mpox-related job discrimination (18%). Persistent clinical/functional sequelae were associated with ≥10 acute mpox lesions ( $p=0.003$ ) (Table).

There was no association between persisting clinical/functional sequelae and race/ethnicity or tecovirimat receipt. HIV viral load (VL) ≥200 copies/ml at mpox diagnosis was associated with persistent skin lesions ( $p=0.04$ ). Anorectal dysfunction ( $p=0.003$ ) and any clinical/functional sequelae ( $p<0.001$ ) were associated with ongoing negative social or sexual impact.

Mpox-related condition	HIV status at time of mpox diagnosis (n=153, missing VL for 1)		Tecovirimat received (n=153, missing for 1)		Post-mpox social or sexual impact (n=154)	
	HIV uncontrolled, VL ≥200 copies/mL (n=22)	HIV-negative or HIV well-controlled, VL <200 copies/mL (n=131)	Yes (n=78)	No (n=75)	Yes (n=74)	No (n=80)
Any persistent sequelae <sup>a</sup>	15 (68%)	67 (51%)	40 (51%)	41 (55%)	51 (69%)*	31 (39%)
≥10 persistent skin changes <sup>b</sup>	5 (23%)*	11 (8%)	7 (9%)	8 (12%)	15 (20%)*	1 (1%)
Urinary dysfunction <sup>c</sup>	1 (5%)	5 (4%)	5 (6%)	1 (1%)	4 (5%)	2 (3%)
Anorectal dysfunction <sup>d</sup>	2 (9%)	9 (7%)	6 (8%)	5 (7%)	10 (14%)*	1 (1%)
Any health services needed <sup>e</sup>	2 (9%)	2 (2%)	2 (3%)	2 (3%)	4 (5%)*	0 (0%)
Negative social or sexual impact <sup>f</sup>	15 (68%)*	55 (44%)	39 (50%)	35 (47%)	---	---

\* $p<0.05$ ; VL = HIV viral load; <sup>a</sup>Skin, clinical, functional; <sup>b</sup>Scars/feloids or color change; <sup>c</sup>Urinary stricture-related difficulty/hesitancy urinating, incontinence; <sup>d</sup>Difficulty defecating from anorectal narrowing/incontinence; <sup>e</sup>Physical/occupational/speech therapy, nursing, other assistance.

**Table.** Relationship of persisting mpox clinical or functional sequelae to HIV status at mpox diagnosis or tecovirimat receipt during mpox, with ongoing impact on social or sexual interactions after >10 months.

**Conclusions:** Many participants had persistent clinical, functional and/or psychosocial post-mpox sequelae. Results demonstrate the need for awareness of ongoing mpox impact and long-term support.

## THPEB059

Prevalence of disseminated histoplasmosis and invasive aspergillosis among advanced HIV disease patients in Uganda: implications for AHD programming in Uganda

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**Background:** Histoplasmosis and Aspergillosis are a major cause of mortality in persons with advanced HIV disease (CD4<200 cells/mL) in endemic areas, and areas of endemicity are evolving. Presenting symptoms of histoplasmosis and Aspergillosis may overlap with those of tuberculosis (TB). The true burden of histoplasmosis and Aspergillosis remains unknown in persons with advanced HIV disease. WHO guidelines recommend screening for Histoplasmosis and Aspergillosis in AHD patients and has



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also approved the use of rapid diagnostic tests for histoplasmosis and aspergillosis. We sought to determine the prevalence of histoplasmosis and aspergillosis among AHD patients in Uganda.

**Methods:** This prospective study was conducted by the Ministry of Health to ascertain the burden of Aspergillosis and Histoplasmosis among AHD patients. Urine and serum samples were obtained from participants at the time of enrollment. *Histoplasma* galactomannan enzyme immunoassay (EIA), and the sōna Galactomannan LFA for the Aspergillus (Immy, Norman OK) were run per the manufacturer's instructions.

We obtained baseline characteristics, symptoms, laboratory values including TB and cryptococcal antigenemia, and calculated the prevalence of histoplasmosis and Aspergillosis using EIA and LFA results.

**Results:** We tested 334 urine and serum samples among participants with advanced HIV disease. 115 samples were positive for Aspergillus antigen (34.4%) (95% CI: 29.4-39.9) while 8 samples were positive for *Histoplasma* antigen (2.4%) (95%CI: 1.1-4.7). The median CD4 was highest among Aspergillosis-positive patients at 77.5 cells/ml<sup>3</sup>. Overall positivity for serum Cryptococcus (IMMY diagnostics, Norman USA) and Tuberculosis TB urine lipoarabinomannan (LAM, AlereLAM, Abbott, Palatine, IL, USA) was 9.6% (31/322) and 28.8% (92/319) respectively.

The highest co-infection observed among AHD patients was between Aspergillosis and Tuberculosis, 25/115 (21.7%). All 25 patients reported symptoms of cough, weight loss, and weakness.

**Conclusions:** Among AHD patients in Uganda *Histoplasma* antigen prevalence is 2.4% while *Aspergillus* antigen prevalence was 34.5%. The highest co-infection was between TB and Aspergillosis and the implications of the co-infection may have poor clinical outcomes for HIV/ TB patients who start TB treatment without starting Antifungal treatment since the diagnosis was not made. The findings from this study underscore the need for the adoption of routine Aspergillosis screening in AHD patients especially in high TB/HIV endemic countries.

## THPEB060

Can artificial intelligence (AI) chatbots assist clinicians in managing HIV-related opportunistic infections? A comparative evaluation of accuracy and readability of ChatGPT 3.5, BARD, and Microsoft Copilot

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**Background:** Managing opportunistic infections (OIs) in people living with HIV (PLHIV) can be challenging. Clinicians require readily accessible and accurate guidance. Chatbots, powered by Large Language Models (LLMs), are an emerging reference tool due to their interactive nature.

We aimed to evaluate the potential of three LLM-powered chatbots, namely ChatGPT 3.5, Bard, Microsoft Copilot as support tools for junior doctors by assessing their concordance with US Department of Health and Human Services (DHHS) guidelines on OIs (ClinicalInfo.HIV.gov: Guidelines for the Prevention and Treatment of OIs in Adults and Adolescents with HIV) and their readability.

**Methods:** Two independent reviewers evaluated LLM responses to eight questions covering the management of four common OIs - cerebral toxoplasmosis, Pneumocystis jiroveci pneumonia, Cytomegalovirus retinitis, and Cryptococcal meningitis and optimal antiretroviral therapy (ART) initiation timing. The responses for concordance to DHHS guidelines were rated on a scale of 1 (least concordance) to 5 (most concordance) based on Likert scale. Readability was evaluated by the Flesch Reading Ease Score and Flesch-Kincaid Grade Level.

**Results:** Bard demonstrated the highest concordance with DHHS guidelines (mean score=3.7), followed by Microsoft Copilot (mean score=3.5) and ChatGPT 3.5 (mean score=3.6). While all LLMs could offer recommendations, details varied, particularly in medication specifics, treatment duration, and chronic maintenance therapy. Notably, ChatGPT deviated from guidelines regarding the timing of ART for cryptococcal meningitis. Microsoft Copilot achieved the highest readability scores (Flesch Reading Ease=17.75 and Flesch-Kincaid Grade=15.15). All LLMs required medical graduate-level understanding. While Bard and Microsoft Copilot cited references, all emphasized that they could not provide medical advice and recommended consulting healthcare professionals.

**Conclusions:** The concordance of LLM responses with DHHS guidelines varied, with Bard demonstrating the highest concordance and Microsoft Copilot having the highest readability scores. LLMs may support self-direct-

ed learning and provide valuable clinical decision support for junior doctors, but they should only be used as a supplement to established guidelines and expert consultation. Managing OIs in PLHIV still requires a personalized human touch and adherence to ethical standards, including patient privacy, information accuracy, and transparency. While chatbots have potential in infectious disease management, continual training, development, and updates are crucial to ensure reliable guidance.

## THPEB061

### Fighting a twin enemy: a descriptive evaluation of HIV and syphilis testing among pregnant women in Liberia

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**Background:** HIV and syphilis are a twin tragedy for exposed babies around the globe, with one million new syphilis and 1.5 million new HIV infections occurring in pregnant women every year. The prevalence of both infections among pregnant women accessing antenatal clinics (ANC) in Liberia is 1.6 and 1.3 % respectively WHO recommends simultaneous dual testing for both infections to maximize access and efficiency.

The National AIDS Control Program partnered with stakeholders to introduce dual testing in 2021 across selected antenatal clinics. We share our national experience and provide a descriptive evaluation of the women tested for both infections.

**Description:** stakeholder engagements, advocacy, and sensitization with staff of ANC clinics, between April 2021 and March 2022 led to the design of a road map adapted to country context. Guidelines and job aids were developed to support the training of providers. 124 master trainers were trained across the 15 counties to cascade training to staff of 563 health facilities.

Data collection and monitoring tools were updated to collect data and to track dual testing. We evaluated the program for the period of January to December 2022.

**Lessons learned:** Of the 187,667 pregnant women tested for HIV, 1,878(1.0%) were HIV positive and were linked to ART. 111,799 (60%) were screened for syphilis with 1,652 (1.5%) testing positive and started on Benzathine penicillin.

The other women (40%) were tested for HIV alone from peripheral clinics without stock of HIV/Syphilis dual test. The proportion of women tested positive for HIV (1.8%) and syphilis (2.3%) was highest for women 10-14 years than women 15years and above (0.9 and 1.5% respectively)

Age (Years)	Tested for Syphilis	Tested Positive for Syphilis	Tested for HIV	Tested Positive for HIV
10 - 14	914	21 (2.3%)	1286	23 (1.8%)
15 – 25+	110,885	1,631 (1.5%)	186, 381	1,855 (0.9%)
Total	111799	1652 (1.5%)	187667	1878 (1.0%)

Table: Pregnant women tested for Syphilis and HIV - January - December 2022 (Source: Country DHIS2)

**Conclusions/Next steps:** Dual HIV and syphilis testing is feasible in Liberia. Supply chain support should be enhanced to assure commodity supply to include peripheral clinics. The comparatively higher prevalence of syphilis and HIV among pregnant women younger than 15 needs to be investigated.

## THPEB062

### Shorter TB preventive treatment using 3HP improves uptake and completion among PLHIV in Tanzania

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**Background:** In 2021, 10.6 million people globally fell ill with TB disease. Of these, 8% were people living with HIV (PLHIV). PLHIV are about 20 times more likely to develop TB disease compared to the rest of the population. For years, 6 months Isoniazid (6H) has been the main stay regimen for TB Preventive Treatment (TPT). Pill burden, long duration on treatment and adverse events are common reasons for sub-optimal completion of 6H.

Recently, rifamycin based regimens that offer shorter duration, less pill burden and are better tolerated have been adopted for TPT. In 2021, only 72% of PLHIV in Tanzania were initiated on TPT with completion of only 78%.

**Methods:** We conducted an implementation cohort study in 6 regions of Tanzania. We introduced 3 months isoniazid and rifapentine (3HP) in 12 clinics. We compared the uptake and completion of TPT among a cohort of PLHIV initiated on 3HP to those initiated on 6H. We used propor-



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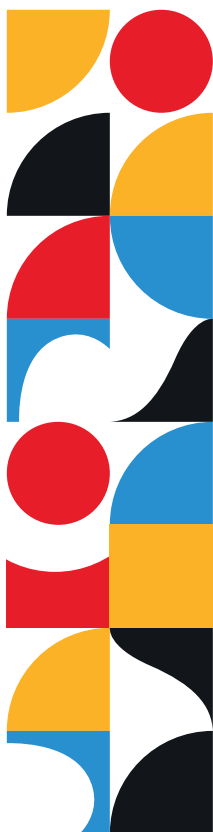
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tions and corresponding confidence intervals to compare uptake and completion. Logistic regression was used to assess other factors associated with completion.

**Results:** A total of 1866 PLHIV were followed up. Of these, 1117 (59.8%) were enrolled in HIV care between Jan-Jun 2022 where 6H was the regimen of choice while 749 (40.2%) were enrolled between Apr-Oct 2023 where 3HP was introduced as the regimen of choice. Median age was 33 years [IQR 26-42] and majority were female (65.1%). Treatment uptake was higher with 3HP, 87.4% (CI 85.0-89.8) than 6H 80.7% (CI 78.4-83.0)  $p<0.0001$ . The proportion of those that completed at least 80% of the doses was 76.5% versus 86.5% in 6H and 3HP respectively (AOR 2.01, 95%CI 1.55-2.66). There were no differences in treatment completion by age, gender, marital status, and presence of a treatment supporter.

**Conclusions:** Use of shorter TPT regimen such as 3HP showed a significant improvement in both uptake and completion of TB preventive treatment among PLHIV in routine programmatic settings of Tanzania. We recommend adequate preparation in terms of training, data capturing tools, strengthening of supply chain and monitoring and reporting of safety events before and during large scale rollout within the countries.

## THPEB063

Optimizing the WHO four symptoms screening to improve the presumptive yield and the diagnosis of tuberculosis among persons living with HIV in military hospitals in Nigeria

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**Background:** Tuberculosis (TB) co-infection in people living with HIV (PLHIV) remains a leading cause of morbidity and mortality. The World Health Organization (WHO) recommends a four-symptom screening (W4SS) for PLHIV at every encounter to facilitate early detection of TB.

This study sought to review the effectiveness of W4SS in the identification of presumptive TB cases and subsequent diagnosis of TB in Nigeria's Military HIV program.

**Methods:** This was a three-year retrospective study from October 2020 to September 2023, analyzing data from TB screening to TB diagnosis and treatment. The study data were from 6 military healthcare facilities supported by the U.S. President's Emergency Plan for AIDS Relief (PEPFAR) located across 5 states in Nigeria that provide

care and treatment services to PLHIV. The W4SS questions include *Cough, Fever, Weight Loss, and Night Sweats*. The 6 facilities were provided with hands-on training on TB screening, diagnosis, and treatment with ongoing virtual and in-person mentorship. Facility performance was also routinely reviewed through high frequency reporting to ensure adequate implementation of screening, diagnosis, and treatment.

**Results:** Over the 3 years, a total of 4,183 PLHIV were screened for TB and 297 (7%) screened positive, higher than the previous value of <2% and the country's average of <3% over the same period. These presumptive TB cases were followed through the cascade; 177 of whom were able to produce high-quality sputum for GeneXpert testing. Of those, 45 (25%) were diagnosed with TB and started TB treatment. Other diagnostic modalities used, and those diagnosed with TB were 12, 11, 27 and 1, 2, 2 for AFB, LF-LAM and CXR respectively.

**Conclusions:** Symptom screening can be improved and active TB case finding among PLHIV can be done using the W4SS if effectively and properly implemented. There is a need to ensure constant training and mentorship of healthcare workers to ensure they are conducting W4SS correctly.

## THPEB064

Single dose of MVA produces a potent immune response to MPox in PLWH from RIVER trial

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**Background:** Third generation non-replicating modified vaccinia virus Ankara (MVA) was used during the 2022/3 mpox outbreak to protect against infection. It's efficacy and longevity of protection in people living with HIV (PLWH) is unclear. We evaluated Orthopox serological responses to MVA in participants from RIVER study, which used MVA as a vaccine vector for the HIVconsv gene (ChAdV63) in treatment arm.

**Methods:** RIVER participants were aged 18-60, within six months of HIV diagnosis and all initiated ART within one month. Participants were randomised to treatment cohort (TC) (ART+ChAdV63+Vorinostat) or control cohort (CC) (ART alone). Plasma samples from TC (n=21) (median age=35 IQR=28-44) and CC (n=13) (median age=30, IQR=30-


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38) were analysed at enrolment, week 8, week 12 and week 16. Serological responses to mpox were measured using Luminex with 9 MPXV (A5L, A27L, A29L, A35R, B2R, B6R, E8L, H3L, M1R) and 3 Vaccinia virus (VACV) (A27L, A33R, B5R) recombinant antigens and reported as mean fluorescent intensity (MFI).

**Results:** TC: median MFI was significantly higher ( $p < 0.05$ ) in response to four MPXV (A35, E8L, H3L, M1R) and 1 VACV (M1R) antigens at week 12 and week 16 compared to enrolment. This difference was not observed in CC. MFI for E8L significantly increased ( $p < 0.05$ ) at week 12 (median=1147, IQR=535-2160) and week 16 (median=640, IQR=193-1135) compared to enrolment (median=34.4, IQR=25-55) in TC whereas MFI remained below cut-off ( $< 101.3$ ) in CC at all time points. Similarly, TC responses to M1R significantly increased at week 12 (median=406, IQR=177-1756) and week 16 (median=179, IQR=91.5-883) and MFI remained below cut-off ( $< 32.8$ ) in CC at all time points. Notably, MFI declined ( $p < 0.05$ ) for E8L and M1R at week 16 (E8L median=640, IQR=189-1136 M1R median=179, IQR=914-883) in comparison to week 12 (E8L median=1147, IQR=521-2160, M1R median=406, IQR=177-3096). Five individuals in treatment arm produced no response to any antigens.

**Conclusions:** At single dose, MVA produces a potent serological response to Orthopox antigens up to week 16 post-vaccination in comparison to controls in PLWH. The slight reduction at week 16 and its potential effect on long-lasting protection against mpox needs to be investigated further.

## THPEB065

### Determinants of high-risk human papillomavirus positivity among Rwandan women with human immunodeficiency virus

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**Background:** High-risk human papillomavirus (hrHPV) causes virtually all cervical cancer, the fourth most common cause of cancer morbidity and mortality among women globally. Cervical cancer, an AIDS-defining malignancy, is the most common cancer and cause of cancer

deaths in most of sub-Saharan Africa (SSA) which also carries the heaviest HIV burden. There is limited data on the prevalence of hrHPV and its determinants among women with HIV (WWH) in SSA. We aimed to assess determinants of hrHPV positivity among Rwandan WWH.

**Methods:** We conducted a study of ~5,000 WWH aged 30-54 years and living in Kigali, Rwanda who were screened for cervical cancer between 2016-2020 using HPV-DNA testing and visual inspection with acetic acid (VIA). Screen-positive women had colposcopy and a four-quadrant biopsy protocol with treatment of biopsy-confirmed disease. A nurse-administered questionnaire collected data on demographics, HPV/cervical cancer risk factors and HPV-DNA testing was performed using the Xpert assay.

**Results:** Women with HIV (N=4,956) with valid HPV results were included in this analysis and their mean age was 40.3±6.5 years. The overall hrHPV prevalence was 26.6% and VIA positivity was 10.2%. The prevalence of HPV16, HPV18/45, HPV31/33/35/52/58, HPV 51/59 and HPV 39/56/66/68 was 6%, 5.5%, 14%, 3.6%, and 6.2%, respectively. Over 98% were on ART and 60.8% had a CD4 count of  $\geq 500$ . The prevalence of hrHPV decreased by increasing age ( $p < 0.001$ ) and it was higher for women who had their first sex before 16 years and who had their first child before 18 years ( $p < 0.001$  for both) and it was also higher with higher number of sexual partners, lifetime and in the past six-months ( $p < 0.001$  for both), for current smokers ( $p = 0.014$ ), oral contraceptive users ( $p = 0.006$ ), women with VIA positive results ( $p < 0.001$ ) and lower CD4 cell count ( $p < 0.001$ ).

**Conclusions:** Our findings highlight the role of HIV control with ART and improved immunity on hrHPV infection, which could potentially impact cervical cancer control among this high-risk population. Multiple factors might also contribute to hrHPV infection and persistence. Raising awareness on those factors coupled with integrating HPV and cervical cancer awareness in HIV care could help control this double burden of disease.

## THPEB066

### Challenges in the prevention and management of tuberculosis in people living with HIV in Santa Fe, Argentina

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**Background:** In Argentina, preventive treatment for latent tuberculosis in patients newly diagnosed with HIV is rarely prescribed, despite the existence of national guidelines supporting its adoption. Here, we describe the incidence of tuberculosis in people living with HIV (PLWH) in 2021 at Santa Fe province, a region of moderate tuberculosis endemicity in Argentina.





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**Methods:** We used data from the National Health Surveillance System (SNVS 2.0), the HIV Patient Administration System (SVIH), and the Primary Care Centers Information System (SICAP) to identify patients with tuberculosis and HIV-tuberculosis coinfection registered between 01/01/2021 and 12/31/2021.

**Results:** The rate of HIV-tuberculosis co-infection was 648/100,000 PLHIV, while the rate in the general population in Santa Fe on the same period was 16/100,000 inhabitants. More than 80% of the HIV-tuberculosis co-infection cases were not on antiretroviral treatment when tuberculosis was diagnosed. The T-CD4 count was <200 cells/mm<sup>3</sup> in 90% of the patients; only 15% were virologically suppressed (<20 copies/mL).

Among PLWH with undetectable viral load, tuberculosis detection was 2.7 times higher than in the general population.

Remarkably, mortality was 30% in PLHIV with tuberculosis coinfection, whereas in the general population with tuberculosis mortality estimates were 5%.

**Conclusions:** This study reveals concerning estimates from a province in Argentina with moderate endemicity for tuberculosis and very low adherence to recommendations for latent tuberculosis diagnosis and treatment in PLWH. We found that, compared to the general population, PLHIV had more than 40 times higher rate of tuberculosis diagnosis and 6 times higher mortality rate.

Our findings underscore the urgent need for interventions such as the widespread implementation of latent tuberculosis diagnostic and treatment resources and training for healthcare providers to improve adherence to national and international HIV-tuberculosis management guidelines.

## THPEB067

Prioritizing children: decentralized diagnostics and child-friendly approaches transform childhood TB management in Zambia

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**Background:** Diagnosing tuberculosis in young children, particularly those under five, is hindered by challenges in impractical sputum specimen collection methods, leading to discomfort. In 2015, only two out of 528 facilities could perform alternative procedures.

Further there was a decrease in the proportion of children with tuberculosis from 8.2% in 2011 to 6.2% in 2015, sug-

gesting possible under-diagnosis and under-reporting. As a result, there was a need to decentralize and scaling up of child-friendly diagnostic tools.

**Description:** In 2018, the program introduced urine LAM testing to 15 tertiary facilities, subsequently scaling up to other care levels. By 2020, sputum induction and lavage sets were procured for 10 health facilities, with each province having one supported hospital for increased coverage. Stool testing for Xpert was adopted in December 2020, rolled out to all GeneXpert facilities. Childhood TB was prioritized through continuous monitoring, mentorship, quality improvement activities, and targeted training of healthcare staff and paediatricians.

**Lessons learned:** A total of 22 pediatricians were trained and an additional 45 health workers were trained in childhood TB management. Each provincial hospital (10 in total) was equipped with sputum induction machines, NPA sets, and staff was trained in the use of the machines. This led to an increase in the proportion of childhood TB notification to 11% in 2022. The acceptance of Nasopharyngeal Aspirate (NPA) as a sample type for GeneXpert contributed to a 33% rise in bacteriologically confirmed TB cases in children. The rollout of LAM testing and stool to facilities resulted in 30% improvement in childhood TB notifications, reversing the previous downward trend.

The lessons learnt are that the integrated approach yields results and employing a flexible testing methods enhance case detection. This is evidenced by the increase in the number of bacteriological confirmation and overall notifications.

**Conclusions/Next steps:** The mixed approach of decentralized service delivery coupled with the adoption and implementation of child-friendly testing methods, staff capacity building on childhood TB led to improved childhood TB diagnosis, bacteriological confirmation, and overall notifications. Sustaining these efforts is likely to improve childhood TB diagnosis in future.

## THPEB068

### Treatment response in children with presumptive pulmonary tuberculosis over six months in the UMOYA cohort in Cape Town, South Africa

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**Background:** Classification of pediatric tuberculosis (TB) may include response to treatment, but the dynamics of TB-related symptoms in children remain understudied. We examined determinants of resolution and recurrence of TB-related symptoms over six months among children with presumptive pulmonary TB.

**Methods:** UMOYA is a prospective cohort study in children (0-13 years) presenting with presumptive pulmonary TB in Cape Town, South Africa (recruitment 2017-present). Children with TB-related symptoms were classified as confirmed TB case, unconfirmed TB case or symptomatic control based on microbiology and clinical presentation. TB cases received anti-TB treatment, controls did not. Follow-up at week 0,2,8,16 and 24 after starting treatment included assessment of TB-related symptoms (cough, wheeze, fever, low appetite, reduced activity, weight loss, tachycardia, tachypnea, lymphadenopathy, hemoptysis).

We examined factors associated with symptom resolution (i.e., becoming asymptomatic for all TB-related symptoms) and recurrence (i.e., becoming symptomatic for  $\geq 1$  TB-related symptom after symptom resolution) over 24 weeks using Markov switch modelling. We report adjusted hazard ratio's (aHRs) and 95% CIs.

**Results:** 288 children (n=53 confirmed TB, n=70 unconfirmed TB, n=165 symptomatic controls; median (IQR) age: 24(11-53) months, n=23 with HIV, n=48 with severe abnormal chest X-ray) were included. Prevalence of any TB-related symptom was 100% at baseline and 49% at week 24. Estimated mean time to symptom resolution was 30 days; estimated mean time to symptom recurrence was 39 days.

Compared to symptomatic controls, TB cases had higher rates of symptom resolution (confirmed TB: aHR=3.58[1.45-8.82]; unconfirmed TB: aHR=33.45[1.19-943.44]) and symptom recurrence (confirmed TB: aHR=4.18[1.47-11.85]; uncon-

firmed TB: aHR=43.31[1.48-1265.83]). Children under 2 years had lower rates of symptom resolution (aHR=0.35[0.14-0.85]) and recurrence (aHR=0.35[0.13-0.97]) than children over 5.

Household smoking exposure (resolution: aHR= 4.18[2.01-8.69], recurrence: aHR= 5.45[2.41-12.35] and family unemployment (resolution: aHR=3.69[1.26-10.83], recurrence: aHR= 4.43[1.35-14.59]) were associated with higher rates of symptom resolution and recurrence. Chest X-ray severity and HIV status were not associated with symptom resolution or recurrence.

**Conclusions:** TB cases receiving anti-TB treatment resolved TB-related symptoms faster than symptomatic controls, but also had faster symptom recurrence. Moreover, resolution and recurrence were associated with environmental exposures and socioeconomic status. Further research on the usefulness of treatment response to diagnose pediatric TB is needed.

### Co-morbidities and clinical complications of HIV and antiretroviral therapy

## THPEB069

### Characterizing weight trajectory in a diverse ambulatory population of people with HIV after switching from their first antiretroviral regimen (WEIGH-IN SWITCH)

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**Background:** Weight gain with integrase inhibitors (INSTI) and/or tenofovir alafenamide (TAF) may be progressive beyond normal aging/return-to-health, but the course after switching antiretroviral therapy (ART) is not fully elucidated. We aimed to characterize weight trajectory in a diverse population of persons with HIV after switching from their first ART.

**Methods:** Single-centre, retrospective cohort study using data from a research registry database of a Canadian tertiary care HIV clinic. Inclusion: adults starting first ART for  $\geq 1$  year from 01/01/2010-30/09/2022, then switched to a second ART for  $\geq 1$  year with  $\geq 2$  weights recorded. The primary outcome was change in weight (kg/year) during the switch period. Participant-level regression was used to define change; the models used piecewise linear slopes with a knot at the time of switch.



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Participants were categorized into stable weight (slope within  $\pm 1$  kg/year), increased weight ( $>1$  kg/year), and decreased weight ( $<-1$  kg/year).

**Results:** 144 participants (83% male, 47% white, 55% born outside Canada, median age 42 years, CD4 326/mm<sup>3</sup>, weight 75.0 kg, BMI 24.8 kg/m<sup>2</sup>) started first ART (47% NNRTI/34% INSTI/19% PI with 90% TDF/2% TAF) for a median follow-up of 3.8 years. Participants switched to 12% NNRTI/84% INSTI/1% PI with 22% TDF/48% TAF for a median 4.5 years. During this period, weight remained stable (41%), increased (39%) or decreased (20%). Among those switched to TAF, 55% increased, 28% were stable and 17% decreased ( $p=0.006$  compared to switches without TAF). The proportion who switched to bictegravir/dolutegravir+TAF who increased weight was higher than those who switched to bictegravir/dolutegravir without TAF or to other regimens [9/11 (82%) vs. 12/45 (27%) and 35/88 (40%), respectively;  $p=0.02$ ; Figure 1].

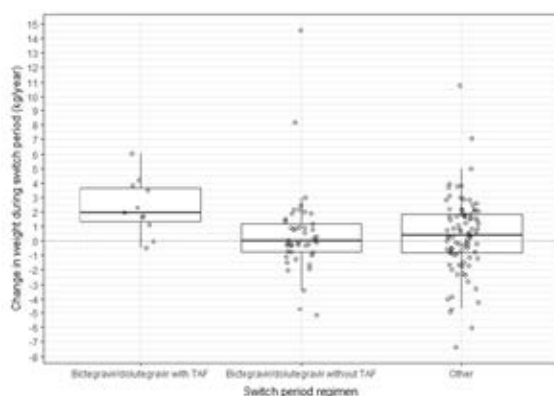


Figure 1. Boxplot of weight change after switching from first antiretroviral regimen.

**Conclusions:** In a contemporary cohort of people, those who switched to TAF were more likely to experience weight gain. Significant weight gain was less frequent in those switching to other regimens including bictegravir/dolutegravir without TAF.

## THPEB070

Prevalence of osteoporosis and risk factors associated with decreased bone density in Korean males living with HIV receiving ART

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**Background:** People living with HIV have a decreased bone density due to many factors such as osteoporosis-related and HIV-related factors. We aimed to evaluate its prevalence and risk factors in Korean males living with HIV receiving ART.

**Methods:** This study included 200 men who underwent dual energy X-ray absorptiometry in a tertiary care hospital. Osteoporosis was defined as a Z score  $<-2.0$  according

to International Society for Clinical Densitometry for men aged  $<50$  years and a T score  $<-2.5$  in men aged 50 or more years according to WHO criteria.

We analyzed the prevalence of osteoporosis and conducted multivariate logistic regression to evaluate the associated risk factors.

**Results:** The prevalence of osteoporosis was 16.95% (20 of 118) in males aged  $<50$  years and 25.6% (21 of 82) in males aged 50 or more years. Low body mass index (BMI) (odds ratio [OR], 0.762; 95% confidence interval [CI], 0.630 to 0.923;  $p=0.005$ ) and the use of tenofovir disoproxil fumarate (TDF) (OR, 1.039; 95% CI, 1.007 to 1.072;  $p=0.017$ ) were the independent risk factors for osteoporosis in males living with HIV aged  $<50$  years.

Osteoporosis in males aged 50 or more years was significantly associated with low BMI (OR, 0.732; 95% CI, 0.577 to 0.929;  $p=0.010$ ) and decreased amount of exercise (OR, 5.611; 95% CI, 1.102 to 28.575;  $p=0.038$ ).

**Conclusions:** Osteoporosis is highly prevalent in Korean HIV-infected males. Bone mass density needs to be measured for HIV-infected males even below 50 years with low BMI or receiving ART including TDF.

## THPEB071

Diabetes mellitus control in people living with HIV at a specialist HIV referral clinic in Zimbabwe: a cross sectional analysis

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**Background:** Optimum blood sugar control is as important as HIV control to ensure a reduction in morbidity and mortality among diabetic people living with HIV (PLHIV). We assessed and compared blood sugar and HIV control in a PLHIV with comorbid DM receiving care at a specialist HIV referral clinic in Zimbabwe.

**Methods:** We conducted a descriptive cross-sectional analysis of adult participants ( $\geq 40$  years) as of 31 December 2023 using routine clinic records. DM control was defined as an HBA1C of  $< 7\%$ . HIV control was defined as a viral load of  $<1000$  copies/ml. We compared the percentage of disease control (HIV vs diabetes) in participants living with both HIV and diabetes.

**Results:** We reviewed 4857 records (1694, 39% males, overall median age 51 years, IQR 46–47). Most participants (91%, with 65% females) were on a dolutegravir based regimen with a median of 14 years on antiretroviral therapy (IQR:9–17). Prevalence of DM was 7% ( $n=330$ , 95%CI 6.1–7.5) with no difference by gender (8% males and 6% females,  $p=0.08$ ). Amongst these diabetic patients, glycemic control was 59% (190/323) and did not significantly differ by gender (62%, 95%CI; 53–70 males vs 58%, 95%CI; 50–64 females). The proportion of HIV virologic control ( $<1000$ copies/ml)

was 98% (95%CI; 96-99) with no differences by gender. Overall, participants were more likely to achieve HIV virologic control (98%) than glycemic control (59%).

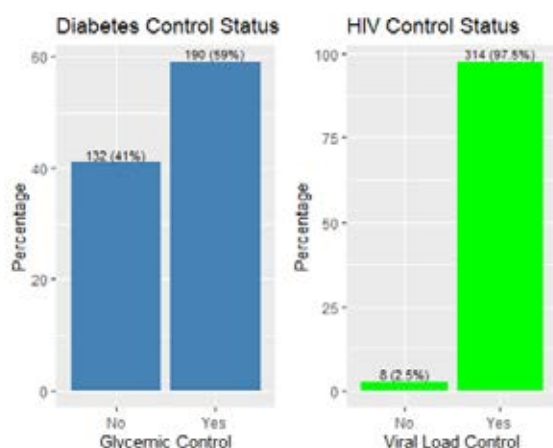


Figure 1. Glycaemic and HIV disease control among diabetic patients.

**Conclusions:** We show a high percentage of HIV virologic suppression which is in line with the global UNAIDS target. However, the proportion of patients with good glycaemic control was significantly lower.

Within integrated HIV care programs, health care workers need to help patients understand the equal importance of glycaemic control.

Lessons learnt from HIV treatment programs should be used to help optimise control of comorbidities. Future research may be useful in understanding perceptions of PLHIV regarding the importance of comorbidities.

## THPEB072

### Changes in the disease spectrums of hospitalized HIV infected patients: a 12-year study from a population in eastern China

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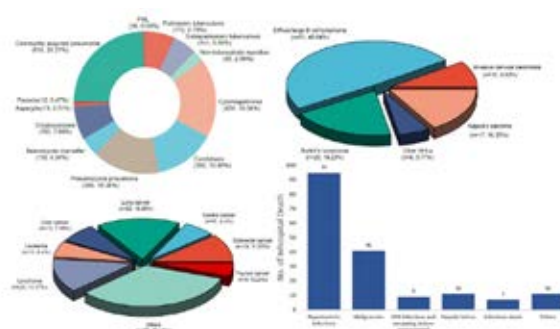
**Background:** Acquired immunodeficiency syndrome (AIDS) caused by human immunodeficiency virus (HIV) remains a serious public health problem. Opportunistic infections and malignancies are the main causes of morbidity and mortality in people living with HIV.

This study investigated hospitalized patients diagnosed with HIV over the past 12 years, to determine the composition and changing trends of the disease spectrum of HIV/AIDS patients, and the related factors of mortality in eastern China.

**Methods:** A total of 2140 people living with HIV were enrolled between January 2010 and December 2021. Demographic, clinical and laboratory data, opportunistic infections, malignancies and in-hospital outcomes were collected and analyzed.

**Results:** A total of 1292 patients (60.4%) developed opportunistic infections. Among them, 537 developed one type and 755 had two or more types of opportunistic infections; 104 cases were assigned to AIDS-defining cancers (ADCs), and 172 cases were non-AIDS-defining cancers (NADCs). Community acquired pneumonia and cytomegalovirus were the main types of opportunistic infections. In ADCs and NADCs, diffuse large B-cell lymphoma and lung cancer were the most common types, respectively. The overall in-hospital mortality rate was 8.1%.

Opportunistic infections and tumors accounted for the majority of in-hospital mortality. Opportunistic infections, malignancies and CD4<sup>+</sup>T cell count were independent predictors for in-hospital mortality.



**Conclusions:** Our study provided a comprehensive description of the disease characteristics of HIV inpatients in eastern China over the past 12 years. We explored the changes in hospitalized patients, disease spectrums and causes of death. AIDS-defining illness is still the main cause of hospitalization and in-hospital mortality. Therefore, efforts are still needed to develop a greater number of successful HIV management strategies.



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## THPEB073

### Incidence of Metabolic Syndrome in People living with HIV Starting ART with a Dolutegravir Based-Regimen vs Bictegravir Based-Regimen After 48 Weeks in Mexico

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**Background:** Evidence suggests that people living with HIV (PLHIV) starting an INSTI regimen are more likely to experience weight gain and metabolic syndrome (MetS) than those on other antiretroviral regimens.

The aim of the study was to identify the incidence of MetS at 48 weeks for ATP III score in PLHIV who started antiretroviral therapy (ART) with Dolutegravir based-regimen compared with Bictegravir based-regimen.

**Methods:** A randomized open clinical trial was developed in men PLHIV who started ART randomized to BIC/FTC/TAF or DTG/3TC/ABC. Weight, blood pressure and waist circumference were measured during routine clinical care; in addition, bioelectrical impedance was done; repeated measures were done at baseline, 24 and 48 weeks. Laboratory tests were done at the same time.

**Results:** A total of 311 PLHIV were randomized, 155 (49.9%) to DTG/ABC/3TC and 156 (50.1%) to BIC/TAF/FTC. At current analysis, 203 had completed 48 weeks of follow-up. Median age is 26 years old (IQR 22-30), and a viral load of 26,403 copies/mL (IQR 7513-85674). A significant increase in CD4+ T cell count was observed in the DTG/ABC/3TC group (P=0.007). The total incidence of MetS was 10 cases (4.9%); 5 (5%) in the BIC/TAF/FTC group and 5 (4.8%) in the DTG/ABC/3TC group (p=0.129). Weight gain was +1.7 kg (IQR

0.3-3.4) with BIC/TAF/FTC and +1.5 kg (IQR 1-5.5) with DTG/ABC/3TC (p =0.591). The incidence of hypertriglyceridemia was 14 cases (14%) in BIC/TAF/FTC and 12 (11.6%) in DTG/ABC/3TC (p=0.315). In BIC/TAF/FTC group, weight gain >5% was found in 16 patients (16%) and weight gain >10% in 7 patients (7%); in the DTG/ABC/3TC group, weight gain >5% was found in 17 patients (16.5%) and weight gain > 10% in 9 (8.7%); p=0.374 and p=0.938 respectively.

Measurements	BIC/TAF/FTC (n=100)	DTG/ABC/3TC (n=103)	P value
Weight gain, median (IQR), kg	+ 1.7 (0.3-3.4)	+ 1.5 (1-5.5)	0.591
Incidence of Hypertriglyceridemia, n (%)	14 (14)	12 (11.6)	0.315
Incidence of Metabolic Syndrome, n (%)	5 (5)	5 (4.8)	0.129
RNA HIV Viral load, Log, median (IQR)	<1.6 (<1.6-1.6)	<1.6 (<1.6-1.6)	0.936
CD4+ count cell, median (IQR), cells/mm <sup>3</sup>	645 (543-833)	603 (505-895)	0.007
Visceral adipose tissue, median (IQR), cm	3.4 (2.6-3.8)	3.5 (3.0-4.3)	0.082
Subcutaneous adipose tissue, median (IQR), cm	1.5 (1.1-2.2)	1.6 (0.9-2.2)	0.896

Table 1. Comparison between groups of 48 weeks results.

**Conclusions:** This Mexican trial shows that the incidence of MetS was similar in both groups. Second generation INSTI-based regimens were effective and tolerated in our population.

## THPEB074

### Prevalence of elevated blood pressure in people with self-reported substance use accessing care in region F, Johannesburg

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**Background:** Hypertension, a risk for cardiovascular disease, is the leading cause of death in sub-Saharan Africa. Substance use is one of many risk factors for elevated blood pressure (BP) and hypertension.

Here, we explore the prevalence of elevated BP and associated risk factors among individuals who self-reported substance use.

**Methods:** This was a cross-sectional study, using secondary data analysis. Data for 2199 participants who self-reported substance use between August 2022 - December 2023 were extracted from iHEART-SA (ethics reference M211160) - an HIV/hypertension integration study conducted in nine public health facilities in Johannesburg. HIV status, age, and sex were assessed as covariates of elevated BP amongst substance users. Elevated BP was defined as two consecutive systolic blood pressure /diastolic blood pressure exceeding 140/85 mmHg. Analysis was completed using with STATA version 17 software.

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**Results:** The prevalence of elevated BP among participants ( $n=2199$ ) was 39% ( $n=849$ ). In the test of association analyses, elevated BP was associated with substance use ( $p<0.001$ ), with almost two-thirds of the participants with elevated BP self-reporting alcohol use ( $n=543$ , 64.0%). As expected, more older participants ( $\geq 50$  years) had elevated BP than younger participants (18-29 years) ( $n=234$ , 28% versus  $n=86$ , 10%,  $p<0.001$ ).

In the multivariable analyses, participants aged 40-49 years ( $aOR=2.03$ , 95% CI=1.34-3.09) and  $\geq 50$  years ( $aOR=3.53$ , 95% CI=2.23-5.59) were more likely to have elevated BP than younger participants (18-29 years).

More males were associated with elevated BP than females ( $n=526$ , 62% versus  $n=323$ , 38%,  $p<0.001$ ). Elevated BP was associated with HIV, with negative participants ( $aOR=2.66$ , 95% CI=2.00-3.54) and those with unknown HIV status ( $aOR=2.26$ , 95% CI=1.11-4.61) more likely to have elevated BP than PLHIV ( $p<0.001$ ).

In multivariable analysis stratified by substance use, the same relationships were seen in the group who reported alcohol use compared to other substances.

**Conclusions:** There is an association between elevated BP and substance use, particularly alcohol usage. This study highlights a need for future research into the substance use associations with the development of hypertension, as well as the design of health interventions giving consideration to alcohol use on elevated BP and hypertension.

TLD and at least one month post TLD initiation, to evaluate the difference in eGFR. A paired t-test was conducted to determine whether DTG was associated with a change in eGFR. Bivariate and multivariate logistic regression was used to identify risk factors for an eGFR decrease of more than 20%.

**Results:** Among 814 clients who switched from TLE to TLD, the mean eGFR decrease was 16mL/min/1.73m<sup>2</sup> (13.6%) ( $p<0.001$ ) at an average of 49 weeks post TLD switch (14mL/min/1.73m<sup>2</sup> (12.3%) for males and 16.7mL/min/1.73m<sup>2</sup> (14%) for females). There were 219 clients (27%) with an eGFR decrease of more than 20%. The mean eGFR decrease in this group was 29.32%. On bivariate logistic regression, risk factors for a decline of over 20% included increased time on TLE (OR 1.08, 95%CI 1.04, 1.13) female sex (OR 1.7, 95%CI 1.2, 2.5), increasing age (OR 1.02, 95%CI 1.01, 1.04), an underweight body mass index (BMI) (OR 2.1, 95%CI 1.3, 3.2), and an obese BMI (1.9 OR, 95%CI 1.2, 2.8). On multivariate analysis, the risk factors were similar, with the exception that obesity was no longer associated with a decline in the eGFR of over 20%.

**Conclusions:** After switching to TLD, the mean change in eGFR observed in Eswatini aligns with published reports. This post-marketing data is reassuring and confirms observations from clinical trials. Identifying risk factors for a greater than expected change in eGFR can help clinicians to better monitor those who might be at higher risk for larger than average reductions in eGFR.

## THPEB075

Factors associated with an above average decline in estimated glomerular filtration rate following substitution with DTG among people living with HIV in Eswatini

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**Background:** Dolutegravir is known to result in a physiologic decrease in estimated glomerular filtration rate (eGFR) of 16-19mL/min/1.73m<sup>2</sup> due to inhibition of tubular creatinine secretion. This analysis evaluated adults in Eswatini transitioning from TDF/3TC/EFV (TLE) to TDF/3TC/DTG (TLD) to determine whether observed reduction in eGFR is aligned with published literature and to identify risk factors for eGFR reductions of greater than 20%.

**Methods:** This is a retrospective observational cohort study of electronic medical record data at Baylor College of Medicine Children's Foundation-Eswatini among adults living with HIV who were on TLE prior to a transition to TLD. We calculated eGFR using the 2021 CKD-EPI equation pre-

## THPEB076

Factors associated with cervical cancer screening uptake among women 25-49 years living with HIV in Botswana, 2021

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**Background:** Cervical cancer morbidity and mortality remain high in Botswana, especially among women living with HIV (WLHIV). Although the Botswana Ministry of Health has established cervical cancer screening and treatment initiatives, uptake remains low. The study investigated factors associated with cervical cancer screening among WLHIV in Botswana.

**Methods:** Secondary analysis was performed using data from the 5<sup>th</sup> Botswana AIDS Impact Survey, a nationally representative, cross-sectional household survey using a two-stage cluster design, conducted in 2021. Women who were aged 25-49 years, confirmed HIV-positive via







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household-based testing, and responded that they had or had not been screened for cervical cancer screening were included in the analysis. All results were weighted to account for sample selection probabilities. The cervical cancer screening rate and confidence intervals was calculated using jackknife method of estimation. Weighted logistic regression models were used to determine the association with cervical cancer screening using Adjusted Odds Ratios (AORs) with 95% CIs for demographic (age, place of residence) and socioeconomic (education level, wealth quintile) variables using STATA 16.

**Results:** Overall, 1,692 women in the study were confirmed HIV-positive and had cervical cancer screening status. More than half (63.9%, 95%CI 61.6-66.2) of the respondents had been screened for cervical cancer.

Median age was 40 years with an interquartile range of 35-44 years. Women aged 35-44 years (AOR=2.06, 95%CI 1.48-2.86); 45-49 years (AOR=3.07, 95%CI 1.96-4.80) had higher odds of being screened for cervical cancer compared to women aged 25-34 years.

Women who attained secondary education (AOR=3.16, 95%CI 1.72-5.79) and tertiary (AOR=3.88, 95%CI 1.77-8.50) had higher odds of being screened compared to those with no education. Women who lived in urban areas (AOR=1.32, 95%CI 1.01-1.75) had higher odds of being screened compared to rural residents.

**Conclusions:** WLHIV in Botswana who are 25-34 years, with health inequalities of no education, and living in rural areas, were less likely to get screened for cervical cancer. HIV programs could increase cervical cancer screening rates by focusing on improving clinical services and community outreach for WLHIV for younger women and those who are less educated and live in rural areas.

## THPEB077

### Switching strategies in older adults with HIV: comparing 2-Drug and 3-Drug Regimens

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**Background:** Background: Although single-tablet second-generation integrase inhibitors, such as the 2-drug regimen (2DR) dolutegravir/lamivudine and the 3-drug regimen (3DR) bictegravir/emtricitabine/tenofovir alafenamide, are highly recommended as switch strategies, data from older adults with HIV (OAH) remain limited.

Our primary objective was to understand the reasons for switching to either a 3DR or a 2DR in OAH, and to investigate the onset of new comorbidities post-treatment switch.

**Methods:** Methods: A descriptive analysis was conducted on a cohort of 656 virologically suppressed older adults with HIV >=50 years old on antiretroviral therapy, focusing on those who switched their treatment to a 3DR (bictegravir/emtricitabine/tenofovir alafenamide) or 2DR (dolutegravir/lamivudine). We compared the reasons for this change and the incidence of new metabolic or cardiovascular comorbidities.

**Results:** Results: Out of the 656 OAH analyzed, 137 (20.9%) switched to a 2DR and 147 (22.4%) to a 3DR. No differences were found between groups in the baseline characteristics, including age. The majority of participants switched from integrase inhibitor-based regimens (57.7% 2DR vs. 59.9% 3DR), while 12.9% and 4.4% of switched from protease inhibitor-based regimens, respectively (p=0.011). The initiative for the change was made by the treating physician in 96.4% and 86.4%, respectively (p=0.012). The main reason for the change was simplification (74.5% and 47.6%, respectively p<0.0001). 6.6% and 17.7% switched to avoid drug interactions, respectively (p=0.004), while 8.2% of those who switched to 3DR did so for high genetic barrier, with no changes for this reason in the 2DR (p=0.0006).

There were no significant differences in other reasons for switch: adverse effects, toxicity, treatment failure, or weight gain. We found no differences between the two groups in new metabolic or cardiovascular comorbidities (hypertension, diabetes mellitus, dyslipidemia and stroke).

**Conclusions:** Conclusions: We found no significant differences in baseline characteristics or in emergence of new comorbidities among OAH who switch to either a 2DR or a 3DR. Those OAH switching to a 3DR did so more frequently for its higher genetic barrier and to avoid drug interactions.

## THPEB078

### Impact of concurrent initiation of Depo-Provera and TDF-containing ART on bone loss in young women in the BONE: CARE Study

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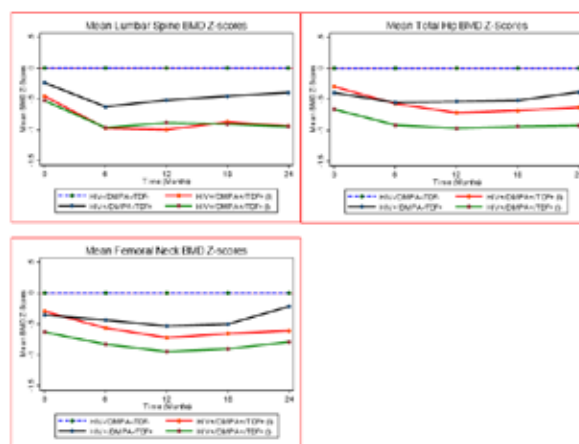
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**Background:** We previously demonstrated a doubling of bone mineral density (BMD) loss over a two period among prevalent users of the three-monthly contraceptive, depot medroxyprogesterone acetate (DMPA, Depo Provera) who were initiating tenofovir disoproxil fumarate (TDF)-containing antiretroviral therapy (ART). It is however not known how timing of initiation of these two agents affects BMD loss. We assessed the combined BMD effects of initiating TDF in new users compared to current users of DMPA.

**Methods:** We recruited women with and without HIV from health facilities around Kampala, Uganda and classified based on their combination of HIV status, TDF use, and DMPA use. All HIV+ women were ART-naïve at baseline. BMD assessments of the lumbar spine (LS), total hip (TH) and femoral neck (FN) were done using dual energy x-ray absorptiometry at 6-monthly intervals over 2 years. BMD Z-scores were generated using data for the HIV negative group as the reference population. We used repeated measures analysis to compare rate of change among new and current users of DMPA, calculated as percent (%) change in BMD Z-score per year adjusting for age, and BMI.

**Results:** We present data for 213 WLWH initiating TDF-ART, which included 106 new DMPA-IM users and 107 current users. The mean age was 26.1 years (SD, 4.2). The annualized

rates of loss in BMD Z-scores were significantly higher in current DMPA users compared to new DMPA users at the TH: -0.29 (-0.56, -0.03; p=0.032), Figure. Marginal differences were observed at the FN: -0.01 (-0.31, 0.29; p=0.959), and no differences were seen at the LS: and -0.26 (-0.53, 0.01; p=0.056).



HIV+/DMPA+/TDF+ (i) – Used DMPA in last two years.  
HIV+/DMPA+/TDF+ (ii) – No DMPA use in last two years.  
HIV+/DMPA-/TDF+ – New DMPA users – no DMPA exposure in the last 2 years.

Figure 1. Mean BMD Z-scores among women in the BONE: CARE Study.

**Conclusions:** Concurrent initiation of DMPA in young women initiating TDF-containing ART was associated with higher BMD loss at the TH compared to TDF initiation in current DMPA users. Bone sparing contraceptive options need to be considered for women initiating TDF ART.



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## THPEB079

### Comorbidity control outcomes and equity among sexual minority men engaged in HIV care in a multicenter prospective study

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**Background:** Cardiometabolic comorbidities are common among people with HIV. Few studies have evaluated whether their hypertension or diabetes management outcomes differ from counterparts without HIV.

We assessed comorbidity management prevalence and equity by race/ethnicity among a mixed HIV serostatus cohort of sexual minority men.

**Methods:** Data were collected semiannually (2016-2019) from gay and bisexual cisgender men in the Multicenter AIDS Cohort Study (MACS) Healthy Aging Study with and without HIV, aged  $\geq 40$  years, in four U.S. metropolitan areas. Prevalence ratios were estimated using multivariable Poisson regression with generalized estimating equations for two outcomes: hypertension control ( $<130$  systolic /  $<80$  diastolic) and glycemic control (hemoglobin A1c  $<7.5\%$ ). Equity was assessed using prevalence ratios of control for Hispanic and Black men, relative to White men and compared by HIV status.

**Results:** There were 892 men (3,994 person-visits) with hypertension and 221 men (993 person-visits) with diabetes; 188 with both. The mean age was  $61 \pm 8$  years; 48% with HIV (94% taking antiretroviral therapy; 79% virally suppressed); 71% White, 21% Black, and 8% Hispanic/other race. Hypertension and glycemic control were lowest among Hispanic (23%/43%) and Black (22%/58%) men without HIV, and highest among White men with HIV (33%/82%); control was similar for White men without and Black men with HIV (~30%/76%). Men with HIV had a 19% and 11% higher prevalence of achieving hypertension and glycemic control than men without HIV, adjusting for age,

race, site, education, substance use, and BMI. The ratio of comorbidity control by race/ethnicity was more equitable among men in HIV care than men without HIV, but not statistically significantly different. Healthcare satisfaction was higher among men with, versus without, HIV ( $p < 0.001$ ), but it was not significantly associated with comorbidity control.

**Conclusions:** Sexual minority men in HIV care with hypertension and/or diabetes were significantly more satisfied with their quality of care and achieved levels of comorbidity control equivalent to or greater than men without HIV. Successful elements of hypertension and diabetes management in HIV care should be evaluated for translation to other healthcare settings and to other comorbidities, and further evaluation is needed to optimize factors to reduce disparities in successful comorbidity management.

## HIV and ageing

## THPEB080

### Differences in cognitive trajectories between sexes among aging virologically suppressed Thai people living with HIV

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**Background:** Due to the disparities in biopsychosocial factors experienced by men and women, the impact of HIV on cognitive performance may differ between sexes. We aimed to determine the differences in cognitive trajectories between men and women in an aging people living with HIV (PLWH) cohort in Thailand.

**Methods:** Virologically suppressed Thai PLWH aged  $\geq 50$  years in the HIV-NAT 006 cohort were enrolled during 2015-2017 to evaluate cognitive performance using the Thai-validated Montreal Cognitive Assessment (MoCA), with the second assessments conducted since 2021.

A multivariate linear mixed-effects model, with an interaction term between sex and age, was utilized to estimate for sex differences in cognitive trajectories with aging.


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**Results:** Among 224 PWH included, median (IQR) age was 54.5 (51.9–59.7) years, 39.3% were women, 73.2% had >6 years of education, median duration of HIV infection was 17.9 (14.2–20.8) years, and median MoCA score was 24 (21–26), with 57.1% having cognitive impairment at baseline. Women were less likely to have >6 years of education (52.3% vs. 86.8%,  $p<0.001$ ) and had lower MoCA score (23 [18–25] vs. 25 [22.5–26],  $p<0.001$ ) than men. After adjusting for baseline MoCA, body mass index, education, smoking, alcohol consumption, diabetes, hypertension, and depression, men showed a greater decline in cognitive performance with increasing age than women (Figure). After adding HIV-related factors to the model, the greater decline in cognitive performance in men persisted (23.8 [95%CI 23.0–24.7] to 21.1 [95%CI 20.0–22.2] in men vs. 23.0 [95%CI 21.9–24.2] to 21.5 [95%CI 20.2–22.9] in women from age 50 to 70 years).

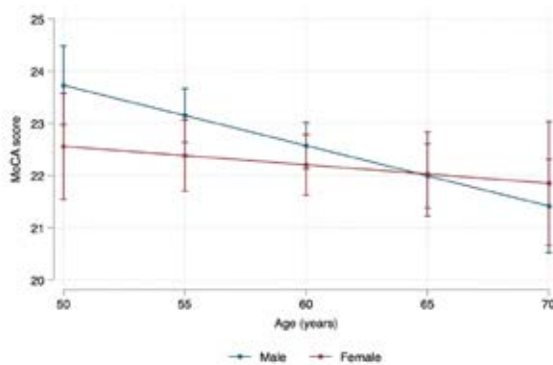


Figure 1. Modeled cognitive trajectories for MoCA scores, with 95% confidence intervals, as a function of age from 50 to 70 years for men and women.

**Conclusions:** Despite higher cognitive performance at the earlier stage, men living with HIV demonstrated a greater cognitive decline compared to their women counterparts. These findings underscore the importance of further investigation in sex differences for cognitive decline in aging individuals living with HIV.

## THPEB081

### Geriatric syndromes and quality of life in older adults living with HIV in Brazil

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**Background:** Older people living with HIV (OPLWH) are a growing population globally. Understanding of the epidemiology and consequences of geriatric syndromes in diverse settings is urgently needed. We examined the association of geriatric syndromes and quality of life (QOL) among OPLWH in Brazil.

**Methods:** We enrolled OPLWH aged  $\geq 50$  years on antiretroviral therapy from clinics in three Brazilian cities for standardized collection of geriatric syndromes, medical history, and sociodemographic information. Geriatric syndromes included frailty (Fried phenotype), polypharmacy ( $\geq 5$  daily medications), cognitive impairment (Montreal Cognitive Assessment score  $< 26$  adjusted for education), activities of daily living (ADL) dependency (Barthel scale  $< 96$ ), instrumental ADL dependency (Lawton scale  $< 26$ ), sarcopenia (Short Physical Performance Battery score  $< 10$ ), depression (PHQ-9 score  $\geq 10$ ), and any falls in the past year. QOL was measured using the EQ-5D-5L, which accounts for dimensions of mobility, self-care, usual activities, pain/discomfort, and anxiety/depression. We described the association of none/one or multiple prevalent geriatric syndromes with QOL composite index and QOL dimensions (no problems to extreme problems).

**Results:** The median age of the 703 OPLWH enrolled was 62 years; 63% cis-gender men and 35% cis-gender women; median CD4 count 731 cells/ $\mu$ L; 88% undetectable HIV-RNA; and 21% had  $< 8$  years of education. Polypharmacy (77%) and any cognitive impairment (72%) were the most prevalent geriatric syndromes. Among all, sarcopenia was present in 40%, pre-frailty in 49%, and frailty 6%. Overall, 244 (35%) OPLWH had none/one geriatric syndrome, 195 (28%) two, 147 (21%) three, and 117 (17%)  $\geq 4$  geriatric syndromes. Greater number of geriatric syndromes was associated with lower QOL index (Figure A) and more severe problems for every QOL dimension (Figure B,  $p<0.001$  for all).





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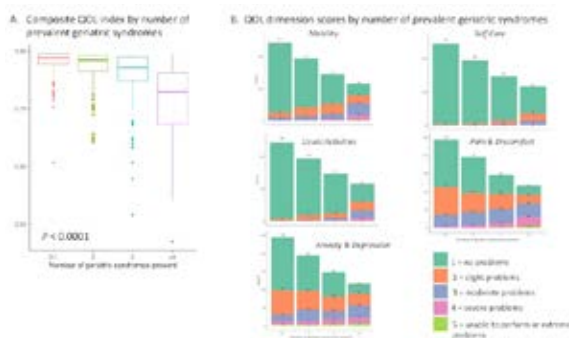
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**Conclusions:** Geriatric syndromes were prevalent among OPLWH in Brazil, and higher burden of geriatric syndromes was associated with worse QOL. Improved screening for geriatric syndromes in OPLWH may improve health outcomes in this growing population.

## THPEB082

HIV-related stigma among older adults living with HIV in Brazil: association with poor perception of aging

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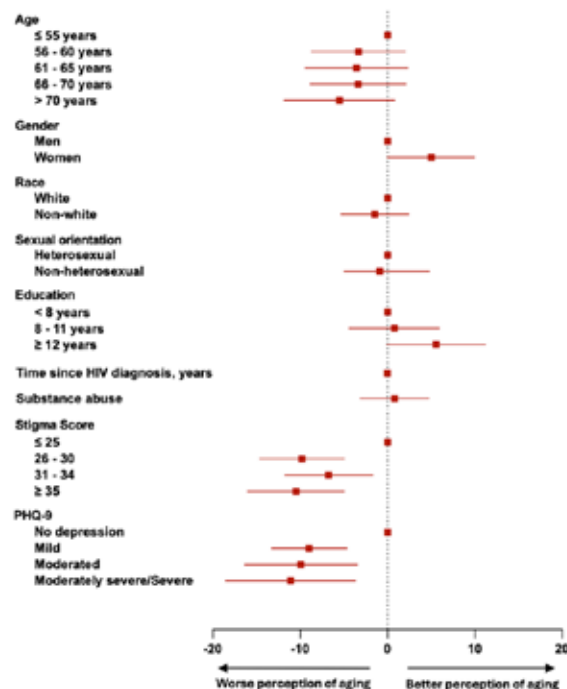
**Background:** Older adults' perceptions of aging may be influenced by contextual and subjective factors. Among older people living with HIV (OPLWH), HIV-related stigma (HRS) may play a key role in aging expectations and perceptions.

**Methods:** OPLWH ≥50 years old receiving antiretroviral treatment in three Brazilian cities were enrolled for detailed collection of clinical, social, and demographic data related to aging. We investigated the relationship between HRS (12-item Short HIV Stigma Scale) and perception of aging (Expectations Regarding Aging [ERA-12] score) using linear regression model adjusted for age, gender, time since HIV diagnosis, race (white; non-white), sexual orientation (heterosexual; non-heterosexual), substance use (daily alcohol/tobacco/cannabis or any use of

other illicit substances), depression (PHQ-9; no depression; mild; moderate; moderately severe/severe depression), and education (<8; 8-11; ≥12 years). Higher HRS and lower ERA-12 scores reflect greater HIV and aging stigma, respectively.

**Results:** We included 686 OPLWH with a median age of 62 years; 63% were cis-gender men. Percentages with no depression, mild, moderate, and moderately severe/severe depression were 58%, 26%, 9%, and 7%, respectively. Median HRS score was 30, with quartiles defined at ≤25; 26-30; 31-34; and ≥35. The median ERA-12 score was 36 (range 22-47). In the multivariable analysis, higher HIV stigma score quartiles and depressive symptoms were significantly associated with lower ERA-12 scores (Figure 1).

Women and participants with higher schooling had more positive perceptions of aging compared to men and participants with lower schooling, although differences failed to reach statistical significance.



**Conclusions:** HRS may negatively impact numerous health outcomes among OPLWH. Here, we found that higher HRS scores and depression were associated with poorer perception of aging.

Further studies are needed to understand if interventions to mitigate HRS and appropriate management of depression could improve aging expectations and perceptions among OPLWH.

## THPEB083

### Prevalence of high blood pressure among people living with HIV on antiretroviral therapy in Botswana, April-June 2023

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**Background:** Twenty years after rolling out a public antiretroviral (ART) program, Botswana is experiencing a rapid shift in the age distribution of people living with HIV (PLHIV). Approximately 35% of PLHIV in Botswana today are aged 50 years or older. In Botswana, high blood pressure (BP) was reported affecting up to a quarter of all PLHIV. The extent of BP screening and its documentation on the electronic medical records (EMR) within HIV clinics remains unclear.

We evaluated completeness of BP measurement documentation, determined the prevalence of hypertension, and the prevalence of antihypertensive medication prescription among PLHIV receiving ART in Botswana.

**Methods:** We used retrospective analysis of EMR data from PLHIV on ART from April through June 2023 (FY23Q3) at 52 facilities in Botswana. Hypertension was defined as diastolic  $\geq 90$  mmHg and or systolic  $\geq 140$  mmHg. Proportion of clients with documented BP measurement, hypertension diagnosis, and on antihypertensive medication was calculated.

**Results:** A total of 122,951 clients were on ART of whom 65% (80,349) had ever had BP measurement recorded. Of these, 29% (23,552) had a recorded BP in FY23Q3. Prevalence of hypertension during FY23Q3 was 26% (6228/23552). Among individuals with hypertension, 51% were 50 years or older, 32% aged 40-49, 58% were women. Prevalence of hypertension was 31% (2602/8376) vs 24% (3626/15176) among men and women respectively and 38% (3165/8389) among PLHIV aged 50 years or older.

Out of the 122951 PLHIV on ART at the end of FY23Q3 11% (14411) had ever received antihypertensive medications, while 1915 (2%) clients had documentation of antihypertensive medications within the quarter.

**Conclusions:** A third of PLHIV on ART had no documentation of BP measurements in the EMR. Among PLHIV with a recorded BP measurements, individuals aged 50 years and above had higher prevalence and accounted for more than 50% with hypertension.

Despite a high burden of hypertension few PLHIV diagnosed with hypertension have documented prescription of antihypertensive medications. Enhanced BP screening,

documentation of BP in the EMR and use of antihypertensive medications are needed to address hypertension given the increasingly aging PLHIV population on ART.

## THPEB084

### Frailty and multimorbidity in mid-aged and older adults living with HIV: a cross-sectional study in Zimbabwe

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**Background:** We aimed to determine the prevalence and factors associated with frailty and multimorbidity in people living with HIV (PLWH).

**Methods:** This population-based cross-sectional study recruited, by GIS-mapped household sampling, men and women aged  $\geq 40$  years in Harare, Zimbabwe. Data were collected using researcher-administered questionnaires, physical assessments (e.g., handgrip strength) and blood tests (including HIV status, if consenting).

Frailty was defined using the five Fried criteria: unintentional weight loss, exhaustion, low physical activity, low gait speed, low handgrip strength. Presence of  $\geq 3$  criteria defined frailty, 1-2 pre-frailty, and absence (0) robust. Long-term conditions defining multimorbidity were based on self-reported diagnosis or diagnosis based on measurements (e.g., blood pressure/glucose). Adjusted regression models were used to analyse data.

**Results:** The 1109 participants had mean(SD) age of 62.5(14.1) years, 51.6% female. Of 1034(93.2%) with HIV status data, 21.6% (n=223) were living with HIV: 6.4% were newly diagnosed; 96.2% of those who knew their status were on antiretroviral treatment (ART), whilst 89.7% of those on ART had a viral load  $<50$  copies/mL. The prevalence of frailty, prefrailty and robust in PLWH was 3.6%, 61.4%, and 35% respectively.

In addition to HIV, 32.7% were living with  $\geq 2$  conditions, 36.3% with one condition and 30.9% with only HIV. Time since HIV diagnosis and treatment duration were both independently associated with frailty, but not multimorbidity: independent of age and ART duration, living with HIV was associated with pre-frailty or frailty (adjusted odds ratio [aOR]=2.03 (95%CI 1.03-4.13), for each 5-years lived with HIV) while, independent of age and years lived with HIV, ART duration was protective, 0.39 (0.19-0.78) for each 5-years on ART. PLWH had higher odds of prior tuberculosis (7.92 (4.32-15.05)) and comorbid cancer (2.74 (0.77-9.08)), albeit marginally, compared with people without HIV.



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Frailty and multimorbidity were associated with a lower health-related quality of life in PLWH, although the associations were similar in people without HIV.

**Conclusions:** Sixty-five percent of PLWH aged 40-83 years were frail or pre-frail, while 33% were living with 2 or more long-term conditions necessitating interventions to prevent or manage frailty and multimorbidity. Early ART initiation and good viral suppression are interventions that could protect against frailty.

## THPEB085

Health related quality of life of people ageing with HIV in a low resource setting: the Newlands Clinic cohort, Harare Zimbabwe

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**Background:** Antiretroviral therapy (ART) has increased life expectancy for people living with HIV (PLHIV). However, associated multimorbidity and geriatric syndromes can limit health-related quality of life (HRQoL).

We assessed HRQoL in older people routinely attending an HIV-geriatric clinic in Zimbabwe.

**Methods:** In this cross-sectional study, clients ≥65 years who attended the Newlands HIV-geriatric clinic from Oct-2022 to Dec-2023 had HRQoL evaluated using the Euro-QoL-5 dimensions questionnaire (EQ-5D-5L).

This assesses mobility, selfcare, usual activities, pain, anxiety/depression and includes a visual analogue scale (EQ-VAS). Each dimension has 5 levels, from 1 (no problems) to 5 (extreme problems), EQ-VAS ranges from 0 (worst imaginable health) to 100 (best imaginable health).

Analyses used logistic regression. Low HRQoL was defined as a dimension sum<12, impaired physical function as short physical performance battery ≤9, depression as PHQ-9 ≥5, anxiety as GAD-7 ≥5, malnutrition as mini nutritional assessment score ≤11.

**Results:** Of 148 attendees, most were female 102(69%), median age 69 (IQR 67-72) years.

Viral suppression was common at 93% (<50 copies/ml). Median (IQR) EQ-VAS was 77.5 (60-90) for women and 80 (70-90) men. Only 10(6.6%) reported no problems in any dimension, whilst 15 (10%) reported problems in all dimensions (Table-1).

Most reported no problems with selfcare (82%). The most frequent problems were pain/discomfort (80%) and anxiety/depression (73%).

Low HRQoL was associated with impaired physical function (OR 4.42 [95%CI 1.86-10.5], p=0.001), depression

(5.85[1.77-19.2], p=0.004), anxiety (6.20[2.51-15.3], p<0.001) and malnutrition (4.76[2.14-10.6],p<0.001). Comorbidities and medications were independent of HRQoL.

Level	Mobility	Self-care	Usual Activities	Pain / Discomfort	Anxiety/ Depression
1 n (%) (no problems)	64 (43%)	121 (82%)	76 (51%)	30 (20%)	40 (27%)
Male	29	40	26	19	15
Female	35	81	50	11	25
2 n (%)	17 (11%)	10 (7%)	30 (20%)	47 (32%)	39 (26%)
Male	4	1	10	14	15
Female	13	9	20	33	24
3 n (%)	50 (34%)	11 (7%)	31 (21%)	53 (36%)	46 (31%)
Male	9	3	8	9	10
Female	41	8	23	44	36
4 n (%)	16 (11%)	5 (3%)	8 (5%)	14 (9%)	16 (11%)
Male	3	1	1	3	5
Female	13	4	7	11	11
5 n (%) (severe problems)	1 (1%)	1 (1%)	3 (2%)	4 (3%)	7 (5%)
Male	1	1	1	1	1
Female	0	0	2	3	6
Total	148	148	148	148	148
No. reporting any problems* (scores 2-5)	84 (57%)	27 (18%)	72 (49%)	118 (80%)	108 (73%)

Table 1. Frequency by dimensions of HRQoL indicators in older people living with HIV in Zimbabwe

**Conclusions:** Most older PLHIV reported a deficit in at least one HRQoL dimension, with >50% reporting problems in four of five dimensions. Comprehensive HIV care should incorporate assessment and management of these domains to support healthy ageing.

## THPEB086

Noninferior efficacy, reduced weight gain, and improved lipid metabolism of switch to ainoovirine- versus boosted elvitegravir-based regimen in virologically suppressed people living with HIV-1: 48-week results of the SPRINT trial

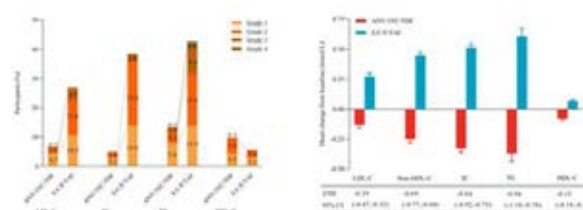
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**Background:** Safety concerns arise from integrase strand transfer inhibitor (INSTI)-based regimen due to weight gain and metabolic complications. An alternative antiretroviral (ARV) switch therapy may be warranted for virologically suppressed people living with HIV-1 (PLWH).

**Methods:** This is a phase 3, randomized, double-blind, non-inferiority study. Eligible participants must have maintained plasma HIV-1 RNA below 50 copies per mL. Participants were randomly assigned to receive ANV 150 mg, lamivudine (3TC) 300 mg and tenofovir disoproxil fumarate (TDF) 300 mg or cobicistat (Cobi) 150 mg boosted EVG, emtricitabine (FTC) 200 mg and tenofovir alafenamide (TAF) 10 mg. Both arms received ARV in STR once daily.

The primary efficacy endpoint was the proportion of participants with HIV-1 RNA at 50 copies per mL or above at week 48. Non-inferiority was prespecified with a 4% margin. This trial is registered at Chinese Clinical Trial Registry, ChiCTR2100051605.

**Results:** Analysis included 762 patients (381 ANV/3TC/TDF; 381 EVG/Cobi/FTC/TAF). At week 48, 7 (1.8%) participants on ANV/3TC/TDF and 6 (1.6%) participants on EVG/Cobi/FTC/TAF had plasma HIV-1 RNA at 50 copies per mL or above (estimated treatment difference [ETD], 0.3%, 95%CI -1.6 to 2.1). At week 48, the participants on ANV/3TC/TDF showed less weight gain compared to those on EVG/Cobi/FTC/TAF (least square mean, 1.16 versus 2.05 kg, -0.90 kg, -1.43 to -0.37), and the ETDs were -0.39 mmol per L [-0.47;-0.32] for low-density lipoprotein cholesterol, -0.69 mmol per L [-0.77;-0.60] for non-high-density lipoprotein cholesterol, -0.84 mmol per L [-0.92;-0.75] for total cholesterol, and -0.98 mmol per L [-1.18;-0.78] for triglyceride, respectively. A small proportion of participants discontinued study drug due to AE (0.3% versus 0.3%), and serious AEs (SAEs) were similar (2.9% versus 2.4%).



**Figure 1: Proportions of PLWH experiencing dyslipidemia AE (MedDRA) by severity and changes from baseline in fasting serum lipid concentration over 48-week treatment**  
 Serum lipids concentration as determined by local pathology laboratories. Severity of dyslipidemia AE as determined by the investigator in reference to the Division of AIDS (DAIDS) Table for Grading the Severity of Adult and Pediatric Adverse Events >2.1. CFB data are presented in least square mean±standard error. AE=adverse event; ANV/3TC/TDF=ainoovirine/lamivudine/tenofovir disoproxil fumarate; E/C/F/TAF=elvitegravir/cobicistat/emtricitabine/tenofovir alafenamide; HDL-C=high-density lipoprotein cholesterol; LDL-C=low-density lipoprotein cholesterol; MedDRA=Medical Dictionary for Regulatory Activities; non-HDL-C=non-high-density lipoprotein cholesterol; PLWH=people living with HIV; TC=total cholesterol; TG=triglyceride. \*ANV/3TC/TDF versus E/C/F/TAF at week 48 by mixed model for repeated measures analysis.

**Conclusions:** In virologically suppressed PLWH, switch to ANV-based regimen resulted in less weight gain and improved lipid metabolism while maintaining virological suppression non-inferior to that to boosted EVG-based regimen.

## THPEB087

Characteristics and outcomes of Virologically Suppressed (VS) Treatment Experienced (VSTE) people with HIV (PWH)

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**Background:** VSTE PWH have varying degrees of treatment experience that influences their treatment choices and outcomes. Our aim was to characterize VSTE popu-



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lation to better understand the implications for management with emerging switch options for optimization of care.

**Methods:** Retrospective study using EMR (Trio Health HIV Network) and genotypic resistance data (Labcorp). Population: PWH age  $\geq 18$ , initiating a VSTE regimen after 01/01/2016,  $\geq 6$  months on regimen,  $\geq 1$  years of follow-up,  $\geq 1$  prior antiretrovirals (ARVs) and VS (viral load [VL]  $< 200$  copies/mL) at index date.

VSTE regimen criteria: complex ARV regimen **OR** prior exposure to 2 core classes **OR** resistant to 2 ARV classes (NNRTIs, INSTIs, NRTIs, PIs), Table.

Outcomes: virologic failure (VF): VL  $\geq 500$  copies/mL or 2 consecutive VLs  $\geq 200$  copies/mL; viral blip (VB): VL 200-1000 copies/mL with subsequent suppression ( $< 200$  copies/mL); drug class resistance: intermediate/high resistance to  $\geq 1$  class agent.

**Results:** Of 42,536 PWH with prescriptions after 01/01/2016, 5,763 (14%) were categorized as VSTE based on: prior class exposure (71%), complex regimen (44%), resistance (7%), Table; 21% qualified on multiple criteria. Regimens included INSTIs (76%), PI (35%) and NNRTI (17%); 19% included  $> 2$  core classes, 20%  $> 3$  ARVs, 33% multi-tablet.

Thirty-three percent of PWH had baseline genotype tests, of them 73%  $< 3$  years prior to VSTE qualification. Of PWH with results within 3 years, 78% had  $\geq 1$  major mutation (48% NRTIs, 44% NNRTIs, 26% PIs, 11% INSTIs); 44%  $\geq 2$  class resistance; most common mutations: M184VI (34%); A62V (33%); K103NS (22%).

During follow-up (median 2.8 years), 5% had  $\geq 1$  VB and 6% had VF (more common on regimens  $> 2$  core classes, 9% vs 5%  $p < 0.001$ ).

Description of VSTE Regimen Characteristics	Number of PWH Meeting Criterion	Meets at least 1 other Criterion	2 ARV Classes in regimen (NNRTI, PI, INSTI, NRTI)	With Baseline Resistance Test Result (within 3 years)	Resistant to 2 ARV classes of those with results	With Viral Failure on regimen
VSTE Regimen Criteria						
Complex ARV Regimen†	2,563 (44%)	1,117 (44%)	1,481 (58%)	474 (18%)	136 (29%)	197 (8%)
Prior exposure to 2 core classes (NNRTI, PI, INSTI)	4,068 (71%)	1,089 (27%)	3,478 (85%)	628 (15%)	105 (17%)	226 (6%)
Resistance to 2 ARV classes (NNRTI, PI, INSTI, NRTI)	393 (7%)	241 (61%)	297 (76%)	313 (80%)	313 (100%)	36 (9%)
VSTE Regimen						
2 Core ARV Classes	4,681 (81%)			787 (17%)	239 (30%)	247 (5%)
$> 2$ Core ARV Classes	1,082 (19%)			243 (22%)	74 (30%)	93 (9%)

VSTE: virologically suppressed treatment experienced; ARV: antiretroviral; HTE: heavily treatment experienced; STR: single tablet regimen;  
Core regimen classes: non-nucleoside reverse transcriptase inhibitors [NNRTIs], integrase inhibitors [INSTIs], nucleoside/nucleotide reverse transcriptase inhibitors [NRTIs], protease inhibitors [PIs].  
†Complex regimen: 2 out of 3 core classes (NNRTI, PI, INSTI), darunavir/cobicistat/emtricitabine/tenofovir alafenamide (D/C/F/TAF) or tenofovir disoproxil fumarate (TDF), multi-dosing per day, complex multi-pill regimen (excluding regimens reflecting available single-tablet regimens). Regimens with ARVs indicative of HTE population were excluded: ibalizumab [IBA], enfuvirtide [T20], fostemsavir [FTR], lenacapavir [LEN].

Table.

**Conclusions:** VSTE comprised 14% of PWH in treatment. The majority were able to remain suppressed during follow-up despite high rates of underlying resistance. Rates of VF were higher for more complex regimens and for those with prior resistance. Improved simplification strategies with new classes and increased genotypic surveillance of current regimens could improve outcomes.

## THPEB088

Evaluation of safety and tolerability of switching to the B/F/TAF or DTG/3TC regimen in virologically suppressed people living with HIV aged  $> 40$  years: a real-world observational study

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**Background:** Both bictegravir/emtricitabine/tenofovir alafenamide (B/F/TAF) and dolutegravir/lamivudine (DTG/3TC) are recommended in treatment guidelines for switch therapy in people living with HIV (PLWH). This study aimed to evaluate the safety and tolerability of these two switched regimens in a real-world setting among middle-aged and old-aged PLWH previously treated with efavirenz (EFV)/tenofovir disoproxil fumarate (TDF)/3TC.

**Methods:** This retrospective single-center cohort study in Hangzhou included 220 virally suppressed PLWH who switched from EFV/TDF/3TC to DTG/3TC or B/F/TAF between January 1, 2020 and October 30, 2023. All participants were followed for 12 months to examine changes in body mass index, glucose levels, lipid profiles (total cholesterol (TC), low-density lipoprotein cholesterol (LDL-C), high-density lipoprotein cholesterol (HDL-C), and triglyceride (TG)), and markers of liver and renal function.

**Results:** The mean age of included participants was  $> 50$  years. During the 12-month follow-up, the HIV RNA level was below the lower limit of detection ( $< 20$  copies/mL), and no solicited adverse reactions were observed among all participants. The switch to DTG/3TC or B/F/TAF therapy was associated with significant improvement in LDL-C, glucose levels, and liver and renal function (all  $P < 0.05$ ), while other biochemical indexes did not change significantly. Furthermore, except for liver function parameters (ALT:  $P = 0.009$ , AST:  $P = 0.001$ ), no significant differences in other biochemical indices were observed between the DTG/3TC and B/F/TAF groups. For old-aged PLWH (age  $\geq 60$  years), TC and ALT levels declined in the B/F/TAF group, while BMI and ALT levels dropped in the DTG/3TC group (all  $P < 0.05$ ).

**Conclusions:** The switch to either B/F/TAF or DTG/3TC treatment is safe and well tolerated for PLWH in this real-world study, even among old-aged PLWH. Metabolic indices did not differ significantly for the two regimens.

**THPEB089**

Efficacy, safety and tolerability of switching to dolutegravir/lamivudine in virologically suppressed adults living with HIV on bicitegravir/emtricitabine/tenofovir alafenamide-48-week results from the DYAD study

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**Background:** We previously demonstrated noninferior efficacy of switching to dolutegravir/lamivudine (DTG/3TC) vs. continuing bicitegravir/emtricitabine/tenofovir alafenamide (B/F/TAF) among stably suppressed adults through Week (W) 24 in the DYAD study.

Here, we present updated 48-week efficacy and safety results.

**Methods:** DYAD (NCT04585737) is an open-label clinical trial that randomized adults with HIV-1 RNA<50 copies/mL and no prior virologic failure (2:1) to switch to once-daily fixed-dose DTG/3TC or remain on B/F/TAF. Primary endpoint is the proportion with HIV-1 RNA≥50 c/mL at W48 (FDA snapshot algorithm, ITT-E population, 6% noninferiority margin). Clinical safety and changes in renal and metabolic parameters were also evaluated.

**Results:** Overall, 222 adults (16% women; 51% aged ≥50 years; 28% Black, 30% Hispanic/Latinx ethnicity) were randomized. At W48, 6 (4%) participants on DTG/3TC and 5 (7%) on B/F/TAF had HIV-1 RNA≥50 c/mL (adjusted treatment difference -2.8%, 95% confidence interval [-11.4%, 3.1%]) meeting noninferiority criteria. At W24, 7 participants (4 on DTG/3TC, 3 on B/F/TAF) met confirmed virologic withdrawal (CVW) criteria, and 2/7 had treatment-emergent resistance. One B/F/TAF CVW developed M184M/I and G140G/S at W12, and one DTG/3TC CVW had M184V at W12. At W48, there were no new cases of treatment emergent resistance among 11 (8 on DTG/3TC, 3 on B/F/TAF) additional participants meeting CVW criteria. One non-CVW DTG/3TC participant developed M184V and K65R at W12 (genotype inadvertently collected at first episode of unconfirmed viremia). Drug-related adverse events (AEs) and withdrawals due to AEs occurred in 31 (21%) and 6 (4%) participants with DTG/3TC and 2 (3%) and 0 participants with B/F/TAF, respectively. Between W24-W48, no additional drug-related AEs and withdrawals due to AEs occurred in the DTG/3TC arm. There were no significant differences in mean change from baseline in creatinine, lipid parameters, weight, BMI and waist circumference between treatment groups at W48.

**Conclusions:** Switching to DTG/3TC was noninferior to continuing B/F/TAF among virologically suppressed adults at W48. Drug-related AEs-and-withdrawals were high-

er in the DTG/3TC arm which is likely consistent with the open-label nature of this switch study. These data reinforce findings from TANGO and support use of DTG/3TC as a switch option from contemporary 3-drug integrase inhibitor-based regimens.

**THPEB090**

Effectiveness and durability of dolutegravir/rilpivirine in older people with HIV from the Veterans Aging Cohort Study (VACS)

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**Background:** Dolutegravir/rilpivirine (DTG/RPV) is a 2-drug antiretroviral regimen efficacious as a switch therapy in clinical trials. Data on real-world use of DTG/RPV among older people with HIV (PWH) remains limited.

**Methods:** Treatment-experienced, virologically suppressed [viral load (VL) <50 copies/mL] PWH enrolled in the Veterans Aging Cohort Study (VACS), ≥50 years old and switching to DTG/RPV, DTG- or bicitegravir (BIC)-based standard 3-drug regimens (3DRs) 01JAN2014 – 30SEP2022 were included. Virologic suppression [VS; VL <50 copies/mL], low-level viremia (LLV; VL ≥50 and <200 copies/mL), and regimen discontinuation were compared 6- and 12-month post-regimen initiation (baseline). Virologic failure (VF; 2 consecutive VLs ≥200 copies/mL, or 1VL ≥200 copies/mL followed by regimen discontinuation) was evaluated over 12 months. Change in CD4 cell count from baseline was assessed at 6 months. Outcomes were compared using inverse probability of treatment weighted logistic or linear regression.

**Results:** Of 9,933 treatment-experienced, suppressed older PWH (97% male, 8% Hispanic, 47% Black), PWH who switched to DTG/RPV (n=682) compared to those switching to DTG-3DRs (n=4,793) or BIC-3DRs (n=4,458) were older (52% ≥65 years vs. 35% on DTG-3DRs and 39% on BIC-3DRs). VS was statistically comparable at 6 (94% DTG/RPV vs. 92% DTG-3DR and 93% BIC-3DR) and 12 months (94% DTG/RPV vs. 92% DTG-3DR and 92% BIC-3DR). LLV at 6 and 12 months was also comparable between regimens. VF was uncommon (0.5% DTG/RPV vs. 0.9% DTG-3DR and 0.5% BIC-3DR). Mean CD4 decreased over 6 months for DTG/RPV but increased for DTG-3DR and BIC-3DR, although the magnitude of differences was small.

Discontinuations were similar between DTG/RPV and DTG-3DR. BIC-3DR showed fewer discontinuations at 6 (BIC-3DR: 4% vs. DTG/RPV: 9%) and 12 months (7% vs. 15%).



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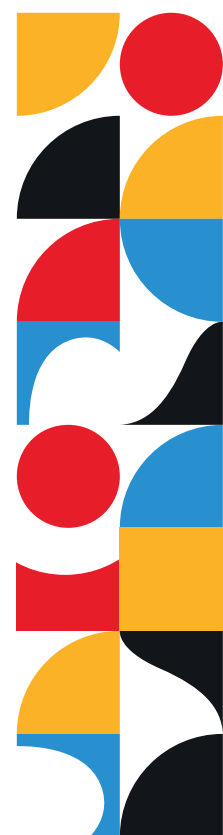
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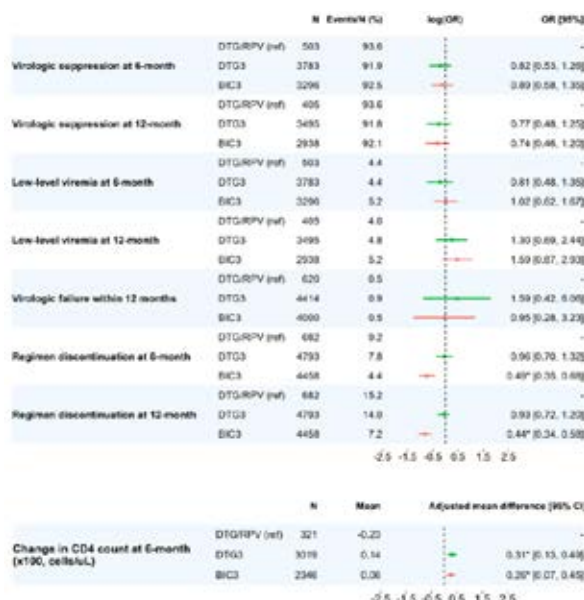
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\* Odds ratios and confidence intervals were calculated from inverse-probability weighted models, which adjusted for age, sex, race and/or ethnicity, region, smoking, alcohol use disorder, drug use and dependence, homelessness, baseline low-density lipoprotein, baseline CD4 count, baseline viral load, baseline VACS 2.0 index, and years on ART regimen. \*, \*\*, and \*\*\* indicate significance at the 10%, 5%, and 1% levels. Abbreviations: DTG3: dolutegravir-based 3-drug regimen; BIC3: bictegravir-based 3-drug regimen; DTG/RPV: dolutegravir/rilpivirine (JULUCA); ART: antiretroviral therapy; PWH: people with HIV; OR: adjusted odds ratio; CI: confidence interval; VACS: the Veterans Aging Cohort Study; CD4: clusters of differentiation 4

Figure 1. Treatment outcomes for those receiving DTG- and BIC-based 3-drug regimens compared to those receiving DTG/RPV among ART-experienced PWH<sup>1</sup>.

**Conclusions:** Among older PWH, DTG/RPV demonstrated high levels of virologic effectiveness comparable to DTG- or BIC-based 3-drug regimens, but with smaller immune responses. DTG/RPV was discontinued more frequently than BIC 3-DRs.

## THPEB091

High plasma concentration of tenofovir alafenamide in people living with HIV with ABCB1 genetic variants

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**Background:** The ATP-binding cassette transporter B1 (ABCB1) and G2 (ABCG2) are both expressed in the intestines, which are efflux transporters of drugs. We aimed to analyze the relationships between single nucleotide polymorphisms in the ABCB1 and ABCG2 genes and plasma concentrations of tenofovir alafenamide (TAF), tenofovir (TFV), and emtricitabine (FTC).

**Methods:** We recruited 10 people living with HIV receiving once-daily treatment with a single tablet containing TAF (25 mg), FTC (200 mg), and bictegravir (50 mg) at least 4 weeks after switching at the AIDS Clinical Center, National Center for Global Health and Medicine (NCGM), Tokyo,

Japan. The Ethics Committee at the NCGM approved this study (NCGM-G-003058-03) and all participants provided written informed consent. Peripheral blood samples were withdrawn into heparinized tubes at 0, 1, 2, 3, 4, 6, 8, 12, and 24 h after administration. Plasma and peripheral blood mononuclear cells (PBMCs) were separated and stored at -80°C. Plasma concentrations of TAF, TFV, and FTC were quantified using liquid chromatography-tandem mass spectrometry. Genomic DNA was isolated from PBMCs. Genotyping for allelic variants of ABCB1, including 1236 C>T (rs1128503), 2677 G>T/A (rs2032582), 3435 C>T (rs1045642), 4036 A>G (rs3842) and ABCG2 421 C>A (rs2231142), was performed using TaqMan Drug Metabolism Assays.

**Results:** None of the genotypes for ABCB1 1236 C>T, 2677 G>T/A, 3435 C>T, and ABCG2 421 C>A exhibited correlations with plasma concentrations of TAF, TFV, and FTC. In contrast, individuals with the ABCB1 4036 AG genotype (188.7 ng/mL, n=3) exhibited a significantly higher mean peak plasma concentration of TAF than those with the ABCB1 4036 AA genotype (67.7 ng/mL, n=7) ( $p=0.0167$ , Mann-Whitney U test). Similarly, individuals with the ABCG2 421 AA genotype (235.0 ng/mL, n=1) exhibited a higher peak plasma concentration of TAF than those with the ABCG2 421 CC/CA genotypes (89.4 ng/mL, n=9). However, those genotypes did not affect the elimination of terminal half-lives of TAF.

**Conclusions:** The allelic variant ABCB1 4036 A>G is associated with low expression. Individuals with this genetic variant exhibited significantly higher peak plasma concentrations of TAF, potentially explained by reduced expression of efflux transporters in the intestines associated with these genetic variants.

## THPEB092

Switch to dolutegravir/lamivudine (DTG/3TC) in people living with HIV-1 suppressed on bictegravir/emtricitabine/tenofovir alafenamide (B/F/TAF): 96-week final analysis from the SOUND study

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**Background:** DTG/3TC is approved for antiretroviral therapy-naïve or virologically suppressed people living with HIV-1 with no prior virologic failure or resistance to DTG/3TC. In the SOUND study, virologically suppressed participants who switched from B/F/TAF to DTG/3TC with unknown resistance history maintained high rates of virologic suppression at Week 48. Here, we present the 96-week final analysis from SOUND.

**Methods:** SOUND is an open-label, single-center, pilot study of people living with HIV-1 who were on B/F/TAF for >24 weeks, with viral load <50 c/mL for >6 months (≥12

months if prior history of virologic failure), no prior genotypic or phenotypic resistance testing, and negative hepatitis B surface antigen.

Week 96 endpoints included virologic and immunologic outcomes, safety, and retrospective proviral DNA resistance testing of baseline samples.

**Results:** Of 40 individuals enrolled, 18 (45%) identified as female and 23 (58%) as Black; median (range) time on B/F/TAF was 2.5 (1-3.6) years. At Week 96, 37 (93%) participants maintained virologic suppression (HIV-1 RNA <50 c/mL). The remaining 3 participants withdrew from the study while virologically suppressed, with no new discontinuations since the 48-week analysis.

Serious adverse events were observed in 5 participants (none related to DTG/3TC). No participants discontinued due to laboratory abnormalities. Median (range) change from baseline in CD4+ cell count at Week 96 was 38 (–388, +276) cells/mm<sup>3</sup>.

Among the 32 baseline samples available for retrospective proviral DNA resistance testing, 6 (19%) had NRTI resistance-associated mutations (RAMs), all with M184V or M184M/V conferring resistance to 3TC. Two (6%) participants had INSTI RAMs at baseline (S147S/G and Q148R/R); neither conferred resistance to DTG. Baseline NNRTI and PI RAMs were observed in 8 (25%) and 3 (9%) participants, respectively.

RAMs, n (%)	Participants with available baseline samples (N=32) <sup>b</sup>
NRTI	6 (19) <sup>c</sup>
T69N	1 (3)
M184M/V	5 (16)
M184V	1 (3)
NNRTI	8 (25) <sup>d</sup>
K101Q	1 (3)
K103K/N	6 (19)
K103N	1 (3)
V106I	1 (3)
Y188Y/H	1 (3)
INSTI	2 (6) <sup>e</sup>
S147S/G	1 (3)
Q148Q/R	1 (3)
PI	3 (9) <sup>f</sup>
D30D/N	2 (6)
L33L/I	1 (3)
M46M/V	1 (3)
I47I/V	1 (3)
N88S	1 (3)
N88N/S	1 (3)

<sup>a</sup>Mutations are not mutually exclusive, and participants could have >1 mutation.

<sup>b</sup>Samples were not available for 8 participants due to participant withdrawal (n=3), sample tubes cracking in transport (n=2), samples unable to be located (n=2), and samples unable to be analyzed (n=1). <sup>c</sup>RAMs were associated with resistance to lamivudine and emtricitabine (n=6). <sup>d</sup>RAMs were associated with resistance to efavirenz and nevirapine (n=8). <sup>e</sup>RAMs were associated with resistance to elvitegravir (n=1) and elvitegravir and raltegravir (n=1). <sup>f</sup>RAMs were associated with resistance to neftinavir (n=3).

*Table. Retrospective Proviral DNA Resistance Analysis on Baseline Samples<sup>a</sup>*

**Conclusions:** Final results from SOUND support the efficacy and safety of switching to DTG/3TC for people living with HIV-1 who are virologically suppressed on B/F/TAF with unknown resistance history. Retrospective proviral DNA sequencing did not predict outcomes.

## THPEB093

## Clinical pharmacokinetics and safety of orally administered VH4004280 (VH-280), a novel HIV-1 capsid inhibitor, in Adults Without HIV

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D. Brimhall<sup>5</sup>, D. Anderson<sup>2</sup>, S. Andrews<sup>6</sup>, C. Acuiip<sup>1</sup>,  
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**Background:** VH4011280 (VH-280) is a novel HIV-1 capsid inhibitor that demonstrated potent in vitro antiviral activity against a wide spectrum of HIV-1 strains and clinical isolates. We present the pharmacokinetics, drug interaction potential, and safety of VH-280 in a first-time-in-human study.

**Methods:** This double-blind, randomized, placebo-controlled, phase 1 study evaluated oral VH-280 in healthy adults administered as single ascending doses as powder-in-bottle (PiB) and tablet (parts 1 and 3, respectively) and as multiple ascending doses as PiB for 14 days with or without midazolam (part 2), evaluating VH-280 inhibition/induction of CYP3A4.

**Results:** 73 participants were included (placebo, n=16; VH-280, n=57); 98% and 100% were male, 40% and 58% identified as Black or African American, and median age was 33 and 36 years in parts 1 and 3 and part 2, respectively. VH-280 plasma exposures (C<sub>max</sub> and AUC) were broadly dose proportional, with median t<sub>max</sub> of 9 to 10 hours (PiB and tablet). Geometric mean of the terminal half-life was >6 days, ranging from 146 to 208 hours, leading to maintenance of VH-280 above the therapeutic target (21.0 ng/mL; Figure).

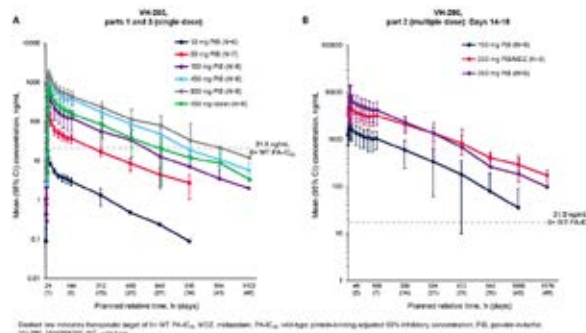


Figure. Mean plasma VH-280 concentration-time plots in (A) parts 1 and 3 and (B) part 2 (semi-logarithmic scale).

Tablet administration led to 45% to 57% less exposure compared with PiB. Midazolam exposures were unchanged. Frequency of adverse events (AEs) was compa-





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orable between placebo and VH-280 groups. VH-280-related AEs were predominantly grade 1. No serious AEs, AEs leading to withdrawal, or deaths were observed. There were no trends in vital signs, electrocardiograms, or laboratory hematology or chemistry parameters, except for a possible trend of increased total and low-density-lipoprotein cholesterol at exposures anticipated to exceed therapeutic exposures.

**Conclusions:** VH-280 was well tolerated, does not inhibit/induce CYP3A4, and exposures exceeded the anticipated therapeutic target across a range of single and multiple oral doses. These early data support further development of VH-280 as a long-acting antiretroviral for the treatment of HIV-1.

## THPEB094

PAIRED - PATient Reported Experiences and perceived benefit of treatment with dolutegravir/lamivudine - qualitative interviews: diverse group of people with HIV-1 (PWH) reflect on life and health

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**Background:** Understanding the real-world experiences of people with HIV-1 (PWH) is essential to successful HIV treatment.

**Methods:** PAIRED comprised a cross-sectional survey and in-depth qualitative interviews of stable-switch PWH ≥18 years, receiving dolutegravir/lamivudine for ≥3 months in the US. A mixed recruitment methodology (site-led and community outreach) was employed. Interview participants were selected to provide diverse representation among PWH who completed the survey. Qualitative data was collected from 20 PWH via 60-minute semi-structured, in-depth telephone interviews. Thematic analysis methodology (Figure 1) using Atlas.ti version 22.0 software was used.

**Results:** The qualitative interview portion of PAIRED included a diverse sample (50% female sex at birth, 45% non-White, and 70% ≥50 years). Six distinct themes were identified via thematic analysis:

1. Having a reduced number of medicines in HIV treatment is important to PWH due to its associated reduction in long-term drug exposure and PWH perception that their regimen has less risk of toxicities;
2. Overall, there was very high satisfaction with dolutegravir/lamivudine, largely due to PWH expectations being met regarding safety and efficacy;
3. Dolutegravir/lamivudine offers simplicity and is a convenient treatment which has enabled PWH to have more

freedom and autonomy in their daily life compared to prior ART;

4. Advancement in treatment (including dolutegravir/lamivudine) has led to HIV no longer being a 'death sentence' and for many people this gives them peace of mind when managing their HIV;

5. HIV is no longer the main health concern and dolutegravir/lamivudine complements the management of other diagnosed health conditions, enabling PWH to better focus on their overall health;

6. There remain few unmet treatment needs short of a cure in the HIV space at present.



Figure 1. Thematic analysis methodology.

**Conclusions:** A diverse group of PWH reflected on their experiences and the current reality of living with HIV. Dolutegravir/lamivudine fits well with this new reality.

## THPEB095

5 years of DoDo: experience with doravirine and dolutegravir as an alternative antiretroviral 2-drug regimen

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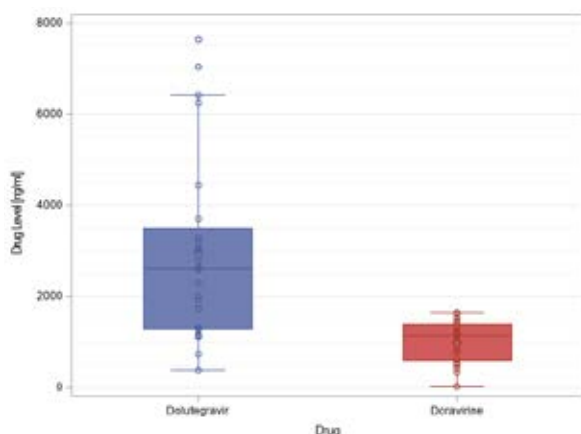
<sup>7</sup>Universitätsklinikum Jena, Institut für Infektionsmedizin und Krankenhaushygiene, Jena, Germany, <sup>8</sup>LMU Klinikum Munich, Zentrum für Klinische Infektiologie (KLIK), Division of Infectious Diseases, Med. Klinik und Poliklinik IV, Munich, Germany

**Background:** Current antiretroviral two-drug regimens (2DR) combining dolutegravir (DTG) with either lamivudine (3TC) or rilpivirine (RPV) may be limited by drug resistance or drug-drug-interactions (DDI). The combination of the next-generation NNRTI doravirine (DOR) with DTG could be an attractive alternative, but evidence with respect to durability remains scarce and pharmacokinetic interaction data are conflicting.

**Methods:** Descriptive analysis of DOR+DTG (DoDo) as a 2DR in a real-life setting at hospital clinics and private practices in Germany and Austria since February 2019.

**Results:** Through January 2024 93 people with HIV are followed. At switch to DoDo median age was 58 years (range 19-81), female/male ratio was 21/72. A history of HIV-associated/AIDS-defining conditions was present in 66%, median CD4-nadir was 167/ $\mu$ l (range 0-922). Median time on ART before switch was 21 years (0-34) with a median of 6 prior regimens (1-22). Main reasons for DoDo were DDI (32%), tolerability (24%), and cardiovascular risk (20%). Eighty-one participants (87%) have remained on DoDo for a median of 35 months (1-60), including 4 using DoDo a second time. Twelve persons (13%) permanently switched off DoDo after a median of 337 days (20-1390), including 2 for persisting low-level viremia. All others had a VL<50 cp/ml at the last follow-up. Five persons died due to non-AIDS comorbidities. Changes of CD4-count and weight before and during DoDo varied considerably between participants but on average were limited. Drug levels are available for 24 participants (26%) (figure).

In 2/24 (8%) dolutegravir was below the target level of 1100 ng/ml, in 1 other person (4%) doravirine was undetectable. There was notable variability of dolutegravir levels. VL was fully suppressed in these 24 participants at all timepoints; there were no signs or symptoms of toxicity.



**Conclusions:** DOR+DTG (DoDo) can be a valuable long-term 2DR option with no apparent mutual DDI-issues. More data on this 2DR are needed.

## THPEB096

### Weight and blood lipid outcomes among treatment-naïve and treatment-experienced people living with HIV initiating bicitgravir/emtricitabine/tenofovir alafenamide (BIC/FTC/TAF)

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**Background:** This study aims to compare the changes in weight and blood lipids at week 48 to baseline among treatment-naïve people living with HIV initiating ART with BIC/FTC/TAF (treatment-naïve group, TN) and those who switched to BIC/FTC/TAF regimens (treatment-experienced group, TE).

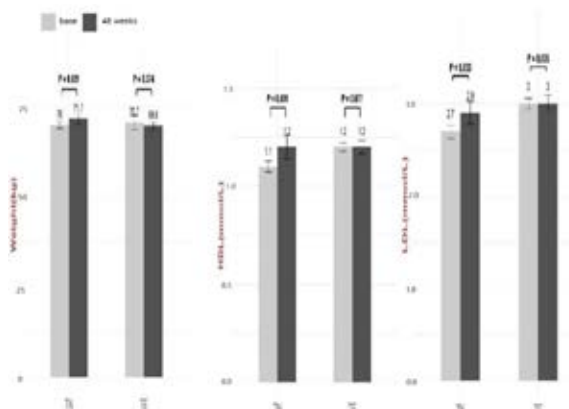
**Methods:** A retrospective study was conducted at the STD/AIDS clinic of Beijing Youan Hospital, Capital Medical University from January 2020 to December 2021. Demographic, clinical, and laboratory data were collected for both the TN and TE groups.

The t-test or Wilcoxon rank-sum test was utilized to compare the changes in weight and lipid profiles, including HDL-C, LDL-C, TG, and TC, at baseline and after 48 weeks of treatment between the two groups.

**Results:** The study included a total of 1,253 people living with HIV : 538 were treatment-naïve and began BIC/FTC/TAF therapy, while 715 were treatment-experienced and switched to this regimen.

The median ages were 32.0 years (IQR: 27.0-39.0) for the TN group and 31.0 years (IQR: 26.0-36.0) for the TE group. In the TE group, 433 (60.5%) had previously used ART regimens that contained TDF. For the TN group, there were significant differences in weight ( $P=0.031$ ), HDL-C ( $P=0.001$ ), and LDL-C ( $P=0.033$ ) when comparing baseline values to those at week 48 of ART.

Conversely, in the TE group, there were no significant changes in weight ( $P=0.374$ ), HDL-C ( $P=0.877$ ), or LDL-C ( $P=0.635$ ) over the same period.



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**Conclusions:** Treatment-naïve people living with HIV initiating ART with BIC/FTC/TAF experienced significant changes in weight, HDL-C, and LDL-C at week 48 compared to baseline.

However, no significant changes were observed in the treatment-experienced individuals who switched to this regimen. During antiviral treatment, it is important to closely monitor metabolic changes and address any issues in a timely manner.

## THPEB097

### Antiretroviral Treatment in PLWH with late diagnosis initiating ART with DTG/3TC or BIC/TAF/FTC

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**Background:** Opportunistic infections and/or low CD4+T-cell counts are exclusion criteria in most clinical trials. People living with HIV (PLWH) and late diagnosis are inadequately represented in studies assessing efficacy of antiretroviral treatment (ART) regimens. Real-world data is of high importance in this vulnerable subset of PLWH.

There are currently no data from European studies focusing on virologic outcomes in treatment naïve PLWH with baseline CD4 count  $\leq 200/\mu\text{l}$  comparing dolutegravir/lamivudin (DTG/3TC) and bictegravir/tenofovir alafenamid/emtricitabine (BIC/TAF/FTC).

Aim of the study was to obtain information on effectiveness and tolerability/safety of DTG/3TC in treatment naïve PLWH with a CD4 cell count  $\leq 200/\mu\text{l}$ . Results were compared with data from treatment naïve patients with a CD4 cell count  $<200/\mu\text{l}$  treated with BIC/TAF/FTC.

**Methods:** Retrospective, multicentre, multinational study with 12 investigational sites in Germany, Spain and Portugal. Primary objective was effectiveness of initial ART with DTG/3TC compared to BIC/TAF/FTC in patients with low CD4 counts at baseline ( $<200/\mu\text{l}$ ). Primary endpoint was proportion of PLWH with  $<50$  copies/ml treated with DTG/3TC and BIC/TAF/FTC after 48 weeks after treatment initiation.

PLWH with  $\text{CD4}<200/\mu\text{l}$  and/or an AIDS defining disease who started first line ART with DTG/3TC or BIC/TAF/FTC between July 2019 and September 2022 were included and matched by age, gender, CDC stadium and baseline CD4 count and HI-viral load. Virologic response was analyzed using FDA snapshot analysis at week 48  $\pm 6$  wks.

**Results:** 82 PLWH were included in the study, 4.8% women, with a mean (SD) baseline CD4  $96/\mu\text{l}$  (78). 41 PLWH were started on 2DR DTG/3TC and 41 on 3DR BIC/TAF/FTC. 95.1% and 85.3% of PLWH on 2DR and 3DR, respectively, had a viral load  $<50$  copies/ml at week 48. Discontinuation rates were 5.9% in the 2DR and 2.7% in the 3DR group.

**Conclusions:** In a European cohort of PLWH and late diagnosis starting first line ART with DTG/3TC or BIC/TAF/FTC, there were no significant differences in discontinuation rates or virologic response rates at week 48. Our results indicate, that the choice between ART 2DR and ART 3DR can be made on an individual basis. Future research will focus on identifying factors associated with regimen selection in this cohort.

## THPEB098

### Enhancing HIV care: rapid antiretroviral therapy initiation in a community-based organization clinic in Kuala Lumpur, Malaysia

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**Background:** In Malaysia, Community HealthCare Clinic (CHCC) of the PT Foundation is a leading Community-based organization (CBO), has provided HIV care and sexual health services based on social entrepreneurship service delivery model since late 2018.

This study aimed to assess the feasibility of rapid antiretroviral therapy (ART) initiation for newly diagnosed patients in this CBO-led clinic.

**Methods:** CHCC is a one-stop centre for STI/HIV screening, treatment and prevention, led by the community, is equipped with near patient point of care diagnostics including in-house PIMA CD4 analyser and GeneXpert for HIV viral load determination, facilitating rapid ART initiation. A



descriptive single-center study included all patients newly diagnosed at CHCC or referred to the clinic from January 2019 to December 2023. Data on socio-demographics, clinical characteristics and ART initiation outcomes were collected. Rapid ART initiation was defined as ART within 7 days of the first clinic visit upon diagnosis, while delayed initiation was after 7 days.

**Results:** Among 293 newly diagnosed HIV patients, 92.8% were men (70.1% MSM), 5.1% were women, and 2% were transgender. The median age at diagnosis was 32 (IQR 27–39) years, with a median nadir CD4 count of 304 (IQR 201–430) cell/mm<sup>3</sup>. The median time from the first clinic visit to ART initiation was 7 (IQR 2–15) days. The majority, 96.9% initiated TDF/FTC/EFV, in line with our national guideline. Of the patients, 16% started ART at same day, 19.5% had rapid ART initiation, 41.6% experienced delayed ART initiation while 22.9% were referred to government facilities without ART initiated, primarily due to cost and logistic issues (51.6%). Delayed initiation was mainly attributed to clinic structural barriers (63.3%) such as delayed appointment following confirmatory tests; followed by Bactrim initiation before ART (19.3%), and patient-related factors (8.3%), including denial and unreadiness to start ART.

**Conclusions:** The study demonstrates the feasibility of rapid ART initiation through a CBO-led clinic in Malaysia. Efforts to enhance clinic services are warranted to improve timely ART initiation, aligning with updated WHO guidelines including Bactrim and ART initiation on same time, and providing financial assistance for rapid ART initiation before referring to government facilities.

## THPEB099

### Clinical outcomes at month 12 after initiation of cabotegravir and rilpivirine long acting (CAB+RPV LA) in an observational real-world study (BEYOND)

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**Background:** CAB+RPV LA is the first complete long-acting regimen for virologically suppressed people with HIV (PWH) administered by a healthcare provider (HCP). The BEYOND real-world study describes the month 12 (M12) clinical outcomes of patients initiating CAB+RPV LA in the United States.

**Methods:** BEYOND is a 2-year observational study of utilization, outcomes, and experience of PWH initiating CAB+RPV LA (monthly or every 2 months) across 30 US sites.

HCPs completed an electronic case report form (eCRF) at baseline, M6, and M12 to capture demographics, medical and treatment history, and clinical outcomes.

**Results:** A total of 308 PWH were enrolled between Sep 2021-Jul 2022 and initiated CAB+RPV LA. Mean age of participants was 46 years, 39% were ≥50 years, 13% were female assigned at birth, with 44% White, 33% Black, and 23% other races. By M6, 36/308 (12%) participants discontinued the study. This M12 analysis (data cutoff Sep 2023) included 272 PWH: 245 remained on treatment at M12, 8 (3%) additional PWH were reported as having discontinued CAB+RPV LA since M6, and 19 (7%) had unknown treatment status.

The most common reason for discontinuation was medication cost/access issues (3/8 PWH). At M12, 97% were receiving CAB+RPV LA every 2 months and 3% were on monthly dosing. Of PWH with viral load <50 c/mL at baseline, 97% (181/187) had a most recent viral load of <50 c/mL at M12 (Table 1).

Confirmed virologic failure (CVF) with resistance was reported in 1/272 (0.4%) PWH between M6 and M12.

Virologic Outcomes	Month 6 (N=308)	Month 12 (N=272)
Participants with viral load <50 c/mL at baseline*	248	187
Viral load <50 c/mL	235 (94.8%)	181 (96.8%)
Viral load ≥50 c/mL	13 (5.2%)	6 (3.2%)
Participants with viral load >50 c/mL at baseline*	18	13
Viral load <50 c/mL	17 (94.4%)	13 (100%)
Viral load ≥50 c/mL	1 (5.6%)	0
Confirmed virologic failure**	6 (1.9%)	1 (0.4%)

\*Number with available viral load at baseline AND respective time point.  
\*\*Confirmed virologic failure was defined as 2 consecutive HIV-1 RNA viral loads ≥200 c/mL or 1 HIV-1 RNA viral load ≥200 c/mL followed by regimen discontinuation within 3 months of viral load ≥200 c/mL.

Table 1. Clinical outcomes at M12.

**Conclusions:** The M12 results from real-world initiation of CAB+RPV LA in the United States are consistent with the phase 3/3b clinical trials with high rates of virologic suppression, low rates of CVFs with treatment emergent resistance, and no new discontinuations due to intolerance.

## THPEB100

### Three-year effectiveness of bictegravir/emtricitabine/tenofovir-alafenamide as switch strategy in the real-world experience

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**Background:** We previously described the effectiveness of bictegravir/emtricitabine/tenofovir (B/F/TAF) as a switch strategy in people living with HIV (PLWH) in the real life. At 48 weeks of follow-up, 83% and 94.4% of participants had HIV-RNA < 50 copies/ml in the intention to treat (ITT) and per protocol (PP) analysis.



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No differences were seen between PLWH with or without previous nucleoside reverse transcriptase inhibitor (NRTI) resistance associated mutations (RAMs) (Mican et al; AIDS;2022). Herein we describe the results after three years of follow-up.

**Methods:** Retrospective review of treatment-experienced PLWH initiating B/F/TAF between April-2019 and February-2020. HIV-RNA less than 50 copies/ml was analyzed at 92 and 144 weeks of follow-up in an intention-to-treat (ITT) analysis (missing=failure) and per-protocol (PP) analysis (participants with missing data or changes for reasons other than virological failure were excluded). RAMs were analyzed by Sanger RNA sequencing and included in the HIV Drug Resistance Database (Stanford University).

**Results:** 506 PWH were included: 16.2% women, median age (IQR) 52.3 (43.5-57.8) years, median duration of HIV infection 18.9 years, 13.6% with documented pre-existing NRTI-RAMs (Table1), 86.6% with viral load below 50 copies/mL.

At 96 weeks in the ITT and PP analyses, 73.1% and 95.4%, respectively had HIV-RNA< 50 copies/ml. At 144 weeks, these figures were 68.2% and 94% respectively. We observed no statistically significant differences between PLWH with and without previous NRTI-RAMs (Table2).

22 PLWH had detectable HIV-RNA at week 144, but only 13 had HIV-RNA higher than 200 copies/ml. Only in 5 cases treatment was changed. The remaining persons were encouraged to reinforce adherence or were considered as low level viraemia situations. Resistance testing was performed in seven participants, but RAMs were detected in only two, always before 48-week follow-up (M184V *de novo* and re-emerging M41I-D67N, K70R-M184V-T215F-K219Q).

RAMs	Number
Only M184V/I	27
K65R + M184V/I	2
M184V/I + ≥2 TAMS	19
M184V/I + others	9
K65R	1
≥2 TAMS	8
Other	3

Table 1: Preexisting NRTI-RAMs.

	No NRTI resistance (N=437)	NRTI resistance (N=69)	All (N=506)
HIV viral load <50 copies/ml	295 (67.6%)	50 (72.5%)	345 (68.2%)
HIV viral load >50 copies/ml	19 (4.3%)	3 (4.3%)	22 (4.3%)
No data	123 (28.1%)	16 (23.2%)	139 (27.5%)
Missing	39 (8.9%)	7 (10.2%)	46 (9.1%)
Toxicity	29 (6.6%)	3 (4.3%)	32 (6.3%)
Deaths	15 (3.4%)	5 (7.3%)	20 (4%)
Switch to double-therapy	34 (7.8%)	0	34 (6.7%)
Other reasons	6 (1.4%)	1 (1.4%)	7 (1.4%)

Table 2: Virological outcome at month 36.

**Conclusions:** Through 3 years of follow-up, switching to B/F/TAF maintained high rates of virological suppression in long-term PLWH. These results are seen even in persons with pre-existing NRTI-RAMs.

## THPEB101

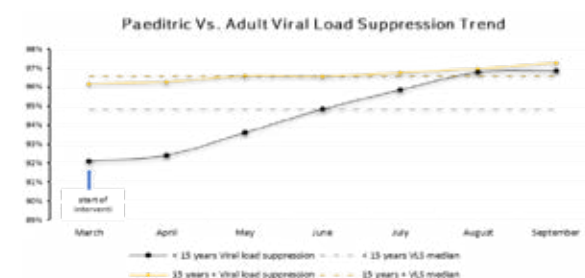
### Improving viral load suppression in children receiving antiretroviral therapy in Bauchi State, Nigeria: a quality improvement approach

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**Background:** Despite the availability of more efficacious regimens, viral load (VL) suppression rates among children on antiretroviral therapy (ART) in Nigeria have continued to trail those of the adult population. This work highlights the results of a quality improvement initiative for VL suppression among children in the Bauchi state Accelerating Control of the HIV Epidemic in Nigeria -Cluster 2 (ACE2) project.

**Description:** In March 2023, the Retention and Audit Determination Tool (RADET) line lists were used to calculate and compare the viral suppression rates for the <15 and ≥15 years age categories of clients on ART in Bauchi State. Facilities with the poorest VL suppression rates in the under-15 years category were prioritized and supported to address identified root causes such as incorrect regimens, suboptimal dosing for weight and age, frequent treatment interruptions, poor adherence, and poor treatment literacy of caregivers. Over 6 months, these root causes were addressed through ART regimen optimization, provision of dosing guides, enhanced adherence counseling, individualized care plan, and appointment reminders. VL suppression rates were monitored monthly using the RADET line lists.



**Lessons learned:** The VL suppression rate in children younger than fifteen years improved from 92% to 97% within 6 months of the initiative, catching up with the adults and exceeding the UNAIDS target.


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This shows that simple strategies targeted at children and their caregivers, healthcare providers, and health systems can significantly improve VL suppression in a short period.

**Conclusions/Next steps:** While there are cross-cutting challenges to effective ART between adults and children, the <15 require special attention to address their unique barriers. It's crucial to tailor interventions to individual needs and understand caregivers' significant contributions to ART's success in children.

Further evaluations would be necessary to determine the effect of each intervention on individual clients' outcomes and overall suppression rates.

## THPEB102

### Viral suppression and drug resistance patterns among MSM in Cameroon: evidence supporting elimination of HIV in key populations

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**Background:** Key populations (KP) stand higher risks of acquiring HIV-infection than any other targets; with men having sex with men (MSM) being the most vulnerable sub-population. Thus, ensuring an effective treatment re-

sponse among MSM in low and middle-income countries (LMICs) would contribute substantially in achieving HIV global elimination goals. We thus aimed at evaluating the virological response and acquired HIV drug resistance (HIVDR) patterns among MSM in Cameroon.

**Methods:** A facility-based study was conducted from August-2022 to February-2023 among ART-experienced MSM receiving at Humanity First Plus (Community Based Organization; CBO) in Yaounde-Cameroon. Viral load (VL) was measured using Abbott *m2000rt*, and VL<50 copies/mL was considered as undetectable while all VL<1000 copies/mL was considered as suppressed viremia. Cases of confirmed unsuppressed viremia were enrolled for HIV genotypic resistance testing using the Sanger-sequencing. HIV drug resistance (HIVDR) was interpreted using the Stanford HIVdb v9.4, and molecular phylogeny was used for HIV subtyping.

**Results:** Of the 95 ART-experienced MSM at the CBO during the study period, 82 (86.3%) provided informed consent for participation. Their median [IQR] age was 27 [21-37] years and 75/82 (91%) reported having multiple sexual partners. Regarding ART history, median [IQR] duration on ART was 4 [2-5] years and most prescribed ART regimens were TD-F+3TC+DTG (95%; 78/82); TDF+3TC+EFV (2.4%; 2/82) and ATV/r+3TC+TDF (2.4%; 2/82). Virological response revealed an overall rate of 97.6% (80/82) viral suppression, indicating a high level of HIV prevention among MSM receiving ART. A rate of 70.7% (58/82) MSM achieved an undetectable viremia (VL<50 copies/mL), indicating an optimal prevention of HIVDR emergence. Following enhanced adherence council sessions, only 2 cases remained unsuppressed (64,109 and 104,440 copies/mL), and HIV-1 sequencing revealed one case harboring drug resistance mutations (G190GE, L210W), indicating an overall rate of 1.2% (1/82) HIVDR at the facility-level. Phylogenetic analysis indicated the presence of the HIV-1 subtypes A1 and CRF02\_AG.

**Conclusions:** Among ART-experienced MSM in Yaounde, receiving predominantly DTG-containing regimens, viral suppression rate is above the 95% target, indicating prevention of HIV transmission among this KP. Furthermore, the low rate of HIVDR underscores the high effectiveness of current ART regimens used among KP in similar LMICs.

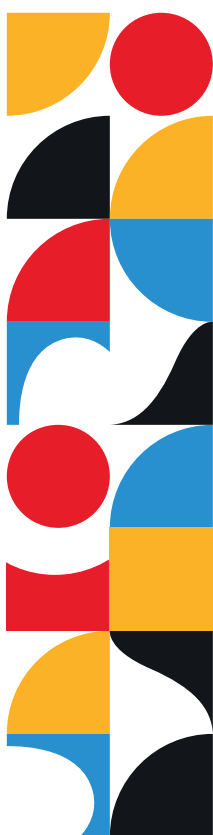
## THPEB103

### Injection site reactions with subcutaneous lenacapavir administration at alternate injection sites

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**Background:** Lenacapavir (LEN) is a first-in-class, long-acting capsid inhibitor, indicated, in combination with other antiretrovirals, for the treatment of multidrug-resistant HIV-1 infection in heavily treatment-experienced people,





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and is also under investigation as a single agent for HIV-1 prevention. LEN is administered by subcutaneous (SC) injection in the abdomen. We report injection site reactions (ISRs) occurring with SC LEN administration at alternate injection sites.

**Methods:** This Phase 1 open-label study enrolled healthy adults into four cohorts, each with a unique injection site: thigh, upper arm, gluteal region, and abdomen (reference). Participants received a single SC LEN dose (927 mg as two 1.5 mL injections) on Day (D) 1. The primary endpoint was pharmacokinetic exposure, with no clinically significant difference between injection sites observed (IDWeek 2023; Abstract 1542). Secondary endpoints included safety parameters; injection sites were examined daily during D1-10 and at subsequent visits (weekly-monthly) until study end (D270). ISRs were coded by MedDRA preferred term and graded 1-5 for severity.

**Results:** Forty participants (n=10/cohort) received SC LEN; median age was 46 years, and 50% of participants were male. One Grade 3 ISR was observed (erythema in the upper arm) which resolved without treatment (duration, 5 days); all other ISRs were Grade 1/2. The most common ISRs ( $\geq 15\%$  of total participants) were pain, erythema, induration, nodule, and swelling (**Table**). Swelling, erythema, and pain typically resolved within days (median duration,  $\leq 7$  days). Across all cohorts, median duration of induration ranged from 6 to 25 days; nodule, observed in the thigh and abdomen cohorts only, had a median duration of 20 and 9 days, respectively.

Most common ISRs ( $\geq 15\%$ of total participants)	Thigh (n=10)	Upper arm (n=10)	Gluteal region (n=10)	Abdomen (reference) (n=10)
	n Median (range) duration, days			
Pain	9 4 (1-8)	8 1 (1-14)	9 3 (2-7)	10 2 (2-6)
Induration	8 6 (2-168)	10 25 (2-271)	3 8 (6-9)	8 19 (8-192)
Erythema	9 3 (2-8)	8 7 (3-14)	5 5 (3-7)	6 4 (2-7)
Nodule	4 20 (8-61)	0 -	0 -	2 9 (8-45)
Swelling	0 -	1 2 (2-2)	1 7 (7-7)	4 2 (2-3)

n numbers = number of participants. ISR, injection site reaction.

**Table.** Frequency and median duration of most common ISRs by injection site cohort (N=40).

**Conclusions:** The frequency and duration of ISRs were generally similar between the alternate injection sites and the abdomen. This study supports further investigation of these alternate injection sites for SC LEN administration.

## THPEB104

One-year outcomes of long-acting cabotegravir and rilpivirine in people living with HIV and a long exposure to antiretroviral therapy: data from the SCohoLART Study

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**Background:** Aim of the study was to evaluate the 9- and 12-month cumulative probabilities of treatment discontinuation (TD) in people living with HIV (PLWH) and a long exposure to antiretroviral therapy (ART) switching to long-acting (LA) drugs.

**Methods:** SCohoLART (NCT05663580) is a single-center, prospective, cohort study designed to collect both samples and clinical data of PLWH on virological suppression who switched to bimonthly LA cabotegravir and rilpivirine.

Participants were followed-up in accordance with national guidelines.

TD occurred at switch to another regimen for any reason including virological failure (VF); VF was defined as HIV-RNA $\geq 50$  copies/mL at two consecutive measurements or a single HIV-RNA $\geq 1000$  copies/mL.

Participants' characteristics were reported as median (interquartile range, IQR) or frequency (%). Cumulative probabilities of TD were estimated by Kaplan-Meier curve.

**Results:** We evaluated 504 participants: 453 (89.9%) were male and median age was 49.0 (40.0-56.4). Median years from HIV diagnosis and of ART were 14.4 (9.0-21.2) and 11.5 (8.2-17.8), respectively; 175 (34.7%) were on dual therapy. During a median study follow-up of 9.4 (6.4-11.4) months, 48 PLWH experienced TDs (9.5%), including 4 (0.8%) for VF, whose characteristics are shown in Figure 1.

Participant	Year of HIV diagnosis	Body mass index	Pre-switching therapy regimen	Pre-switching viral load	First long-acting therapy regimen	First long-acting viral load	VF at follow-up	Subtype	Pre-A11 genotypic resistance test	Genotypic resistance test at follow-up
Male, 50 years old	2003	22.2	DTG + ABC + 3TC	171 copies/mL	DTG + ABC + 3TC	108 copies/mL after 4 weeks	Yes	CR	Not available	CR
Male, 42 years old	2003	25.7	DTG + ABC	1440 copies/mL	DTG + ABC + 3TC	108 copies/mL after 32 weeks	Yes	CR	Not available	CR
Male, 56 years old	2002	24.8	DTG + ABC + 3TC	128 copies/mL	DTG + ABC + 3TC	108 copies/mL after 32 weeks	Yes	CR	Not available	CR
Male, 57 years old	2008	25.3	DTG + ABC + 3TC	128 copies/mL	DTG + ABC + 3TC	108 copies/mL after 32 weeks	Yes	CR	Not available	CR

**Figure 1.** Characteristics of participants experiencing virological failure.

The 9- and 12-month cumulative probabilities of TD were 10% (95%CI: 7%-12%) and 12% (95%CI: 9%-16%), respectively (Figure 2). Main cause of TD was injection site reaction (ISR; 10, 20.8%).

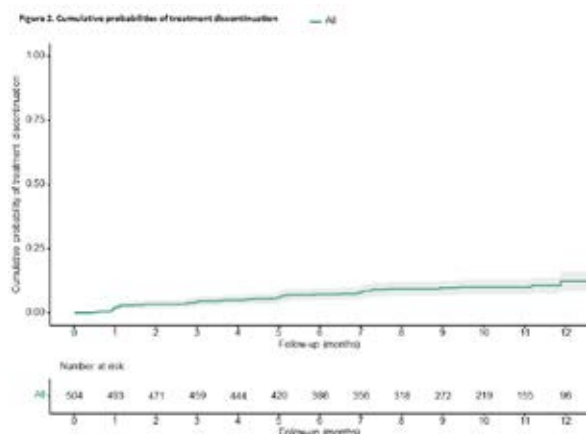


Figure 2. Cumulative probabilities of treatment discontinuation.

**Conclusions:** The 9- and 12-month cumulative probabilities of TD with cabotegravir and rilpivirine were low, with few VFs, in this cohort of ART-experienced PLWH. ISR is the leading cause of TD.

## THPEB105

The relationship of smoking and unhealthy alcohol use to HIV care retention and viral control: findings from a multi-site cohort study

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**Background:** Tobacco smoking and unhealthy alcohol use may negatively influence HIV care continuum outcomes, but associations have not been examined across international cohorts.

**Methods:** People with HIV (PWH) were included from 11 Antiretroviral Therapy Cohort Collaboration (ART-CC) cohorts; 5 North American and 6 European. Exposures were harmonized measures of smoking and alcohol use from

electronic health records (2010-2018). Retention in care was defined as having at least two HIV care visits 60 days apart within 12 months of the alcohol measurement date; HIV RNA failure was defined as >200 copies/mL. Adjusted prevalence ratios (PRs) were obtained from separate logistic regression models for each outcome; with covariates of age, sex, race, and HIV acquisition mode. We calculated a pooled effect estimate by fitting a random-effect meta-analysis.

**Results:** There were 83,102 PWH with available outcome data; mostly male (87.4%). The sample was 46.1% white, 28.1% Black, 6.4% Hispanic, 1.7% Asian, 0.3% indigenous, and 17.4% other/unknown. Almost half (48.6%) were non-drinkers, 44.5% were low/moderate drinkers, and 6.9% were heavy drinkers. Around 43.7% were current smokers, while 56.3% reported never or former smokers. Compared with those with low/moderate drinking, those with heavy drinking had higher risk of not being retained in care (pooled PR [95% CI]=1.13 [1.03-1.25]), with heterogeneity of  $I^2=7.8\%$ .

Current smokers had a higher risk of not being retained in care compared with former or never smokers (pooled PR [95% CI]=1.12 [1.08-1.16]), with heterogeneity of  $I^2=18.1\%$ . PWH reporting heavy drinking had higher risk of viral failure versus low/moderate use (pooled PR [95% CI]=1.18 [1.02-1.37]), with heterogeneity of  $I^2=68.9\%$ .

There was no evidence of lower risk of viral failure among those who were non-drinkers compared with low/moderate drinking (pooled PR [95% CI]=0.98 [0.84-1.14]), with heterogeneity of  $I^2=85.9\%$ .

Current smokers were at higher risk of viral failure than non-smokers (pooled PR [95% CI]=1.44 [1.25-1.67]), with high heterogeneity across cohorts ( $I^2=90.6\%$ ).

**Conclusions:** In this large international sample of PWH, smoking and unhealthy alcohol use were associated with worse HIV care retention and viral control, with variability observed between cohorts.

## THPEB106

Gender-related differences in cabotegravir/rilpivirine long-acting therapy in a real world cohort of HIV patients

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**Background:** Long-acting (LA) Cabotegravir/Rilpivirine (C/R) is a new antiretroviral therapy (ART) for the maintenance of viral suppression in HIV-patients. There is scant information on outcomes in women excluding those reported from clinical trials.



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**Methods:** Ongoing, prospective, single center cohort analyzed to assess potential gender-related differences in baseline features, safety and efficacy of C/R outside clinical trials in the first year of implementation in a monographic HIV outpatient clinic at a tertiary center in Madrid, Spain.

**Results:** Between Jan-2023/Jan 2024 270 patients started C/R (8% of patients on ART), 13% were women (N=35). Table-1 shows our main results.

	Women (N=35)	Men (N=235)	P
Age (y, mean,IQR)	51.7±11	44.6±12	P=0.001
Main route of HIV infection	74% HETEROSEXUAL	86% MSM	P=0.0001
Spanish European origin	62.9%	48.9%	0.15
BMI (mean±SD)	25.8 ± 5.0	25.7 ± 3.7	NS
HIV subtype B (N=97)	66.7%	94%	0.028
Baseline undetectable HIV RNA (N, %)	34 (97%)	233 (99%)	NS
Cd4 cell count (cells/ml; mean±SD)	782 ± 339	775 ± 309	NS
Time on ART (months; mean±SD)	190±112	132±96	0.001
Number of previous ART lines (mean±SD)	6.9 ± 4.5	4.1 ± 3.4	0.001
AIDS	25.7%	14.5%	0.79
CDC-A	42.9%	71.5	0.002
Comorbidities (%)	68.6%	46.4%	0.018
NNRTI resistance	2 (5.7%)	2 (0.85%)	NS
Adherence with injections	100%	100%	NS
Maintenance of HIV suppression	97%	99%	NS
ISR (any degree)	2 (5.7%)	9 (3.8%)	NS
Treatment interruption	2 (5.7%)	5 (2.1%)	NS

**Conclusions:** In this real world cohort, C/R showed equal safety and efficacy outcomes regardless gender, despite women being older, with more advanced disease, longer and more ART exposure, more comorbidities and less HIV subtype B.

## THPEB107

Evolution of inflammatory biomarkers and HIV-DNA in people with HIV switching to long acting cabotegravir/rilpivirine from either dual or triple therapy: results from a prospective cohort study

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**Background:** We assessed impact of switching to long acting cabotegravir/rilpivirine (LACR) on inflammatory parameters and HIV-DNA levels in real-life setting cohort of people with HIV (PLWH) switching to LACR from either dual or triple therapy.

**Methods:** This is a prospective study including all consecutive PLWH with HIV-RNA<50 copies who started LACR, who remained with HIV-RNA<50 copies/ml and who did not develop any intercurrent infectious event during the follow-up. We assessed HIV-DNA levels, ultra-sensitive C-reactive protein (hsCRP), CD4/CD8 ratio, neutrophil/lymphocytes ratio (NLR), platelet/lymphocyte ratio (PLR) assessed at the baseline, 4, 12 and 24 weeks after the switch (M0, M1, M3, and M6, respectively). Participants were divided into two groups: coming from triple and dual therapy. Repeated measures ANOVA was employed to assess differences in inflammatory outcomes over time and between groups, adjusting for time effect.

**Results:** We included 60 PLWH, 75% males, median age 48 (IQR: 43-57) years, 60% with multimorbidity, median age with HIV and CD4+T-cell count of 11 (IQR:6-17) and 725 (IQR: 569-948) cell/mm<sup>3</sup>, respectively. 58.1% PLWH were in triple group and 41.7% in the dual group. Evolution of the study parameters overall and by groups is depicted in Figure 1. From M0 to M6, we did not detect any significant change in any biomarker. By considering treatment group, we detected a significant increase in the CD4/CD8 ratio and a signal of HIV-DNA increase (despite not significant) in the dual group, however these differences were lost by time-effect.

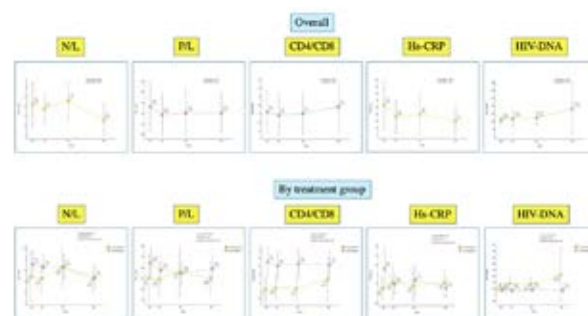


Figure 1.

**Conclusions:** Preliminarily, switching to LACR either from dual or triple therapy seems to have not a significant impact on inflammatory biomarkers or HIV-DNA. Further studies (with longer follow-up, larger number of PLWH, and taking into account HIV-DNA variability) are needed to investigate the impact of a third-antiretroviral removal on HIV-DNA and inflammation levels in people receiving LACR.

**THPEB108**

Improving adherence to antiretroviral treatment in Peruvian Amazon: a study of growth group programs in 2022

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**Background:** Retention and adherence to HIV treatment are important to achieve the 95-95-95 goals. AHF Peru, with the objective of improving retention and adherence to antiretroviral (ARV) treatment, developed two programs focused on people who are starting their treatment and those who have abandoned it.

**Methods:** During 2022, growth groups (GG) were launched in Lima and Iquitos (Peruvian Amazon) for those starting their treatment (SGG) and for those who had abandoned their treatments (AGG).

The SGG holds a meeting a month after starting treatment while the AGG holds 6 meetings. In these meetings, HIV, ARV treatment, physical and psychological care, problem-solving tools, reduction of risk practices, stigma and discrimination are discussed.

**Results:** In 2022, 14 groups were formed with a total of 88 participants (SGG=43; AGG=45). 91% SGG and 82% AGG of clients adhered to treatment within one year.

Of the adherent clients whose viral load could be measured (SGG= 36; AGG=31), 97% of the SGG and 81% of the AGG had an undetectable viral load.

Of the 7 clients (SGG= 4; AGG= 3) who abandoned treatment, five of them were drug users and suffered from mental disorders. One case reported gender violence and in the remaining case no information could be collected.

**Conclusions:** Alternatives must be sought to ensure adherence to ARV treatments. We understand that these types of programs must be based on the social determinants of each population. Our patients' work schedules and difficulties such as transportation prevented some patients from participating in these programs.

The results analyzed stimulate us to continue advancing in this type of community-based programs.

## Antiretroviral therapies and clinical issues in adolescents and young adults

**THPEB109**

Adolescents and young adults with HIV using long-acting injectable cabotegravir/rilpivirine as a standard of care: outcomes of the observational cohort at 26 months

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**Background:** Long-acting injectable (LAI) cabotegravir/rilpivirine (CAB/RPV) can improve antiretroviral treatment (ART) adherence and outcomes among adolescents and youth with HIV (AYHIV). Current data on LAI CAB/RPV in AYHIV are limited to clinical trials.

We evaluated the outcomes of LAI CAB/RPV among AYHIV in care at Children's National Hospital, Washington, DC.

**Methods:** We analyzed an observational cohort of AYHIV ≥12-<25 years of age who initiated LAI CAB/RPV between October 2021 and December 2023 as a standard of clinical care. Data included demographics (age, race, ethnicity, and sex at birth), HIV transmission mode, body mass index (BMI), prior ART, self-reported injection site pain, adverse events, HIV RNA, ART resistance, CAB/RPV dosing and retention in care.

**Results:** Nineteen AYHIV (53% male; median age=19.2 years [14.9-23.6 years]; 84.2% African-American; 63.2% with perinatally-acquired HIV; median BMI=25.8 kg/m<sup>2</sup> [18.6-57.9 kg/m<sup>2</sup>]) transitioned from oral ART to monthly LAI CAB/RPV with longest LAI duration of 26 months. Most AYHIV (94.7%) were virally suppressed ≥6 months on prior ART and transitioned (89.5%) from one daily pill with two NRTIs plus one INSTI.

Two AYHIV (10.5%) experienced ≥1 viral blips ≥200 copies/mL [207-1,100 copies/mL] and one AYHIV (5.3%) experienced ≥1 viral blips <200 copies/mL when transitioning to bimonthly injections during the first 12 months on LAI CAB/RPV. These viral blips did not result in the development of resistance to CAB and/or RPV. Most AYHIV (89.5%) switched to bimonthly LAI CAB/RPV after maintaining HIV RNA <20 copies/mL for 3-6 months on monthly injections.

All AYHIV on LAI CAB/RPV were virally suppressed at the end of the study period. Injection-associated pain/discomfort ranged from mild to moderate, lasted 0.5-1 days and improved with physical activity. Two AYHIV (10.5%) with perinatally-acquired HIV developed one-time im-



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mediate post-injection adverse reactions (malaise and pain) which self-resolved within 20 minutes. There were zero missed or delayed injections.

**Conclusions:** Despite challenges (e.g., viral blips and selected AYHIV with high BMI), we report 100% engagement in care and viral suppression among 19 AYHIV on LAI CAB/RPV at  $\leq 26$  months follow-up. More data are needed to evaluate the long-term outcomes and sustainability of LAI CAB/RPV used in clinical care by AYHIV.

## THPEB110

Protease inhibitor stock-out in Sub Saharan Africa: real-world implications of single-drug substitutions to dolutegravir in treatment experienced clients

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**Background:** In October 2020, the Eswatini National AIDS Program (SNAP) faced a complete Protease Inhibitor (PI) stock-out. Those suppressed ( $< 1000$  copies/ml) on a PI were substituted to dolutegravir (DTG). The long-term outcomes of treatment experienced clients on PIs, following single drug DTG substitutions is uncertain.

This abstract follows rates of viral detection ( $\geq 50$  copies/ml) and non-suppression ( $\geq 1000$  copies/ml) over 96-weeks.

**Methods:** Data was abstracted from the electronic medical record in all clients on second-line, PI-based, antiretroviral therapy (ART) registered at Baylor Children's Foundation-Eswatini who had a single drug substitution of DTG for a PI (N = 450). Time to event analysis to detect risk factors for viral detection after substitution was performed with Cox regression modeling.

Overall viral suppression at 48 and 96 weeks, in clients maintained on DTG, was evaluated descriptively and risk factors for non-suppression after those thresholds were assessed by logistic regression.

**Results:** The median age at time of DTG substitution was 22 (IQR 16, 33) years, 57% (259/450) were female, and 13% (60/450) had a CD4 of  $< 200$  cells/ml. All had viral suppression at substitution and 393/450 (87.3%) were undetectable.

Multivariate cox regression analysis demonstrated a reduced risk of a detectable viral load in adults (HR 0.57, 95% CI 0.37, 0.88), with tenofovir backbones (HR 0.61, 95%CI 0.41, 0.90), with undetectable VLs in the year prior to substitution (HR 0.43, 95%CI 0.29, 0.64), and an undetectable VL at DTG substitution (HR 0.45, 95%CI 0.28, 0.70). In cross-sectional analysis, among clients retained on DTG for over

48 weeks, 94% (95%CI 91, 96%) were suppressed and 85% (95%CI 81, 88%) were undetectable (n=408), these rates were unchanged at 96 weeks (n=383).

The only factors that predicted an unsuppressed viral load at both 48 and 96 weeks were low level viremia (VL 50-1000 copies/mL) at DTG substitution and being an adolescent or young adult (15-24 years).

**Conclusions:** 96-week VL suppression rates nearing UNAIDS targets can be achieved after DTG substitutions in many treatment-experienced clients. However, we have identified risk factors for viral non-suppression after one drug substitution that represent high-risk populations for treatment failure and future INSTI resistance.

## THPEB111

In the mismatch: viral suppression despite low tenofovir diphosphate in dried blood spots (DBS) in the multicenter AIDS cohort study/women's interagency HIV study combined cohort (MWCCS)

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**Background:** Tenofovir-diphosphate (TFV-DP) in DBS is an objective adherence measure predictive of future viremia in virally-suppressed persons with HIV (PWH) on TFV-based ART. Individuals with a viral load (VL):TFV-DP mismatch (suppressed HIV-1 RNA VL despite low TFV-DP concentrations) are at increased risk of future viremia and treatment failure. Black race, male sex, and high BMI were associated with lower TFV-DP concentrations after controlling for adherence in directly-observed therapy (DOT) trials, but VL:TFV-DP mismatch rates in real-world settings are unknown.

**Methods:** DBS samples were obtained from MWCCS-enrolled PWH receiving tenofovir alafenamide (TAF)-based ART. TFV-DP was quantified using validated LC-MS/MS.



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Mismatch was defined as having VL<200 cps/mL and TFV-DP<1800 fmol/punches, the latter conservative threshold based on a previous DOT study in PWH and ≥85% adherence (NCT04065347).

**Results:** DBS was measured in a 356-sample subset of mostly female (71%) PWH receiving TAF for ≥3 months and median age 54 [47, 61] (Figure 1).

TFV-DP in DBS for VL<200 cps/mL and VL≥200 cps/mL was 1989 [1274, 2974] and 264 [54, 597] fmol/punches, respectively. No participant experienced VL≥200 cps/mL and TFV-DP>1800 fmol/punches (Figure 2).

The mismatch rate was 44%/37% for females/males with rates of 46%/58%, 51%/48%, 36%/33%, and 41%/33% for those with black race, BMI>30 kg/m<sup>2</sup>, INSTI-based ART, and self-reported adherence ≥95%, respectively.

	Female		Male	
	Mismatch (n = 111)	No mismatch (n = 143)	Mismatch (n = 30)	No mismatch (n = 64)
Age at visit (years)	51 (47-62)	57 (52-63)	58 (57-67)	55 (44-66)
Race (2010 NIH definition)				
Black/African American	83 (74.8%)	98 (68.5%)	23 (60.5%)	87 (56.6%)
White/Caucasian	5 (4.5%)	65 (45.5%)	19 (50.3%)	37 (57.8%)
All other	23 (20.7%)	29 (20.3%)	4 (10.5%)	89 (56.6%)
Body mass index				
≥ 30 kg/m <sup>2</sup>	73 (65.8%)	70 (49%)	16 (42.1%)	87 (56.6%)
CD4+ helper cells (per mm <sup>3</sup> )	811 (567-1017)	693 (472-916)	754 (564-912)	700 (454-887)
ART class				
INSTI-based	62 (55.8%)	92 (64.3%)	29 (74.6%)	41 (64.1%)
NNRTI-based	21 (18.9%)	23 (16.1%)	8 (20.5%)	82 (51.8%)
BoostedPI/Medicaid	36 (32.2%)	27 (18.9%)	19 (48.7%)	11 (17.2%)
Other	0 (0%)	1 (0.7%)	0 (0%)	0 (0%)
Adherence (past 6 months)				
95-100%	90 (81.1%)	127 (88.8%)	29 (74.6%)	59 (92.2%)
75-94%	17 (15.3%)	9 (6.3%)	7 (17.5%)	4 (6.2%)
< 75%	3 (2.7%)	4 (2.8%)	1 (2.6%)	1 (1.6%)

Note: Missing values - race 1 (0.3%), body mass index 17 (4.8%), CD4+ cells 3 (0.8%), adherence 4 (1.1%).

Figure 1.

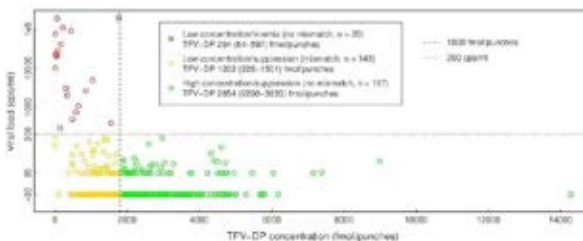


Figure 2.

**Conclusions:** VL:TFV-DP mismatch may identify individuals requiring an adherence intervention to prevent future viremia and treatment failure. Using a conservative PK-based TFV-DP threshold, we observed a high rate of mismatch. Future studies to establish an optimal clinically relevant threshold are required.

## THPEB112

### Assessing mental health in youth with successfully treated perinatal HIV in southern India: insights from the I'mPossible Fellowship Program

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**Background:** Despite literature indicating the high risk of mental health disorders among adolescents and young adults (AYA) with HIV, robust studies are limited in India. We screened for the prevalence of depression, generalized anxiety disorder (GAD), and experiences of stigma among participants of the I'mPossible Fellowship, a peer-led mentorship intervention in India empowering AYA with HIV through a comprehensive approach to health and psychosocial support, education, and vocational training.

**Methods:** Between March-June 2023, (approximately 1 year after the I'mPossible intervention rollout), 185 AYA with perinatally-acquired HIV were enrolled across 5 districts in the southern Indian state of Karnataka. Incorporating principles of community-based participatory research, peer mentors administered screening tools for depression (PHQ-9), and anxiety (GAD-7), and an abbreviated 4-item HIV Stigma Scale to participants.

**Results:** Participants' mean age was 18.6 years (SD 3.5y), and 117 (63.2%) identified as male. 91.9% experienced the loss of one or both parents in early childhood, and 43.2% lived in group care homes. Their mean ART duration was 9.7 years (SD 4.0y). Notably, 90.4% were virally suppressed (VL<150). A high proportion exhibited positive screens for at least one mental health condition (62.7%), depression alone (25.9%), anxiety alone (7%), or both conditions (29.7%).

Prevalence of perceived stigma, including disclosure concerns (81.1%) and worries about public attitudes (74.6%), was high. In the multivariate regression models, orphan status (loss of both parents) was linked to increased odds of a positive GAD screen (aOR 2.10, 95%CI 1.07-4.09).

**Conclusions:** The high prevalence of positive screens for depression and anxiety among AYA with HIV in India, despite high viral suppression, necessitates the incorporation of mental health interventions to promote sustained HIV care retention. Integration of mental health interventions into existing peer-support models can enhance AYA's overall health, and contribute towards achieving the global targets to end the HIV epidemic.





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## THPEB113

### Prevalence of depression and Suicidal Ideation among adolescents living with HIV on antiretroviral therapy in Kenya and Tanzania

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**Background:** Depression and suicidal ideation (SI) are important comorbidities among adolescents living with HIV (ALHIV) and have been associated with poor quality of life, suboptimal adherence to antiretroviral therapy (ART) and treatment discontinuation.

We sought to determine the prevalence of depression and SI and explore associated risk factors among ALHIV receiving ART in Kenya and Tanzania.

**Methods:** This analyses pooled data from a larger cross-sectional study and includes ALHIV (10-19 years) on ART for  $\geq 6$  months at 27 PEPFAR-supported clinics in the U.S. Military HIV Research Program in Kenya and Tanzania between 2018-2022. Patient Health Questionnaire (PHQ)-9 was used to assess the presence (score  $\geq 5$ ) and severity of depression. PHQ item #9 was used to assess risk for SI and thoughts of self-harm. Any response  $>0$  to item #9 was considered a positive screen for SI. Multivariate logistic regression was used to identify correlates of depression and SI.

**Results:** Among 1,135 ALHIV, 617 (54.4%) were aged 10-14 years, 592 (52.1%) were females, 647 (57.0%) were Kenyans, 1049 (92.4%) had been on ART for  $>24$  months and 929 (81.9%) were virally suppressed ( $<1000$ copies/mL). Moderate to severe depression was present in 21 (1.9%, 95% CI: 1.21-2.81%) and 6 (0.53%, 95% CI: 0.24-1.15%) had SI or thoughts of self-harm.

In multivariate analysis, ALHIV aged 15-19 years, compared to 10-14 years, and those missing  $\geq 3$  ART doses in the past month, compared to no missed doses, had higher odds of depression: aOR 2.67 (95% CI: 1.00-7.06;  $p=0.04$ ) and aOR 3.47 (95% CI: 1.08-11.07;  $p=0.03$ ), respectively.

Similarly, ALHIV missing  $\geq 3$  ART doses in the past month, compared to no missed doses, had higher odds of SI (aOR 7.47, 95% CI: 1.17-47.6;  $p=0.03$ ), while having no malnutrition, compared to moderate/severe malnutrition, was inversely associated with SI (aOR 0.16, 95% CI: 0.02-0.93;  $p=0.04$ ).

**Conclusions:** In this ART-experienced cohort of ALHIV, we found low prevalence of depression and SI. Older adolescence, missing doses of ART, and nutritional status were

associated with depression and SI. ALHIV with adherence challenges should be screened for depression and other mental health challenges and referred for additional support and treatment to optimize their health and well-being.

## THPEB114

### Exploring phenotypes of neurocognitive impairment and risk in Ugandan adolescents with perinatally acquired HIV (PHIV)

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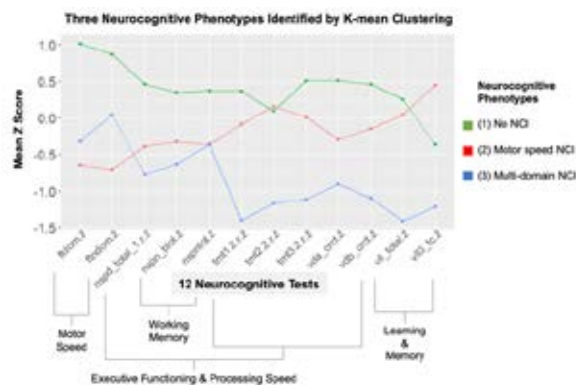
**Background:** Neurocognitive impairment (NCI) in adolescents with virally-suppressed PHIV is not well understood due to its heterogeneity (i.e., domains of NCI differ across adolescents) and numerous HIV (e.g., ART timing and legacy effects) and non-HIV (e.g., trauma and poverty) risk factors.

Differentiating unique NCI phenotypes may help identify the most salient risk factors for adolescents with NCI. We examined NCI phenotypes and risk factors in a sample of Ugandan adolescents with PHIV (APHIV).

**Methods:** K-means clustering across 12 neurocognitive tests of motor speed, working memory, learning, memory, attention, processing speed, and executive functioning among 48 virally-suppressed Ugandan APHIV (Mage = 16.16 years, SD = 2.07; male = 52%) was conducted. Sociodemographic (i.e., extreme poverty, hunger, low education), HIV (i.e., age at ART initiation, nadir CD4 count), and psychosocial (i.e., depressive symptoms, adverse experiences) risk factors were compared across clusters.

**Results:** Three clusters/phenotypes were identified: (1) No NCI ( $n = 17$ ), (2) Motor speed NCI ( $n = 19$ ), and (3) Multi-domain NCI (i.e., impairment in all domains except motor speed;  $n = 12$ ). Phenotypes did not differ by age or gender, however, they did differ by mean years of education ( $p = .017$ ); phenotype (1)'s mean was consistent with age-expected years in school, whereas phenotypes (2) and (3) were 2-3 years behind expectation.

There were no differences across phenotypes in poverty, HIV, and psychosocial factors, though there was a trend towards phenotype (2) experiencing more hunger ( $p = .08$ ).



**Conclusions:** Distinct neurocognitive phenotypes may exist in APHIV which may be driven by different combinations of risk factors. Less education may be a risk factor for and/or result of NCI.

Further research is needed to validate these phenotypes and their risk factors in larger samples. This knowledge may inform targeted interventions for NCI, such as educational support or food assistance.

## THPEB115

**Virologic outcome and retention in care among people with low-level viremia during antiretroviral treatment in Ethiopia: a retrospective cohort study**

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**Background:** A proportion of people with HIV (PWH) receiving antiretroviral treatment (ART) have detectable HIV RNA in plasma below the threshold commonly used to define virologic failure, a condition called low-level viremia (LLV). Previous studies, mainly from high-income countries, have found LLV to be associated with inferior treatment outcome.

We explored the association between LLV and unfavourable treatment outcome in an Ethiopian setting with recent rollout of Dolutegravir.

**Methods:** We categorized PWH receiving ART at public health facilities with  $\geq 1$  available viral load (VL) result June 2019-June 2020 for viremia status. PWH with virologic non-suppression (VL  $>1000$  copies/mL) during study inclusion were excluded. We assessed incidence of virologic non-suppression (VL  $>1000$  copies/mL on 1 occasion) and non-retention in care (death or loss to follow-up) during three years after initial viremia categorization, comparing participants with LLV (VL 151-1000 copies/mL) and par-

ticipants with virologic suppression (VL  $\leq 150$  copies/mL), using multivariable logistic regression adjusting for age, sex, ART regimen, type of health facility, and duration of ART before study inclusion.

**Results:** Among 18,152 persons receiving ART, VL results were available from 12,524 (69%). Among 12,165 ART recipients with documented VL  $\leq 1000$  copies/mL, 206 (1.7%) had LLV and 11,959 (98.3%) had virologic suppression. The majority (64.2%) of participants were female. The average duration of ART before study inclusion was 7.9 years. Most participants (89%) received tenofovir/lamivudine/dolutegravir at the time of inclusion.

Over three years of follow-up, 264 (2.2%) of virologically suppressed and 22 (11.3%) with LLV had virologic non-suppression. LLV was associated with both virologic non-suppression (adjusted odds ratio [AOR] 3.7; 95% confidence interval [95% CI] 2.2-6.2) and non-retention in care (AOR 3.4; 95% CI 1.7-6.6).

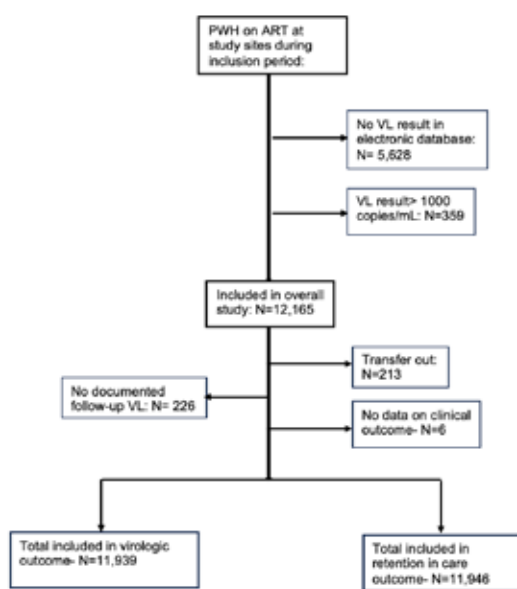


Figure 1. Flow chart of study inclusion and exclusion. Abbreviations: PWH, People with HIV; ART, antiretroviral therapy; VL, Viral load.

**Conclusions:** Among PWH receiving ART at Ethiopian facilities, LLV was associated with inferior virologic outcome and retention in care. LLV may serve as a predictor for adverse ART outcomes.

## THPEB116

**Improving viral suppression among adolescents Kenya through target peer led groups at a rural facility in Homabay**

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**Background:** Kenya has an estimated 180,000 adolescents living with HIV (ALH) and a suppression of 63% Homa Bay County which has the highest national HIV prevalence of 19.6% has 54,000 AYPs and a viral suppres-



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sion of 59% among AYP according to NACC estimates 2022. This is much lower compared to other ages. Group therapies and interpersonal psychotherapy have been documented to help address mental challenges affecting adherence.

Nyagoro health centre has 86 adolescent on ART. Viral suppression and retention was at 76% and 80% respectively in 2021. We implemented a group and interpersonal psychotherapies to address adherence issues.

**Methods:** We implemented a CQI project at Nyagoro Health Centre to address viral suppression. Some of the root causes of poor adherences identified were schooling schedule, violence, sibling squabbles, communication problems between them and their parents and non-disclosure. We held group and interpersonal psychotherapies with the adolescents. The clinic had groups of 10 adolescents meeting in a 30 - 45 minute session. The group's sessions involve sharing of experiences and concerns and coming up with solutions to support clients. The groups also employed a treatment buddy system. Some more personal issues were addressed through one to one session with adherence counselors.

**Results:** We formed 9 groups and each group had 1 Mentor and 10 adolescents. The mentor would identify key issues raised by the adolescents and then they as a group find the solutions alone. Some of the issues included: roles disputes, interpersonal shortcomings, life stage transitions, relational conflict, grief, and other attachment issues or loss. The viral suppression for the adolescents in the groups is at 89% by June 2023 from a previous 76% in 2021. Retention has also improved to 90% from a previous 80% in 2021.

**Conclusions:** Mentor led groups are a sustainable and effective in addressing adherences challenges amongst adolescents and young people.

6, and 18 months. Brain ultrasound was performed in all newborns at birth to rule out central nervous system abnormalities.

**Results:** The study population includes 568 HIV-exposed uninfected children born between November 2000 and September 2022 and followed up at the Pediatric Infectious Diseases unit of Luigi Sacco Hospital (Milan, Italy). At birth, neuropsychiatric abnormalities were present in 12% of assessed children, and they appeared to be gradually decreasing across time reaching the minimal frequency of 2,3% at 12 months. Most of these newborns had normal neuropsychiatric assessments in the following months, indeed.

We tried to study the effect of four antiretroviral drugs, dolutegravir, efavirenz, atazanavir, and didanosine, which are known to have more impact on neurodevelopment. Exposure to atazanavir occurred in 77 subjects, and an increased proportion of neurodevelopmental abnormalities (50% vs 18,9 % without atazanavir) was found at assessments after 12 months.

The number of children exposed to atazanavir during pregnancy who underwent neurodevelopmental assessments after 12 months of age was little (only 8 children), but, importantly, neurodevelopmental abnormalities in this group were all related to language impairment.

**Conclusions:** This work comprehensively describes outcomes and complications in a group of HEU children born between the years 2000 and 2022.

Given these initial results, more focus should be put on HEU children; large prospective studies monitoring over time specific neurodevelopmental disorders using clinical neuropsychiatric assessments and general neurologic development and cognitive functioning using more precise scoring systems should be put in place.

## THPEB117

### 20-year review of neurological outcomes in HIV-exposed uninfected children in a pediatric HIV referral center

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**Background:** Children born to HIV-infected mothers have unique and potentially dangerous exposures during pregnancy. HEU children vary in terms of exposure to both HIV and ART. We therefore performed a retrospective study to describe neurological outcomes of children who were exposed to HIV during pregnancy.

**Methods:** Participants included in the study were all children born to HIV-positive mothers. Child neuropsychiatry assessments were routinely performed to all children at birth, 3, and 12 months, with some additional visits at 1,

### THPEB118

Characteristics and management of tuberculosis preventive therapy (TPT) among new clients receiving ART at lighthouse supported clinics in Lilongwe, Malawi

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**Background:** Tuberculosis (TB) is the leading cause of mortality and morbidity in HIV positive individuals. HIV positive clients have a high risk of developing active Tuberculosis (TB), however, TB prevention therapy (TPT) significantly reduces the risk of developing active TB in HIV positive individuals.

We aimed to describe the characteristics and outcomes of clients newly enrolled on TPT and ART at ten Lighthouse supported clinics in Lilongwe, Malawi using program data after scaling up TPT nationwide.

**Description:** This was a retrospective cohort analysis conducted between October 2022 and September 2023. Data from program was abstracted from TPT medical record registers and treatment cards from ten Lighthouse supported clinics in Lilongwe, Malawi. Demographic characteristics, TB screening, TPT initiation, and completion rates of TPT were assessed using descriptive statistics conducted in STATA 18.

**Lessons learned:** The study included 4335 clients enrolled on ART at ten Lighthouse supported clinics with mean age of 32±11 years and 61% (2648) females. They were 3782 (87%) clients screened TB negative and 3006 (79%) were eligible for TPT initiation. A total of 2940 (98%) eligible clients were started on TPT. A total of 2307 (79%) were expected to complete TPT and 1756 (76%) completed. The common reasons for ineligibility were Confirmed TB or on TB treatment 257 (6%) and 854 (20%) were pregnant or <3 months postpartum.

However, the major reasons for clients not completing TPT included development of active TB 19 (0.6%), 247 (8%) were lost to follow-up, 318 (11%) were transferred out and 5 (0.2%) had adverse reactions. The best practice implemented was that every new ART client newly initiated on ART and TPT were being contacted by short messaging services (SMS) and phone calls three days before and after missing an appointment.

Complete documentation also helped to track presumptive TB cases to properly follow them whether were eligible for TPT or TB treatment. There were less than 1% who developed active TB during the course of TPT period.

**Conclusions/Next steps:** The program data showed that TPT reduced development of active TB among new clients initiated on ART.

Understanding the factors influencing TPT initiation, adherence, and completion rates is vital in optimizing TB prevention strategies among person living with HIV.

### THPEB119

Low-level viremia leads to increased risk for virologic failure in children and adolescents living with HIV on antiretroviral therapy in sub-Saharan Africa (CLOVES): a multicenter, retrospective cohort study

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**Background:** Viral load (VL) of 1000 copies/mL marks the cutoff for defining virologic failure (VF) in children and adolescents living with HIV (CALHIV) in many low and middle-income countries.

However, evidence in adults suggests that low-level viremia (LLV), or VL between 50-999 copies/mL, increases risk of later VF. There are fewer studies that address LLV in CALHIV.

**Methods:** A retrospective chart review was performed on data collected from October 2004 to December 2022 from the Baylor College of Medicine Children's Foundation - Tanzania sites in Mbeya and Mwanza. CALHIV (0-19 years of age) on antiretroviral therapy (ART) for ≥6 months with at least one VL <50 copies/mL plus ≥2 subsequent VLs were included. Data analysis was performed with two VF categories, VL ≥1000 copies/mL and ≥200 copies/mL.

Multivariable Cox regression modeling was performed to evaluate the association between LLV and VF; hazard ratios (HR) with 95% confidence intervals (CI) are presented.

**Results:** A total of 2618 CALHIV were included in the outcome analysis with a median age of 13.2 (IQR 9.7, 16.7), and 52.5% were female.

Most participants (81.9%) were on 1<sup>st</sup> line dolutegravir (DTG)-based regimens. LLV was found in 40.5%. When defining VF as ≥1000 copies/mL, those with a history of LLV had a HR of 1.63 (1.38, 1.91) for VF.

When stratifying by LLV (50-199, 200-399, and 400-999), all levels were associated with an increased risk for VF with HR of 1.39 (1.13, 1.69), 1.69 (1.33, 2.16), and 2.03 (1.63, 2.53), respec-



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tively. When defining VF as  $\geq 200$  copies/mL, HRs for VF rose to 3.85 (3.33, 4.46) for any LLV and 1.41 (1.15, 1.72), 7.99 (6.68, 9.57), and 9.37 (7.85, 11.18) for LLV of 50-199, 200-399, and 400-999, respectively.

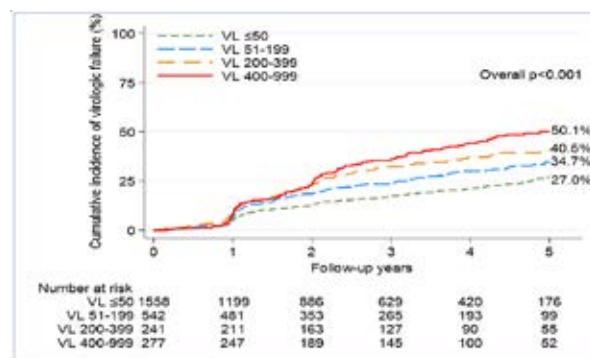


Figure 1. Kaplan-Meier plot showing incidence of virologic failure (VL  $\geq 1000$  copies/mL) by low-level viremia category.

**Conclusions:** LLV in CALHIV is associated with a greater risk of VF that increases with higher levels of LLV.

## THPEB120

In utero exposure to atazanavir-based antiretroviral regimens in a mouse model shows differential long-term motor and cognitive deficits dependent on the NRTI-backbone

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**Background:** Combination antiretroviral therapy (ART) use in pregnancy has been pivotal in improving maternal health and reducing perinatal HIV transmission. However, children born HIV exposed uninfected fall behind their unexposed peers in several areas including neurodevelopment. The contribution of in utero ART exposure to these deficits is not clear. Here we present our findings of neurocognitive outcomes in adult mice exposed in utero to ART.

**Methods:** Dams were treated with a combination of ritonavir-boosted atazanavir with either abacavir plus lamivudine (ABC/3TC+ATV/r) or tenofovir disoproxil fumarate plus emtricitabine (TDF/FTC+ATV/r), or water as a control, administered daily from day of plug detection to birth. Offspring underwent a battery of behavioral tests that investigated motor performance and cognition starting at 6-weeks of age and ending at 8 months. Changes in brain structure were assessed using magnetic resonance imaging and immunohistochemistry. Expression of genes involved in neural circuitry and synaptic transmission were assessed in the hippocampus, a region strongly associated with memory formation, using qPCR.

**Results:** Pups exposed to TDF/FTC+ATV/r showed in-

creased motor activity and exploratory drive, and deficits in hippocampal-dependent working memory and social interaction, while pups exposed to ABC/3TC+ATV/r showed increasing grooming, and deficits in working memory and in female pups social interaction. Significant volumetric changes in the brain were seen only in the ABC/3TC+ATV/r group and were associated with reduced neuronal counts in the hippocampus. Altered neurotransmitter receptor mRNA expression as well as changes in expression of the neurotrophic factor BDNF and its receptors were observed in both ART-exposed groups in a sex-dependent manner.

**Conclusions:** In our murine model, in utero ART exposure had long-term effects on brain development and cognitive and motor outcomes in adulthood. Our data show that neurological outcomes can be influenced by the type of nucleoside reverse transcriptase inhibitor backbone of the regimen and not just the base drug, and display sex differences.

## THPEB121

Early childhood growth outcomes in periurban South Africa: unravelling the complex interplay of exposure to maternal HIV as well as placental insufficiency

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**Background:** The first 1000 days of life lay the foundations for subsequent growth. This ambidirectional study, including prenatal, perinatal, and postnatal factors, aimed to identify exposure variables affecting body size and composition and corresponding Z-score outcomes in 18 month-old infants born to low-risk mothers in periurban South Africa. An estimated 30.0% of pregnant women in South Africa are living with HIV, with majority receiving antiretroviral therapy during pregnancy, hence their infants are HIV-exposed-but-uninfected, possibly resulting in poorer outcomes due to intrauterine exposure to maternal HIV infection, antiretroviral therapy, or both.

**Methods:** This study included 249 mother-infant pairs with anthropometry outcomes, and body composition outcomes available in 205 infants. Prenatal factors (maternal age, HIV status, anthropometry, parity, food insecurity, and umbilical artery resistance index Z-score (UmA-RIAZ) as a measure of placental function, whereby higher Uma-RIAZ indicates poorer placental function); perinatal outcomes (infant sex, gestational age, birth anthropometry); and postnatal factors (infant feeding) were included as exposure variables to examine their effect on infant anthropometry and body composition



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outcomes at 18 months. Univariate analysis was used to investigate associations between exposure variables and infant outcomes, with variables with  $P < 0.05$  included in multivariate analyses.

**Results:** Twenty percent of study mothers were living with HIV, most were multiparous (73.9%), and 48.2% had low/very low household food security.

Multivariate analysis showed that maternal HIV infection and higher UmA-RIAZ predicted reduced 18-month infant length [-1.1cm (95%CI: -2.1,0.0) and -0.8cm (95%CI: -1.3,-0.3), respectively] and infant length-for-age Z-score [-0.38 (95%CI: -0.76,0.00) and -0.24 (95%CI: -0.42,-0.07), respectively]. Higher UmA-RIAZ also predicted lower birthweight [-0.11 (95%CI: -0.17,-0.04)] and birthweight-for-age Z-score [-0.23 (95%CI: -0.38,-0.08)]. Furthermore, household food insecurity predicted reduced infant fat-free mass-for-age Z-score at 18 months (-0.26: 95%CI: -0.51,-0.02).

**Conclusions:** Maternal HIV infection is one important factor in the first 1000 days of an infant's life that lays the foundations for subsequent growth. Additionally, infant anthropometry and body composition outcomes are greatly affected by other pre- and postnatal nutrition-related factors, such as placental insufficiency *in utero* and household food insecurity, with long-term consequences such as stunting, which impact the individual, future generations and society.

## THPEB122

*In utero exposure to HIV-1 increases cytomegalovirus (CMV) affliction and reduces binding capacity of antibodies to respiratory syntactical virus (RSV) in infants below 6 months in Yaounde, Cameroon*

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**Background:** The advent of the Prevention of Mother-to-Child Transmission (PMTCT) program has led to a growing population of HIV-exposed unafflicted (HEU) children. Although not afflicted, reports on the severity of affliction, affliction-related hospitalizations, vaccine response and death in HEU compared to HIV unexposed unafflicted (HUU) infants remain conflicting. In this study, we aim to determine the effects of *in utero* exposure to HIV in the

acquisition of transmissible childhood etiologies such as malaria, Rotavirus, Rhinovirus, Influenza A and B viruses, Respiratory syncytial virus (RSV), Cytomegalovirus (CMV), as well as their response to Tetanus toxoid (TT) and Hepatitis B (Hep-B) vaccines during their first six month of life.

**Methods:** We sampled 77 HEU and 45 HUU during their 3 (M3) and 6 months' (M6) routine vaccination visits. Malaria, Rotavirus, CMV, RSV, Rhinovirus, and Influenza A and B were diagnosed and quantified by real-time quantitative PCR. Exposure to RSV and response to Tetanus toxoid (TT) and Hepatitis B (Hep-B) vaccines were measured in samples in both groups at 6 months using Enzyme Linked Immuno-Sorbent Assay (ELISA).  $P < 0.05$  was considered significant.

**Results:** Although episodes of RSV, Influenza A and B as well as Rotaviruses were not diagnosed in these children, we found similar proportions of CMV (40% vs 40% M3; 55% vs 43% M6), malaria (0% vs 2% M3; 3% vs 2%) and rhinovirus (51% vs 59% M3; 36% vs 41% M6) infections between our HEU and HUU groups at both time points. HEU experienced a higher CMV viral load compared to HUU at M3 ( $P=0.04$ ) and M6( $P=0.01$ ). Even though RSV was not diagnosed in both groups, HEU children had RSV antibodies with a lower neutralizing capacity compared to HUU children ( $P=0.0065$ ). Response to TT and Hep-B vaccines were similar in both groups ( $P=0.08$  and  $P=0.38$  respectively).

**Conclusions:** This study depicts the need for persistent monitoring of transmissible etiologies and responses to childhood vaccines in HEU. The underlying causes of the increased susceptibility to CMV and poor response to RSV warrant further investigation.

## THPEB123

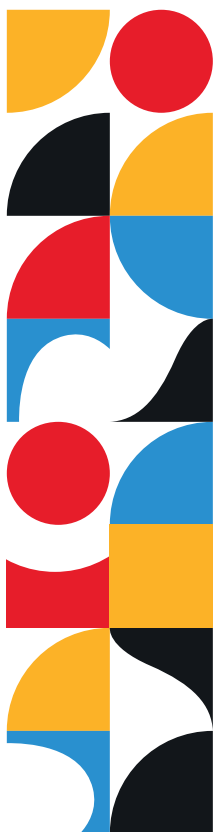
*Doubling up efforts to reduce vertical transmission(Emtct) at Entebbe Regional Referral Hospital, a six months' project*

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**Background:** Vertical transmission of HIV accounts for up to 18% of all new infections in Uganda and for up to 90% of infections among children. Current evidence shows that with effective interventions, including use of antiretroviral therapy, the rate of transmission could be reduced to less than 5% in a breastfeeding setting like in Uganda. At Entebbe Regional Referral Hospital, MOH/PEPFAR requires reduction of the transmission rate to  $< 2\%$ . However, in March 2023, our reports showed that vertical transmission rate was 15%. A quality improvement project was initiate to mitigate associated factors.

**Description:** Maternal Child Health meetings were held to identify and analyze the reasons for the high vertical transmission. File audits for the HIV positive babies were done and the team identified late ART initiation close to





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delivery or in postnatal, delivery from home, nonadherence, inadequate maternal Retesting especially in Private Facilities, mixed feeding as the factors associated and agreed on improvement changes . A six months project was initiated. CME on EMTCT to all health workers in MNCAH was done.

A counselor was assigned to conduct weekly phone call health education and adherence support on newly initiated mothers on ART, late ANC/ post-natal care ART initiated mothers and those with non-suppressed viral load as mothers at high risk of vertical transmission.

A tester was assigned to ANC, Maternity, PNC, YCC(EPI) to identify all mothers due for retesting and timely identification of those who seroconvert for early intervention. Weekly performance review meetings were agreed on. community sensitization and support supervision to private facilities was done.

**Lessons learned:** The transmission rate reduced from 15% in March 2023 to 0% by 30th September 2023.

Adequate health education, adherence counselling, timely maternal Retesting, community sensitization, support supervision to lower facilities, safe obstetric practices can reduce the risk of vertical transmission.

Month	Transmission Rate(%)
March	15
April	0
May	0
June	4.17
July	0
August	0
September	0

**Conclusions/Next steps:** Virtual elimination can be achieved in Uganda as evidenced by rate of transmission reducing to 0% (< 5%) in a breastfeeding setting like in Entebbe.

## Clinical issues specific to key populations

### THPEB124

Efficacy and safety of B/F/TAF in Hispanic/Latine adults with HIV-1 initiating first-line therapy: 5-year follow-up from two Phase 3 studies

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**Background:** Hispanic/Latine people are disproportionately affected by HIV-1 and may have a greater risk of comorbidities compared with non-Hispanic/Latine people with HIV (PWH). However, this population has historically been underrepresented in HIV clinical studies.

Here we assess the efficacy and safety of first-line therapy with bicitgravir/emtricitabine/tenofovir alafenamide (B/F/TAF) over 5 years in Hispanic/Latine PWH.

**Methods:** Studies 1489 (NCT02607930; B/F/TAF vs. dolutegravir/abacavir/lamivudine [DTG/ABC/3TC]) and 1490 (NCT02607956; B/F/TAF vs. DTG+F/TAF) were randomized, double-blind, multicenter Phase 3 studies in adult PWH initiating first-line therapy.

We present a pooled analysis of participants who received B/F/TAF in the 144-week (W) randomization phase and in the 96W open-label extension.

Outcomes were compared between Hispanic/Latine and non-Hispanic/Latine participants. Baseline demographics and clinical characteristics, proportion of participants with HIV-1 RNA <50 copies/mL (missing=excluded), change in CD4 cell count, changes in metabolic parameters, adherence and treatment-emergent adverse events (TEAEs) are presented.

**Results:** In total, 155 (24.5%) Hispanic/Latine and 477 (75.5%) non-Hispanic/Latine participants (61.9% and 68.1% from the U.S., respectively) received B/F/TAF over 240W. At baseline, median age was 30 and 33 years, 89.0% and 89.1% were male at birth, 11.6% and 21.2% had HIV-1 RNA >100,000 copies/mL, 10.3% and 13.4% had CD4 <200 cells/μL, and 4.5%/12.9%/10.3% and 6.5%/16.4%/14.7% had a history of diabetes mellitus/hypertension/hyperlipidemia, respectively. Outcomes are shown in the Table. At W240, 100.0% of Hispanic/Latine participants and 98.1% of non-Hispanic/Latine participants had HIV-1 RNA <50 copies/mL. Change in CD4 count, changes in metabolic parameters including body weight and estimated glomerular filtration rate, adherence rate and TEAEs were similar between groups.


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	Hispanic/Latine N=155	n	Non-Hispanic/Latine N=177	n
<b>Efficacy</b>				
HRV RNA <50 copies/mL (missing/excluded), n (%)	118 (100%)	118	308 (98%)	314
Change from baseline in CD4 count, mean (SD)	300 (215.1)	112	340 (243.5)	303
<b>Metabolic parameters</b>				
Change from baseline in body weight, kg, median (Q1, Q3)	6.2 (1.8, 10.8)	118	6.0 (2.1, 12.5)	313
All participants	6.2 (2.2, 10.8)	106 (89.8)	6.0 (2.1, 12.4)	301 (96.2)
Male/Female participants	6.2 (2.2, 10.8) / 6.2 (2.2, 10.8)	106 / 12	6.0 (2.1, 12.4) / 6.0 (2.1, 12.4)	301 / 12
Change from baseline in fasting TC HDL ratio, median (Q1, Q3)	-0.2 (-0.2, 0.5)	106	-0.2 (-0.2, 0.5)	303
Change from baseline in fasting TC HDL ratio, median (Q1, Q3)	-0.2 (-0.2, 0.5)	106	-0.2 (-0.2, 0.5)	303
TE diabetes / TE hypertension, n (%)	4 (2.7) / 8 (5.2)	148 / 136	9 (2.5) / 12 (2.2)	443 / 402
<b>Adherence</b>				
Study drug adherence rate during the study, % (95% CI)	8 (2.2) / 40 (26.3) / 106 (68.5)	104	36 (17.1) / 111 (23.7) / 301 (68.6)	405
<b>Safety</b>				
At least one study drug-related TEAE, n (%)	40 (26.7)	155	131 (27.8)	477
At least one TEAE leading to premature study drug discontinuation, n (%)	1 (0.6)	155	9 (1.9)	477
Deaths, n (%)	1 (0.6)	155	7 (1.5)	477

\*Baseline value was defined as the last non-missing value obtained on or prior to the first dose of B/TAF. \*\*By Cochran-Gaith equation. †Based on pill count for B/TAF only. ‡The denominator is the number of participants who returned at least one tablet and had calculable drug adherence. B/TAF, bicittegravir/emtricitabine/tenofovir; TC, total cholesterol; HDL, high-density lipoprotein; SD, standard deviation; TE, treatment-emergent; TEAE, treatment-emergent adverse event; Q, quartile.

Table. Outcomes at week 240.

**Conclusions:** Through 5 years of follow-up in Hispanic/Latine PWH, B/F/TAF maintained high rates of virologic suppression and was well tolerated, with similar metabolic (including treatment-emergent diabetes/hypertension) and safety outcomes compared with non-Hispanic/Latine PWH.

These results demonstrate the durability and safety of B/F/TAF in Hispanic/Latine PWH.

## THPEB125

Associations between sexual stigma, COVID-19 economic stressors, psychosocial syndemic conditions, and condom use among men who have sex with men in India

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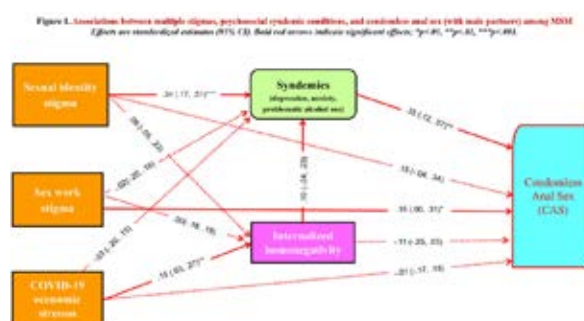
**Background:** Men who have sex with men (MSM) are at an elevated risk for HIV. Limited data show that sexual stigma and psychosocial problems are associated with HIV-related sexual risk behaviors among them. Amid COVID-19, we hypothesized that COVID-19 economic stressors could influence HIV risk as well. Using minority stress and syndemic theories, we explored whether sexual and sex work stigmas and COVID-19 economic stressors are associated with condomless anal sex (CAS) via psychosocial syndemics and internalised homonegativity (IHN).

**Methods:** We conducted mediational analyses in *Mplus*8 using cross-sectional survey data collected through hybrid-mode surveys (September-December 2022) among 250 MSM in South India. The binary outcome measure was CAS (past 2 months) with male partners.

Standardized scales were used to measure psychosocial conditions such as depression (PHQ-2), anxiety (GAD-2), and problematic alcohol use (AUDIT-C), and sexual and sex work stigmas. Covariates included were: education, marital status, and sexual identity.

**Results:** The participants' mean age was 29 years (SD 6.8). Nearly three-fifths (62%) had completed a college degree, 29% reported engagement in sex work, and 49% reported CAS. The prevalence of depression (past 2-week), anxiety (past 2-week), problematic alcohol use (past 3-month), and psychosocial syndemics (co-occurrence of two or more psychosocial conditions) was 19%, 55%, 12% and 22%, respectively. Significant direct effects were observed from sexual stigma to syndemics, syndemics to CAS, and COVID-19 economic stressors to IHN (Figure 1).

The total effect of sexual stigma on CAS was significant ( $\beta=.25$ ; 95% CI .08, .42;  $p=.004$ ), with syndemics as the significant mediator ( $\beta=.12$ ; 95% CI .02, .21;  $p=.02$ ).



**Conclusions:** Sexual stigma indirectly contribute to HIV risk through psychosocial syndemics. Strategies to reduce sexual stigma and address psychosocial syndemic conditions could reduce HIV risk among MSM. The role of economic stressors on mental health needs to be further explored.

## THPEB126

Switch to bicittegravir/emtricitabine/tenofovir alafenamide (B/F/TAF) among vulnerable people living with HIV: evidence for long-term efficacy

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**Background:** While multi-tablet antiretroviral (ARV) therapy combinations have proven effective historically, single tablet regimens (STRs) are associated with higher rates of sustained virological suppression and patient satisfaction.

This is especially true of STRs including unboosted integrase strand transfer inhibitors (INSTIs) with an increased barrier to resistance, better tolerability, and fewer drug interactions.

This may be particularly beneficial for marginalized patient populations, with challenges of decreased adherence (including unplanned treatment interruptions) and lower tolerance for side effects.

We have previously demonstrated sustained virologic suppression over 18 months among 41/43 HIV-infected active injection drug users following a switch of prior ARV therapy to the STR bicittegravir/emtricitabine/teno-





fovir alafenamide (B/F/TAF) in the setting of prior transient viremia. We sought to evaluate whether this benefit would be maintained over an additional 24 months of follow-up.

**Methods:** The inception cohort consisted of 43 individuals who were followed up after having received B/F/TAF for 18 months. They remained enrolled in a multi-disciplinary program, with B/F/TAF provided with enhanced adherence support, allowing daily observed therapy.

The end point of analysis was the rate of virologic suppression after an additional 24 months of follow up, for a total of 42 months after initiating B/F/TAF therapy.

**Results:** 43 subjects were included in this analysis: median age 54 (34–66) years, 11.1% female, 20% indigenous, 37.8% men who have sex with men, and all were active drug users, with 91.1% being fentanyl users. At 18 months of follow up, we noted median CD4 count 612 cells/mm<sup>3</sup>.

All 43 remained on B/F/TAF for the 24 months of follow up, with no long-term disengagement. 41/43 had maximal virologic suppression, including both participants with detectable HIV RNA at month 18.

Two cases of detectable HIV RNA (1520 & 3000 copies/mL) were documented at month 42. In both cases, virologic suppression was achieved after resumption of B/F/TAF.

**Conclusions:** Among a group HIV-infected injection drug users experiencing transient viremia, switching to B/F/TAF remains effective in the long-term. Its efficacy (even in the setting of its resumption after extended treatment interruptions) and its tolerability make it a particularly useful therapeutic option in this vulnerable population.

## THPEB127

### Efficacy of Dolutegravir based single tablet regimen in people with HIV who inject drugs

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**Background:** People with HIV who inject drugs (PWHID) often experience unscheduled antiretroviral therapy (ART) interruptions (USTI) and increasing risk of ART resistance but are underrepresented in clinical trials. Dolutegravir (DTG) has a high genetic barrier to resistance and is available as a single tablet regimen (STR) with abacavir

(ABC) and lamivudine (3TC). This study aims to assess the efficacy, tolerability of, and adherence to ABC/3TC/DTG in PWHID.

**Methods:** In a prospective, single-arm, open label 96-week trial, adult PWHID (injection drug use (IDU) as HIV acquisition risk or current/recent IDU), were switched to ABC/3TC/DTG STR and attended 11 study visits. Primary endpoints: percentage of participants with HIV viral load (VL) <40 copies/mL (cps/mL) and adherence as medication possession ratio (MPR) at week 48 (W48), USTI over 96 weeks and safety. MPR: total number of ART doses dispensed divided by the number of days between visits; MPR ≥0.8 considered adequate adherence. Intent to treat (ITT) analysis included participants who received ≥1 dose of ABC/3TC/DTG.

**Results:** Of 45 participants enrolled, 33 contributed to the analysis (8 screen failure, 4 lost after screening). All were Caucasian, 73% male, median (IQR) age 43 (40, 47) years. Active IDU was reported in 64% participants. Median (IQR) time since HIV diagnosis was 10 (4, 13) years. At baseline (BL), 94% were ART experienced (97% protease inhibitors) and 59% had VL<40 cps/mL. The proportion of participants with VL<40 cps/mL increased to 75% W48 (p=0.03) and persisted to W96 (82%). Of 59% suppressed at BL, 58% remained suppressed at W48 and 52% at W96. Of 41% not suppressed at BL, 16% became suppressed at W48 and 29% at W96.

Mean MPR over W48 was 0.84 (95%CI. 0.75, 0.93). USTI of a median (IQR) 12 (5, 33) weeks duration occurred in 20 (61%) participants, with 12 /15 who re-initiated ART achieving VL<40 cps/mL.

Of 25 (76%) participants reporting drug related AEs, 5 (15%) led to USTI. There were 13 SAE's reported of which only 1 (3%) was related to ABC/3TC/DTG.

**Conclusions:** In this trial of PWHID, switch to ABC/3TC/DTG STR improved rates of viral suppression, demonstrated adequate adherence and remained effective after USTI.

## THPEB128

### Prevalence and associated factors of depressive symptoms among travestis and transgender women in Rio de Janeiro, Brazil

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**Background:** Travestis and transgender women face significant health disparities, including a heightened HIV burden and societal transphobia, contributing to an in-


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creased risk of depressive symptoms. This study assessed the prevalence of depressive symptoms and identified associated factors within this vulnerable population.

**Methods:** A cross-sectional analysis of the *Transcendendo* cohort (Jan 2015-Dec 2023) was conducted, utilizing base-line data from *travestis* and transgender women aged >18 in Rio de Janeiro, Brazil. Depressive symptoms were evaluated using the 10-item *Center for Epidemiologic Studies Depression* scale (CES-10) (cutoff=10). Factors associated with depressive symptoms were identified using stepwise logistic regression.

**Results:** 885 participants were included, with a median age of 29 (IQR:24-38). The majority identified as Black or Parda (74.34%) with secondary education (65.88%) and earned <\$200/month (59.77%) (**Table 1**). 89.4% screened positive for depressive symptoms, and 54.1% of them were living with HIV. Participants screening positive for depressive symptoms, compared to those screening negative, showed higher rates of chemsex in the previous six months (13.27%vs.3.19%), lifetime sexual assault (43.33%vs.29.79), and use of tobacco (58.03%vs.43.62%) and marijuana (46.17%vs.36.17%). Conversely, they had lower proportions of current gender-affirming hormone use (46.14%vs.60.64%) and stable partnerships (15.5%vs.26.09%) ( $p<0.03$  for all comparisons). Multivariable analysis revealed that chemsex ( $\alpha\text{OR}=4.23[95\%\text{CI}:1.53-17.55]$ ,  $p=0.016$ ) and sexual assault ( $\alpha\text{OR}=1.86[95\%\text{CI}:1.16-3.06]$ ,  $p=0.012$ ) increased the odds of depressive symptoms, while gender-affirming hormone use ( $\alpha\text{OR}=0.61[95\%\text{CI}:0.39-0.95]$ ,  $p=0.030$ ) and having a stable partner ( $\alpha\text{OR}=0.50[95\%\text{CI}:0.30-0.84]$ ,  $p=0.008$ ) reduced the odds. There was a nonsignificant association between depressive symptoms and HIV, tobacco, or marijuana use.

Characteristic	Overall (N=885)	No depressive symptoms (N=88)	Depressive symptoms (N=797)	p-value
Age (median, IQR)	29 (24-38)	30 (23-38)	29 (24-38)	0.8
Race/ethnicity (N, %)				
Black	256 (29.0%)	23 (26.1%)	233 (29.0%)	
Parda	396 (44.7%)	44 (50.0%)	352 (44.0%)	
White	225 (25.4%)	28 (31.8%)	197 (24.7%)	
Educational level (N, %)				
Less than secondary education	302 (34.1%)	33 (37.5%)	271 (33.9%)	0.8
Higher than secondary education	583 (65.8%)	55 (62.5%)	528 (66.1%)	
Income per month (N, %)				
Less than \$200	529 (59.7%)	53 (60.2%)	476 (59.6%)	0.5
Higher than \$200	356 (40.2%)	35 (39.8%)	321 (40.4%)	
Marital status (N, %)				
Single	733 (83.0%)	68 (77.3%)	665 (83.7%)	0.010
Having a partner	150 (16.9%)	20 (22.7%)	130 (16.3%)	
Current transactional sex (N, %)				
No	550 (62.0%)	55 (62.5%)	495 (62.0%)	0.6
Yes	330 (37.0%)	33 (37.5%)	297 (37.0%)	
Current gender-affirming hormone use (N, %)				
No	777 (87.8%)	92 (104.5%)	685 (86.3%)	0.008
Yes	108 (12.2%)	3 (3.4%)	105 (13.3%)	
Lifetime sexual assault (N, %)				
No	403 (45.6%)	37 (42.0%)	366 (45.9%)	0.012
Yes	482 (54.4%)	51 (58.0%)	431 (54.1%)	
Lifetime sexual assault (N, %)				
No	512 (57.9%)	60 (68.5%)	452 (56.8%)	0.6
Yes	373 (42.1%)	28 (31.5%)	345 (43.2%)	
Lifetime suicidal ideation (N, %)				
No	401 (45.3%)	40 (45.6%)	361 (45.3%)	0.7
Yes	484 (54.7%)	48 (54.4%)	436 (54.7%)	
Lifetime suicide attempt (N, %)				
No	637 (72.0%)	70 (79.5%)	567 (71.4%)	0.077
Yes	247 (27.9%)	18 (20.5%)	229 (28.6%)	
Tobacco use (N, %)				
No	260 (29.3%)	38 (43.2%)	222 (27.9%)	0.020
<1 month	590 (66.6%)	43 (48.8%)	547 (68.9%)	
1-12 months	129 (14.6%)	15 (17.1%)	114 (14.4%)	
Marijuana use (N, %)				
No	298 (33.6%)	42 (47.7%)	256 (32.1%)	0.029
<1 month	390 (44.0%)	34 (38.6%)	356 (44.6%)	
1-12 months	197 (22.3%)	12 (13.6%)	185 (23.3%)	

IQR, Interquartile range; Income calculations in this study were based on a currency conversion rate of 1 US dollar (USD) being equivalent to 5 Brazilian Reals (R\$).

**Conclusions:** The study revealed a high prevalence of depressive symptoms among *travestis* and transgender women in Brazil, underscoring the necessity for tailored gender-specific care and expanded access to mental health services. These services should encompass com-

prehensive social support and adopt a harm reduction approach to substance use, addressing the challenges of this vulnerable community.

## THPEB129

Discrepancies among the self-reported symptoms versus laboratory-based diagnosis of STIs (active Syphilis/NG/CT) among female sex workers (FSW) in Jashore, Bangladesh

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**Background:** STIs are a global public health concern affecting female sex workers (FSW). However, studies indicated that self-reported STI symptoms differ from lab diagnoses. This study aims to understand the prevalence and correlates of active Syphilis, Neisseria gonorrhoeae (NG), Chlamydia trachomatis (CT), and self-reported STI symptoms among FSW in Jashore, Bangladesh.

**Methods:** A cross-sectional survey was conducted via two-stage time-location sampling among 327 FSW in Jashore, Bangladesh from September 2022 to March 2023. Information on demographics, sexual behaviors, and STI symptoms were collected through face-to-face interviews. Cervical and blood samples were collected to detect STIs (active Syphilis/NG/CT). Bivariate and multivariate analyses explored the correlates of self-reported STI symptoms and lab-based diagnoses.

**Results:** Over the past year, 70.6% reported any STI symptoms, of whom only 16.0% were tested positive. The prevalence of any STI was 16.5%. Most FSW who reported symptoms were street-based (42.4%), aged 25-35 years (48.5%), sold sex for >6 years (42.4%), living with intimate partners (45.9%), 15-19 years old at first marriage (93.6%), had income ≤91 USD (66.7%), had non-transactional sex within a year (71.9%), used condoms during last transactional sex (68.4%), forced sex during their lifetime (32.5%), and during the last 12 months, reported forced sex (8.2%), physical violence (16.5%), drug-induced sex (20.8%), self-reported mental health problems (76.6%), suicidal attempts (37.7%) and self-harm attempts (18.6%). Reported STI symptoms were significantly associated with hotel-based sex work (AOR: 4.0, 95%CI: 1.4-11.4,  $p=0.010$ ), age 15-24 years (AOR: 3.3, 95%CI: 1.2-9.6,  $p=0.026$ ) or 25-35 years (AOR: 1.9, 95%CI: 1.1-3.4  $p=0.021$ ), first marital age ≥20 years (AOR: 5.5, 95%CI: 1.2-25.6,  $p=0.032$ ) and non-transactional sex (AOR: 2.1, 95%CI: 1.2-3.6,  $p=0.007$ ).



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**Conclusions:** The analysis showed that reported STI symptoms mostly did not align with lab diagnoses. Those who reported STI symptoms were more likely to be young, poor, sell sex on the streets, and possess several SRHR-related complexities. Self-reported STI symptoms were significantly associated with work settings, age (including onset of marriage), and having sex with non-transactional sex partners. Therefore, regular STI screening through laboratory diagnosis and appropriate STI management and prevention services need to be targeted and strengthened.

## THPEB130

Intersection of chemsex, mental health, and substance use: findings from the Conectad@s study in Rio de Janeiro

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**Background:** The increasing prevalence of substance use and chemsex (sexualized drug use) among young (18-24 years) cis/trans men and nonbinary people assigned male sex at birth who have sex with men (YMSM) presents significant public health concerns. Chemsex is linked to condomless sex, increasing the risk for HIV or other sexually transmitted infections.

This study aimed to evaluate substance use and chemsex among YMSM and factors associated with chemsex.

**Methods:** The Conectad@s was a respondent-driven sampling study that enrolled YMSM in Rio de Janeiro/Brazil (November 2021–October 2022). We examined the prevalence of substance use (prior six months), chemsex (any substance use before/during sex, excluding tobacco and alcohol, in the previous three months) and the risk of problematic substance use (assessed by ASSIST).

A logistic regression model investigated potential associations with chemsex, adjusting for age, race, education, and income.

**Results:** Among 409 participants (median age: 21 years, 90.5% cis-MSM), 71.3% self-identified as Black/Pardo, 71.1% reported ≤USD240 monthly income per capita, and 9.8% were living with HIV. The majority (69.2%) reported recent substance use (other than alcohol/tobacco), with marijuana (64.8%), ecstasy (24.2%), inhalants (17.4%), and MDMA (14.4%) being the most reported. No participant reported the use of crack (or paste), and only four reported methamphetamine use. Overall, 37.2% reported engaging in chemsex (Figure). Factors associated with higher odds of chemsex were higher number of sexual partners

(aOR:1.03[95%CI:1.01-1.05], p-value:0.006), condomless receptive anal sex (aOR:2.16[95%CI:1.06-4.52], p-value:0.037), ever attempting suicide (aOR:1.86[95%CI:1.00-3.47], p-value:0.050), alcohol use before/during sex (aOR:3.68[95%CI:2.05-6.75], p-value:0.001), and moderate/high risk of substance use (aOR:22.55[95%CI:12.38-43.54], p-value:0.001).

	Descriptive Analysis				Adjusted Logistic Model		
	Overall (n=409)	No chemsex (n=297)	Chemsex (n=112)	p-value	aOR	95% CI	p-value
Age, years - Median (IQR)	21 (20-21)	21 (20-21)	21 (20-21)	0.808	1.00	0.96-1.03	0.204
Race (Black or Pardo [ref. white/Asian])	291 (71.1)	184 (71.7)	107 (95.4)	0.749	0.75	0.40-1.40	0.365
Schooling: Higher than secondary [ref. Secondary or lower]	247 (60.4)	155 (52.2)	92 (82.3)	0.004	0.59	0.35-0.97	0.032
Monthly per capita income: ≤1.50 (ref. >1.50)	290 (71.1)	190 (73.7)	100 (89.2)	0.007	0.55	0.30-0.98	0.032
Ever tested for HIV (%)	300 (73.4)	189 (63.6)	111 (98.2)	<0.001	1.03	1.01-1.05	0.006
N sexual partners - Median (IQR)	5 (1-11)	5 (1-11)	9 (4-15)	<0.001	1.03	1.01-1.05	0.006
Condomless receptive anal sex (%)	282 (69.1)	157 (52.5)	125 (111.4)	0.007	2.16	1.06-4.52	0.037
Ever attempted suicide (%)	182 (44.5)	51 (17.2)	131 (117.8)	0.002	1.86	1.00-3.47	0.050
Alcohol use before/during sex in prior 3 months (%)	250 (61.1)	128 (43.1)	122 (108.9)	<0.001	3.68	2.05-6.75	0.001
High risk of substance use (%)	181 (44.3)	117 (39.4)	64 (56.7)	0.002	22.55	12.38-43.54	0.001
Moderate/high risk for any drug (%)	282 (69.1)	157 (52.5)	125 (111.4)	<0.001	22.55	12.38-43.54	0.001

Table 1. Descriptive analysis and adjusted logistic model for chemsex among YMSM enrolled in the Conectad@s Study, Rio de Janeiro, Brazil, 2022.

**Conclusions:** We observed elevated substance use and chemsex rates among YMSM from Brazil. Our findings affirm the link between chemsex and engaging in HIV-related sexual risk behavior, reinforcing the importance of offering PrEP and doxycycline-PEP in a harm reduction framework for YMSM. An integrated approach to HIV prevention among youth should address broader health concerns, including mental health and problematic substance use.

## Other strategies and therapies

### THPEB131

Correlation coefficient of MUAC and BMI in the identification of acute malnutrition among PLHIV and TB clients in Djibouti

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**Background:** Detection of malnutrition and the monitoring of the effectiveness of rehabilitative interventions is important among people living with HIV (PLHIV) and Tuberculosis (TB) clients. A 2021 study conducted by the World Food Programme, the Ministry of Health and the Ministry of Social Affairs and Solidarity highlights the existing correlations in the use of Body Mass Index (BMI) and Mid-Upper Arm Circumference (MUAC) to detect malnutrition in Djibouti.

**Methods:** This quantitative cross-sectional study involved 1080 PLHIV selected from 9 selected Antiretroviral Therapy (ART) and TB clinics in Djibouti Ville. Sampling utilized a probability proportional to size model. Trained social workers collected data through structured question-



naires and anthropometric assessments, including MUAC and BMI. Descriptive analysis, stratified into three categories (ART clients, TB DOTS clients, and HIV/TB co-infected, was performed using SPSS. Malnutrition was indicated by MUAC < 24.00 cm and BMI < 18.5 kg/m<sup>2</sup>.

**Results:** From the 1080 study respondents evaluated in the analysis, the mean weight was: 60.54±12.90 kg; height: 1.65±0.09 m; BMI: 22.19±4.59 kg/m<sup>2</sup>; MUAC: 26.88±4.33 cm; age: 40.64±12.01. A strong correlation exists between MUAC and BMI among PLHIV/TB with a Pearson correlation value of 0.573. The prevalence of malnutrition was found to be 23.3% (n=250) with MUAC and 19.6% (n=210) with BMI. Of the 534 females, 125 (23.4%) and 86 (16.1%) were malnourished using MUAC and BMI respectively. The prevalence of malnutrition remained the same among males at 23.0% (n=125) for both BMI and MUAC.

**Conclusions:** In Djibouti Ville, MUAC positively correlates with BMI among PLHIV and TB clients. MUAC measurements of below 24.0 cm correlate with a BMI of <18.5 kg/m<sup>2</sup>, especially among males. The use of MUAC tapes can hence be considered as a valid alternative to BMI, particularly where health protocol requires minimal physical contact of where adequate BMI tools cannot be found or are not fit for purpose. Application of MUAC screening for malnutrition among PLHIV and TB clients where BMI is not possible is encouraged.

## THPEB132

### Excision of HIV proviral DNA - From bench to bedside

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**Background:** PROVIREX employs *in vitro* engineered Brec1, a site-specific recombinase-based genome surgery technology to precisely excise chromosomally integrated viral genomes (i.e. proviruses). Brec1 excises the provirus of most HIV-1 strains and subtypes with high specificity. Elaborate non-clinical studies demonstrated that Brec1 acts precisely without apparent cytopathic, cytotoxic or genotoxic effects. The first-in-human Brec1 gene therapy trial is expected to start in Q3/2024 as phase Ib/IIa clinical trial, which is fully financed by public funds from BMBF, BWFG and Else Kröner-Fresenius-Stiftung (EKFS).

**Methods:** The completion of Brec1 preclinical analyses allowed successful funding of a first-in-human Brec1 gene therapy trial. Here, people living with HIV will be treated

by autologous transfer of genetically modified CD34+ hematopoietic stem cells (HSC) harbouring Brec1. CD34+ HSC will be harvested after mobilization with G-CSF and *ex vivo* transduced with lentiviral vector containing Brec1 expression cassette under LTR promotor control. All study participants will continue to receive suppressive cART. Close follow-up monitoring of the study participants will be performed for at least 2 years, including analysis of immune (e.g. HIV-specific T cell responses) and cellular parameters, viral load, viral reservoir size and cell-associated total viral DNA.

**Results:** All preclinical studies have been finalised, LV-Brec1 has been produced and approved for treatment. Also, the GMP transduction technology at DRK Frankfurt has been successfully transferred and is fully established including all validation runs. The manufacturing licence has been applied for by the authorities. First patient in for the clinical trial HIVcure is expected to be in Q3/2024. Upon HSC engraftment, it is expected that the hematolymphoid system of the study participants will be continuously supplied with cells that are HIV-1 resistant by precisely excising the proviral DNA. Study endpoints will include safety of transfusion of gene-modified HSC, detection of gene-modified peripheral blood cells, and, in selected cases, antiviral effects due to provirus excision.

**Conclusions:** The HIVcure clinical trial for the first in patient testing of the Brec1 recombinase is expected to start in Q3/2024.

All preclinical studies, the production of the lentiviral vector and the transfer of the technology to the DRK Blood Donor Service in Frankfurt have been successfully completed.

## ART resistance

## THPEB133

### Transmitted drug resistance to reverse transcriptase and protease inhibitors in Argentina: an updated analysis

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**Background:** Argentina, like other Latin American countries, has reported moderate to high levels of transmitted drug resistance (TDR) in people with HIV (PWH), primarily towards non-nucleoside reverse transcriptase inhibitors (NNRTIs). Updated surveys are essential to monitor the prevalence of resistance-associated mutations (RAMs) to reverse transcriptase and protease inhibitors (PIs) in treatment-naïve populations.



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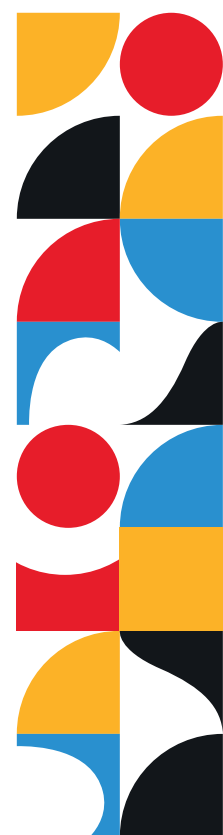
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**Methods:** A cross-sectional study was undertaken utilizing samples from antiretroviral therapy (ART)-naïve PWH collected between 2017-2021 as routine clinical practice at two reference HIV clinics in Buenos Aires, Argentina. Samples were analyzed for RAMs using the World Health Organization (WHO) mutation list ([hivdb.org/s/who](http://hivdb.org/s/who)). Mutations to rilpivirine (RPV) and to doravirine (DOR) were assessed according to the Stanford algorithm ([hivdb.org/s/nnrtinotes](http://hivdb.org/s/nnrtinotes)). Susceptibility to NNRTIs was evaluated using the HIVdb Program (<https://hivdb.stanford.edu/hivalg/by-patterns/>) with Stanford and ANRS criteria. Sequences classified as "susceptible" and "potential low-level resistance" were grouped as "susceptible".

**Results:** Samples from 1667 individuals were analyzed: 81.2% were male; 52.6% identifying as men who have sex with men. According to the WHO list, the overall TDR was 12.1% (n= 203). The prevalence of RAMs was 10.1% (170/1667) for NNRTIs, 4% (67/1667) for nucleoside reverse transcriptase inhibitors (NRTIs), and 1.7% (30/1667) for PIs. The most frequent NNRTI mutations were K103N (5.6%), G190A (0.89%), K103S (0.77%), and Y188L (0.53%). RPV and DOR RAMs were observed in 6% and 1.3% of the samples, being the most common E138A polymorphism (3.8%) and Y188L (0.53%), respectively. Susceptibility to DOR, RPV, efavirenz, and nevirapine with Stanford algorithm was 97.4%, 92%, 91.4%, and 90.4%, respectively. The ANRS criteria yielded susceptibility rates of 98.3%, 93.3%, 92.3%, and 90.8%. Regarding NRTIs, thymidine analog mutations (including T215 revertants) were the most frequent RAMs observed in 3.3% of cases followed by M184V (0.17%) and K65R (0.11%). Among PIs, the most prevalent RAMs were M46L (0.47%) and V82A (0.35%).

**Conclusions:** Despite decreasing prescription of first-generation NNRTIs to treatment-naïve PWH in Argentina, our study demonstrates persistence of overall moderate to high levels of drug resistance to these drugs. TDR was moderate for RPV and low for DOR. TDR to NRTIs (particularly lamivudine and tenofovir) and PIs remains low. Surveillance of TDR remains critical for recommendations of ART initiation.

## THPEB134

### Evaluation of dried tube specimens for quality assurance of HIV drug resistance genotyping

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**Background:** By 2023, over 29.8 million people living with HIV were receiving antiretroviral therapy globally. Quality HIV drug resistance (HIVDR) testing is crucial for treatment monitoring. Traditional HIVDR testing of plasma requires cold chain for storage and shipment, posing challenges in resource-limited settings. To overcome these challenges,

we developed Dried Tube Specimens (DTS) as a safe, and globally accessible alternative for HIVDR proficiency testing (PT) programs, paving the way for improved HIVDR monitoring worldwide.

**Methods:** Five-member DTS panels were produced by adding viral isolates of known viral load to a diluent of Phosphate Buffered Saline (PBS) and 2% green food dye. The specimens were dried overnight in a biosafety cabinet at ambient temperature then stored at -80°C. Viability and robustness were tested for two types of DTS: DTS-A, wherein samples were left dry throughout the storage time and reconstituted in PBS immediately prior to testing, and DTS-B, wherein samples were reconstituted with Zymo DNA/RNA Shield (DRS) (Zymo Research) and PBS in a 1:1 ratio prior to storage and tested at a later date. DTS samples were tested as if they were plasma using the ABI HIV-1 Genotyping Kit (Thermo-Fisher Scientific).

**Results:** DTS-B exposed to ambient temperature (22-26°C) for 15 and 30 days were successfully amplified for Protease, Reverse Transcriptase (PRRT) and Integrase (IN) in 5 of 5 samples. DTS-B exposed to 37°C for 15 days amplified the PRRT and IN regions successfully in 4 of 5 samples. DTS-B transported to a sub-Saharan African country without cold chain had a successful amplification rate of 19 of 20 and 20 of 20 samples for PR/RT and IN, respectively. DTS-A, when exposed to ambient temperature for 15 days, had a PRRT amplification success of 5 of 10 and an IN success of 7 of 10 samples. After 30 days of ambient temperature exposure, the DTS-A samples had an amplification success rate of 4 of 10 samples for both PRRT and IN.

**Conclusions:** Using DTS reconstituted with Zymo DNA/RNA could be a promising tool for use in global PT schemas for HIVDR genotyping. Additional stability tests under varying time and temperature conditions are ongoing.

## THPEB135

### Evaluation of viremic people living with HIV presenting with dolutegravir resistance in Western Kenya

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**Background:** Dolutegravir (DTG) was introduced in Kenya in 2017 for use in people living with HIV (PLHIV). HIV drug resistance (HIVDR) data is limited in such PLHIV failing on



DTG-based regimens outside of clinical studies. We describe characteristics of PLHIV with DTG HIV drug resistance (HIVDR) mutations from ten high prevalence counties in Western Kenya.

**Methods:** All results from PLHIV failing DTG-based regimens i.e. documented viral load (VL) >1,000 copies/mL submitted for HIVDR testing after approval from the NyaWest Regional Technical Working Group were reviewed in October 2023. Client plasma samples were amplified before genotyping at NPHL from July 2020 to July 2023 with Thermo-Fisher Sanger pro/RT/int sequencing for >200 copies/mL and Drug Resistance Mutations (DRMs) identified using Stanford HIVdb. Clinical and demographic data on treatment history for clients with DTG resistance were abstracted from case summaries.

**Results:** Out of 184 client samples received at NPHL, 84 (46%) had HIV-1 VL >200 cp/mL and were successfully genotyped with only 18 (10%) having major INSTI DRMs. 16 (89%) with INSTI resistance were treatment experienced PLHIV with multiple DRMs while 2 (11%) were on 1st line TD-F/3TC/DTG and only had 1 DRM each after 17 – 38 months on therapy. 10 of 18 (56%) were male with the age range of 13 – 61 years. Mean CD4 count was 255.9 cells/uL; 7 (39%) were on treatment for tuberculosis co-morbidity while 13 (72%) had never suppressed on DTG before the HIVDR testing. After switch decisions, 9 of 18 (50%) have viral suppression below 50 cp/mL while 7 (44%) have VLs >1,000 and 2 have died (11%).

**Conclusions:** Most (90%) PLHIV with high VLs on DTG-based ART did not have DRMs and can re-suppress with adherence support. Higher frequency of major INSTI DRMs (89%) was noted in ART-experienced clients compared to ART naïve clients on DTG-based ART, suggesting that adherence support in PLHIV failing DTG-based regimens should target those with prior treatment failure, viral non-suppression or TB-HIV co-morbidity. Our data shows that DTG resistance is likely to increase and may impact the usefulness of long-acting cabotegravir, making the case for continued HIVDR monitoring in Kenya.

## THPEB136

### Specific clusters of non-integrase mutations emerge during raltegravir and dolutegravir selection

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**Background:** NNRTI-based regimen failures typically see frequency of genotypic resistance >70%, but studies of INSTI failures consistently see <50% incidence of genotypic resistance within integrase. This implies that several mechanisms of INSTI resistance have not yet been uncovered.

**Methods:** We generated diverse HIV integrase chimeras: 5 subtype A, 3 subtype D, and 2 subtype B integrase-containing viruses within a subtype B background. These 10 viruses were serially passaged, in duplicate (2x10 viruses), with increasing concentrations of either raltegravir (RAL), dolutegravir (DTG), or no drug, for >20 passages (>200 days of drug exposure). To track virus evolution, full genomes of each virus were sequenced by Miseq (Illumina) every 3 passages.

**Results:** Majority (16/20) of the viruses in the RAL escalation and almost half (9/20) of the viruses in the DTG escalation evolved ability to productively replicate above 100X the RAL IC50 or 40X the DTG IC50, respectively. E138K/Q148R was the most common pathway of RAL resistance (6/20); this was associated with >10-fold increase in RAL IC50. R263K was the most common integrase mutation during DTG selection in subtype B and D viruses (1/4 and 3/6, respectively), but was not selected in subtype A viruses (0/10). We observed greater DTG resistance, and greater loss of fitness, in subtype B vs D R263K mutants. In addition to *env* mutations that accumulated in both drug groups and the no drug control, novel integrase mutations and distinct mutation clusters outside of integrase were observed during both RAL and DTG selection. We noted a high frequency of reverse transcriptase mutations (12/20 viruses) accumulate during RAL selection. Several of these mutations occur at resistance-associated positions. During DTG selection, we found a high frequency of nucleocapsid mutations (12/20) and 5' LTR mutations near the PBS (4/20). Notably, reverse transcriptase mutations T69N, M184I, and F214L that emerged during RAL selection were significantly more frequent in our established cohort of Ugandan DTG failures (pending publication; n=810) compared to naïve individuals.

**Conclusions:** As the DTG scale-up continues, we here uncover several novel RAL/DTG-associated mutations that appear to contribute to INSTI resistance, including several non-integrase mutations that may be overlooked or undetected by traditional genotypic testing.



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## THPEB137

### The impact of conflict on HIV testing and treatment service delivery in Ethiopia

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**Background:** Since November 2020, Ethiopia has grappled with conflict, particularly in the Tigray and Amhara regions. The conflict caused widespread displacement, food shortages, and human rights abuses. It disrupted health services, damaged health facilities, and limited access to medical care, including HIV services.

Ceasefire in Tigray was declared in November 2022, but access to health services remains limited while violence continues in Amhara and Oromia. Together, Amhara and Oromia account for 60% of the PEPFAR-supported treatment cohort.

**Methods:** Using PEPFAR's Monitoring, Evaluation and Reporting (MER) program data and other reports, we analyzed the impact of conflict on HIV services in Ethiopia's Tigray and Amhara regions. MER data from fiscal year October 2019 to October 2022 were reviewed to assess trends in HIV testing services; the number of people living with HIV (PLHIV) on antiretroviral therapy (ART), and those newly initiated on ART before, during, and post-conflict.

**Results:** Before the conflict, over 42,000 PLHIV were on ART in Tigray. In October 2023, only 87 PLHIV were reported. A preliminary PEPFAR site visit report estimates that 34,000 patients returned to treatment in January 2024.

The number of PLHIV newly initiated on ART fluctuated between 400–600 per quarter before the conflict; post-conflict trend shows that only 15 or fewer were initiated quarterly. HIV testing services never returned to the pre-conflict levels of between 60,000–110,00, hovering at only a few hundred per quarter.

Over 146,000 PLHIV were on ART in Amhara before the conflict expanded at which point over 20,000 PLHIV on ART were lost. Nine months later, most patients have returned to treatment. However, conflict resumed in Amhara in July 2023 and its impact on health and HIV services resumed.

**Conclusions:** The health system and service delivery collapsed in war-affected areas. Post-recovery plans should prioritize recovery of lost patients and provision of services for those newly infected.

As infrastructure is rebuilt, focusing on restoring supply chains for timely delivery of ART and HIV testing supplies everywhere is critical. As conflicts surge globally and 12

## THPEB138

### Cigarette dependence associated with COVID-19 vaccine attitudes and risk appraisal among people with HIV who smoke

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**Background:** HIV is related to higher COVID-19 mortality rates, and smokers have worse COVID-19 outcomes than non-smokers. People with HIV (PWH) are twice as likely as HIV-negative peers to smoke and less likely to quit. COVID-19 vaccination reduces severe illness, but low vaccine trust and low COVID risk appraisal limit vaccination rates. This preliminary analysis assesses the association between cigarette dependence, vaccine trust, and COVID-19 risk appraisal among PWH who were recruited to a trial intervention addressing anxiety, depression, and smoking.

**Methods:** We recruited  $N = 136$  PWH who smoke from clinics in Massachusetts and Texas. Self-report measures assessed anxiety (GAD7), depression (PHQ8), cigarette dependence (Fagerstrom Test for Nicotine Dependence), cigarettes per day (dichotomized), vaccine trust, and COVID-19 risk appraisal. Linear regression analyses assessed relationships between vaccine trust total score or COVID risk appraisal as dependent variables, and cigarette dependence or cigarettes per day as independent variables. Recruitment site, anxiety, and depression scores were included covariates.

**Results:** We examined the effect of study site on vaccine trust; participants enrolled in Texas had significantly worse vaccine trust than those in Massachusetts ( $b = 3.82$ ,  $p < .001$ ). As such, site was retained as a covariate, along with depression and anxiety. With respect to cigarettes, smoking more than the sample's average cigarettes per day was associated with greater vaccine trust when controlling for site, depression, and anxiety ( $b = 2.06$ ,  $p = .026$ ). Lastly, there was a statistical trend for lower cigarette dependence being associated with greater perceived risk of COVID-19 when controlling for site, depression, and anxiety ( $b = -1.54$ ,  $p = .063$ ).



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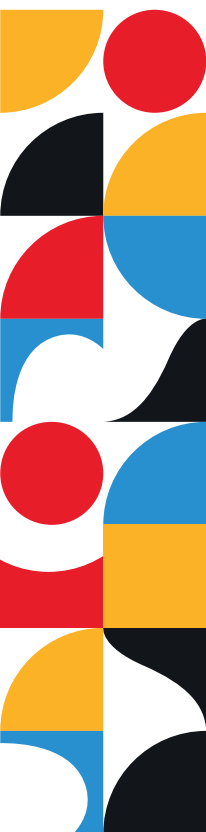
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**Conclusions:** Perceptions of COVID-19 risk and vaccine trust are complex and likely influenced by factors beyond anxiety and depression. Participants were probably exposed to different COVID-19 messaging based on the geopolitical environment of their site.

PWH smoking more cigarettes per day may rely on their vaccines to protect them from illness rather than changing their behavior.

Additionally, those with lower cigarette dependence may be consciously improving their health and relatedly, more aware of their COVID-19 risk.

Future research should examine these associations alongside medical trust and care engagement.

## THPEB139

### Low prevalence of nirmatrelvir-ritonavir resistance-associated mutations in SARS-CoV-2 lineages from Botswana (2020-2023)

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**Background:** Nirmatrelvir-ritonavir (NTV/r) is a SARS-CoV-2 protease inhibitor and treatment option for high-risk patients with COVID-19. We evaluated naturally occurring nirmatrelvir-ritonavir (NTV/r) resistance-associated mutations (RAMs) among SARS-CoV-2 strains from Botswana, a country with no NTV/r use to date, in order to recommend the usage of the agent for high-risk patients with COVID-19.

**Methods:** We conducted a retrospective analysis using 5,254 complete SARS-CoV-2 sequences from Botswana (September 2020 – September 2023). We evaluated the mutational landscape of the SARS-CoV-2 3-Chymotrypsin-like protease (3CLpro; refereed to as nsp5 gene) relative to the highlighted list of RAMs provided by the FDA emergency use authorisation in 2023. Relatedness of participants with RAMs was evaluated using phylogenetic analysis.

**Results:** The sequenced 5,254 samples included Beta (N=323), Delta (N=1314), and Omicron (N=3354) variants of concern (VOC). Overall, 77.8% of the sequences exhibited at-least one polymorphism within 76/306 amino acid positions in the nsp5 gene. NTV/r RAMs were identified in 34/5,254 (0.7%, 95%CI:0.4%-0.87%), and occurred at five distinct positions. Amongst the NTV/r RAMs detected, A191V was the most prevalent (24/34; 70.6%). Notably, T21I mutation had a prevalence of 20.6% (7/34) and co-existed with either K90R (n=3) polymorphism in Beta sequences with RAMs or P132H (n=3) polymorphism for Omicron sequences with RAMs.

Other NTV/r RAMs detected include P108S with prevalence of 5.9% (2/34) and L50F prevalence of 2.9% (1/34). NTV/r RAMs were significantly higher (p<0.001) in Delta (24/35) compared to either Beta (4/34) or Omicron (6/34) sequences. Phylogenetic analysis indicates that several sequences with NTV/r RAMs cluster together, suggesting a higher likelihood of transmission-based RAMs rather than acquired ones.

**Conclusions:** The frequency of NTV/r RAMs in Botswana was low. Higher rates were observed in Delta VOC variants compared to in Omicron and Beta VOC. Our findings recommend the potential use of NTV/r in Botswana, especially during the current epidemic wave driven by Omicron VOC. However, as NTV/r use expands globally, continuous surveillance for drug-resistant variants is essential.

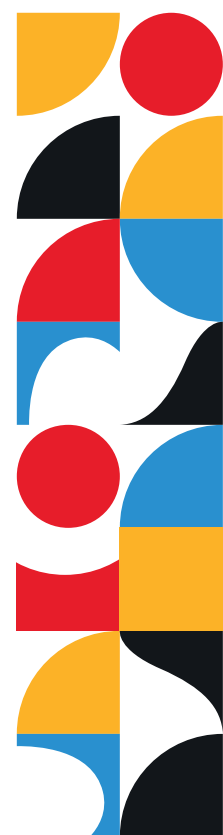
## THPEB140

### Resilient viral load suppression in an acutely-treated cohort of people with HIV during the COVID-19 pandemic in Bangkok, Thailand

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**Background:** Measures to reduce the spread of SARS-CoV-2 had the potential to compromise HIV treatment. We studied viral load (VL) outcomes in acutely-treated people with HIV before and during the COVID-19 pandemic in Bangkok, Thailand. Targeted and scheduled VL monitoring, adherence support and adapted service delivery methods (telemedicine, ART home delivery) were implemented to help maintain viral suppression.

**Methods:** We analyzed differences in VL measurements among adults with acute HIV in the RV254/SEARCH010 cohort from January 2018 to October 2023 based on COVID







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restrictions— (1)Pre-COVID: 1/1/2018-3/15/2020, (2)First Lockdown: 3/16/2020-5/03/2020, (3)None: 5/4/2020-4/30/2021, (4)Second Lockdown: 5/1/2021-6/6/2021, and (5)None: 6/7/2021-9/30/2023. Outcomes included number of VL tests per person-year (PY) and proportion of suppressed tests with VL <1,000 copies/ml (VS). Associations between COVID restrictions and number of VL measurements over time were modeled using Poisson regression with generalized estimation equations (GEE). Factors associated with VLS were evaluated using logistic regression with GEE and adjusted for treatment regimen, age in 10-year increments, sex, and years on ART. Adjusted odds ratios (aOR) and 95% confidence intervals (95%CI) were reported.

**Results:** 9,643 samples from 622 participants comprised of 584 males (98%) with mean (SD) age of 30.80(7.85) were analyzed. VL measurements significantly declined from pre-COVID (4.28/PY [95%CI 4.16-4.41]) to subsequent periods, especially first (0.73/PY [95%CI 0.50-1.06]) and second (0.36/PY [95%CI 0.24-0.56]) lockdowns (Figure1). VS rates remained >98% during pre-COVID and non-lockdown periods; VS rates were 95% and 80% in the first and second lockdowns. The second lockdown decline was statistically significant after controlling for other factors (aOR 0.04 [95%CI 0.01-0.32]). VS rates did not differ by the other periods, age, sex, regimen, or duration on ART.

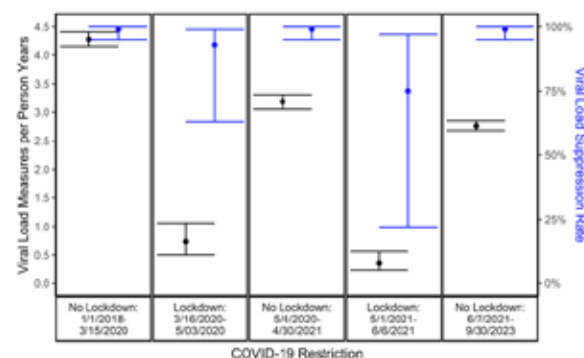


Figure 1. Viral load measures per person years and viral load suppression during the COVID-19 pandemic in RV254/SEARCH010 Cohort.

**Conclusions:** VL monitoring decreased during COVID-19 lockdowns. VS decrease in lockdown may be affected by targeted VL monitoring. We did not find evidence of longer-lasting reduction in VS, indicating resilience despite COVID-related barriers to care.

## THPEB141

### Effect of cyclone Freddy on HIV treatment services in Zambézia Province, Mozambique

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**Background:** Between January 2021-March 2023, nine cyclones made landfall in Mozambique. Cyclone Freddy made its second landfall on March 11<sup>th</sup>, 2023, impacting 1.1 million persons. In Zambézia Province, 22,116 people sought refuge in accommodation centers and approximately 2,000 houses were destroyed/damaged.

We describe response efforts to mitigate Cyclone Freddy's effect on HIV service continuity for 378,350 people living with HIV (PLHIV) on antiretroviral therapy (ART) in Zambézia.

**Description:** Mitigation interventions initiated two days post-landfall extended through September 2023, including i) performing assessments evaluating service disruption and damage, categorizing districts as directly-affected (directly hit), flood-affected (not directly hit but flooded), and unaffected (not directly hit or flooded); ii) executing 63,744 community ART distributions; iii) conducting 128 re-integration campaigns whereby clinical teams provided services to 5,971 PLHIV; iv) repairing 37 health facility roofs, and v) re-establishing electronic medical record systems interrupted due to infrastructure damage. We analyzed aggregated clinical data from October 2022-September 2023, assessing trends in interruptions in treatment (IIT, i.e., >28 days since last expected clinical contact or ART pick-up) among PLHIV on ART comparing directly-affected, flood-affected, and unaffected districts.

**Lessons learned:** In April 2023, 8.6% and 10.6% of all PLHIV on ART in directly- and flood-affected districts respectively, experienced IIT, compared to 4.6% in unaffected districts. Flood-affected districts returned to their pre-cyclone IIT levels (average 2.3% between October 2022-January 2023) faster (within 3 months) compared to directly-affected (within 6 months). By September 2023, 3.1% and 2.6% of PLHIV on ART in directly- and flood-affected districts, respectively, experienced IIT, similar to 3.0% in unaffected districts.

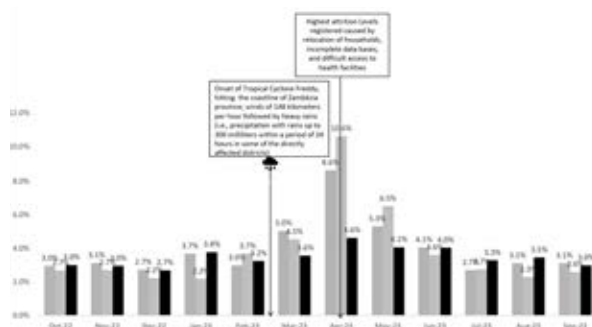


Figure 1. Trends in interruption in treatment (ITT) in Zambezia province (february-September 2023).

**Conclusions/Next steps:** Findings highlight the immediate increase in IIT among PLHIV on ART residing in cyclone-affected areas. Given the frequency of cyclones affecting Mozambique, these results underscore the need for programming adaptation responding to climate-related emergencies, and for emergency response preparedness ensuring continuity of HIV services.

## THPEB142

### Mitigating the impact of climate disasters on continuity of HIV service delivery: lessons from Cyclone Freddy in Malawi

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**Background:** Malawi is a high HIV burden country and highly susceptible to extreme weather-related hazards. In March 2023, Cyclone Freddy struck Malawi, leaving in its wake catastrophic consequences ranging from loss of lives to widespread destruction of health infrastructures, and disruption of health systems, particularly HIV-related services. HIV service continuation is crucial to optimizing treatment outcomes, including viral suppression. The disruption of HIV services poses a threat to sustaining the gains of epidemic control and the UNAIDS 95 95 95 fast track targets. We aim to describe measures deployed to mitigate the impact of cyclone Freddy and ensure continued HIV service delivery in Malawi.

**Description:** Malawi leveraged on existing multisectoral and interagency collaboration with community structures as the bedrock to the national response. The department of disaster management set up camps with mobile clinics for displaced persons. Building on the lessons learnt from adapting HIV systems for COVID-19 response, the Ministry of Health took the following proactive measures: issued an emergency policy protocol that allows dispensing of ARV to every person that self-identify as living with HIV on treatment without demanding for any supporting documentation, integration of HIV services into the camp

clinics, deployment of surge staff, optimising multi-month dispensing, decentralized ARV dispensing points, activated emergency supplies of ARVs, and leverage peer-led mechanism to facilitate ARV delivery especially among Key populations were effective in ensuring continuity of care.

**Lessons learned:** The study found no significant change in HIV testing and ART services ( $p = 0.716$  for both), indicating stability post-cyclone.

Service	Pre_Mean	Pre_SD	Post_Mean	Post_SD	Z	P_Value
Total HIV Tests	117.39	232.40	110.21	201.22	0.36	0.7161
Alive on ART	157.64	603.30	177.90	595.29	-0.36	0.7160

**Conclusions/Next steps:** The impact of climate disasters on continuity of HIV service delivery can be catastrophic, particularly in highly vulnerable countries like Malawi. The response efforts deployed to mitigate the impact of cyclone Freddy in Malawi demonstrate the importance of emergency preparedness and adaptability of health systems in ensuring service continuity for People Living with HIV.



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## Track C: Epidemiology and prevention science

### Epidemiology of HIV

#### THPEC143

Epidemiological trajectory and machine learning models: charting a course to combat HIV/AIDS in Ethiopia's 19-year journey (2000-2018)

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**Background:** This research aimed to comprehensively understand the evolving epidemiological patterns and dynamics of HIV/AIDS in Ethiopia over a 19-year period (2000-2018). The primary objectives were to assess the overall HIV prevalence, identify regional disparities, and explore knowledge gaps among pregnant women regarding HIV/AIDS and mother-to-child transmission (MTCT).

**Methods:** The study conducted a retrospective analysis of secondary data obtained from nationwide community-based surveys conducted between 2000 and 2018. The sample included 21,014 adults aged 15-49 tested for HIV across 79 zones in Ethiopia. Additionally, data from the 2016 Ethiopia Demographic Health Survey, comprising 7,193 pregnant women, were analyzed to evaluate knowledge levels about MTCT.

The study employed advanced analytics, including temporal analysis, regional comparisons, hot spot mapping, age-stratified analysis, and machine learning models.

**Results:** Nationally, the study revealed a notable 47% decline in the number of people living with HIV between 2000 and 2018, with a sustained downward trajectory and an average yearly percentage change of -3.45%. However, specific regions, including Benishangul-Gumuz, Gambella, and Harari, exhibited concerning upward trends. Variations in HIV prevalence was observed among regions, with Amhara, Oromia, and Addis Ababa consistently reporting high rates but showing gradual reductions over time. Southern Nations, Nationalities, and Peoples (SNNP), Tigray, Somalia, and Afar regions displayed relatively stable patterns.

Age-stratified analysis revealed the highest HIV burden among the 25-29 and 30-34 age groups in most regions, with elevated prevalence in the 35-39 and 40-44 age groups. Concerning knowledge gaps, the study highlighted that 85% of pregnant women lacked comprehensive knowledge about HIV/AIDS, and 66% demonstrated inadequate understanding of MTCT. Logistic regression analy-

sis identified significant influencers, including HIV testing, wealth index, media exposure, and educational attainment.

**Conclusions:** The findings of this study hold critical implications for HIV prevention, treatment, and care in Ethiopia. While national trends indicate progress, regional variations and persistent knowledge gaps underscore the need for tailored interventions. Leveraging advanced analytics and tailoring interventions to specific regions, demographic groups, and risk factors can accelerate the decline of HIV prevalence.

The study calls for a commitment to evidence-based policymaking, innovative interventions, and comprehensive healthcare access to secure a healthier, HIV-free future for Ethiopia.

#### THPEC144

Evolution of HIV transmission networks in rural South Africa

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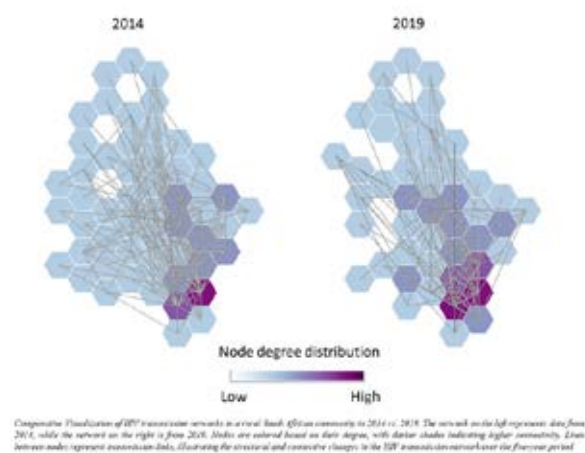
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**Background:** This study provides a comparative analysis of the evolution and dynamics of HIV transmission networks in a rural South African community. The objective is to highlight the changes in the HIV transmission network over time, reflecting the impact of public health interventions and sociodemographic shifts.

**Methods:** Utilizing demographic surveillance data collected in the uMkhanyakude district, KwaZulu-Natal, South Africa from 2014 and 2019 we constructed HIV transmission networks in this rural community. Phylogenetic analysis identified transmission clusters from HIV-1 Pol sequences. Geospatial mapping linking these sequences to specific locations was used to reveal the spatial distribution of transmission. A grid representing the area of the study was generated to aggregate nodes of connection without geographical references to uphold participant confidentiality, and to conduct network analysis focused on comparisons among connectivity and key nodes within the networks generated.

**Results:** The transmission network generated using data from 2014 (map in the left) demonstrated a central, highly connected HIV transmission cluster in a peri-urban area, acting as a hub within the network. This cluster had substantial connectivity to smaller, peripheral nodes, indicat-

ing a centralized network structure. In contrast, the network generated using data from 2019 (map in the right) revealed a more decentralized transmission network, with clustering in peripheral and rural areas. This shift indicates a spread of HIV transmission beyond the central peri-urban cluster identified in 2014.



**Conclusions:** The comparison between the two time points underscores the dynamic nature of HIV transmission networks. The shift from a highly centralized structure to a more dispersed network in 2019 might suggest the influence of various factors, including public health interventions, societal changes, and population mobility, on the evolution of HIV transmission patterns. These findings emphasize the need for adaptable public health strategies that can respond to the evolving epidemiological landscape of HIV transmission.

## THPEC145

Perceived risk of unintended pregnancy among young people aged 13-24 years during COVID-19-related lockdowns in peri-urban Cape Town, South Africa: a cross-sectional study

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**Background:** The COVID-19 pandemic and its related lockdowns may predispose girls and young women to greater risk of unintended pregnancy.

The aim was to assess the perceived risk of unintended pregnancy among young people (13-24) in relation to COVID-19 lockdowns and to determine its association with access to family planning, after adjusting for individual, structural and socio-behavioral factors.

**Methods:** Data were drawn from a baseline survey of the longitudinal Bidirectional, Upbeat communication and Differentiated, Distance care for Young People (BUD-DY) project, conducted in February-September 2021. The study included a sample of 477 young people living with and without HIV. Multivariable logistic regression models

were used to assess the adjusted odds ratio of perceiving a greater risk of unintended pregnancy in relation to family planning access, individual, structural and socio-behavioral factors.

**Results:** Most participants (89.4% women and 88.4% men) did not perceive that their risk of unintended pregnancy had increased because of COVID-19-related lockdowns, with no difference by gender. In adjusted models, family planning access was associated with lower odds of perceiving a greater risk of unintended pregnancy (AOR= 0.17; 95%CI =0.07-0.43). Perceiving a greater risk of unintended pregnancy decreases with education level (AOR= 0.24, 95%CI =0.07-0.83). Participants living without HIV (AOR= 3.0, 95%CI =1.26-7.22) and those who reported past-month smoking (AOR= 3.86, 95%CI =1.47-10.14) were more likely to perceive a greater risk of unintended pregnancy.

**Conclusions:** Young people in peri-urban townships in Cape Town did not perceive a greater risk of unintended pregnancy due to the COVID-19 pandemic lockdowns. During public health crises such as the COVID-19 pandemic, the health care system should remain resilient in order to meet the sexual and reproductive health needs of young people.

## THPEC146

Are violence, poor mental health, and harmful alcohol and other substance use associated with cortisol levels among female sex workers in Nairobi, Kenya?

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T. Maisha Fiti study champions<sup>3</sup>, J. Bradley<sup>4</sup>, P. Ngurukiri<sup>3</sup>, M. Kungu<sup>3</sup>, T. Abramsky<sup>1</sup>, J. Pollock<sup>5</sup>, A. Beksinska<sup>1</sup>, P. Shah<sup>1</sup>, E. Irungu<sup>3</sup>, M. Gafos<sup>1</sup>, J. Seeley<sup>1</sup>, H.A. Weiss<sup>4</sup>, A.A. Elzagallaai<sup>2</sup>, M.J. Rieder<sup>2</sup>, R. Kaul<sup>6</sup>, J. Kimani<sup>3</sup>, T. Beattie<sup>1</sup>

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**Background:** Violence, mental health problems and harmful alcohol and other substance use, are commonly experienced by female sex workers (FSWs) in sub-Saharan Africa, all of which are associated with increased risk of HIV acquisition. In this study, we aim to investigate the stress-response system as a potential pathway linking the experiences of these stressors, with increased risks of infections, including HIV, through dysregulated cortisol levels, which have been linked with immune function impairment.



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**Methods:** We used the baseline behavioural and laboratory data of the *Maisha Fiti* longitudinal study of FSWs in Nairobi, Kenya (study period: 2019-2021). Participants reported recent violence experiences (past 6 months), recent mental health problems and harmful use of alcohol and other substances (past 3 months). Hair samples proximal to the scalp were collected to measure cortisol levels determined using an ELISA technique.

We analyzed hair samples ( $\geq 2\text{cm}$ ) of HIV-negative respondents. We ran multivariable linear regression models to determine whether violence, poor mental health and the harmful use of substances were independently associated with hair cortisol concentration (HCC).

**Results:** 425 HIV-negative respondents provided at least 2cm of hair samples. The mean HCC was 331.20 (95% CI: 294.7 to 372.2). The prevalence of recent violence was 89.3% (physical 54.6%; sexual 49.4%; emotional 77.0%; financial 66.5%) and 29.1% had been arrested by the police because of their sex work. 23.7% of women reported moderate/severe depression, 11.6% moderate/severe anxiety, 13.5% PTSD and 10.8% recent suicidal thoughts/attempts. 48.8% of participants reported harmful alcohol and/or other substance use (34.3% alcohol; 36.5% other substances).

In multivariable regression:

- (i) recent physical and/or sexual violence (adjusted geometric mean ratio =1.28; 95% CI: 1.01 to 1.62;  $p=0.044$ ) and;
- (ii) harmful alcohol and/or other substance use (adjusted geometric mean ratio =1.31; 95% CI: 1.03 to 1.65;  $p=0.025$ ) were positively and independently associated with increased mean HCC.

**Conclusions:** Exposure to violence and harmful alcohol/substance use may distort the functioning of the hypothalamic-pituitary-adrenal axis (cortisol levels), potentially representing a physiological pathway for increased vulnerability to infections such as HIV.

## THPEC147

### Initiation of injection drug use by gay, bisexual and other men who have sex with men in Canada's three largest cities (2017-2023)

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**Background:** Gay, bisexual, and other men who have sex with men (GBM) who inject drugs are at risk of acquiring HIV and HCV. Addressing injection drug use (IDU) by GBM is important for HIV and HCV elimination; approaches may differ compared to others who inject.

We examined IDU initiation in a cohort of GBM, identifying determinants.

**Methods:** The Engage study recruited sexually-active GBM, aged  $\geq 16$  years, using respondent-driven-sampling (RDS) in Montreal, Toronto, and Vancouver. Participants completed a self-administered questionnaire at enrollment and every 6-12 months; data from 2017-2023 were used. Proportion of recent IDU at cohort entry was determined using reported past six-month (P6M) IDU of amphetamines (including crystal methamphetamine), cocaine, or opioids. Incidence of first IDU was estimated among participants with no lifetime history of injection. Rate ratios (RR) were estimated using three-city/pooled data, time-lagged (i.e., most recent prior visit) variables (e.g., sociodemographic, P6M sexual and substance use behaviours, psychosocial, and health-related), and Poisson regression (accounting for time of exposure, study city).

We selected the most parsimonious predictive multivariable model using lowest Akaike information criterion. Estimates were adjusted using RDS-II and inverse-probability-of-censoring weights.

**Results:** Of 2449 participants, the adjusted proportion of recent IDU at cohort entry was 5.1% (95% confidence interval (CI): 4.2-6.2). Among 2210 GBM with no IDU history (6861 years follow-up), first IDU was reported by 33 participants, a rate of 0.7 per 100 person-years (95%CI: 0.5-1.0). Factors predictive of IDU initiation in the multivariable model included: non-injection crystal methamphetamine use (RR: 14.6; 95% CI: 6.3-33.7), attendance at party-and-play events (2.4; 1.1-5.3),  $\geq 6$  (vs  $\leq 5$ ) male sexual partners (3.3; 1.4-7.8), and being a person of colour (POC; 1.7; 1.0-3.4).



**Conclusions:** Factors unique to GBM (number of sexual partners, sexualized substance use) were important for identifying those at risk of IDU initiation. HIV and HCV prevention through appropriate harm reduction for non-injection drug use, GBM attending group sex events, and those transitioning to IDU, may be key for elimination. Why POC appear more likely to initiate IDU requires further exploration.

## THPEC148

### HIV and HCV cascade, RNA prevalence and new diagnoses in opioid agonist therapy (OAT) patients from the SAMMSU-cohort, Switzerland

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**Background:** To end the HIV/AIDS-epidemic by 2030, until 2025, 95% of all people who live with HIV (PWLH) should be diagnosed, thereof 95% on antiretroviral treatment (ART) and thereof 95% virologically suppressed ("95-95-95"-targets of UNAIDS). To reach HCV-elimination by 2030, the WHO aims at 90% of chronic hepatitis C (CHC) patients diagnosed and 80% treated. We wanted to describe the current state of HIV and HCV elimination among patients of the Swiss Association for the Medical Management in Substance Users (SAMMSU)-cohort.

**Methods:** The SAMMSU-cohort is an open cohort with yearly follow-up, enrolling >18-year-old patients with current or previous OAT in eight different centers throughout Switzerland since 2014.

**Results:** Between 2014 and 02/01/2024, 1390 patients have been enrolled (76% male, median age: 44 years, 75% ever intravenous drug use). HIV-serostatus was known for 99.8% (1387): 9.9% (137/1387) HIV-antibody-positive. 98.5% (135/137) were on ART, and thereof 99.3% (134) fully suppressed. HIV-RNA-prevalence was 2.2% (3/137) in PWLH and 0.2% (3/1390) in the whole cohort. The number of HIV first diagnoses dropped from 37 in the five-year-period 1999-2003 to zero in 2019-2023 (last HIV first diagnosis in 2015).

The HCV-serostatus was known for 99.7% (1386/1390) and HCV-RNA available for 97.4% (826/848) of the HCV-antibody-positive patients. HCV-antibody-prevalence was 57.5% in HIV-negative and 94.9% in HIV-positive patients ( $p < 0.001$ ). In PWLH, chronification was more frequent (86.2% versus 77.2%,  $p = 0.022$ ), while treatment-uptake was lower (78.6% versus 87.9%,  $p = 0.009$ ). With direct-act-

ing antivirals, cure rates were 97%, irrespective of HIV-serostatus. Accordingly, HCV-RNA prevalence was higher in HIV-positive compared to HIV-negative patients, i.e. 11.7% (16/137) versus 5.4% (68/1250),  $p = 0.004$ ; overall: 6.0% (84/1390). The number of HCV first diagnoses dropped from 155 in the five-year-period 2009-2013 to 38 in 2019-2023 (32/38 diagnosed at or before enrolment).

**Conclusions:** The "95-95-95"-HIV-targets are already met in OAT patients from the SAMMSU-cohort. There were no new HIV diagnoses since eight years.

With CHC diagnosis and cure rate at >95%, and treatment-uptake of 90% for HIV-negative and nearly 80% for HIV-positive people, WHO targets are reached within the SAMMSU-cohort.

However, ongoing enrolment of patients with newly diagnosed HCV demonstrates that micro-elimination, but not yet macro-elimination is achieved.

## THPEC149

### Prevalence of naturally occurring lenacapavir-related drug resistance mutations in antiretroviral therapy-naïve and experienced individuals in Taiwan: an in-silico analysis

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**Background:** Previous genotypic analysis of 1,500 clinical samples from a population of People with HIV (PWH) indicated an absence of naturally occurring resistance mutations to the capsid inhibitor Lenacapavir. This finding is noteworthy as the conventional HIV genotyping does not include the CA region, resulting in limited surveillance data.

Prior to the expanded clinical use of Lenacapavir and its introduction in Taiwan, it is crucial to gain a comprehensive understanding of the prevalence of naturally occurring Lenacapavir-related drug resistance mutations (DRMs).

**Methods:** Since 2017, clinical specimens submitted for HIV-1 genotyping to the Infection Department Laboratory at Chang Gung Memorial Hospital in Taiwan have been sequenced using near-full length next-generation sequencing, forming a local HIV-1 sequence database. In this study, we retrospectively screened the database for CA mutations potentially associated with resistance to



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Lenacapavir, specifically at positions L56, N57, M66, Q67, K70, N74, and T107. Variants with a population exceeding 1% were selected for analysis.

**Results:** The database contained a total of 278 CA sequences from clinical HIV-1 RNA samples, including 152 from antiretroviral therapy (ART)- naïve and 126 from ART-experienced individuals. Mutations at the 7 sites were rare, occurring in 3.3% (5/152) of ART-naïve and 5.6% (7/126) of ART-experienced cases, with most being either accessory mutations or common polymorphisms (Table). Notably, a Q67H mutation was found in an ART-naïve case with a frequency of 26.8%, and a Q67R mutation with uncertain clinical impact appeared at a low frequency of 2.8% in an ART-experienced case.

Table. Information of users with Lysaghts-ii related drug resistance mutations in the study

Cont. No.	Age	Sex	Subtype	Drugs to 3.5% C <sub>50</sub>	Other Drugs	AET history
NC01008	25	M	B	T307B (0.4%)	-	-
NC00807	14	M	B	T107B (1.2%)	-	-
NC01001	15	M	B	T107B (14.7%)	NETI, K700	-
NC01004	33	M	B	T107B (10%)	-	-
NC01014	33	M	B	Q07B (26.7%)	-	-
AT00002	52	M	B	K502 (1.7%)	NETI, M104V	AZTTC - LPO → TAFITC/BIC
T000006	44	M	B	T107B (2.7%)	NETI, D676, T060, K700, T210, K210	AZTTC-NVP → T107B-ATV-RTV → T107B-DRV-RTV
TC20000	32	M	B	T107A (0.34%)	NETI, K006, V100, Y100	AZTTC-EFV → AZTTC-RAL → T107B-EFV
TC20000	29	M	B	N07B (1.7%)	NETI, K010, K100, N100	T107B-EFV
TC20000	29	M	B	N07B (1.7%)	NETI, K700, M104V, K210	T107B-EFV
TC20000	45	M	B	T107B (0.4%)	-	T107B-EFV6
TC20006	31	M	B	T107B (2.6%)	NETI, D676, K100, K700, M104V	AZTTC-LPO → T107B-NVP → T107B-RAL → T107B-DRV-RTV → T107B-RTV → TAFITC/BIC
V001_76	37	M	B	Q07B (1.7%)	NETI, K010, K100, Y100	AZTTC - EFV → T107B-EFV → AZTTC + DRV

[illegible]

**Conclusions:** The prevalence of naturally occurring DRMs to the capsid inhibitor Lenacapavir is low in Taiwan, yet their existence cannot be denied.

# THPEC150

## Healthcare challenges and interventions in pre-trial detention centers in Venezuela

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**Background:** In Venezuela, pre-trial detention centers, originally intended for brief holding periods, often detain individuals far beyond the normative 48 hours, with some awaiting trial for up to 10 years. This prolonged detention, in facilities not designed for long-term occupancy, leads to severe overcrowding and deteriorating physical conditions for detainees. From January 2021 to October 2023, healthcare was provided to 3975 detainees in 60 such centers, focused on providing healthcare to detainees, who were the primary population of interest, without considering other high-risk groups.

**Methods:** This was a cross-sectional, observational study conducted in 60 pre-trial detention centers across 9 Venezuelan states (Miranda, Vargas, Zulia, Bolívar, Nueva Esparta, Carabobo, Aragua, Anzoátegui, Distrito Capital) from January 2021 to October 2023. The study involved 3975 detainees, with the age distribution as follows: <19

(0.69%), 19-25 (24.31%), 26-35 (36.81%), 36-45 (19.1%), and >46 (19.1%), with an average age of 34 years, where 422 women (10.6%), 3550 men (89.3%), and 10 transgender women. HIV screening involved initial 3rd generation rapid tests, followed by confirmatory 4th generation rapid tests. Confirmed HIV-positive individuals underwent viral load testing.

The study also assessed the prevalence of tuberculosis using GeneXpert, along with other common health conditions like scabies, musculoskeletal pain, and skin diseases. Interventions included medical treatment and linkage to local healthcare services for those requiring ongoing care, particularly for HIV and tuberculosis.

**Results:** Out of 3975 detainees, 53 (1.33%) tested HIV positive. The distribution was 3 women (0.71% of the female population), 49 men (1.38% of the male population), and 1 transgender woman. There were 118 TB cases identified, with no HIV-TB. Health issues included scabies (27.5%, 1093 cases), musculoskeletal pain (25.2%), skin diseases (14%, 556 cases), and other STIs (7%). Comprehensive health-care was provided for respiratory symptoms, dermatological conditions, and musculoskeletal pain, along with preventive measures like deworming.

**Conclusions:** This intervention in Venezuelan pre-trial detention centers highlighted significant health challenges, including the prevalence of HIV and TB, under conditions of severe overcrowding and prolonged detention. The study emphasizes the necessity of continuous healthcare provision and highlights the unique healthcare needs of detainees as a key population in HIV epidemiology.

# THPEC151

## Characteristics of sexual assault survivors at Ogun State sexual assault referral center; implication for HIV transmission

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**Background:** Despite the high prevalence of sexual assault globally, survivors in the Sub-Saharan Africa rarely present for care, and when they do they come after the 72-hour window period for accessing post exposure prophylaxis (PEP) for HIV, hence increasing the risk of heterosexual transmission of HIV. This study aims to report the characteristics of sexual assault survivors that were managed at the Ogun State Sexual Assault Referral Centre (SARC); and implication for HIV transmission.

**Methods:** This is a retrospective study of survivors of sexual assault that presented at Ogun State SARC between October 2021 and November 2023. Data was retrieved from facility case files and analyzed using SPSS Version 23.0. Informed consent and confidentiality were ensured.



**Results:** A total of 83 sexual assault survivors accessed the services at Ogun State SARC. All survivors in the study were female, and were between the ages of 2 years and 54 years. The mean age was  $18.8 \pm 11.3$  years, and survivors were highest in the age group 11-20 years (53%). The most reported variant of sexual assault was defilement (64%). Sexual act was without protection in 72% of cases, and was committed by more than one perpetrator in 8.4% of cases. Only 56% survivor presented within 72 hours of assault and were able to access HIV PEP.

**Conclusions:** The majority of survivors of sexual assault in this study were adolescents and young female adults with most of them accessing care after the 72-hour window for commencement of PEP. As such, there is a need for increased awareness among this age groups about sexual assault and the activities of SARC in providing care for survivors of such assault in order to minimize the risk of HIV transmission.

## THPEC152

Social determinants of health associated with in-hospital mortality: a cohort study of 13,999 AIDS hospitalizations in low-income individuals in Brazil

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**Background:** Social Determinants of Health (SDH) like socioeconomic, household, and geographic factors are significantly associated with AIDS-related outcomes. The aim of this study was to assess the association between different SDH on in-hospital AIDS mortality rate.

**Methods:** In this cohort study we used a sample of the low-income population who applied for government social programs and entered between January 1, 2008 to December 31, 2018 in The 100 Million Brazilian Cohort linked to: nationwide HIV/AIDS hospitalization and mortality records. We performed a multivariable Poisson regression analysis using a hierarchical approach to estimate the relationship between SDH — at the individual and familial level — on in-hospital AIDS mortality rate.

**Results:** We followed-up 13,999 individuals hospitalized due to AIDS, among whom 2,196 (15.69%) experienced in-hospital mortality, resulting in a mortality rate of

6.38/100 persons-years (PY) (95% CI 6.11-6.65). Among those who died from AIDS while hospitalized, 56.23% (1,235/2,196) were men and 79.55% (1,747/2,196) were aged between 20-59 years. The mean length of stay for the hospitalizations was 15.13 days (SD 17.23). Beyond older age, various factors were associated with higher in-hospital AIDS mortality: living in the North Region — the most sparsely populated region in Brazil (RR 1.94; 95% CI 1.38-2.71); lower wealth (RR 1.24; 95% CI 1.02-1.52); lower educational attainment (RR 1.23; 95% CI 1.06-1.42); living in houses built with sub-standard construction materials (RR 1.22; 95% CI 1.04-1.44); Black skin color (RR 1.21; 95% CI 1.02-1.44) and, Pardo (brown/mixed) skin color (RR 1.17; 95% CI 1.03-1.32).

**Conclusions:** In a low-income Brazilian population we found that those with even greater social vulnerability i.e., living in a precarious situation and in remote areas, with extreme poverty, less education, and, Black or Pardo people — highlighting the harmful permanence of racism in the country — had higher in-hospital AIDS mortality. Given this inequity, social policies that have the potential to minimize the effects of SDH, such as conditional cash transfer programs (in addition to early diagnosis and greater access to health and antiretroviral treatment), should be considered important tools for reducing AIDS mortality, especially in low- and middle-income countries.

## Surveillance: Measuring the HIV pandemic

### THPEC154

Can routine antenatal data be used to assess HIV antiretroviral therapy coverage among pregnant women? Evaluating the validity of different data sources in the Western Cape, South Africa

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**Background:** Accurate measurement of antenatal antiretroviral treatment (ART) coverage in pregnancy is imperative in tracking progress towards elimination of vertical HIV transmission. In the Western Cape, South Africa, public-sector individual-level routine data are consolidated from multiple sources, enabling the description of temporal changes in population-wide antenatal antiretroviral coverage. We evaluated the validity of different methods for measuring antenatal ART coverage.







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**Methods:** We compared self-reported ART data from a 2014 antenatal survey with laboratory data from a sub-sample within the survey population. Thereafter, we conducted a retrospective cohort analysis of all pregnancies consolidated in the Provincial Health Data Centre (PHDC) from January 2011 to December 2020. Evidence of antenatal and HIV care from electronic platforms were linked using a unique identifier. ART coverage estimates were triangulated with available antenatal survey estimates, aggregated programmatic data from registers recorded in the District Health Information System (DHIS) and Thembisa modelling estimates.

**Results:** Self-reported ART in the 2014 antenatal survey (n=1434) had high sensitivity (83.5%), specificity (94.5%) and agreement ( $k=0.8$ ) with the gold standard of laboratory analysis of ART. Based on linked routine data, ART coverage by the time of delivery in mothers of live births increased from 67.4% in 2011 to 94.7% by 2019. This pattern of increasing antenatal ART coverage was also seen in the DHIS data, and Thembisa model, but was less consistent in the antenatal survey data. Higher ART coverage before pregnancy was observed in older age groups (Figure 1).

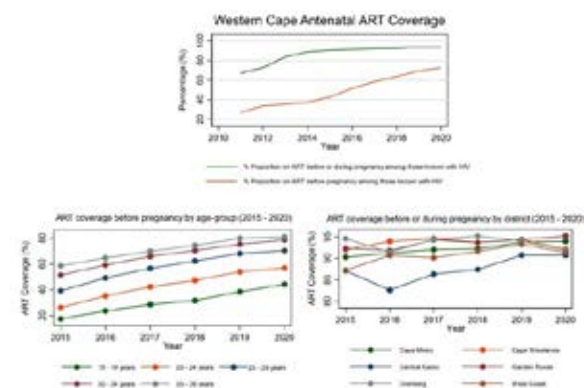


Figure 1. Temporal trends in antenatal ART coverage in the Western Cape by timing, district and age (PHDC).

**Conclusions:** This study is the first in a high-burden HIV setting to compare sentinel ART surveillance data with consolidated individuated administrative data. Although self-report in survey conditions showed high validity, more recent data sources based on self-report and medical records may be uncertain with increasing ART coverage over time. Linked individuated data offers a promising option for ART coverage estimation with greater granularity and efficiency.

## THPEC155

### Estimating the proportion and number of people with indications for HIV pre-exposure prophylaxis (HIV-PrEP) by key population, Canada, 2020

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**Background:** HIV-PrEP is a highly effective intervention that reduces the risk of acquiring HIV and is recommended for individuals at ongoing and increased HIV risk exposure. In Canada, two key populations most affected by HIV are gay, bisexual, and other men who have sex with men (gbMSM) and people who inject drugs (PWID).

**Methods:** We analyzed national data from surveys (CCHS 2015-2016, Sex Now 2019 and 2021, EMIS 2017, PWID Track 2010-2012, PWID Track 2017-2019) to determine the proportion of gbMSM and PWID with HIV-PrEP indications. Indications were based on Canadian PrEP guidelines (for example: number of sex partners, inject drug use, condom use, STI and etc). We first applied these proportions to the most recent gbMSM and PWID population size estimates developed by PHAC. We then examined the proportion of people with HIV-PrEP indications who were aware of it. Among these, we calculated the proportion of those actually taking it.

**Results:** Approximately 20.0% of gbMSM (81,015, 95% CI: 45,368-133,674) and 12.8% of PWID (11,558, 95% CI: 9,662-13,726) had indications for HIV-PrEP. According to the Sex Now online survey (2019 and 2021), 94% of gbMSM participants with HIV-PrEP indications were aware of it. Among them, 36.6%-44.2% had ever taken it and a further 31.2%-33.1% were taking it at the time of survey. From PWID Tracks 2017-2019 surveys, 10.0% of participants with HIV-PrEP indications knew about it, and of those 10.0% had ever taken it, and none were taking it at the time of survey.

**Conclusions:** The estimated gbMSM and PWID with HIV-PrEP indications far exceeds the number of people (all population) actually taking it in Canada estimated by PHAC from IQVIA database. Given the difference between knowledge and uptake of HIV-PrEP among gbMSM and PWID populations, this illustrates that more must be done to improve access (particularly for PWID).

## THPEC156

### Self-transfers among clients receiving HIV antiretroviral treatment in Zimbabwe, 2013-2023: findings from the national HIV case surveillance of Zimbabwe

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**Background:** Self-transferring between HIV antiretroviral treatment (ART) clinics among clients with HIV poses challenges for HIV programs, including misclassification of clients in care as lost to follow-up (LTFU). In Zimbabwe, each client enrolled in HIV care-and-treatment is assigned a unique national HIV antiretroviral number (UAN) that should be retained when transferring clinics.

Using the national HIV case surveillance (NCS) data, an individual-level dataset of people living with HIV from diagnosis throughout the continuum of care, we report trends and the extent of self-transferring among newly initiated ART clients (ARTC) in Zimbabwe, 2013-2023.

**Methods:** We analyzed data from clients who initiated ART between 1/1/2013 and 9/30/2023 with at least six-month follow-up from 44 districts across 10 provinces in Zimbabwe.

We defined a transfer as receiving HIV services at multiple clinics, and a self-transfer as a transfer without a documented transfer status and with  $\geq 2$  UANs used.

**Results:** Of 721,044 newly initiated ART, 71,909 (10%) attended  $\geq 2$  clinics with 57,672 (80%) of these identified as self-transfers as defined above.

Among all transfers, the proportion of self-transfers increased from 2013 (65%) to 2019 (86%) but decreased during the COVID-19 pandemic from 74% in 2020 to 66% in 2022 (Figure 1).

Self-transfers primarily moved to clinics within the same province [31% (Mashonaland-East)-85% (Bulawayo)].

The highest proportion of self-transfers moving to clinics in neighboring provinces sharing a border was 40% (Matabeleland South-Matabeleland North), and provinces without common borders was 48% (Bulawayo-Midlands). Of all clients who self-transferred, 71% were female, 41% were 25-34 years of age, and 60% were married/co-habitant ARTCs.

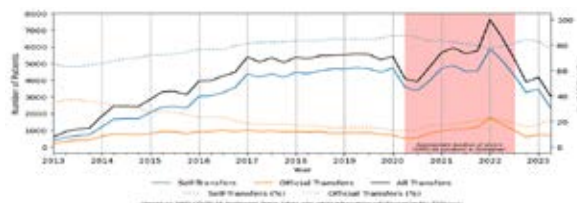


Figure 1. Trends of clinic transferring among patients with HIV receiving HIV antiretroviral treatment, Zimbabwe, 2013-2023.

**Conclusions:** Among those moving out of their initial ART clinics, 80% could be misclassified as LTFU. Prioritizing an online health information exchange system across clinics at each province may help track self-transfers. Additional studies to understand this population might help tailor pre-treatment counselling or service packages to reduce self-transferring.

## THPEC157

### Trends and characteristics of newly diagnosed HIV individuals aged 15 years and older, October 2019 to September 2023: findings from the National HIV Case Surveillance in Zimbabwe

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**Background:** Characterizing HIV acquisition is crucial to understanding the HIV epidemic and developing effective prevention strategies. We described HIV epidemic trends and estimated time from acquisition to diagnosis (TFATD) of newly diagnosed people living with HIV (NDx-PLWH) aged  $\geq 15$  years reported to the national HIV Case Surveillance (NCS), October 2019 to September 2023.

**Methods:** Of 145,916 PLWH aged  $\geq 15$  years diagnosed during the study period, we excluded 5,691 (4%) on HIV treatment before the diagnosis date. For 7,653 multifacility re-testers (5%), data from the first diagnosis were included. TFATD was estimated by halving the difference between last known HIV-negative test and HIV diagnosis dates.

Binomial logistic regression models were used to estimate the adjusted odds ratio (aOR) and 95% confidence intervals (95%CI) of factors associated with TFITD within six months (TFITD\_6mths).



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**Results:** Data from 140,225 NDx-PLWH from 44 districts throughout 10 provinces of Zimbabwe were analyzed. NDx-PLWH decreased from Quarter 3, 2019 to Quarter 3, 2023, with a notable decrease in Quarter 2, 2020 during the COVID-19 pandemic. The female to male ratio (2:1) and the difference by age—highest proportion for 25–34 group (34%)—remained the same across quarters. (Figure 1) Of 32,983 (24%) NDx-PLWH with a last known HIV-negative result, 12,471 (38%) had estimated TFITD-6mths. Females (aOR 1.3; 95%CI 1.2–1.4), NDx-PLWH aged 15–24 (aOR 3.25; 95%CI 2.8–3.8), married/co-habitant NDx-PLWH (aOR 1.2; 95%CI 1.1–1.2), or never married (aOR 1.2; 95%CI 1.1–1.4) had higher odds of having TFATD-6mths compared to reference groups.

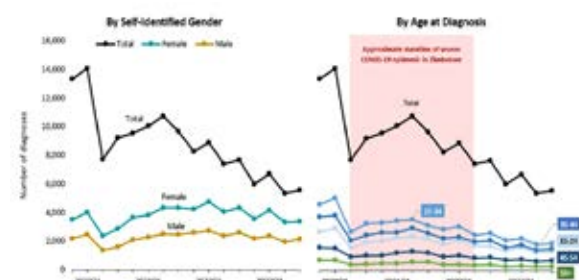


Figure 1. Trends of Newly Diagnosed People Living with HIV by Gender and Age Group, Zimbabwe, October 2019 to September 2023

**Conclusions:** The decrease in NDx-PLWH aged  $\geq 15$  from 2019–2023 indicates Zimbabwe is on track towards HIV epidemic control. Further analysis of gender and age differences among NDx-PLWH could help develop prevention strategies to reduce new acquisitions. Additional approaches for estimating HIV incidence among NDx-PLWH without any HIV-negative test results before acquiring HIV could be explored.

## THPEC158

Ten-year trends in the prevalence and incidence of HIV and syphilis among key populations in Vietnam, 2012–2022

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**Background:** The HIV epidemic in Vietnam is concentrated among key populations (KP), including men who have sex with men (MSM), people who inject drugs (PWID), and

female sex workers (FSW). This study aims to describe the magnitude and trends in HIV prevalence and incidence, and syphilis prevalence, among these KP between 2012–2022 to inform future public health programming.

**Methods:** Annual repeated cross-sectional surveys were conducted using venue-based sampling from 2012 to 2022 in 39 provinces of Vietnam. Participants provided blood samples for HIV (using strategy III for confirmation) and active syphilis testing (screening by rapid plasma reagin and confirming by *Treponema pallidum* hemagglutination).

The Osmond's Algorithm was used to estimate HIV incidence rates based on previous self-reported test results and history of risk behaviors. Cochran-Armitage trend test for proportions was used.

**Results:** From 2012 to 2022, 76,707 participants (13,518 MSM; 39,846 male PWID; and 33,121 FSW) participated in the surveys. Among MSM, HIV prevalence increased from 2.4% in 2012 to 12.5% in 2022 (p-value for trend <0.05), and HIV incidence increased from 0.62 to 2.82 per 100 person-years (py) (p < 0.001). Among male PWID, HIV prevalence varied from 10.2% to 14.2% with no significant trend in either direction, whereas HIV incidence decreased from 2.11 to 1.16 per 100 py (p=0.001) over the study period.

Among FSW, HIV prevalence varied between 1.8% and 3.6%, while HIV incidence varied from 0.64 to 0.35 per 100 py with no significant trend in either indicator. Syphilis prevalence increased in all three groups: MSM (0.8% to 8.9%), male PWID (0.8% to 2.0%), and FSW (0.4% to 2.2%) (all p<0.05).

**Conclusions:** The increase in HIV prevalence and incidence among MSM warrant implementation science and operational research to identify the best way to increase the uptake of PrEP and other prevention interventions for this population.

While HIV prevalence remains high among PWID and low and stable among FSW, the observed decline in HIV incidence among PWID and the stable HIV incidence among FSW suggest that existing prevention efforts may be having some impact.

The observed increasing syphilis prevalence highlights the importance of targeted syphilis screening and treatment among all three KP.

## THPEC159

### HIV incidence and risk factors in the era of interventions like oral pre-exposure prophylaxis

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**Background:** Current HIV incidence data is rare and prevention trials have become costly to conduct as HIV combination prevention packages must be provided yet they reduce HIV incidence. We determined HIV incidence and risk factors of acquisition in a HIV vaccine trial preparedness cohort.

**Methods:** Adults (18-45 years) at high risk of HIV acquisition were recruited from sex work venues along the trans-African highway and Lake Victoria fishing communities from July 2018 to October 2022. Consenting individuals were eligible if they tested HIV negative, had a sexually transmitted infection or had had unprotected sex with ≥2 partners or unprotected sex with a new partner in the past 3 months or unprotected sex in exchange for money/goods in the past month. Baseline data collected included demographics, HIV risk and sexual behaviour. Every six months, HIV risk and sexual behaviour was assessed using a standardised questionnaire. HIV counselling and testing (HCT) was provided at baseline and every 3 months. Baseline demographic data was summarised descriptively. HIV incidence was estimated as the number of participants who tested positive for HIV by the person-years (pyr) at risk expressed as per 100 pyr. Univariable and multivariable Poisson regression models were used to assess associations with HIV incidence.

**Results:** Of the 1422 individuals enrolled, 1115 (78.4%) attended ≥1 follow up visit of whom 69% were female, 55% ≤ 24 years of age. A total of 24 individuals acquired HIV during 900.3 person years of observation (PYO), an overall incidence rate (IR) of 2.7 PYO [95% Confidence Interval (CI): 1.8-4.0]. Female gender [adjusted incidence rate ratio (aIRR)=6.84 PYO, 95% CI 1.60-29.30], residing in fishing communities [aIRR=3.04 PYO, 95% CI 1.05-8.78] and use of recreational drugs in the past 3 months [aIRR=3.08 PYO, 95% CI 1.19-7.99] were baseline characteristics associated with incident HIV. During follow up, having sex after consuming alcohol [aIRR= 2.65 PYO, 95% CI 1.11-6.31], an STI diagnosis/treatment in the past 3 months [aIRR=2.52 PYO, 95% CI 1.09-5.80] were associated with HIV acquisition.

**Conclusions:** HIV incidence remains high especially among women despite available interventions like oral PrEP.

## THPEC160

### Development of the South African HIV prevention cascades using a standardized approach across four prevention methods

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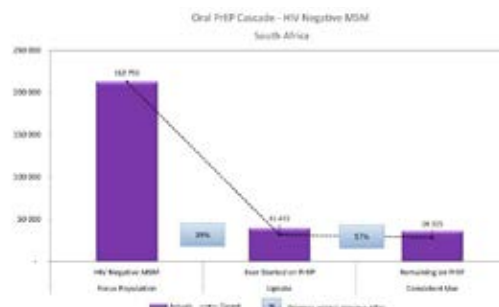
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**Background:** In South Africa, annual HIV transmissions must fall below 40,000 to achieve 2030 global targets. The National Department of Health developed standardized HIV prevention cascades to drive progress towards this target.

**Methods:** We used the UNAIDS prevention cascade approach, with pillars for focus population, coverage, uptake, and consistent use. Seven prevention methods were evaluated for cascade development based on need, suitability, and data availability. Routine government data sources were used whenever possible. Otherwise, national surveys and models were used.

**Results:** Four prevention methods met the evaluation criteria for cascade development at national and provincial levels of people 15 years and older for the period April 2022-March 2023. Of 25,826,383 sexually active people, 14,921,781 were reached with government-distributed condoms, 5,804,573 used condoms at last sex, and 1,631,085 used condoms consistently. Of 8,907,461 people at high risk of acquiring HIV, 1,175,293 ever started oral PrEP and 593,148 were remaining on oral PrEP in March 2023. Oral PrEP cascades were disaggregated for men who have sex with men, female sex workers, transgender women, and adolescent girls and young women. Of 75,701 people who inject drugs, 37,851 had access to opioid substitution therapy (OST), 30,280 were initiated on OST, and 24,224 were on OST for at least six months. Of 6,917,608 HIV negative uncircumcised men, 2,690,950 wanted to be circumcised, 254,019 were circumcised, and 195,595 attended a post-operative visit.



**Conclusions:** To our knowledge, this is the first time national South African cascades for multiple prevention methods were created using a standardized approach and routine data. Our greatest limitation was not being able to use a single routine data source, which resulted



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in combining multiple data sources into each cascade. However, discussions with program managers revealed the cascades to be useful tools for planning, advocacy, target setting and understanding gaps across pillars.

## THPEC161

High proportion of recent HIV infections among women, adolescents and young people: an analysis of recency testing data in Zambia

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**Background:** Recency assays use one or more biomarkers to identify whether HIV infection in a person is recent (usually within a year or less) or longstanding. Recency assays have been used to estimate incidence in representative cross-sectional surveys and in epidemiological studies to better understand the patterns and distributions of new and longstanding HIV infections. In Zambia the recency testing program was launched in 2020 and over 120,000 samples have been tested cumulatively.

We analyzed recency data to better understand the transmission patterns of HIV across geographical areas and subpopulations and to monitor the proportion of the population living with HIV who are diagnosed early versus late in infection.

**Methods:** Recency tests data from 6 provinces in Zambia between 2020 and 2023 was extracted from HIV case based surveillance database. Records that were found to be recent by the screening test but did not have the confirmatory test result were excluded. The PEPFAR Monitoring, Evaluation and Reporting version 2.7 definition was used to assign recency result as binary variable (recent or long-term) after the confirmatory test result came back. We further analyzed results by sex, age category and testing delivery entry point.

**Results:** Recent infections were 1,747 (3.4 %) out of a total 51,749 tests done. Females were found to be having a recent infection in 3.8 % of samples as opposed to males (2.7 %). The entry point with highest percentage was PMTCT (4.6 %) and lowest was index testing (2.9 %). Younger ages were associated with a higher proportion (15-19 years at 8.0 %; 20-24 years at 5.6 %, compared to 40-44 years at 2.2 % and 45-49 years at 1.8 %).

**Conclusions:** This analysis revealed that adolescent and young people and females of reproductive age are found with recent HIV infection in Zambia. This data correlates with findings from the 2021 Population based HIV Impact Assessment that shows high HIV incidence among female, adolescent and young people. While further analyses are needed to better understand social demographic factors linked with HIV transmission in this population, findings from this study justifies the urge to scale up age and population specific HIV prevention.

## THPEC162

Defining retention in care: insights from the uHambo Lwami study in KwaZulu-Natal, South Africa

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**Background:** Definitions of retention in HIV care vary substantially. The South African Department of Health defines disengagement as being 90+ days late for antiretroviral treatment pick-up. However, some individuals have brief periods of care disruption that do not meet this threshold. Unique definitions of retention highlight various aspects of care journeys and may be important to the development of cost-efficient engagement interventions.

**Methods:** We extracted health records for individuals initiating HIV care at 6 public health care clinics in KwaZulu-Natal Province, South Africa between March 2021-September 2022. Loss-to-clinic was estimated using three distinct definitions: >14 days, >30 days and >90 days late to an individual's last scheduled appointment on or before the individual's 6-month anniversary of enrolment into care. Descriptive statistics were used to characterize outcomes overall and by clinic.

**Results:** 2,462 individuals were included from 5 urban facilities and 1 rural facility. A majority of individuals were female (n=1528; 62.2%); median age was 32 (IQR: 26-38 years). Approximately 42% of individuals (n=1043; 95% CI: 41.4, 43.4) were >14 days late, 35% (n=863; 95% CI: 34.1, 36.0) >30 days late, and 30% (n=726; 95% CI: 28.6, 30.4) >90 days late in the population overall. Among those who were >14 days late, 17.2% returned by day 30 and 30.4% by day 90. Variability in absolute proportions of lost-to-clinic varied across clinics, but patterns based on definitions were largely similar.



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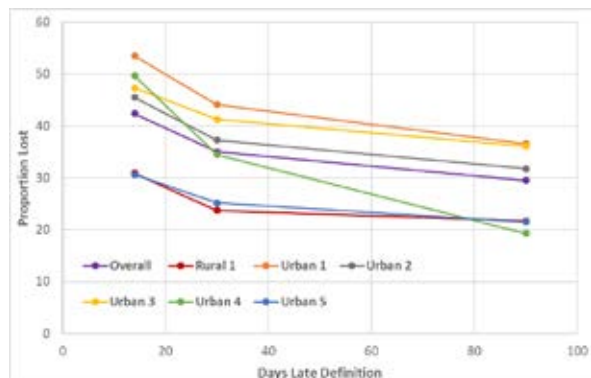
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**Conclusions:** Overall, 42% of individuals were >14 days late to care with many returning before day 30. As such, resource-intensive interventions (e.g. tracking and tracing) may be most warranted after 30-day lapses since many people naturally return prior to this. This underscores the importance of leveraging unique retention definitions to inform cost-efficient engagement interventions. Future research should investigate true longitudinal engagement outcomes to further enrich our understanding of this crucial treatment outcome.

## THPEC163

**Trends in advanced HIV disease (AHD) among adults living with HIV from two time points in Eswatini: findings from population-based HIV impact assessments, SHIMS2 2016 and SHIMS3 2021**

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**Background:** Antiretroviral therapy (ART) scale-up in the 'test and treat' era has led to a global decline in advanced HIV disease (AHD), defined as CD4 <200 cells/μL. However, early mortality among people living with HIV (PLHIV) with AHD remains an issue in high burden countries in sub-Saharan Africa.

We examined trends in AHD using data from population-based HIV impact assessments in Eswatini (SHIMS2 & 3) conducted in 2016-17 and 2021.

**Methods:** The analysis was restricted to PLHIV aged 15-80 years tested at the household using the national HIV testing algorithm and who had CD4 and qualitative ARV detection results. Awareness and ART status were based on self-report and detectable ARVs. Viral suppression was

defined as <1000 copies/mL. AHD prevalence overall and stratified by demographic and clinical attributes were compared between survey rounds using 95% confidence intervals and Rao-Scott Chi Square tests. Jackknife method with replicate weights were applied.

**Results:** Among the 3000 and 2893 PLHIV from SHIMS2 & 3, AHD declined significantly overall [7.6% (95% CI:6.6-8.6) to 3.8% (95% CI:3.1-4.4)] and by gender [men: 11.4% (95% CI:9.3,13.5) to 5.8% (95% CI:4.3,7.4); women: 5.6% (95% CI:4.6-6.6) to 2.6% (95% CI:1.9-3.3)]. AHD also declined significantly by age (15-54 years), region, marital status, and education as well as among PLHIV aware of their HIV status, on ART, and virally suppressed (p<0.05). No difference in AHD prevalence was found among PLHIV unaware of their HIV status: 13.4% (95% CI:9.6-17.2) to 12.6 (95% CI:7.2-18.1); or those aware and not on ART: 22.3% (95% CI:12.4-32.2) to 16.1% (95% CI:9.7-22.5). The latter was evident among men compared to women [AHD among aware, not on ART, SHIMS2 to SHIMS3: men 21.5% (95% CI: 9.5, 38.0) to 26.0% (95% CI: 9.6, 42.3) versus women 22.7% (95% CI:10.6, 34.7) to 15.3% (95% CI:8.3, 22.3)].

**Conclusions:** Significant declines of AHD prevalence were noted among PLHIV aware of their HIV status, on ART, and virally suppressed, a trend not observed in those not aware of their status, or aware but not on ART, especially among men. Targeted interventions for this group such as active case finding, linkage, and retention in care are warranted.

## THPEC164

**Using new US Census Bureau gridded population data to derive subnational PLHIV and ART coverage estimates in Copperbelt countries, Zambia and Democratic Republic of the Congo**

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**Background:** Population estimates are a critical first component guiding public health programming. Knowing how many people there are - and where they are - is necessary for every aspect of epidemic response. In 2022, U.S. Census Bureau released an updated population dataset





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(Demobase Copperbelt) for Zambia and Democratic Republic of Congo (DRC) where the most recent population censuses were 2 and 40 years ago respectively.

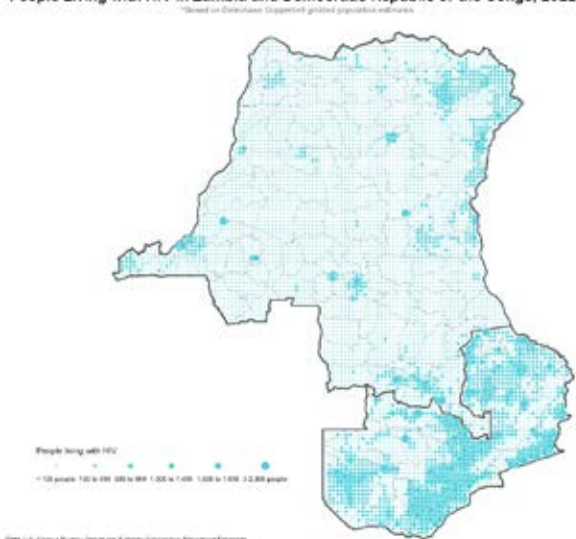
We used these data to derive subnational PLHIV (people living with HIV) for both countries and antiretroviral therapy (ART) coverage estimates for Zambia. We then compared these results to commonly-used data sources, AIDSInfo (national) and Naomi (national and subnational data).

**Methods:** U.S. Census Demobase population and Naomi HIV prevalence estimates were used to derive PLHIV estimates at a 100m<sup>2</sup> resolution for both countries. For Zambia, we used Naomi data to estimate ART coverage by district. We then compared Demobase-derived estimates to Naomi and AIDSInfo PLHIV and ART figures.

**Results:** National Demobase PLHIV estimates were generally lower - and ART coverage estimates higher - than alternative estimates (Naomi/AIDSInfo), though within AIDSInfo estimate bounds. We found congruence between Demobase estimates and alternatives that used a different modeling approach in many, though not all, subnational areas.

		NATIONAL (Estimate [Lower-Upper Bounds])			SUBNATIONAL (Mean [Min-Max])	
		Demobase	Naomi	AIDSInfo	2nd-Order Unit (n)	Demobase Naomi
Zambia	PLHIV (Thousands)	1,375	1,411 [1,367-1,458]	1,400 [1,300-1,500]	District (116)	13 [0.5-383.0] 12 [0.5-275.0]
	ART Coverage (%)	92.3	89.9 [84.6-93.6]	90.0 [86.0-96.0]		92.2 [28.3-190.0] 89.3 [76.3-96.1]
DRC	PLHIV (Thousands)	420	490 [473-511]	490 [400-590]	Health Zone (164)	2 [0.04-42.0] 3 [0.0-95.0]

People Living with HIV in Zambia and Democratic Republic of the Congo, 2022



**Conclusions:** While different population estimation approaches have advantages and disadvantages, the Demobase method is more approachable than some alternatives for countries looking to build internal gridded population estimates. Results between population data alternatives were generally congruent, with implications for utility across countries.

Updated PLHIV and ART coverage figures were respectively lower and higher than Naomi and AIDSInfo estimates for both countries. If accurate, this could indicate that existing PLHIV estimates may need reconsideration in some subnational areas.

## THPEC165

### Viral load suppression and low-level-viremia in adults in Tanzania: results from the Tanzania HIV impact survey 2022-2023

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**Background:** Viral load suppression (VLS) among people living with HIV (PLHIV), defined as <1,000 copies per milliliter (copies/mL), has been adopted as the routine approach in monitoring the effectiveness of HIV treatment in Tanzania since 2016. However, information on PLHIV with low-level viremia (LLV) and undetectable viral loads is limited.

We analyzed Tanzania HIV Impact Survey (THIS) 2022-2023 data to assess different levels of viral load (VL) to inform HIV programming especially enhancement of treatment adherence among PLHIV in Tanzania.

**Methods:** THIS 2022-2023 was a nationally representative, cross-sectional household survey with stratified, two-stage cluster design. Participants aged ≥15 years were offered rapid HIV testing with subsequent laboratory confirmatory and VL testing. Three VL levels were computed from quantitative results: PLHIV with <50 copies/mL (VL<50); PLHIV with 50-999 copies/mL (LLV); and PLHIV with ≥1000 copies/mL (unsuppressed VL). We report population estimates as percentages (95% confidence interval), overall and by age and sex. The analysis accounted for the complex survey design and survey weights using jackknife estimation.



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**Results:** A total of 1,849 PLHIV who had VL result available were included in the analysis. Overall, 62% (59%-65%) of adults aged  $\geq 15$  years had VL<50, 16% (14%-18%) had LLV, and 22% (20%-25%) had unsuppressed VL. Among females, 67% (63%-70%) had VL<50, 14% (12%-17%) had LLV, and 19% (17%-22%) had unsuppressed VL; among males, 53% (48%-59%) had VL<50, 19% (15%-24%) had LLV, and 28% (23%-33%) had unsuppressed VL. Among 15-24 year-olds, 43% (32%-56%) had VL<50, 16% (9%-28%) had LLV, and 40% (30%-52%) had unsuppressed VL; among 25-49 year-olds, 63% (59%-66%) had VL<50, 14% (12%-17%) had LLV, and 23% (20%-26%) had unsuppressed VL; among participants aged  $\geq 50$  years, 66% (61%-70%) had VL<50, 19% (16%-23%) had LLV, and 15% (12%-19%) had unsuppressed VL.

**Conclusions:** Approximately six out of ten PLHIV had VL<50, with a markedly lower proportion reported for young adults and males. The proportion of LLV by age and sex, ranged from 14-19%, underscoring the importance of more refined monitoring of VL<1,000 copies/mL outcomes in clinical settings and programmatic indicators especially targeted treatment enhancement and optimization among young adults and males to improve VLS in Tanzania.

## THPEC166

### Geospatial dynamics of HIV prevalence: a study on the impact of road proximity in rural Rwanda

H.S. Muzungu<sup>1,2</sup>

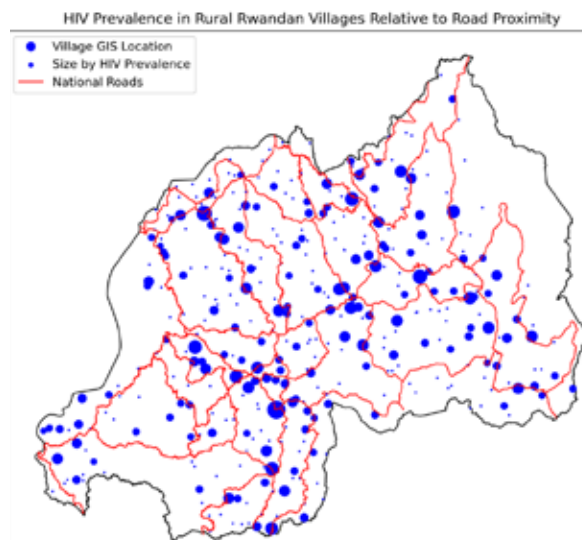
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**Background:** Despite maintaining a stable overall HIV prevalence of 3% over the past two decades, Rwanda has exhibited significant disparities among subpopulations, characterized by variations across rural and urban settings, gender, and other demographic categories. Efforts to comprehend and address these distinctions have been extensive; however, a notable void persists in understanding the impact of road proximity on HIV prevalence in rural Rwanda.

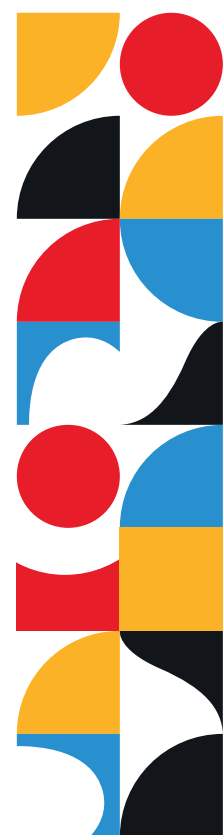
**Methods:** This study employed data from the Rwanda Demographic and Health Survey 2015, particularly HIV and GIS data. The HIV test results were aggregated at the village level to provide a measure of HIV prevalence. The independent variable was calculated by measuring the distance from the center of the village to the nearest national road. Linear regression analysis was conducted to determine the effect of distance to the national road on HIV prevalence at the village level.

**Results:** This study included rural 379 villages distributed across all the districts of Rwanda. The Average HIV prevalence was 18 cases per 1000 people while the average distance to the national road was 2.8 kilometers. The regression model yielded statistically significant results regarding the influence of distance to the main road on HIV

Prevalence. Notably, the coefficient for the distance to national roads was -1.9438 ( $p < 0.001$ ), indicating a negative association. On average, each one-kilometer increase in distance corresponded to an expected decrease of 1.9438 cases of HIV per 1000 people.



**Conclusions:** This study revealed a significant negative association between the distance to national roads and HIV prevalence in rural Rwandan. The results suggest practical implications for public health interventions, emphasizing the potential effectiveness of strategies targeting remote areas. These findings emphasize the importance of considering spatial factors when designing future interventions.







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## THPEC167

### High prevalence of transmitted and acquired drug resistance mutations among newly HIV diagnosed neonates and infants from Mozambique

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**Background:** Postnatal prophylaxis (PNP) and very early neonatal antiretroviral treatment (ART) within the first four weeks of life currently rely on nevirapine-based regimens. The efficacy of prophylactic or therapeutic regimens is potentially limited by viruses with drug resistance mutations (DRMs) acquired from mothers living with HIV (MLWH).

**Methods:** In the LIFE study conducted in Mozambique and Tanzania, we enrolled 6505 MLWH and their 6602 infants at the time of delivery. During the first 12 weeks, we identified 125 infants diagnosed with HIV (1.9%; 95% CI: 1.6, 2.3) who were followed-up until 18 months of age. Genotypic resistance testing (GRT) was performed by Sanger sequencing for nucleot(s)ide (NRTI) and non-nucleotide (NNRTI) reverse transcription inhibitors, protease inhibitors (PI), and integrase strand transfer inhibitors (INSTI).

**Results:** At delivery, 76.4% of MLWH were on a dolutegravir-based ART regimen, 22.1% were on an efavirenz-based regimen, and 1.2% were not on ART. The study neonatal ART regimen consisted of zidovudine, lamivudine, and nevirapine syrups. After attaining one month of age and 3kg weight, infants were initiated on/transitioned to abacavir+lamivudine dispersible tabs, plus lopinavir/ritonavir syrup or granules, and in 29.7% of cases, lopinavir/ritonavir was later switched to dolutegravir.

We performed GRT at baseline for 82 MLWH with HIV-positive infants and for 147 samples collected from 73 infants during the follow-up. Among mothers, DRM against NRTI were detected in 7.3% (mostly M184IV), NNRTI in 40.2% (mostly K103NT, E138AGKQ), and none against PI or IN-

STI. Among infants, we detected DRM against NRTI in 32% (mostly M184IV, L74V), NNRTI in 53.7% (mostly K103NT, E138AGKQ, Y181YCF), PI in 1% (V32I), and INSTI in 2% (S147SC). The proportion of DRMs against NRTI among infants was significantly higher than in mothers ( $p=0.004$ ).

**Conclusions:** We observed high rates of transmitted DRMs against NNRTIs in infants born to MLWH, which may have affected the efficacy of PNP prior to HIV diagnosis and ART in neonates initiating nevirapine-based treatment. Maternally transmitted DRMs and acquired DRMs resulting from ART adherence challenges in neonates and infants, particularly DRMs against NRTIs, may be associated with inefficient treatment response. Optimized PNP and ART regimens for neonates are urgently needed.

## THPEC168

### The added value of electronic readers for HIV-1 rapid testing for recent infection (RTRI): an evaluation panel data analysis from 6 countries

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**Background:** In sub-Saharan Africa (SSA), where HIV incidence is declining, HIV prevention programs need to reach those most-at-risk to remain cost-effective. Some SSA settings administer rapid tests for recent HIV infection (RTRI) upon HIV diagnosis to identify social networks or geographic areas where prevention is needed. Currently, technicians interpret RTRI results by visually inspecting test strips. We investigated how the use of electronic readers may impact RTRI performance.

**Methods:** We used data from the Consortium for the Evaluation and Performance of HIV Incidence Assays (CEPHIA), which enrolled participants in 6 countries (4 in SSA) with known dates of last testing negative and first testing positive for HIV, providing estimated days since detectable infection (EDDI). We calculated sensitivity and specificity of visual versus electronic RTRI read-out (Asante HIV-1 Rapid Recency Assay, Sedia Biosciences, Beaverton, Oregon, USA) for identifying individuals <1 year since EDDI when used according to US Centers for Disease Control and Prevention guidelines.

**Results:** Among 627 participants with available EDDI (52% with EDDI <1 year), visual RTRI had 16.9% sensitivity (95% CI: 14.2-19.5%) and 99.3% specificity (95% CI: 98.9-99.8%) for identifying EDDI <1 year; in SSA ( $n=332$ ), sensitivity was 19.6% (95% CI: 16.0-23.3%) and specificity 98.8% (95% CI: 98.0-99.7%). Electronic read-out in all participants had 34.6% sensitivity (95% CI: 31.2-38.0%) and 97.8% specificity (95% CI: 96.9-98.6%); in SSA, sensitivity was 37.2% (95% CI: 32.7-41.7%) and specificity 96.7% (95% CI: 95.3-98.1%). Compared to visual RTRI, electronic read-out had significantly



higher sensitivity ( $p < 0.001$ ) and lower specificity ( $p < 0.001$ ) in all participants and in SSA. Among non-recent HIV cases, false recency rate (1-specificity) increased from 0.7% with visual read-out (0.8% in men, 0.4% in women) to 2.2% with electronic read-out (2.2% in men, 2.3% in women).

**Conclusions:** Electronic RTRI read-out could double detection of recent HIV acquisitions compared to visual inspection, but could triple false recent results. Electronic readers may provide more value when comprehensive outbreak detection is paramount, such as in HIV elimination efforts, but may offer less value in avoiding "false alarms" under resource constraints. Research is needed to further understand RTRI performance and the added value of electronic readers for detecting recent HIV acquisition.

## THPEC169

### Early lessons learnt from preparing for triple vertical elimination of HIV, syphilis and hepatitis B in Malawi

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**Background:** Malawi has made tremendous progress towards the elimination of vertical transmission of HIV since the adoption of the Option B+ in 2011. Since 2010, an estimated 124,000 HIV child cases have been averted. The final HIV transmission rate by the end of breastfeeding reached 5.5% in 2023. However, we acknowledge that need for more effort in screening for syphilis and HBV. Malawi aims to eliminate vertical transmission of HIV, Syphilis and Hepatitis B by 2030 and has officially enrolled with the WHO path to triple elimination process. This aims to confirm significant progress towards elimination of the vertical transmission of all 3 disease conditions.

**Description:** Led by MOH, the following preparations were made: established the steering committee; developed the roadmap for the validation process; developed the national guidelines on viral hepatitis prevention and treatment; approval of Hep B birth dose, conducted orientation for all district program coordinators and their management teams; streamlined path to elimination into the national quarterly eMTCT mentorship checklist; completed the country assessment checklist to identify gap in PMTCT programme performance; trained the National Validation Committee facilitated by UNICEF, UNAIDS and WHO.

**Lessons learned:** The results from the routine data tracking of key PMTCT indicators from 2018 to 2023 shows noticeable improvement in all weak performing indicators before start of PTE (Fig 1). Quarterly performance review and facility mentorship were the main drivers behind this

improvement. The program started tracking ANC women tested for Hepatitis B in January 2023, and this improved from 5% in January to 49% in December 2023.



**Conclusions/Next steps:** The Path to Elimination framework has been an effective tool for improved program coordination and targeted mentorship. Through PTE, there is more stakeholder awareness, commitment, and additional resources have been mobilized for syphilis and HBV. Lessons and experiences shared will be valuable to other countries aspiring to achieve similar goals.

## THPEC170

### Strengthening enhanced adherence counselling to people living with HIV with a high viral load and suppression in Northern Cameroon

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**Background:** National guidelines recommend assessing compliance and providing the necessary support to people living with HIV (PLHIV) with an unsuppressed viral load (VL) (>1000 copies/ mL) and repeating the VL test after 3 months of optimal adherence. This requires at least 3 monthly sessions for enhanced adherence counselling. However, there is very little evidence regarding the effect of these three sessions on viral suppression among PLHIV on ARV treatment (ART) in the northern part of Cameroon. This study aims to help fill this gap.

**Methods:** A retrospective cohort study was carried out with a sample consisting of all PLHIV who received a non-suppressed VL result between 2021 and 2023 and who had a control VL result carried out after sessions of enhanced adherence counselling with tips for strengthening adherence.

**Results:** A total of 1,640 PLHIV, followed in 75 health facilities supported by ICAP, of which 67.4% were women; 94.1% were at least 15 years old. The average duration on ART was 4.4 years with a standard deviation of 4.1 years. TDF 3TC DTG was the most common protocol in this group



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(76.6%) and secondly TDF 3TC EFV (14.5%). The majority of PLHIV who participated in at least 3 counseling sessions to strengthen compliance were in the majority (96.5%). Viral suppression after counseling sessions was 86.5%. After adjusting for the variables sex, age at initiation, duration on ART and ARV protocol, the viral suppression rate of PLHIV who participated in less than three counseling sessions before the control VL is significantly lower than that of their counterparts who completed at least 3 sessions [Odds ratio (OR)=0.29; p=0.004].

Furthermore, compared to PLHIV who had a VL  $\leq 10,000$  copies/ mL before the counseling sessions, those who had a VL between 10,000 and 99,999 copies/ mL and  $\geq 100,000$  copies/ mL have lower odds of viral suppression (OR=0.56; p=0.004 and OR=0.51; p=0.002).

**Conclusions:** The results of this work reinforce the need to adhere to guidelines for managing high viral loads. PLHIV with very high VL are the most at risk of non-suppression despite counseling sessions. More attention should be paid to this group.

## Modelling the HIV pandemic

### THPEC171

Expanding PrEP coverage with long-acting injectable cabotegravir (CAB-LA) to achieve HIV elimination among men who have sex with men (MSM) in Taiwan: a mathematical modelling study

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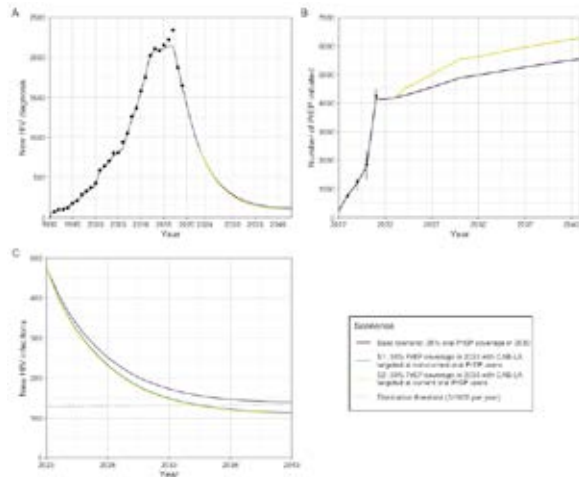
**Background:** The HPTN 083/084 trials demonstrated the superiority of long-acting injectable cabotegravir (CAB-LA) over tenofovir disoproxil fumarate/emtricitabine (TDF/FTC) for HIV pre-exposure prophylaxis (PrEP). For people struggling with adhering to oral PrEP, CAB-LA has a potential to improve overall PrEP effectiveness.

This study aims to evaluate whether introducing CAB-LA to current and non-current oral PrEP users among MSM in Taiwan could reach the target of HIV elimination.

**Methods:** A dynamic mathematical model, incorporating HIV transmission and progression with PrEP use, was calibrated to the Taiwanese MSM HIV epidemic. MSM were stratified by three age groups and two sexual activity levels. Oral PrEP and CAB-LA effectiveness were set at 86% and 91%. Increasing PrEP coverage to 30% in 2030 was modelled by either introducing CAB-LA to non-current oral PrEP users (scenario 1, S1), or 15% of current oral PrEP users switching to CAB-LA which improves oral PrEP effectiveness to 90% (S2).

The impact on the HIV epidemic trajectory was evaluated over 20 years, compared to the base scenario, from an HIV elimination perspective ( $<1$  newly HIV acquisition/1000 MSM per year).

**Results:** In the base scenario, oral PrEP coverage was projected to rise from 18% to 25% among young and high-sexually-active MSM between 2022 and 2030, but could not achieve HIV elimination over 20 years. Conversely, expanding PrEP coverage to 30% by 2030 with CAB-LA averted 10.6% and 12.1% of new HIV acquisition over 20 years among young and high-sexually-active MSM in S1 and S2 and could achieve HIV elimination by 2036 and 2035 in S1 and S2, respectively.



**Conclusions:** By extending PrEP coverage to 30% by 2030 through the use of CAB-LA, it is feasible to achieve HIV elimination within the next two decades. Prioritizing CAB-LA to current oral PrEP users with suboptimal adherence could avert more HIV acquisitions and accelerate HIV elimination among MSM.

## THPEC172

### Real-world adherence of HIV-1 oral pre-exposure prophylaxis regimens in the United States: a group-based trajectory modeling approach

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**Background:** In people using oral HIV-1 pre-exposure prophylaxis (PrEP), effectiveness depends on adherence. We used group-based trajectory modeling (GBTM) to describe real-world, population-level adherence to oral PrEP regimens.

**Methods:** PrEP-naïve adults (≥18 years) receiving oral F/TDF or F/TAF for HIV-1 PrEP between January 2021–December 2022 were identified from the IQVIA LRx Dx database. Following first prescription, adherence (defined as prescription refill) was observed over seven 30-day windows, with proportion of days covered (PDC) measured every 30 days. As new HIV-1 infections resulted in PrEP discontinuation and disrupted adherence patterns, individuals acquiring HIV-1 during adherence observation windows were excluded; potential for survivor bias was assessed.

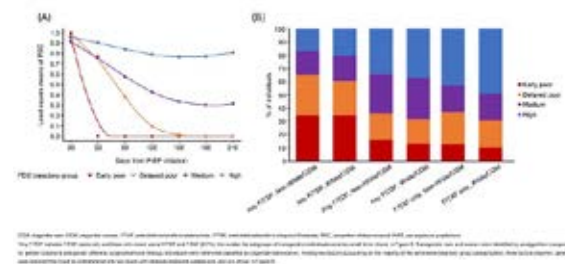
GBTM was used to identify PDC-based adherence trajectories. A classification tree model determined driving factors of adherence trajectories from a range of demographic characteristics and baseline conditions.

**Results:** Overall, 76,212 individuals (median age at PrEP initiation: 33 years) were classified into four adherence-trajectory groups: high (37%), medium (26%), early-poor (21%), and delayed-poor (15%) adherence (Figure A).

The primary determinant of adherence trajectories was choice of regimen, with 46% of F/TAF users in high and 12% in early-poor group, and 30% of F/TDF users in high and 19% in early-poor group. Gender (73% importance relative to regimen choice) and race (20%) were also key factors. Among subgroups defined by these factors, most White cisgender men using F/TAF demonstrated high adherence, while most cisgender women using F/TDF had poor adherence (Figure B).

Furthermore, when new HIV-1 infections were observed after adherence observation windows, the early-poor group had significantly higher HIV-1 incidence versus the high adherence group ( $p=0.01$ ). Individuals excluded due to seroconversion (0.9%) had low mean adherence (PDC=0.5), suggesting estimates are conservative.

Figure. (A) Proportion of days covered for oral PrEP adherence-trajectory groups. (B) Individual characteristics by adherence-trajectory groups.



**Conclusions:** GBTM-identified, real-world, population-level adherence patterns to oral PrEP regimens underscore the importance of strategies for increasing adherence in priority populations to reduce HIV-1 transmission.

## THPEC173

### A novel modelling framework to simulate the effects of HIV stigma on HIV transmission dynamics

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**Background:** HIV remains a global public health challenge, with social determinants such as stigma influencing transmission dynamics, access to testing, and treatment. HIV-related stigma significantly shapes both indi-



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vidual behavior and community responses to HIV. However, modeling approaches have rarely represented the highly complex role of stigma in HIV epidemics. Our study introduces an innovative modeling framework designed to disentangle the intricate interplay between HIV-related stigma and HIV transmission dynamics.

**Methods:** Our model focuses on how anticipated, internalized, and experienced HIV stigma affect HIV testing, antiretroviral treatment initiation, and treatment adherence. We built an individual-based model representing the HIV epidemic (referred to as HIV-IBM) in a USA-like population of 3 million individuals. The HIV-IBM accounted for community demography, same-sex and heterosexual encounters among simulated individuals, healthcare-seeking patterns, drug injection behaviors, healthcare accessibility, and treatment. Stigma parameters were based on a scoping review focused on the prevalence and effects of stigma in people living with and without HIV. The HIV-IBM was used to assess effects of interventions targeting different types of simulated stigma. We tested reductions of stigma by 50% and 100% across the simulated population and performed a sensitivity analysis to identify the effect of each type of stigma on the simulated HIV epidemic.

**Results:** The HIV-IBM without reduced stigma had an annual incidence of 12.6 (95% CI: 9.2-14.4) new cases per 100,000 people. Reducing the overall level of stigma in the population by 50% resulted in an annual incidence of 8.3 (95% CI: 6.3-10.1) new infections per 100,000 people. A 100% reduction in stigma resulted in an annual incidence of just 5.3 (95% CI: 2.3-7.1) new infections per 100,000 people. The sensitivity analysis showed that outcomes resulting from interventions targeting each type of stigma were highly heterogeneous.

**Conclusions:** The result of this study showed that reducing HIV-related stigma could have a large impact on HIV incidence. Our model framework provides a dynamic approach to understanding the role of stigma in HIV transmission. This novel approach could facilitate the exploration of stigma reduction strategies and offer insights to inform evidence-based policies and interventions for reducing stigma and curtailing HIV.

## THPEC174

Starsim: a new agent-based framework for modeling HIV and STI co-transmission

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**Background:** Compared to other modeling approaches, agent-based models (ABMs) allow for detailed simulation of specific scenarios, and enable comparison with

a broader range of data. Over the last several years, we developed a suite of ABMs that have seen widespread use for modeling different diseases, including COVID-19 (Covasim), human papillomavirus (HPVsim), and family planning (FPSim).

Recently, we codified the principles and philosophies common across these models into a standalone tool called "Starsim" (<http://starsim.org>). Starsim is capable of simulating co-transmission of HIV with other sexually transmitted infections (STIs), other transmissible diseases (such as TB), and non-communicable diseases.

**Methods:** Starsim is a modeling framework containing modules representing different diseases (including their natural history and transmission), contact networks (including sexual, respiratory, and maternal), demographics, and interventions. It is written in pure Python, allowing for simplicity, flexibility, and high performance.

It is completely free and fully open-source under the MIT license. These choices are intended to maximize ease of use and lower the barrier for adoption and modification by researchers.

**Results:** Since 2020, we have trained over 200 people to use our suite of ABMs. We found that the Starsim approach was simple enough that most users were able to quickly learn these tools, and flexible enough to model users' requested policy scenarios. For example, we were able to rapidly develop and calibrate a lightweight HIV-HPV model that could answer questions about the effectiveness of targeted HPV vaccination.

Starsim can be rapidly adapted to new contexts thanks to its modular structure, array-based computation, parallelization, and pre-loading of commonly used data.

**Conclusions:** Many of the leading HIV models were developed prior to (and helped usher in) the modern era of test-and-treat and 95-95-95 targets. Consequently, these models have typically focused on specific treatment and prevention programs (such as ART and circumcision) and the HIV care continuum. In contrast, the Starsim framework is designed to give users the flexibility to adapt the model to their local epidemic context and policy questions, such as the integration of HIV and non-HIV services, coinfections and comorbidities, and social determinants of health: factors that have become increasingly important considerations for sustainable HIV epidemic control.

## THPEC175

Awareness and willingness to use oral HIV Pre-exposure prophylaxis (PrEP) among HIV-negative women who use non-barrier contraception in Zimbabwe: findings from the Zimbabwe population-based HIV Impact Assessment, 2020

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**Background:** In Zimbabwe, HIV incidence is highest among women of reproductive age. PrEP has been prioritized for specific populations, including pregnant and breastfeeding women, but little is known about PrEP awareness and acceptability among reproductive age women accessing contraceptives. We evaluated the association between non-barrier contraception use and awareness of and willingness to use PrEP among non-pregnant women in Zimbabwe.

**Methods:** Using publicly available data from the 2020 Zimbabwe Population-based HIV Impact Assessment survey, we compared awareness of and willingness to use oral PrEP between ever sexually active, HIV-negative, non-pregnant women aged 15-44 currently using vs. not currently using non-barrier contraception (pills, intrauterine device, injectable, or implant) via weighted bivariate logistic regression. We then examined the association between non-barrier contraception use and awareness of and willingness to use PrEP in weighted multivariable regression, controlling for age, marital status, residence (urban/rural), household wealth index, multiple sexual partners, sex work, and reported having a sexual partner with HIV.

**Results:** Among the study population (n=5,147), median age was 28 (IQR 22.3-34.4) and over half reported current use of non-barrier contraception (63.4%; 95% CI 61.6-65.2%). There were no significant differences in awareness of (10.0% vs. 11.5%) or willingness to use (64.7% vs. 63.4%) PrEP between women who did and did not use non-barrier contraception in bivariate analysis. In multivariable analysis, willingness to use PrEP was significantly higher among women using non-barrier contraception compared to women who did not (aOR 1.17; 95% CI 1.01-1.35, p=0.04), while awareness of PrEP did not differ significantly between the two populations (aOR 1.01; 95% CI 0.78-1.29, p=0.97).

**Conclusions:** Willingness to use PrEP was higher among women using non-barrier contraception vs. those who did not when controlling for demographics and HIV risk factors. In this population, willingness to use PrEP may be related to acceptability of biomedical contraception. Ensuring that PrEP is offered at contraception service delivery points could increase access to PrEP among women in Zimbabwe. Given the high contraception use among women of reproductive age and ongoing need for additional HIV prevention choices, these findings help identify potential early adopters and further research opportunities for multipurpose technologies such as the dual prevention pill.

## THPEC176

Impact of changing PrEP regimens on retention among men who have sex with men in Hanoi, Vietnam (2020-2023)

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**Background:** Understanding retention patterns among people who use HIV pre-exposure prophylaxis (PrEP) is necessary to achieve its protective benefits. We examined the association of PrEP retention with use of daily, event-driven (ED), or regimen switching reported at last visit among men who have sex with men (MSM) in Hanoi, Vietnam.

**Methods:** Between April 2020 and February 2023, we collected data from PrEP clients at Hanoi Medical University. We restricted analysis to those who were male at birth, identified as male, reported sex with men, and returned for follow-up. The routine follow-up schedule was: 30 days after the initial visit, 60 days after the first revisit, and every 90 days thereafter. Clients were prescribed either ED or daily PrEP at the initial visit; at subsequent visits, clients reported the regimen used since the prior visit. For analyses, we defined three categories of PrEP use: ED-PrEP exclusively, daily PrEP exclusively, and switching between the two. The outcome was time to first discontinuation in the study period, defined as missing a scheduled visit by >30 days. We performed survival analysis using Kaplan-Meier curves.

**Results:** In total, 2,115 people were included; 61.1% (n=1,292) reported using daily PrEP exclusively, 10.5% (n=221) using ED-PrEP exclusively, and 20.7% (n=602) switched PrEP regimens. Among those who switched, 425 (70.6%) switched



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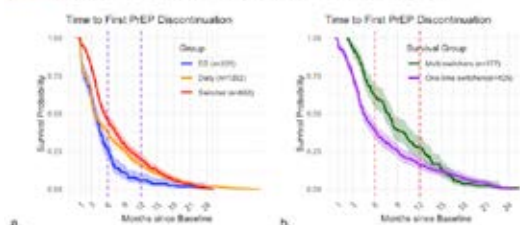
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once and 177 (29.4%) switched multiple times. Median time to first discontinuation was 105 days [IQR: 80-204] among those reporting ED-PrEP at last visit, 104 days [IQR: 119-411] among those reporting daily PrEP, and 136 days [IQR: 123-386] among those who switched (multi-switchers: 231 days; one-time switchers: 133 days) (Figure 1).

Figure 1. Kaplan-Meier Curves of Time to First PrEP Discontinuation among 2,115 people in a PrEP clinic in Hanoi, Vietnam from April 2020 to February 2023. (a) Time to First PrEP Discontinuation comparing ED-PrEP, Daily PrEP, and Switcher groups and (b) Time to First PrEP Discontinuation comparing one-time switchers and multi-switchers.



**Conclusions:** We provide real-world data from MSM in Vietnam that switching between PrEP regimens is common. Those who switched had longer periods of retention during the study period. This supports offering PrEP clients in global settings an option to switch regimens.

## THPEC177

Empowering prevention: patient-centered self-collection for STI screening and its implications for HIV prevention and new technologies in Kenyan women

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**Background:** *Chlamydia trachomatis* poses a significant public health challenge among sexually active women, exacerbated by limited disease awareness. Traditional STI screening methods face barriers due to the intimate nature of the procedure, prompting exploration of innovative approaches. Recognizing the critical link between STIs and heightened HIV risk in women, targeted STI screening and treatment are advocated as integral components of comprehensive HIV prevention efforts. Concurrently, the global approach to HIV testing has embraced increased accessibility through HIV self-testing.

This study delves into the acceptability of self-vaginal swab collection, examining its potential contribution to HIV prevention and alignment with advancing technologies, focusing on Chlamydia.

**Methods:** Conducted at Kisumu County Referral Hospital, Kenya, this cross-sectional study enrolled 385 women who provided informed consent. The study employed the Rapid Diagnostic Kit to detect *Chlamydia trachomatis*, utilizing electronic questionnaires to gauge preferences for self-collection. Practical demonstrations, including video clips and visual charts, familiarized participants with the self-vaginal swab collection process, featuring the Rapid

Diagnostic Kit. Statistical analyses, including descriptive statistics, were employed to quantify participant preferences and experiences.

**Results:** The 90.3% preference for self-vaginal swab collection over health worker collection demonstrated the high acceptability of self-vaginal swab collection for Chlamydia screening. The use of the Rapid Diagnostic Kit played a pivotal role in confirming Chlamydia infection and aligning participant preferences, particularly for privacy and non-invasiveness. Participants valued the confidential nature of self-collection, contributing to a heightened sense of comfort and acceptability.

Practical demonstrations facilitated a better understanding of the self-collection process, and the absence of invalid samples underscored the feasibility and reliability of self-collection.

**Conclusions:** This study, strategically aligning with the global evolution of HIV testing approaches, showcases the acceptability and feasibility of self-vaginal swab collection for Chlamydia screening. The findings emphasize the importance of aligning screening programs with patient preferences, advocating for the integration of innovative diagnostic tools, such as the Rapid Diagnostic Kit, into routine healthcare practices for enhanced effectiveness in sexual health outcomes.

## THPEC178

Control your PrEP, control your status: exploring MSM's awareness and acceptance of event-driven PrEP in South Africa

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**Background:** Key populations, particularly men who have sex with men (MSM), face higher HIV acquisition risks, primarily through condomless anal sex (CAS). To reduce HIV transmission in MSM, diverse prevention methods must be readily available, complemented by tailored strategies to boost uptake and correct usage. Event Driven Pre-Exposure Prophylaxis (ED-PrEP) offers a novel, evidence-based solution, addressing barriers hindering the adoption of existing HIV prevention techniques among MSM.

This study aimed to assess MSM knowledge, attitudes, and perceptions regarding ED-PrEP across five districts and to uncover links between socio-demographic factors, sexual risk profiles, and MSM's willingness to use ED-PrEP.

**Methods:** This study utilized a prospective descriptive cross-sectional survey to investigate perceptions, attitudes, and knowledge concerning ED-PrEP among MSM in five diverse South African districts. Participants were recruited from KP-friendly Aurum drop-in clinics.

Using a combination of snowball and convenience sampling methods, the research enrolled 295 participants who completed a comprehensive KAP survey via an online platform from April to June 2023. Data analysis uti-

lized SPSS 29.0, enabling a robust examination through descriptive statistics, chi-square analyses, and logistic regression to derive meaningful insights from the collected information.

**Results:** The knowledge and attitude scale comprised 16 and 9 items respectively. The study found that 72% of the participants had good knowledge about PrEP and ED-PrEP (score of >80%), 24% had fair knowledge (score between 50-79%) and 4% has poor knowledge (score of <50%). The majority of respondents reported a positive attitude towards ED-PrEP (58%), 41% were neutral and 4% reported a greater sense of mistrust about ED-PrEP. There was a significant association between knowledge about ED-PrEP and Attitude with  $\chi^2=11,842$ ,  $df=4$ , at  $p<0.05$ .

**Conclusions:** Despite the current lack of public campaigns about ED-PrEP, MSM demonstrate adequate knowledge about ED-PrEP to use the regimen safely. This study provides evidence that there is understanding of the regimen, and positive sentiment around the use and adoption of ED-PrEP among this target population. These findings highlight the necessity for meticulous and targeted educational campaigns to dispel myths and present ED-PrEP as a safe, alternative HIV prevention method for all men.

## THPEC179

HIV prevention strategies and PrEP uptake among transgender women (TGW) in São Paulo: a qualitative exploration through in-depth interviews

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**Background:** Transgender Women (TGW) face social and economic marginalization due to multiple layers of stigma, placing them at an increased risk of HIV infection. HIV testing and the use of prevention strategies like pre-exposure prophylaxis (PrEP) are significantly lower in this population compared to other groups with heightened vulnerability.

We developed the Manas por Manas peer navigation (PN) intervention to mitigate intersectional stigma and enhance HIV testing and prevention among TGW in São Paulo, Brazil. This qualitative exploration delves into the experiences of a sub-sample of 20 participants.

**Methods:** We conducted longitudinal in-depth interviews (IDIs) from November 2021 to June 2023, using a semi-structured script to investigate participants' engagement with the project and their uptake of HIV self-testing (HIVST) and prevention strategies, particularly PrEP. IDIs were conducted in the early stages of research

and again at project completion. Interviews were either virtual or in-person, recorded, transcribed, and subjected to thematic analysis.

**Results:** Results indicate that participants significantly enriched their understanding of HIV prevention, particularly of PrEP, through engagement with navigators. All participants were familiar with PrEP during the initial interview, albeit with limited information. Those on PrEP cited multiple sexual partnerships, engagement in sex work, and perception of reduced anxiety about potential infection as primary motivations. Some reported discontinuation due to side effects or perceived lack of necessity. Almost all reported regular testing in health services, but few had tried HIVST, and many expressed doubts about its reliability.

Notably, perceptions and experiences of PrEP and HIVST remained largely unchanged at the second interview.

**Conclusions:** Despite PN's positive impact on knowledge, disappointingly, PrEP and HIVST usage remained relatively low among IDI participants. Restrictive COVID-19 pandemic measures affecting in-person PN sessions and health service availability may have been, at least partially, to blame.

Other factors such as the lack of campaigns promoting PrEP and HIVST uptake among TGW in Brazil, as well as the preference for alternative prevention strategies and regular testing in services may have also played a role.

These findings underscore the need for tailored strategies and policies, acknowledging transgender women's specificities and broadening HIV prevention options for this population.

## THPEC180

Outcomes from a community-clinic hybrid PrEP approach as part of a clinical trial in China, 2021-2023

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**Background:** Data on PrEP uptake, persistence, discontinuation, adverse events, and HIV incidence among Chinese at-risk PrEP users is limited. This study addresses the research gap by summarizing the results of a PrEP phase 4 clinical trial in China.



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**Methods:** We conducted a 12-month PrEP demonstration project in Wuhan and Guangzhou, China, using a community-clinic hybrid model for recruitment, participant engagement, and PrEP delivery. The healthcare providers implemented oral PrEP prescribing, medical consultation, and medicine dispensed through clinic visits or mail-delivered PrEP by community-based organizations. PrEP refill was monthly for the first quarter and trimonthly thereafter. PrEP persistence (defined as finishing the follow-up as required) and adherence (defined as self-reported taking more than 4 pills in 7 days for daily and over 75% strict adherence to 2+1+1 for event-driven dosing) information was surveyed quarterly. Enrollment, PrEP persistence, adherence, discontinuation, and adverse events were descriptively summarized.

**Results:** From September 2021 to December 2023, we screened 3649 PrEP-eligible participants. Of those, 1138 participants started oral PrEP, with a median age of 29.1(SD=5.9). Most participants identified as gay or bisexual(1066/1138) and cis-gender men(1134/1138). After initiation, PrEP persistence at 3, 6, 9, and 12 months were 83.7%(947/1131),76.9%(795/1034),68.2%(589/864), and 60.6%(439/724) respectively. At 3-month follow-up, 43.8%(415/947) and 56.2%(532/947) chose the daily and on-demand regimen. In the end, 39.4%(173/439) of participants reported increasing dosing strategies switching, 35.3%(61/173), 40.5%(70/173), 57.8%(100/173), 64.7%(112/173) at each time follow up. Among them 88.4%(153/173) participants had transferred from daily to the on-demand regimen. The self-reported adherence was 75.0%(774/1032),67.8%(637/940),58.6%(469/800), and 50.7%(340/670) at each time point. 285 participants (25.0%,285/1138) discontinued PrEP during the study. 47.6% and 55.4% of subjects reported alcohol use and nitrates at baseline and 12 months. Six participants were seroconverted, resulting in an HIV incidence rate of 0.53 per 100 person-years. ( The absence of PrEP in this population is 5.10 per 100 person-years).

**Conclusions:** The hybrid CBO and clinic-based model proved feasible for reaching and dispensing PrEP among Chinese at-risk populations. On-demand use and mail-order drugs were popular alternatives and one-half of participants engaged in sex using alcohol and nitrates. Long-term PrEP persistence and optimal adherence continuously decreased among Chinese users during the 12 months.

## THPEC181

### A global review of national guidelines of post-exposure prophylaxis for the prevention of HIV

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**Background:** The World Health Organization (WHO) recommends the use of antiretroviral drugs as post-exposure prophylaxis (PEP) for preventing HIV infection for occupational and non-occupational exposures. To inform the development of global WHO recommendations on PEP, we reviewed national guidelines of PEP for their recommendations.

**Methods:** Policies addressing PEP from 38 WHO HIV priority countries were obtained by searching governmental and non-governmental websites and consulting country and regional experts; these countries were selected based on HIV burden, new infections and the number of HIV-associated deaths. We reviewed national guidelines published as of August 2023 to collate data on where PEP can be offered, who can prescribe PEP, PEP eligibility, recommended drug regime, linkage to other interventions, recommended investigations prescribed with PEP, HIV self-test recommendation related to PEP and stopping rules for PEP.

**Results:** In total, 46 guidelines across 36 countries were included, with the majority (70%) of documents published on or after 2020. There was significant variation across guidelines regarding where PEP can be accessed and who can provide or prescribe PEP. Six countries (17%) described being able to access PEP from a primary care facility, four countries (11%) from hospitals and two (6%) from community-based services. Only three countries (8%) specifically considered dispensing PEP by professionals other than doctors (e.g. nurses). None mentioned pharmacists as prescribers. We found a lack of consistency across countries regarding who is eligible for PEP, regimens used, interventions integrated into PEP provision and recommended investigations for PEP users. No country guidance provided considerations on using HIV self-tests for starting or after stopping PEP.

**Conclusions:** Despite PEP being recommended for more than three decades, many national policies were inconsistent or lacking in terms of PEP guidance. The findings from this review underscore the need for a globally unified approach to PEP recommendations that is in line with best practices and the latest evidence. This should include

recommendations for decentralisation and task-sharing to achieve sufficient scale for impact. Improving timely access to PEP among those who need it would contribute to reducing the incidence of HIV globally.

## THPEC182

### Tenofovir douche as HIV pre-exposure prophylaxis for receptive anal intercourse: end user feasibility evaluation of tenofovir rectal microbicide douche

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**Background:** Unprotected receptive anal intercourse (RAI) holds the highest sexual HIV transmission risk. The need for diverse pre-exposure prophylaxis (PrEP) options has encouraged the development of on-demand, topical PrEP products for individuals at HIV risk who prefer non-systemic or occasional PrEP use.

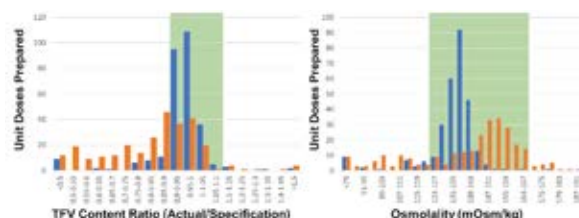
We aimed to assess end-users' proficiency in preparing two different douche formulations using two tenofovir (660mg) sachets, either lyophilized or spray-dried, and to evaluate their experience.

**Methods:** Cisgender adult men with a history of RAI-related douching were consented, screened, and enrolled. Twenty-one participants were randomized 1:1 to the order of douche product preparation. Participants received written instructions on how to prepare a douche with the sachet powder.

All participants prepared three enema bottles of each; douche aliquots were analyzed for TFV concentration, osmolality, and pH. User experience and likelihood of future product use were assessed by questionnaire.

**Results:** Most participants reported both products very easy/easy to prepare and very likely/likely to use the product; participants preferred the lyophilized product, with only 19% indicating liking (a little or very much) the spray-dried preparation process. Osmolality specification was met by 90% and 61% of the lyophilized and spray-dried sachets prepared, respectively; TFV content met specifications in 86% and 30% of the lyophilized and spray-dried product, respectively (Figure 1); failures were skewed to values below specifications.

Questionnaires indicated the most common challenges were tearing open the sachet and transferring the spray-dried product, which clung to the sachet and wafted into the air upon opening.



**Figure 1.** End user performance in preparation of the tenofovir (TFV) douche lyophilized powder (blue bars) and spray-dried powder (orange bars) compared to pharmaceutical specifications: tenofovir content 90%–100% of the specified final TFV concentration (5.28 mg/mL), shown here as TFV Content Ratio, actual value of prepared unit dose divided by product specification; osmolality 145 ± 22 mOsm/kg. Acceptable ranges are indicated by the green shaded areas. Histogram height (y-axis) is total number of unit doses prepared by study participants falling within each pharmaceutical category bin (x-axis).

**Conclusions:** Most participants reported the douches were easy to prepare with likely future use. However, participant-prepared spray-dried douches met all pharmaceutical criteria only 30% of the time.

These data informed numerous product modifications intended to improve ease of douche preparation, likelihood of future use, uptake, and adherence in future clinical development.

## THPEC183

### Enhancing ART adherence readiness and disclosure confidence among newly diagnosed HIV-positive healthcare clients: results from assessing the impact of lay counsellors trained in motivational interviewing counselling in Johannesburg, South Africa

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**Background:** We developed a motivational interviewing (MI) skills training program (The Thusa-Thuso program) for lay counsellors providing HIV counselling and testing services in South Africa (SA).

We report the effects of the Thusa-Thuso intervention on newly diagnosed persons living with HIV (PLHIV) immediately after counselling.

**Methods:** We randomized eight primary healthcare clinics in Johannesburg to either the intervention (n=4 clinics, n=293 healthcare clients) where all enrolled lay counsellors were supported for 12 months before adult (>18 years) PLHIV enrolment or the standard of care (n=4 clinics, n=261 healthcare clients).

PLHIV were recruited via referral from the testing HIV counsellor and interviewed on their confidence in taking medication in public, ART and disclosure concerns and counselling experience. These were analysed using Poisson regression reporting adjusted risk ratios (RR) with 95% confidence intervals (CIs).



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**Results:** The participants had a median age of 34 years (IQR 29-41), and 61% were female. More participants at intervention sites (95.1%) reported receiving post-test counselling than controls (89.9%) (aRR 1.2, 95% CI: 0.7-2.2). Compared to control participants, intervention participants were more likely to express confidence to take treatment in public (47.0% vs 28.3%) (aRR 1.4, 95% CI: 1.0-2.0), less likely to report HIV disclosure concerns (50.7% intervention vs 60.5% controls) (aRR 0.7, 95% CI: 0.6-0.9), and less likely to report high concerns about ART (45.7% intervention vs 54.3% control, aRR 0.7 for high vs low-medium concerns, 95% CI: 0.6-0.9).

	Control	Intervention	Crude RR 95% CI	Adjusted RR 95% CI
<b>Sex</b>				
Female	151 (57.9)	187 (61.8)	1	
Male	110 (42.1)	106 (36.2)	0.9 (0.7-1.1)	
<b>Age at study enrolment</b>				
15-24.99	77 (29.5)	79 (27.2)	1	
25-34.99	108 (41.4)	138 (47.1)	1.1 (0.8-1.5)	
35+	76 (29.1)	76 (25.9)	1.0 (0.7-1.3)	
<b>Received post-test counselling</b>				
No	29 (11.1)	14 (4.9)	1	1
Yes	232 (88.9)	274 (95.1)	1.7 (1.0-2.9)	1.2 (0.7-2.2)
<b>Taking medication in the presence of others</b>				
Not confident	52 (20.5)	46 (16)	1	1
Confident	55 (21.7)	44 (15.3)	1.0 (0.6-1.6)	1.0 (0.6-1.5)
Somewhat confident	75 (29.5)	62 (21.6)	1.0 (0.7-1.4)	1.0 (0.7-1.4)
Very confident	72 (28.3)	135 (47)	1.4 (1.0-1.9)	1.4 (1.0-2.0)
<b>HIV status disclosure fears</b>				
Low - Medium	102 (39.5)	142 (50.3)	1	1
High	150 (60.5)	146 (50.7)	0.8 (0.6-0.9)	0.7 (0.4-0.9)
<b>ART concerns</b>				
Low - Medium	178 (68.8)	213 (73.9)	1	1
High	89 (34.2)	78 (26.1)	0.8 (0.6-0.9)	0.7 (0.4-0.9)

**Conclusions:** Findings suggest noteworthy improvements in HIV disclosure and ART adherence preparedness among healthcare clients who underwent MI counselling compared to those receiving the standard counselling approach. The Thusa-Thuso program, integrating MI counselling among lay counsellors, is a promising model for effective healthcare client-centred approaches.

## THPEC184

Awareness and acceptability of HIV pre-exposure prophylaxis among HIV-negative pregnant and breastfeeding women in Zambia: analysis of ZAMPHIA 2021

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**Background:** Since 2020, Zambia has been scaling-up HIV pre-exposure prophylaxis (PrEP) services in Maternal Newborn Child Health (MNCH) clinics to prevent incident HIV acquisition among pregnant and breastfeeding women (PBFW). We assessed PrEP awareness and acceptability among HIV-negative PBFW in Zambia during this scale-up period.

**Methods:** We analyzed PrEP awareness and acceptability among HIV-negative PBFW aged 15-50 years old using the 2021 Zambia Population-Based HIV/AIDS Impact Assessment (ZAMPHIA). We used descriptive statistics (with chi-square tests) to describe demographic and behavioral characteristics of PrEP awareness and acceptability among PBFWs and age-matched women who were not pregnant/breastfeeding (non-PBFW) and conducted weighted multivariable regression analysis for predictors of PrEP awareness and acceptability among PBFW and non-PBFW. All analyses were weighted to account for complex survey design.

**Results:** Of the 2,132 HIV-negative PBFW, 24.3%(95%CI:21.6-27.2) reported PrEP awareness. Within age groups, 19.6%(95%CI:16.7-22.7) of PBFW aged 15-24 years and 29.1%(95%CI:24.8-33.6) aged 25-34 years reported PrEP awareness. PrEP awareness was significantly higher for urban residents compared to rural( $p<0.001$ ), higher levels of education compared to lower ( $p<0.001$ ), higher wealth quintiles compared to lower( $p<0.001$ ) and having sexual partners living with HIV compared to without ( $p<0.001$ ). PrEP acceptability among PBFW was 68.2%(95%CI:65.1-71.4) and was significantly higher for PBFW with more lifetime sexual partners compared to fewer ( $p<0.007$ ) and one or more sexual partners in the last 12 months compared to none ( $p<0.034$ )

Predictors of PrEP awareness included having tertiary education compared to no education (aOR 3.96 [95%CI:1.93-8.12]; $p<0.001$ ), being of highest wealth quintile compared to lowest (aOR 3.81[95%CI:2.15-6.74]; $p<0.001$ ) and having sexual partners living with HIV compared to without (aOR 9.21[95%CI:2.98-28.48]; $p<0.001$ ). Predictors for PrEP acceptability was having two or more lifetime sexual partners compared to one (aOR 1.54[95%CI:1.21-1.94]; $p<0.001$ ). PrEP awareness (aOR 1.06[95%CI:0.83-1.35]; $p=0.652$ ) and acceptability (aOR 1.09[95%CI:0.95-1.26]; $p=0.205$ ) did not differ comparing PBFW to non-PBFW.

**Conclusions:** Despite considerable PrEP scale-up in MNCH clinics, PrEP awareness among PBFW is low in Zambia and is not significantly different compared to non-PBFW. However, majority of PBFW and non-PBFW are willing to take PrEP to prevent HIV.

Efforts to improve PrEP awareness and uptake among PBFW are needed, that address the identified disparities, to prevent incident maternal HIV acquisition and contribute to eliminating vertical HIV transmission.

## THPEC185

### Impact of Covid-19 pandemic in sexual practices and mental health of men who have sex with men (MSM) – Project Horizonte, Belo Horizonte, Brazil

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**Background:** It's known that the Covid pandemic intensified discrimination, sexual risk and difficulties in accessing health services among LGBTQI+ population.

The goal of this study was to describe the impacts of the pandemic on the daily of men who have sex with men (MSM), followed up by Project Horizonte (PH), an open cohort of MSM HIV negative established in 1994 in Belo Horizonte/Brazil.

**Methods:** Nested survey in a cohort of MSM. Variables analyzed were collected from online self-administered questionnaire: sociodemographic, sexual practices, condom use, mental health, economic status. Were performed exploratory analysis of measures/proportions and chisquare test of categorical variables

**Results:** Sample:134 participants. Average age: 44 years, higher education: 66.5%. Most (71.6%) works, (37.3% salaried employees), 65.7% self-identifies as black/brown. Most (57.5%) uses public health service. Analysis showed that 46.3% have fully complied with social distancing and took prevention measures. Among those who feel more vulnerable to Covid (43.3%) are the ones who must go to work daily (35.1%), who uses public transportation (28.4%) and those with chronic illnesses (24.6%). 23.1% reported a decrease in income and only 34.3% have managed to maintain themselves financially during the pandemic. For the majority (68.7%), there weren't significant changes in sexual practices during the pandemic and for 31.3% the main changes were: less sexual relations (19.4%), increase in masturbation (14.9%), 42.3% reported increased use of dating apps. The majority (58.2%) did not report any change in condom use and 69.8% did not feel at risk for HIV. Regarding mental health impacts, the reported symptoms were: sadness, anguish, anxiety, trouble concentrating, apathy. Caught our attention that 25.4% reported increase in use of illicit drugs to deal with stress.

**Conclusions:** The majority did not report significant alterations in sexual practices and perception of risk for HIV/STI during the pandemic. However social distancing has interfered in the sociability context, reflecting in a decrease of sexual relations, increase of masturbation and virtual sex. The impacts observed on mental health showed a

potential risk of psychological distress, social vulnerability and, to some extent, unprotected sex. It is necessary to expand public health policies adapted to the LGBTQI+ community in emergency periods.

## THPEC186

### HIV pre-exposure prophylaxis awareness, willingness, and use among transfeminine persons with high likelihood of HIV in the United States: results from the Transgender Women's Internet Survey and Testing (TWIST)

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**Background:** Transfeminine persons (TFP) have a high likelihood of HIV acquisition, yet information about pre-exposure prophylaxis (PrEP) utilization among this population remains scarce. We examined oral PrEP awareness, willingness, and use among a US nationwide sample of TFP.

**Methods:** Sexually active TFP age 15+ were recruited online between April 2022 and June 2023 through social media advertisements. TFP not living with HIV were asked about oral PrEP awareness, willingness, and use. Log-binomial regression modeling examined associations between demographics and oral PrEP use in the past year.

**Table.** Associations between sociodemographic characteristics and oral PrEP use in the past year among Transfeminine persons who have a high likelihood of HIV, The Transgender Women's Internet Survey and Testing (TWIST) project, United States, 2022-23 (n=2736)

	Used PrEP in past 12 months [n, %]	No PrEP use in past 12 months [n, %]	Unadjusted prevalence ratio and 95% confidence interval	Adjusted prevalence ratio and 95% confidence interval**
Total	319 (11.7%)	2417 (88.3%)		
Age (years)				
15-29	156 (9.7)	1453 (90.3)	0.74 (0.55, 1.00)	0.72 (0.53, 0.98)
30-39	125 (15.1)	645 (84.9)	1.58 (0.85, 2.58)	1.05 (0.77, 1.45)
40+	48 (13.1)	319 (86.9)	ref	ref
Race/ethnicity				
Black, non-Hispanic	54 (25.8)	155 (74.2)	2.46 (1.89, 3.21)	2.34 (1.62, 3.33)
Hispanic or Latino	34 (12.4)	241 (87.6)	1.18 (0.84, 1.66)	1.15 (0.82, 1.62)
White, non-Hispanic	205 (10.5)	1749 (89.5)	ref	ref
Other or multiple races	25 (9.0)	252 (91.0)	0.86 (0.58, 1.28)	0.84 (0.56, 1.26)
ACHS rural-urban category				
Large central metro	169 (15.5)	922 (84.5)	ref	ref
Large fringe metro	68 (11.8)	510 (88.2)	0.76 (0.58, 0.99)	0.79 (0.61, 1.03)
Medium metro	42 (7.6)	511 (92.4)	0.49 (0.36, 0.68)	0.46 (0.33, 0.64)
Small metro/micropolitan/non-core	39 (7.7)	470 (92.3)	0.49 (0.35, 0.69)	0.49 (0.35, 0.68)
Health insurance				
None	19 (8.8)	197 (91.2)	0.83 (0.53, 1.30)	0.79 (0.50, 1.23)
Private only	182 (10.6)	1557 (89.4)	ref	ref
Public only	85 (15.1)	479 (84.9)	1.42 (1.12, 1.81)	1.25 (0.97, 1.60)
Other/Multiple insurance	29 (14.4)	172 (85.6)	1.36 (0.95, 1.96)	1.46 (1.01, 2.30)

Abbreviations: ACHS: National Center for Health Statistics  
\*Age, race/ethnicity, ACHS rural-urban category, health insurance were included in the models to estimate adjusted prevalence ratios  
\*\*bold text indicates statistical significance  
\*\*\* Data does not add up to the total number of participants due to missing information resulting from non-response from some of the participants



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**Results:** Of 2736 TFP not living with HIV, 75.1% heard of daily oral PrEP, 11.7% used PrEP in past year and 9.1% were current users. Among 248 current oral PrEP users, 63.3% used TDF/FTC and 33.1% used TAF/FTC. Use duration was  $\leq 6$  months for 43.5%. Among 2417 TFP not living with HIV who had not used oral PrEP in past year, 3.0% reported ever using oral PrEP and 51.2% were willing to use oral PrEP in the future. Non-Hispanic Black TFP were more than twice as likely to have used PrEP in the past year than non-Hispanic White TFP (Table).

TFP 15-29 years were a third less likely to have used PrEP compared to those 40+. TFP living in medium/small and rural areas were half as likely to have used PrEP compared to urban areas. Only those with other/multiple health insurance were more likely to have used PrEP compared to those with private insurance.

**Conclusions:** Despite nearly a decade of oral PrEP recommendations for US TFP, only 9% are current users, with significant usage disparities by age and urbanicity. The higher prevalence of PrEP use among Black TFP is encouraging given the disproportionate HIV burden this group experiences, but more work is needed to ensure equitable access and scale-up to youth and rural persons.

## THPEC187

HIV incidence following pre-exposure prophylaxis (PrEP) initiation among key populations in resource-limited setting: insights from Indonesia

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**Background:** As one of the countries in Asia Pacific with the highest number of people with HIV and limited ART coverage, Indonesia launched a PrEP pilot study among key populations, providing important evidence to guide the national rollout. As part of the program, we determined HIV incidence, adherence, and retention among individuals initiating PrEP.

**Methods:** Indonesia PrEP Pilot program (Dec 2021-Dec 2023, rolled out in 21 districts in 10 provinces) was a real-world, non-randomized study among key populations vulnerable to HIV (men who have sex with men [MSM], female sex workers [FSW], 'Waria' (shemale/transgender women), people who inject drugs [PWID] and the serodiscordant partners of people with HIV). Eligible participants

offered same-day oral daily (D) or event-driven (ED) PrEP and completed baseline, month 1, and three-monthly follow-up visits. Poisson regression was used to obtain the HIV incidence rate ratio, adjusted for age (aIRR).

**Results:** 8502 individuals initiated PrEP between 01/2022 and 10/2023 (median age 27 [IQR 23-32]; 86% men; 75% MSM; 65% chose daily PrEP); 3916 had at least one follow-up visit. Among the 3916, 21 seroconverted over 1347 person-years (PYs) of follow-up; overall incidence rate (IR) 1.56 (95% CI 1.02-2.39) per 100 PYs. Of the 21 seroconversions, 19 occurred without good adherence vs. two of good adherence (aIRR 0.04; 0.01-0.21). Men accounted for 100% of HIV incidence (IR 1.72; 1.12-2.65 vs 0; 0-2.88 in women) and MSM had the highest IR (19/21 individuals over 1077 PYs, IR 1.76; 1.12 - 2.77). IR in MSM in this study was 2.6 times lower (~62% reduction) than IR among MSM not using PrEP in another cohort (IR=4.5, personal communications).

No incidence difference between D-PrEP and ED-PrEP users (aIRR, 1.11; 0.44-2.8). In cascade analysis among 2511 people who started PrEP up to 11/2022, 1676/2511 (66.75%) retained at month (M)1, 1152/1676 (68.73%) at M3, 799/1152 69.38% at M6, 561/799 (70.21%) at M9 and 356/561 (63.46%) at M12.

**Conclusions:** Real-world data from limited resources settings suggest lower efficacy compared to what is seen in controlled trials. To ensure success in Indonesia's national PrEP implementation (2024-onward), efforts to enhance monitoring of adherence and retention must be intensified.

## THPEC188

Evaluating the acceptability of long acting injectables as pre-exposure prophylaxis option in key populations in Cameroon

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**Background:** Cameroon has an HIV prevalence of 3.7%, with a disproportionately higher prevalence of up to 22% in key populations (KPs). Cameroon implemented oral pre-exposure prophylaxis (PrEP) as a prevention option for KPs since 2019. However, uptake and adherence to daily oral PrEP has been very challenging (<5%). Long-acting injectable (LAI) PrEP has been associated with increased PrEP uptake and adherence in key populations. We assessed the acceptability of LAI PrEP option for KPs in Cameroon.

**Methods:** This was a cross-sectional study implemented by the Integrated Research Education and Support Group, and the Care and Health Program in community-based organizations (CBOs) across five regions in Cameroon from July to October 2023, using an exhaustive



consecutive sampling technique. Pre-tested, structured tablet-based questionnaires were administered to female sex workers (FSWs) and men who have sex with men (MSM) by trained research assistants based in the CBOs. Data analysis was done using SPSS.

**Results:** 1140 participants were enrolled with female predominance (74.6%). 55.9% of the general population were on PrEP. 50.3% female sex workers (FSWs) were on PrEP, compared to 76.3% in the men who have sex with men (MSM) population. 65.2% skipped medications mainly due to forgetfulness and daily pill burden. 76.3% indicated preference for LAI to oral PrEP. 90.5% of the FSW population preferred the injectable to the vaginal ring form.

Overall, 73.7% of the population were willing to take injectable PrEP with 45.9% willing to pay. 70.9% of PrEP eligible participants who did not enroll in daily oral PrEP indicated willingness to take injectable PrEP.

**Conclusions:** This study shows a high acceptability of LAI long-acting injectable PrEP amongst KPs in Cameroon, including those who refused to take oral PrEP.

These findings suggest the potentials of LAI PrEP to increase uptake and effectiveness of PrEP program in Cameroon.

## THPEC189

### Uptake of pre-exposure prophylaxis among Key populations in Unguja, Zanzibar, 2023

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**Background:** Pre-exposure prophylaxis (PrEP) was introduced to Zanzibar in 2021. In 2023, we assessed awareness and uptake of PrEP among men who have sex with men (MSM), female sex workers/sexually exploited children

(girls <18 years old who are given money or goods for sex) (FSW/SEC), and people who inject drugs (PWID) in Unguja Island, Zanzibar, via an integrated biobehavioral survey.

**Methods:** We recruited MSM (had sex with men in the past 3 months), FSW/SEC (exchanged sexual intercourse for money in the prior month), and PWID (injected illicit drugs in the past 3 months) aged ≥15 years who had lived in Unguja for ≥3 months using respondent-driven sampling. We assessed awareness and uptake of PrEP services and reasons for not using PrEP through an interviewer-administered questionnaire. We produced weighted estimates reported as percentages with 95% confidence intervals (95%CI).

**Results:** We enrolled 485 MSM, 598 FSW/SEC, and 455 PWID. Overall, 27.5% (95%CI: 22.9-32.0) of MSM, 35.1% (95%CI: 31.5-38.7) of FSW/SEC and 19.9% (95%CI: 16.1-23.7) of PWID had ever heard of PrEP. Among them, 13.9% (95%CI: 2.1-25.1) of MSM, 18.8% (95%CI: 12.4-25.4) of FSW/SEC and 11.9% (95%CI: 6.7-17.1) of PWID had ever used PrEP. Among those who had never heard of PrEP, 39.8% (95%CI: 35.5-44.0) of MSM, 51.6% (95%CI: 47.8-55.3) of FSW/SEC, and 31.1% (95%CI: 27.6-34.5) of PWID said they would take PrEP to help prevent HIV infection.

**Conclusions:** Awareness and uptake of PrEP services among KPs in Unguja, Zanzibar, was low. Interest in using PrEP to prevent HIV infection was highest among FSW/SEC but was limited overall. Comprehensive PrEP education and demand creation will be critical to ensure awareness and uptake.

## THPEC190

### The effectiveness of co-created digital intervention to improve PrEP adherence among Chinese men who have sex with men: a stepped-wedge randomized trial in China

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**Background:** Co-creation – an iterative process where researchers and participants work together in health intervention – is a promising strategy for encouraging behavior change. We conducted a stepped-wedge trial (SWT) to



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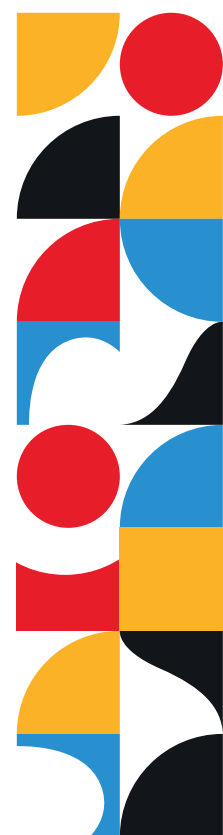
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evaluate the efficacy of co-created digital PrEP adherence messages to facilitate adherence among Chinese MSM PrEP users.

**Methods:** This trial is nested in a PrEP demonstration trial in Guangzhou and Wuhan, China (NCT04754139). Participants were provided TDF/FTC for 12 months and followed up quarterly. MSM were randomly allocated to four sequential groups receiving weekly WeChat-based (a popular Chinese chat media) PrEP adherence messages in a quarterly staggered order. Intervention messages were co-created through open calls and three co-creation rounds with 19 PrEP users in the trial, including short videos, images, and infographics. Generalized linear mixed-effects models were used to assess primary outcomes, including self-reported optimal PrEP adherence (daily users: 6-7 pills/week, on-demand users: full compliance with the 2-1-1 dosing scheme per sex event), self-initiated switching between daily and on-demand dosing strategies, and retention in care (i.e. whether loss to follow-up).

**Results:** From July 2021 to December 2023, 910 MSM (mean age=28.4, IQR=24.1-31.6) completed at least one follow-up survey (i.e. at 3 months). About 24.2% of the participants were college students, and 64.1% had 2 or more sex partners in the past 3 months. SWT cluster sizes at baseline were 251, 272, 280, and 282, respectively. About 25% (n=277) of the participants were lost to follow-up before the 12<sup>th</sup> month, with no significant difference across SWT clusters. Throughout the trial, approximately 60% of the participants reported almost 100% adherence to PrEP, with a non-significant secular trend of declining adherence over time. The co-created PrEP messages intervention marginally improved adherence levels (aOR=1.07, 95%CI: 0.82-1.40), but not statistically significant. On-demand PrEP users (55%) versus once-daily PrEP users (45%) were less likely to report optimal adherence (aOR=90.2, 95%CI: 54.59-148.99). MSM of younger age or with higher income are more likely to report optimal adherence.

**Conclusions:** Co-creating PrEP adherence intervention messages with Chinese MSM has the potential to improve self-reported adherence. Our findings of varied adherence performance among individuals highlight the need for future research into differentiated PrEP interventions.

## THPEC191

### Mapping of HIV-related risks and vulnerabilities among adolescents and youth in Cameroon: the case of Yaounde

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**Background:** The U-TEST initiative by UNICEF is a programmatic and technological innovation encompassing a range of multiple interventions for adolescents and youth, aimed at reducing the incidence of HIV, identifying HIV+ adolescents, facilitating access to care, and reducing cases of Gender-Based Violence (GBV). In this context, Risk and Vulnerability Mapping (RVM), a process for identifying, assessing, and prioritizing risks, is a crucial step to ensure a targeted approach in the interventions of stakeholders. Hence, the need to map risk areas and service delivery points to enhance the collective understanding of stakeholders and adolescents about their environment.

**Description:** It involved a multisectoral synergy, ranging from the Ministry of Youth to secondary education, through civil society organizations and the municipality. Youth from these organizations targeting various groups (adolescents and youth, adolescents and youth living with HIV, and key populations) residing in the municipality were recruited and trained to cover the entire municipality. They used smartphones with a form containing information such as GPS coordinates, types of populations frequenting the area, and preventive services offered to youth at service points (testing, counseling, viral load monitoring, etc.).

**Lessons learned:** Out of the nine health areas in the Yaoundé 2 municipality, two have been classified as low-risk zones, four health areas as medium-risk zones, and three health areas as high-risk zones. Additionally, we observe that the more service points there are (health facilities, churches, etc.) in an area, the lower the risk. A risk map has been developed and disseminated to various stakeholders (municipalities, ministries, civil society organizations, etc.).

**Conclusions/Next steps:** The RVM provides a better understanding of the environment by identifying the types of risks faced by young people and the level of service offerings available. The youth must have this tool that informs them about the different risk zones and the services available in their environment to address them. Partners, on the other hand, benefit from a tool that guides resources and enables tracking and evaluation of actions taken.

## THPEC192

### Key population's preferences in initiating and continuing PrEP in community- or facility-based settings within three sub-Saharan African Countries

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**Background:** Client-centered service delivery at both community and facility settings aims to increase access to pre-exposure prophylaxis (PrEP). The PEPFAR- and US-AID-funded Meeting Targets and Maintaining Epidemic Control (EpiC) project in Eswatini, Ghana, and Lesotho implemented PrEP to prevent HIV acquisition among key populations (KPs) [men who have sex with men (MSM), female sex workers (FSWs)], in both settings.

We sought to categorize clients' PrEP initiation and refill preferences by population, age, and country.

**Methods:** We analyzed routine EpiC programmatic data from October 2022 -- June 2023 from three countries to compare PrEP initiation and refills in community vs facility sites. The two settings were reviewed at initiation, and at first, second, and third refill visits. We used Chi-squared to determine if there were differences by site stratified by KP type, age, and country. We calculated the odds of refills in the community as compared to the facility for the three visits.

**Results:** Overall, 83.6% of KP initiated in the community (95% CI: 82.5% - 84.6%) and 16.4% initiated in the facility (95% CI: 15.4% - 17.5%). There was slight variation in proportion among MSM and FSW (Table 1).

		% initiated in Community n=3913 (%)	% initiated in Facility n=770 (%)	% initiated All (N=4683)	P value
Population	FSW	(86.1)	13.9%	50.7%	p<0.001
	MSM	(81.0%)	19.0%	49.3%	
Age	<=24 yrs.	84.5%	15.5%	45.6%	p=0.113
	25+ yrs.	82.8%	17.2%	54.4%	
	Eswatini	90.7%	9.3%	55.4%	
Country	Ghana	71.9%	28.1%	16.5%	p<0.001
	Lesotho	76.3%	23.7%	28.1%	

Table 1: Comparison of PrEP initiation in community and facility settings.

The odds of returning for first refill was 1.5 times (p<0.001), second refill 1.4 times (p=0.005) and third refill 0.9 (p=.08) when in the community vs facility, with MSM contributing significantly to the results (Table 2).

Service sites	First refill			Second refill			Third refill		
	FSW	MSM	Total	FSW	MSM	Total	FSW	MSM	Total
Facility (n=770)	ref	ref	ref	ref	ref	ref	ref	ref	ref
Community (n=3913)	0.9	2.2	1.5	0.8	2.4	1.4	0.6	0.9	0.9
OR (95% CI)	(0.8-1.2)	(1.8-2.8)*	(1.3-1.8)*	(0.6-1.1)	(1.6-3.4)*	(1.1-1.8)*	(0.5-1.6)	(0.6-1.5)	(0.6-1.3)

Table 2: Odds of PrEP refill by population and service point

\*Significant

**Conclusions:** KPs from the three countries are more likely to access PrEP services in community compared to facilities for initiation and refill visits. Yet, a sizeable number of clients access facility-based settings, so offering differentiated service delivery models is essential to improving initiation and usage overtime.

## THPEC193

### Feasibility and acceptability of daily oral emtricitabine and tenofovir alafenamide fumarate (FTC/TAF) for HIV pre-exposure prophylaxis among opioid-dependent people who inject drugs

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**Background:** People who inject drugs (PWID) remain at substantial risk of HIV acquisition, and pre-exposure prophylaxis (PrEP) is critical for HIV prevention. PrEP's efficacy was demonstrated a decade ago using daily oral tenofovir disoproxil fumarate (TDF) with emtricitabine (FTC). In 2019, co-formulated tenofovir FTC and alafenamide fumarate (TAF) became the second approved daily oral PrEP regimen. However, FTC/TAF is only approved for the prevention of sexually transmitted HIV, excluding individuals at risk of receptive vaginal sex, including PWID. This study explored FTC/TAF feasibility and acceptability for daily oral PrEP among PWID.

**Methods:** This single-arm, observational, open-label study enrolled 100 PWID to receive FTC/TAF for daily oral HIV prevention. Inclusion criteria were: age ≥18, HIV-negative, injection drug use (in the past 6 months), and meeting DSM-V criteria for opioid dependence.

Participants meeting clinical criteria received a 90-day supply of FTC/TAF from a community-based syringe services program (SSP). Behavioral and biomedical data were collected at baseline, 3, and 6 months. Descriptive statistics were used to estimate feasibility, acceptability, side-effects, adherence, and persistence on FTC/TAF.



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**Results:** Participants were mostly male (63.0%) and non-Hispanic White (52.0%), with a mean age of 44.4 (SD=9.9). Participants reported injecting drugs at least once per day (37.0%) and engagement in condomless sex (78.0%) in the past 6 months. Prior use of daily oral PrEP was reported by 21% of participants (TDF/FTC: 14.0%; FTC/TAF: 3%; unknown: 4.0%). Although all participants were prescribed FTC/TAF, only 60.0% picked up the drug. Of those, 70% picked up once, 26.7% twice, and only 3.3% at all follow-up visits. Self-reported adherence was high (>90%) across all time points but discordant with urine-based quantification of FTC. Acceptability was high (range: 8-32): 3-months [24.9 (±3.1)]; 6-months [24.4 (±3.4)]. The most frequently reported side effects were tiredness (18.4%) and nausea (17.2%). There were no HIV seroconversions.

**Conclusions:** FTC/TAF PrEP was positively received among opioid-dependent PWID. Implementation through SSP services was feasible and acceptable, suggesting its viability as an HIV prevention tool for this vulnerable group. Poor adherence, as indicated in earlier studies of PWID using TDF/FTC PrEP, emphasizes the need for enhanced adherence counseling specifically tailored for PWID.

## THPEC194

Failure of healthcare providers to discuss PrEP with their Black/African-American healthcare clients may account for an HIV prevention disparity

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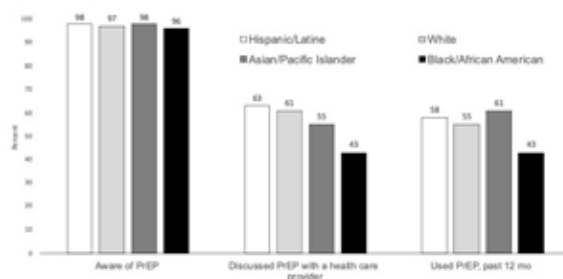
**Background:** A dismaying feature of the HIV epidemic in the USA is the disproportionate burden borne by Black/African-Americans. Black/African-Americans are 14% of people in the USA, yet account for 40% of new HIV diagnoses. Our objective is to quantify disparities in the uptake of PrEP by race/ethnicity in a community-recruited sample of men who have sex with men (MSM).

**Methods:** Data are from National HIV Behavioral Surveillance that tracks HIV prevalence and related behaviors among key populations in the USA. Time-location sampling (TLS) was used to recruit eligible MSM (over 18 years, assigned male or female sex at birth and now identified as men, ever had sex with men, and San Francisco residence) in 2023. HIV testing determined serostatus and face-to-face interviews collected demographics and HIV-related behavior.

**Results:** Of 545 MSM, 8% were Black/African-American. Black/African-American MSM had twice the prevalence of HIV as other race/ethnicities (45% vs. 22%). Black/African-American MSM were as likely as other groups to have health insurance (98% vs. 92%), see a healthcare provider

(93% vs. 89%), and disclose their MSM status (95% vs. 95%). Among HIV-negative MSM, Black/African-Americans were as aware of PrEP as other groups (96% vs. 98%), yet fewer discussed PrEP with a healthcare provider (44% vs. 61%) or used PrEP in the last year (43.5% vs. 57.4%). Of Black/African-American MSM who discussed PrEP with a provider, 100% had used PrEP.

Figure 1. Engagement of men who have sex with men (MSM) with HIV pre-exposure prophylaxis (PrEP) by race/ethnicity, San Francisco, 2023



**Conclusions:** Lower PrEP uptake of Black/African-American MSM in San Francisco may be due to healthcare providers not discussing it with as many Black/African-American healthcare clients as those of other race/ethnicities. Interventions with providers to routinely offer PrEP to all MSM are needed. Also, some Black/African-American MSM may not perceive a need for or desire PrEP due to having none or one main partner. Research is needed to understand and address this disparity in PrEP uptake.

## THPEC195

Preferences for a Pre-exposure Prophylaxis (PrEP) implant among priority populations in the United States: a discrete choice experiment

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**Background:** HIV prevention implants are a promising approach to overcoming adherence challenges with daily or on-demand PrEP regimens. We aimed to understand preferences for implant attributes among key priority populations to inform development of an extended-release PrEP implant.

**Methods:** We developed a discrete choice experiment (DCE) and surveyed individuals eligible for HIV prevention methods, focused on men-who-have-sex-with-men (MSM), cisgender women (CGW), and transgender women (TGW) in the US. Participants were recruited via online/social media, peer referral, and venue-based outreach and were eligible if self-identified HIV-negative, met PrEP eligibility guidelines, and aged 18 or older. The DCE asked participants to choose between two hypothetical



PrEP implants in a series of ten questions. Implants were described by: dissolvability (does not, takes 3-months, 6-months, 1-year), number of rods (1 or 2), and protection duration (6-months, 1-year, 2-years). Random-parameter logit models estimated preference weights.

**Results:** Between September-December 2023, 850 participants completed the DCE online. Overall, 38% were classified as MSM, 23% CGW, 15% TGW, and 24% with another gender identity. Mean age was 33 (range 18-76), 33% identified as Black/African American and 28% Latino/Hispanic. In the last 6 months, half had  $\geq 5$  sex partners (IQR 3-10) and 21% had a diagnosed STI. For all, duration of protection was the most important feature, with a strong preference for a 2-year vs. 6-month implant ( $p < 0.001$ ). Dissolvability was nearly as important as duration for MSM and TGW, with a preference for an implant that dissolves in 3- or 6-months over an implant that requires removal or takes a year to dissolve. CGW also preferred a quicker dissolving implant, although duration was 3.5 times more important (95% CI 1.7-5.3;  $p < 0.001$ ). Participants preferred one rod over two, but in general this feature was not as influential to choice of implant. If available, 59% of CGW, 66% of TGW, and 81% of MSM said they would be interested in using a 1-year implant for HIV prevention.

**Conclusions:** Key populations in the US preferred an implant providing longer duration of protection, and most preferred a quicker dissolving implant. These preferences can inform development of a PrEP implant that is most attractive to potential users.

## THPEC196

### Impact of substance use on pre-exposure prophylaxis adherence among men who have sex with men and trans women in Latin America: a sub-analysis of the ImPrEP Study

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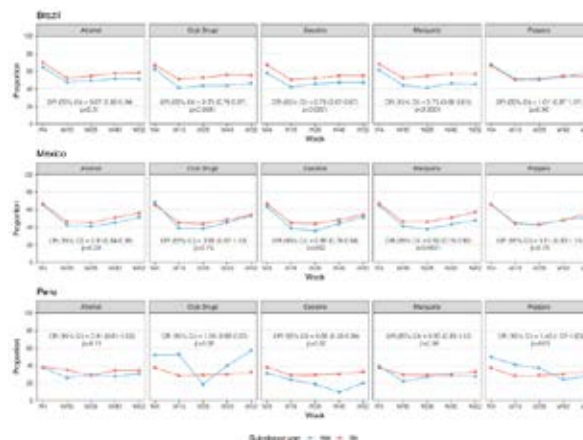
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**Background:** Substance use is higher in men who have sex with men (MSM) and trans women (TW) compared to the general population and could increase the risk of ac-

quiring HIV or interfere with adherence to pre-exposure prophylaxis (PrEP). This study aimed to compare self-report PrEP adherence among ImPrEP participants according to reported substance use during follow-up.

**Methods:** ImPrEP was a prospective, single-arm, open-label, multicenter PrEP implementation study that enrolled 9,509 MSM/TW from Brazil, Mexico, and Peru (2018-2021). We included participants who had at least one follow-up visit (4, 16, 28, 40, and 52-weeks) after enrollment and had complete information on substance use. PrEP adherence was defined as having a not missed pills in the past 30 days, and substance use was assessed by asking about any consumption (yes vs. no) in the previous three months at each visit. We used generalized estimating equation logistic regression models for each substance to associate PrEP adherence proportions over follow-up.

**Results:** The sample at the 4-week visit was 8,714 participants (43.2% Brazil, 34.8% Mexico, 22% Peru), and 55.3% of those who attended the 52-week visit. 94.8% were MSM, 72.1% Black/Pardo/Mestizo, and 82.7% had >secondary education. Participants who used cocaine presented lower odds of adhering to PrEP throughout the follow-up period for all countries, while cannabis and alcohol users demonstrated lower adherence only in Brazil and Mexico. Additionally, the use of club drugs in Brazil and *poppers* in Peru were also associated with decreased odds of PrEP adherence (Figure).



**Conclusions:** Substance use decreases PrEP adherence in MSM/TW from Latin America. Different consumption patterns are probably related to the availability and context of each country. HIV prevention among MSM/TW requires assessment of substance use and detection when interfering with PrEP adherence.



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## THPEC197

Reasons for PrEP discontinuation among women receiving PrEP integrated in public family planning clinics in Kenya

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**Background:** A Daily oral pre-exposure prophylaxis (PrEP) is highly efficacious in preventing HIV infections. However, high rates of PrEP discontinuation, can reduce effectiveness and therefore hinder the ability to reduce incident among individuals at high risk.

**Methods:** Data are from a stepped-wedge cluster-randomized project assessing integration of PrEP delivery within 12 public family planning clinics in Kisumu, Kenya. Between 2021 to 2024 we administered a phone structured quantitative surveys to women who initiated but later discontinued taking PrEP to assess factors and reasons for PrEP discontinuation. Univariable logistic model was used to estimate correlates of PrEP discontinuation between women who discontinued within a month versus those who discontinued after a month.

**Results:** Of the 510 study participants who were interviewed, median age was 26.0 (IQR 23.0-31.0), 368 (72%) were married while 159(31%) were breastfeeding. Approximately, half 244 (50%) discontinued PrEP within a month of initiation and median duration of use was 1.5 (IQR 1.0-4.0) month. Overall, 277 (54%) reported that change in risk for HIV (feeling no longer at risk, virally suppressed partner, or no partner) was the primary reason for stopping PrEP. Other less frequently reported factors included individual concerns (side effect, pill burden) (12%), stigma 40 (7.8%), facilities barriers 31(6.1%), opportunity cost 31 (6.1%), relocation 18 (3.5%), run out of pills 14(2.7%), intimate partner violence 11 (2.2%), and partner influence 10 (2.0). compared to those who stopped PrEP within a month, women who had prolonged use of PrEP were likely to be married (OR= 1.90;95% CI 1.28-2.83), breastfeeding (OR= 1.56;95% CI 1.07, 2.28) and more likely to report that it was their own decision to initiate PrEP (OR= 2.89;95% CI 1.80, 4.72) while those who agreed with their providers to initiate PrEP were more likely to discontinue within one month (OR= 0.28;95% CI 0.28-0.67).

**Conclusions:** With a large Kenyan public health PrEP program, a more than half of the women discontinued PrEP within one-month post-initiation primarily due to perceived low risk prompted by change in relationship and life circumstances. However, there is an urgent need to address reasons of those who stopped PrEP not necessary because they were not at risk.

## THPEC198

Awareness of Undetectable=Untransmittable (U=U) and its associated factors among Indian men who have sex with men:baseline findings from an m-health based randomised trial, Mumbai, India

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**Background:** While U=U is now advocated as a key concept in HIV prevention, little is known about U=U awareness among Indian MSM and its determinants. We investigated factors associated with U=U awareness to inform outreach interventions

**Methods:** We recruited MSM through social media, MSM dating apps, and WhatsApp (April 2022-August 2023). Eligibility included aged ≥18 years; residing/working in Mumbai/Thane, India; fluency in Hindi/English; having anal sex with men in the past year, and not tested for HIV in the past 6-months nor known to be living with HIV. We analysed potential demographic and socio-behavioural determinants of baseline U=U awareness.

Adjusted relative risk (aRR, 95% CI) of U=U awareness was estimated by Poisson regression and robust SE. LASSO penalty were used to build models from a large number of predictors with high auto-collinearity.

**Results:** We enrolled 1005 MSM, median age 27 years, 49% had at least graduate education, 31% reported >20,000INR/month income, 43% enrolled through dating apps, 27% and 27%, were aware of PrEP and PEP respectively. Only 29.1% were aware of U=U, but 50.1% agreed with "people living with HIV who...have an undetectable viral load can have a healthy and long life."

The probability of U=U awareness was associated with easy access to HIV testing (aRR =1.40 [1.02,1.92]; p=0.039), responding in English versus Hindi (aRR=1.97 [1.36, 2.87]; p<0.001), history of online search for sexual-health information (aRR=1.75 [1.26,2.42]; p<0.001), PrEP awareness (aRR=2.28 [1.64,3.18]; p<0.001), PEP awareness (aRR=2.57 [1.41,4.67]; p=0.002), history of STI (aRR=1.83 [1.11,3.03]; p=0.019); and participating in existing MSM focused HIV prevention program (aRR=1.97 [1.18,3.3]; p=0.01).

**Conclusions:** Our study found low awareness of U=U among Indian MSM and that awareness significantly differed by socioeconomic groups. Awareness was also associated with access to HIV prevention information and services (e.g., easy testing, in-person prevention programs, access to online sexual-health information). Campaigns are needed to increase U=U awareness among Indian MSM, and outreach programs (virtual and in-person) should ensure equitable access to this infor-

mation across diverse socioeconomic strata and overcome structural barriers by designing inclusive U=U implementation strategies.

## THPEC199

### HIV-protective behaviors and their evolution among MSM in the ANRS-Prévenir cohort: a latent transition analysis

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**Background:** Studying the evolution of HIV-prevention behaviors is necessary for understanding how men who have sex with men (MSM) integrate Pre-exposure prophylaxis (PrEP) with HIV-prevention strategies. This analysis aims to identify profiles of HIV protection (PrEP coverage and condom-use) and their evolution.

**Methods:** ANRS-Prévenir—a cohort offering PrEP in Ile-de-France—included 3193 participants May-2017 through September-2022. Clinical and behavioral information was collected quarterly. This analysis was conducted on MSM participants between M3 (entire sample on PrEP) and M24. A latent transition analysis (LTA) using PrEP coverage (optimal/sub-optimal/no-use) and condom-use (yes/no) at last sexual encounter (LSE) permitted: 1/ identification of different profiles (states) of HIV protection and associated factors, 2/ estimation of transition probabilities between profiles and associated factors, notably PrEP regimen (daily/event-driven).

**Results:** Of 2633 participants completing the inclusion questionnaire, 2606 were MSM. At inclusion, median age was 36(IQR:29-43), 86.1% had ≥Secondary education, and 43.5% were naive to PrEP. At M3, 62.6% reported optimal-PrEP, 23.4% condom-use, and 47.9% event-driven PrEP (edPrEP).

The LTA identified three HIV-protection profiles: Exclusive-PrEP (PrEP : 90.3% optimal-PrEP, 4.9% condom-use) constituting 44.6% of participants at M3 and 57.6% at M24, poorly-protected (PP: 30.6% condom-use, 71.2% sub-optimal PrEP; M3-M24 : 41.9%-35.3%), and PrEP&Condom (P&C: 75.6% optimal-PrEP, 69.6% condom-use; M3-

M24: 13.5%-71%). Probability of belonging to PP reduced with: age (OR: 0.99, p<0.05) and perception of risk-taking in sexual life (OR: 0.56, p<0.05). Despite a tendency to stay in the same state (PrEP: >94%, PP: >87%, P&C: >66%), starting at M18, transitions from both protected states towards PP were observed. These transition probabilities from PrEP (3.3%) and P&C (10.3%) are associated with: knowing LSE partner (PrEP OR: 4.9, P&C OR: 2.9; p-value<0.05), and reporting edPrEP (PrEP OR: 3.3, P&C OR : 1.2 ; p-value<0.05). Transitions from P&C are associated with chemsex at LSE (OR: 1.2, p-value<0.05).

**Conclusions:** The low mobility between states highlights the importance of education and counseling, starting at inclusion with renewal at M18, particularly among those who: are younger, use edPrEP, and engage in chemsex. It is critical to explore the role of a potential PrEP-fatigue beginning at M18 and/or an under-estimation of risk.

## THPEC200

### In-utero exposure to tenofovir based pre-exposure prophylaxis is not associated with growth faltering in breastfed infants in South Africa: a post hoc analysis of the CAP 016 randomized controlled trial

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**Background:** Oral tenofovir disoproxil fumarate (TDF) based pre-exposure prophylaxis (PrEP) is widely recommended to prevent HIV infection during pregnancy and lactation. While the safety of TDF-based PrEP use in pregnancy is generally reassuring, there is limited evidence of the effect of TDF-based PrEP on infant growth.

We aimed to determine if adverse infant growth outcomes were associated with in-utero exposure to TDF and emtricitabine (TDF/FTC) used as PrEP among pregnant women in a randomized controlled trial in KwaZulu Natal, South Africa.

**Methods:** Infant growth parameters were assessed at birth and at 6, 26, 54 and 74 weeks of age. The World Health Organisation growth standards were used to calculate age and sex appropriate z-scores for weight (W), length (L) and head circumference (HC). Mean WAZ, LAZ, WLZ and HCAZ scores and frequency of adverse infant



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growth outcomes (underweight, stunting, wasting, microcephaly) were compared between infants with and without in-utero TDF/FTC exposure.

Stored DBS samples collected before delivery from women receiving PrEP were used to measure tenofovir diphosphate (TFV-DP) levels.

**Results:** A total of 230 infants exposed to in-utero PrEP (TDF/FTC) and 227 infants not exposed to PrEP (TDF/FTC) were evaluated from birth. Of the 230 mother-infant pairs randomized to PrEP (TDF/FTC), 129 (56.1%) women had TFV-DP levels >200 fmol/punch. At 74 weeks, mean (SD) WAZ, LAZ, WLZ and HCAZ scores were 0.71 (1.4), -0.79 (1.8), 1.48 (1.1) and 1.29 (1.4) respectively for infants exposed to TFV-DP >200 fmol/punch versus 0.89 (1.6), -0.82 (1.7), 1.69 (1.6) and 1.31 (1.4) for infants born to women randomized to the non-PrEP arm ( $p > 0.4$  for all parameters).

The most common adverse growth outcome was stunting observed between 6 weeks and 74 weeks and comparable between treatment groups.

Among infants exposed to TFV-DP > 200 fmol/punch versus PrEP unexposed infants, 18.9% vs 20.4% were stunted at 18 months respectively ( $p = 1.000$ ).

**Conclusions:** We provide additional evidence of a lack of association between infant growth restriction and in-utero TDF exposure using an objective assessment of PrEP exposure. In our randomized controlled study, growth parameters remained comparable between PrEP unexposed infants and infants whose mothers had detectable TFV-DP levels >200 fmol/punch.

## THPEC201

Adherence strategies to improve uptake of Truvada and Dapivirine vaginal ring among adolescents and young women in Uganda: experience from MTN034 Study, Kampala Mujhu Site

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**Background:** Adolescent girls and young women (AGYW) in sub-Saharan Africa, aged 15-24, are at substantial risk of acquiring HIV and yet they have adherence challenges with daily oral pre-exposure prophylaxis (PrEP). Supporting adherence among AGYW is thus important to ensure high uptake and effective use of PrEP.

In the MTN034 trial, adherence was moderately high, thus we describe the adherence support strategies used at the Kampala site.

**Methods:** MTN-034/REACH was a randomized, open-label, phase 2a crossover trial among HIV-seronegative adolescent girls and young women aged 16-21 years at four clinical research sites in South Africa, Uganda, and Zimbabwe. Participants were randomly assigned to either the dapivirine ring or daily oral PrEP for 6 months, then switched to the other product option for 6 months, followed by a third 6-month period in which participants were given a choice of oral PrEP, the dapivirine ring, or neither. Participants were offered a menu of adherence support options, including digital support (text messages daily or weekly), group support (in-person or WhatsApp group meetings), and individual support (extra counseling sessions or peer buddies).

Counseling was provided when drug concentration results were available to ascertain the needed adherence support. Adherence support choices and outcomes were documented in participants' charts.

**Results:** All 60 participants enrolled in Uganda attended group adherence support meetings, held bi-weekly in groups of 8-15, facilitated by study counselors. Individual sessions were also held for each participant at their follow-up visits and as needed. 73% (44) preferred monthly reminder calls, while 27% (16) preferred weekly phone calls with additional counseling. No WhatsApp group meeting was held because few had smartphones.

Reported challenges addressed by the study counselors and the ring/tablet champions', HIV risk reduction counseling, and sexual and reproductive health education sessions in the waiting room empowered them to reduce potential exposures, resulting in improved adherence and continued use (Table)

STUDY PRODUCT	HIGH ADHERENCE	MODERATE ADHERENCE	LOW ADHERENCE
Truvada (361)	177 (49%)	170 (47%)	14 (4%)
Dapivirine ring (493)	385 (78%)	89 (18%)	19 (4%)

Table. Drug concentration results.

**Conclusions:** Providing a variety of adherence support options is key to improving AGYW's adherence to HIV prevention products.

## THPEC202

### Pre-exposure prophylaxis (PrEP) awareness, uptake, willingness and associated factors among adolescent girls and young women in two Ugandan districts: across sectional population based study

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**Background:** Much as Pre-Exposure Prophylaxis (PrEP) is a known HIV biomedical prevention strategy for key and priority populations. Many priority populations for example adolescent girls and young women may not be aware about available PrEP services and therefore less willing to accept PrEP services.

We sought to determine PrEP awareness, uptake, willingness to take PrEP and the associated factors among adolescent girls and young women (AGYW) in two Ugandan districts

**Methods:** We conducted a cross-sectional Population based study through multi-stage sampling, between July 2022 and July 2023, using a semi-structured questionnaire among AGYW aged 13–24 years in Central (Wakiso district) and Western (Hoima City). Variables included; marital status, transactional sex status, occupation, number of sex partners in the past 12 months, circumcision status of the partners of AGYW, condom use and alcohol use. Using a bivariable analysis, we determined the prevalence of PrEP awareness, uptake, and willingness.

A multivariable modified Poisson regression analysis was used to determine predictors of PrEP awareness and willingness respectively, with 95% confidence intervals (CIs).

**Results:** Of 4,217 participants, 54.5% (n = 2,297) were females. The mean age (SD) was 32 (14.1) years and only 21.2% (n = 322) of 1,517 AGYW were aware about PrEP services and only 33.8% were willing to take PrEP. PrEP uptake was only 4.7% (15/320) among AGYW. AGYW with one sexual partner (adj.PR = 2.13; 95%CI: 1.11, 4.08) or AGYW with more than one sexual partner in the past 12 months (adj.PR = 3.04; 95%CI: 1.55, 5.93) and AGYW with tertiary level of education (adj. PR = 3.47; 95%CI: 1.30, 9.30) were more aware about PrEP services. On the other hand, PrEP willingness was more among AGYW who self-reported to be alcohol users (adj. PR = 1.43; 95%CI: 1.04, 1.96) or never married (adj.PR = 1.65; 95%CI: 1.12, 2.41). However, students (adj.PR = 0.50; 95%CI: 0.26, 0.99) were less willing to take PrEP services than AGYW whose occupation was agriculture.

**Conclusions:** These findings suggest that there are low levels of PrEP awareness, uptake and willingness among this priority sub-population. Therefore, there is need for target-specific interventions for AGYW more especially students.

## THPEC203

### A dual prevention pill for HIV and pregnancy prevention: results from a pilot study among adolescent girls and young women in Zimbabwe

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**Background:** Oral pre-exposure prophylaxis (PrEP) use has been sub-optimal among sub-Saharan African women. A dual prevention pill (DPP) combining PrEP and an oral contraceptive (OC) may be preferable, acceptable and increase adherence vs PrEP alone.

**Methods:** We recruited 16–24-year-old cisgender female OC-users in a 6-month crossover study in Harare, Zimbabwe (Nov 2022–Sep 2023). We randomized participants (1:1) to the order of using an over-encapsulated DPP and 2 pills (PrEP, OC) for three 28-day cycles each. We compared the proportion preferring the DPP vs 2 pills (exact binomial test); adherence to each regimen via self-report and tenofovir diphosphate (TFV-DP) levels in dried blood spots indicative of  $\geq 4$  doses/week ( $\geq 500$  fmol/punch, Month 1;  $\geq 700$  fmol/punch, thereafter), adjusting for randomization sequence (DPP or 2 pills first) and treatment period (generalized estimating equations); and effect of regimen on 4 acceptability domains (e.g., product attributes, ease of use, effect on sex; Wilcoxon signed-rank tests).

**Results:** 26/30 participants (mean age, 19.4 years) finished the study. Approximately half were married (47%). Most (97%) completed secondary school, had  $\geq 1$  child (93%), were worried/very worried about getting HIV (84%), and said avoiding pregnancy was important (93%). More women (64%) preferred the DPP than 2 pills (36%), although the difference was not significant. Self-reported adherence was high (>96%), yet <20% were consistently adherent for 6 months per TFV-DP levels (DPP mean: 392 fmol/punch; 2-pills mean: 384 fmol/punch). There was no difference in adherence by regimen, however, participants were twice as likely to be adherent in treatment period 1 (adjusted odds ratio [AOR] 2.0; 95% confidence interval [CI], 1.23–3.28) and 4 times more likely to be adherent if they were randomized to using the DPP first (AOR 4.28; 95% CI, 1.25–14.6). Most rated both regimens as acceptable, with no differences in any domain.

**Conclusions:** Although we found no significant differences between the DPP and 2 pills in this small study using an over-encapsulated DPP, more women preferred the single pill and adherence was better among those starting with the DPP. Future studies with larger samples using the actual (smaller) co-formulated DPP will better inform the DPP's potential impact on HIV and pregnancy prevention.



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## THPEC204

### Profiling Shang Ring adverse events among Zimbabwean boys aged 13-16 years

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**Background:** In June 2015, WHO prequalified the Shang Ring device for circumcision of adolescents and adult males aged 13 years and older after determining that it meets international standards of quality, safety, and efficacy. However, the safety of the boys undergoing VMMC procedure using the Shang Ring device remains critical. We profiled adverse events among the younger adolescents 13-14-year-olds and the older adolescents 15-16-year-olds. The evidence generated helps the VMMC national program to address the safety concerns as it plans to roll out the Shang Ring to all districts in the country and transition to sustainability.

**Methods:** We conducted implementation science research from 8 June 2022 to 5 January 2024 in 9 districts to inform the sustainability phase of the national voluntary medical male circumcision program in Zimbabwe. Adolescents aged 13-16 years were recruited into the research males and offered the Shang Ring procedure. Participants were followed up on days 7, 14, and 49. Assessments for AEs were done on each review. SurveyTo-Go was used for data collection and SPSS version 20 for analyses to generate frequencies, cross-tabulations, and statistical tests

**Results:** 5 165 boys were recruited into the study, 79% (4 076) were aged 13-14 years, and 1 089 (21%) were aged 15-16 years. 30 mild, moderate, and severe AEs were reported and recorded giving an overall AE rate of 58/10,000. 83% of the AEs occurred between day 0 (the day of device placement) and day 14. AE rates by age were 47/10,000 for 13-14-year-olds and 101/10,000 for 15-16-year-olds. The risk of AEs was 2.1 [95% CI 1.03 - 4.5; p=0.036] times more likely in age group 15-16. The most common type of AE is pain (42%) followed by wound infection (13%) and swelling (10%) for both age groups.

**Conclusions:** Overall, the AE rates for the Shang Ring device were low. Older boys were more likely to experience AEs compared to younger boys. Pain is the most common type of AE in both age groups. Addressing the issue of pain during device removal remains critical

## THPEC205

### Preparing for choice: a review of policies and tools to support informed choice for the dual prevention pill, an innovative multipurpose prevention technology (MPT)

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**Background:** Access to oral pre-exposure prophylaxis (PrEP) has increased significantly and novel PrEP methods are entering markets, offering a new era of choice-driven programming. Meanwhile, family planning (FP) has decades of experience delivering multi-product portfolios. The dual prevention pill (DPP) is a novel multipurpose prevention technology (MPT) in development, combining PrEP and contraception as an additional option among growing portfolios of prevention products.

While potentially offering increased convenience for users, the DPP will also introduce new challenges, as providers and users navigate choice across both indications.

**Description:** To support development of an enabling environment for informed choice for the DPP and future MPTs, we conducted an analysis comparing policies and tools that support choice for HIV prevention and contraception, assessing global guidance and handbooks, country policies and guidance (for Kenya, South Africa, and Zimbabwe), and user and provider tools.

This review:

1. Identified documents that inform policy and operationalization of choice,
2. Documented how these policies and tools support choice, and;
3. Assessed opportunities and needs for integrating the DPP.

**Lessons learned:** The infrastructure to support informed choice in FP is more developed than the policies and tools available in HIV prevention. Contraception guidelines include practical information on how programs and providers can support choice. For example, FP documents list the factors that should be described to support informed choice (e.g., effectiveness, safety, side effects, impact on menstruation, clinic visit frequency). In FP, there are also policies to address situations of constrained choice (e.g., "bridging" methods when the method of choice is not available).

While some HIV guidance reference choice, tools do not currently provide direct comparisons, which are widely available for contraception. Neither FP nor HIV prevention have existing tools or policies that clearly and consistently integrate considerations for multiple indications.

**Conclusions/Next steps:** Further research is needed to develop policies and tools to support choice when offering MPTs, including developing effective messaging on key product attributes. Product-specific tools should not

be an end goal as these are likely to overburden providers and limit sustainability and integration. However, developing, testing, and validating product-specific MPT materials is needed to support later-stage integration into contraception and HIV materials.

## THPEC206

Perceived side effects and cost remain barriers to use of HIV pre-exposure prophylaxis amongst men who have sex with men (MSM) in Canada

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**Background:** Men who have sex with men (MSM) remain at highest risk for HIV acquisition in Canada. Use of HIV pre-exposure prophylaxis (PrEP) is standard of care, yet many MSM remain off PrEP. Understanding barriers to PrEP will guide possible interventions.

**Methods:** We undertook a community-based survey of MSM accessing sexual health services in two Canadian provinces with different PrEP landscapes: British Columbia (BC) where a universal program provides PrEP at no cost to at-risk individuals, and Ontario (ON) where a complex insurance landscape sometimes requires co-payments or private funding. Individuals who were aware of PrEP but PrEP-naïve were classified as 'PrEP contemplative' if they described planning to access PrEP within the following year. Top three reasons for not accessing PrEP were compared between provinces using chi-square analysis.

**Results:** 1705 individuals (53.8% in ON, 52.0% White, median age 34, Q1-Q3=28-41) were surveyed June-October 2022. Individuals reported prior sexually transmitted infections (38.2% gonorrhea, 34.1% Chlamydia, 19.6% syphilis) and 13.4% had HIRI-MSM risk scores >25. Overall 30.9% (n=220/712) in ON were PrEP aware but had never used it vs. 26.5% (n=169/637) in BC (p=0.07) and amongst these respondents 51.3% vs. 66.2% (p=0.01) were contemplating PrEP initiation. The primary reason for not having used PrEP was concern regarding side effects (69.9% ON vs. 66.9% BC, p=0.62). Cost of PrEP was the second most common reason reported in ON (51.3% vs. 0% of BC respondents, p<0.0001).

In univariate analysis reporting cost as a barrier to PrEP was not significantly (p values >0.5 for all) associated with age, ethnicity, income level, prior STI or elevated HIRI-MSM risk score. In BC, self-perceived lower HIV risk status was the second most common reason (64.2%) but listed by only 34.5% in ON (p<0.001).

**Conclusions:** A considerable minority of MSM in two of Canada's largest provinces were PrEP contemplative but had never accessed it. Concern regarding possible side effects was the primary reason for a majority, while cost was a significant barrier for those in ON.

Educational campaigns regarding PrEP safety and advocacy for free access remain vital to enhance PrEP uptake amongst MSM in Canada.

## THPEC207

Towards induction of broadly neutralizing antibodies against HIV: a phase I HIV vaccine trial in healthy infants exposed to HIV in South Africa (HVTN 135)

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**Background:** The AMP studies demonstrated that neutralizing antibodies (nAbs) can independently prevent clinical HIV acquisition with susceptible viruses. Evidence suggests that the infant immune system may more readily induce antibodies capable of neutralizing diverse HIV strains compared to adults.

To begin to test this hypothesis, our analysis explored the differences in safety and immune responses to a neutralizing vaccine in both populations.

**Methods:** A CD4 binding site (CD4bs) CH103 low-affinity B cell lineage-engaging HIV Envelope gp120 subunit vaccine adjuvanted with GLA-SE was studied in infants and adults. In the HVTN 135 trial, 18 infants received 20µg CH505TF adjuvanted with GLA-SE (5µg) at Weeks 0 (within 5 days of birth), 8, 16, 32, and 54; 10 received placebo. A separate trial (HVTN 115) included a placebo arm and a similar 5 dose regimen of 20µg CH505TF adjuvanted with GLA-SE (10µg) in 12 adults without HIV.

**Results:** In infants, all solicited adverse events (AEs) were mild or moderate (Grade 2 or less) as well as less frequent and severe compared to adults. In adults and infants, there were no related serious AEs, related Grade 3 unsolicited AEs, or AEs of special interest. Antigen-specific B cell measurements (CH505TF-specific and CD4bs-specific



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IgG+ B cells) two weeks post-fifth vaccination were comparable in 14 infants and 9 adults (Figure 1A). In contrast, nAb titers to a tier 1A virus (CH505.w4.3) were higher in infants (Figure 1B).

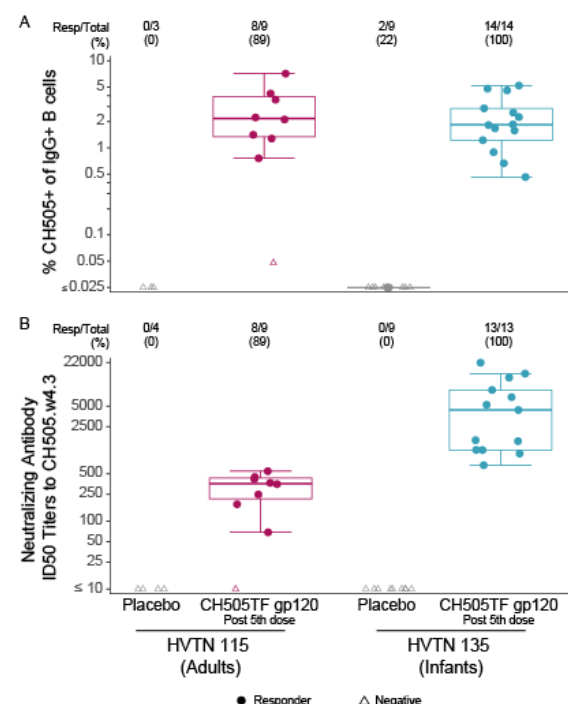


Figure 1A and 1B.

**Conclusions:** HVTN 135, one of few HIV vaccine trials conducted in infants, demonstrated the safety and feasibility of an experimental CD4bs-targeting vaccine in infants. The greater Tier 1a neutralizing antibody titer elicited in infants suggests that there could be differences in response to vaccination with HIV Env and supports further testing the hypothesis that these differences may be more conducive to the development of broadly nAbs.

## THPEC208

Meeting patients where they are: a multimodal approach to HIV prevention

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**Background:** HIV diagnosis remains a significant source of morbidity and mortality in the United States with approximately 1.2 million infected individuals. Campaigns to increase barrier protection use and availability of Pre-Exposure Prophylaxis for HIV have helped to slow the overall rate of new diagnosis.

Although daily oral PrEP has simplified HIV prevention, for many clients this strategy is not ideal due to pill burden, stigma, side effects, and health care access. Long acting injectable cabotegravir (Apretude) for PrEP alleviates some of these barriers.

**Description:** Callen-Lorde cares for over 19,000 clients with 4,500 of those seeking PrEP services. Unfortunately, approximately 25% of clients that initiated oral PrEP in 2023 returned to clinic in the expected timeframe and remained adherent to PrEP. Callen-Lorde's comprehensive multimodal approach to HIV prevention has allowed us to identify individuals who are at risk and to offer a variety of prevention options including LAI for PrEP. Since 2022 Callen-Lorde has utilized a multidisciplinary team to build and rapidly expand a program for LAI cabotegravir. To date we have enrolled 108 clients with a 92.5% retention rate, and zero patients in our LAI program have tested positive for HIV.

The success of our program and the continued adherence of our clients to LAI cabotegravir for PrEP has been driven by a multidisciplinary team of clinicians, nurses, support staff, and patient navigators who have used our electronic medical record and other tools for longitudinal tracking and scheduling of our patients. Multiple redundancies have been integrated into our system to catch patients who miss appointments. This wrap around approach has been integral to client adherence and must be considered when further expanding our program.

**Lessons learned:** Creating a financially sustainable and clinically sound LAI for PrEP program is possible but requires significant organizational investment. When expanding LAI for PrEP programs use of the EMR and longitudinal tracking are essential for ensuring patient adherence and therefore continued HIV prevention with this strategy.

**Conclusions/Next steps:** This presentation will show how a multimodal approach including counseling, patient navigation, and the implementation of LAI for PrEP can improve PrEP adherence and reduce the risk of HIV acquisition.

## THPEC209

Correlates of the sexual and reproductive health service utilization among older adults living with HIV in China: a cross-section study

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**Background:** Sexual and reproductive health (SRH) is critical to the overall health of older adults living with HIV (OALHIV). Research on SRH services among OALHIV is limited. We assessed the utilization of SRH services and its correlates among OALHIV in China.

**Methods:** We conducted a cross-sectional study to collect data from OALHIV aged 50 and above in designated HIV/AIDS treatment hospitals in four Chinese cities between June 2020 and December 2022.

An investigator-administered questionnaire including demographic characteristics, sexual health status, and SRH service utilization, was collected. SRH services included reproductive health examination, and seeking advice/solutions to problems in sexual life among sexually active participants. Logistic regression was used to assess correlates of the utilization of SRH service.

**Results:** A total of 680 OALHIV (500 males and 180 females) were enrolled. The mean age was 60.3±7.8 years. 18.2% had a reproductive health examination in the past year. Among 252 sexually active OALHIV, just over 1 in 3 (36.1%) sought advice/solutions to problems in sexual life. Female OALHIV (aOR = 3.13, 95%CI: 1.84–5.31), an annual income of ≥ USD 7500 (3.68, 1.60–8.47), and an educational level of middle school or above (2.33, 1.24–4.33) were more likely to have a reproductive health examination in the past year.

Among sexually active OALHIV, individuals who were bisexual (compared to heterosexual: 3.03, 1.42–6.47), had an educational level of middle school or above (6.37, 2.36–17.20) were more likely to seek advice/solutions to problems in sexual life.

**Conclusions:** The proportion of SRH services utilization among OALHIV was low. Sex, income, and educational level were significantly associated with reproductive health examinations. Sexual orientation and educational level were significantly associated with seeking advice/

solutions to problems in sexual life among OALHIV. SRH messages and services tailored for OALHIV are needed to enhance their utilization of SRH services.

## THPEC210

Willingness and potential barriers to adopting biomedical prevention for sexually-transmitted infections (STIs) among gay, bisexual and other men who have sex with men (GBMSM) in Taiwan: 2023 HEART Survey

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**Background:** Various biomedical interventions have proven effective against STIs, such as vaccines for human papillomavirus (HPV) and mpox, pre-exposure prophylaxis (PrEP) for HIV, and post-exposure prophylaxis with doxycycline (doxy-PEP) for gonorrhea, syphilis and Chlamydia infection.

Whilst these interventions have been introduced successfully among GBMSM in Taiwan, the awareness, current uptake and future willingness to adopt such strategies remain unknown.

**Methods:** Between November 28<sup>th</sup>-December 28<sup>th</sup> 2023, a survey comprising 65 questions was administered online to adult GBMSM using social networking applications in Taiwan. Beyond demographics, HIV serostatus, risk behaviours, current and previous PrEP use, respondents were asked regarding their awareness and actual uptake of the biomedical preventive strategies (HPV and mpox vaccines, doxy-PEP), willingness for future uptake and their potential barriers.

**Results:** In total, 1,656 survey responses were included in this analysis (mean age =34.7 years, SD 8.2). One-fifth (n=328) reported living with HIV (HIV+), 325 reported negative or unknown HIV status and currently on PrEP (HIV-/PrEP+), and 1003 reported no current PrEP use (HIV-/PrEP-). The overall actual uptake for HPV vaccine, mpox vaccine and doxy-PEP was 8.5% (incomplete)/24.8% (complete), 13.0% (incomplete)/43.5% (complete), and 2.9% respectively.



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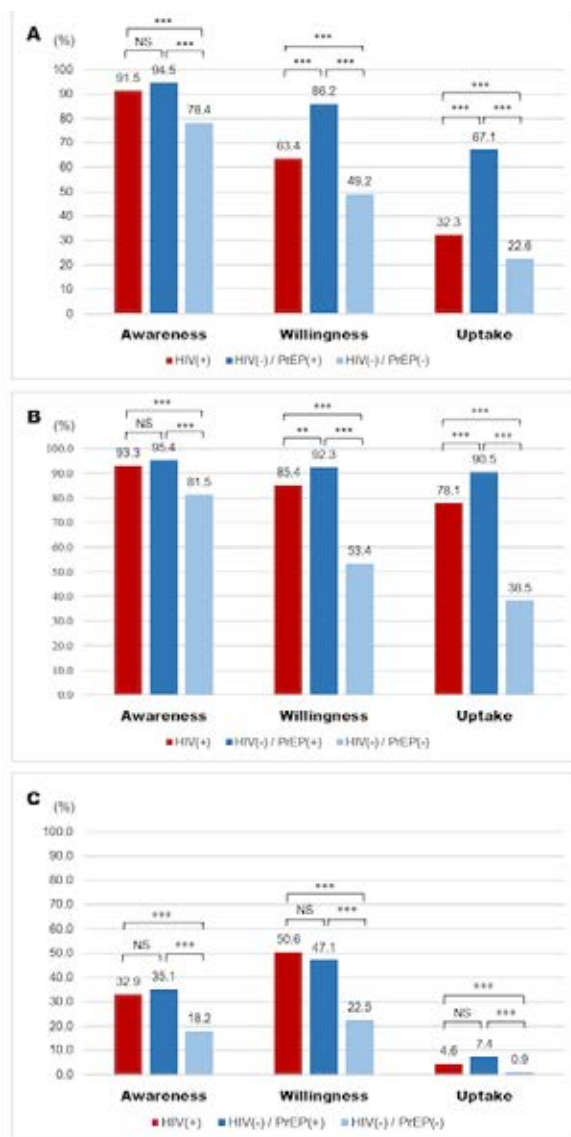


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The awareness-willingness-uptake cascades among each of HIV+, HIV-/PrEP+, and HIV-/PrEP- groups for these strategies are shown in Fig, where HIV-/PrEP+ group had highest uptake for all three strategies, followed by HIV+ group and HIV-/PrEP- group. Apart from infrequent sex, the major barriers to future uptake were high cost (46.2%) for HPV vaccine, low self-perceived risk (44.8%) for mpox vaccine, as well as difficult access to medication (43.1%) and inadequate knowledge (41.5%) for doxy-PEP.



**Fig.** The awareness-willingness-uptake cascades of A) HPV vaccine B) mpox vaccine, and C) doxy-PEP among each of HIV+, HIV-/PrEP+, and HIV-/PrEP- groups. Uptake includes incomplete and complete vaccination. NS, \*, \*\*, \*\*\* means nonsignificant or significant at  $p < 0.05$ ,  $0.001$ , or  $0.0001$ , respectively by using the chi-square test.

**Conclusions:** Whilst the highest uptake of biomedical preventions against HPV, mpox and bacterial STIs was observed among HIV negative men on PrEP, our study demonstrated strategy-specific barriers also exist and are needed to be addressed differently and promptly, especially for GBMSM living with HIV.

## THPEC211

### Concerns about the use of doxycycline post-exposure prophylaxis among bathhouse clientele

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**Background:** Doxycycline post-exposure prophylaxis (doxyPEP) is a novel biomedical intervention which can decrease bacterial STIs among men who have sex with men (MSM) and transgender women regardless of HIV status.

We examined concerns with doxyPEP use among patrons of Steamworks, a bathhouse and collective sex venue with US and Canadian locations.

**Methods:** An anonymous, web-based survey was sent to the Steamworks newsletter list-serve to assess demographics, self-perceived STI risk/worry, as well as doxyPEP awareness, perceptions, and concerns.

Adjusted incidence rate ratios (aIRR) and 95% confidence intervals (CI) were calculated using multivariable Poisson regression with robust variance estimation to examine factors associated with number of concerns about doxy-PEP.

**Results:** From December 12, 2023 through January 12, 2024, 133 surveys were completed. Participants were 35.3% aged 18-49 years, 78.2% White, 83.5% gay, 13.5% bisexual, 93.2% with some college education or more, 14.3% living with HIV, 69.9% currently taking HIV PrEP. Over two thirds (69.9%) reported STI testing in the past 3 months, of whom 24.7% reported testing positive; 60.9% had heard of Doxy-PEP. Antimicrobial resistance (37.8%), adverse effects on health (36.9%), side effects (35.3%), and difficulty with access (22.6%) were the most frequently listed concerns regarding doxyPEP. Twenty percent of respondents reported four or more concerns regarding doxyPEP; 18.1% did not have any concerns.

Adjusted for age, race/ethnicity, education, and sexual orientation, compared to 18-34 year olds, those aged 35-39, 50-59, and  $\geq 60$  were less likely to have  $\geq 4$  concerns about doxyPEP (aIRR=0.20, 0.15, 0.18 respectively,  $p < 0.05$  each).

Those who reported attending a bathhouse in the past 3 months were less likely to have  $\geq 4$  concerns (aIRR=0.30,  $p < 0.05$ ). Those reporting being moderately or extremely concerned about acquiring an STI in the next 3 months were more likely to have  $\geq 4$  concerns about doxyPEP (aIRR 2.14,  $p < 0.05$ ).

**Conclusions:** Understanding and addressing individual concerns will be critical to successfully implementing doxyPEP. The top three concerns were health related;

messaging that addresses these may have positive impact on doxyPEP uptake or adherence. More work is needed to highlight intersectional and overlapping doxyPEP concerns. These and future results can help adapt city-wide sexual health messaging and services in real-time.

## THPEC212

### Knowledge, use and misuse of self-prescribed doxyPEP in a community-based PrEP service

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**Background:** The lack of national Guidelines on DoxyPEP leaves a gap in STI prevention where individuals with perceived high risk of exposure are informally self-administering doxycycline as PEP. This study aims to describe knowledge, use, temporal trends, and impact of doxyPEP in a cohort of PrEP-clients attending a community-based service.

**Methods:** Milano Checkpoint provides sexual health assistance to the largest cohort of PrEP-users in Italy. At each visit, clients are tested for STIs and fill self-administered behavioral questionnaires, including a survey on doxy-PEP. Descriptive statistics and nonparametric tests were used to describe survey participants from September to December 2023. Temporal trends were assessed with Cochran-Armitage test. Incidence rate (IR) was calculated for syphilis and chlamydia (separately and in combination, S/C), and for gonorrhea. Incidence rate ratios (IRR) were compared using adjusted Poisson models.

**Results:** The analysis included 686 respondents: 188 (27.5%) were aware of doxyPEP but only 52 (7.6%) reported using it. Users were significantly younger (36 versus 38 years), with higher number of overall (20 versus 13) and condomless (12 versus 7) sexual intercourses in the previous 3 months. DoxyPEP information was received mainly from friends (41.0%) and the internet (36.7%), but users discussed doxy-PEP with PrEP providers more often than non-users (32.7% versus 14.0%,  $p=0.006$ ). DoxyPEP was used mostly in case of self-perceived high-risk STI exposure (42.1%), but only 51.7% used the recommended dosing. DoxyPEP awareness and use decreased significantly over time.

Historical STIs IRs between groups were similar, but doxy-PEP users showed a significant increase in chlamydia (IRR 3.07, 95%CI 1.27-8.51,  $p=0.006$ ), S/C (IRR 1.95, 95%CI 0.91-4.46,  $p=0.067$ ), and gonorrhea (IRR 3.91, 95%CI 1.56-11.68,  $p=0.001$ )

incidences compared to the previous visit recorded. Adjusted Poisson models suggest that increasing frequency of doxyPEP use is protective against chlamydia (IRR 0.94) and S/C (IRR 0.92) at the limit of significance.

**Conclusions:** DoxyPEP was used by a limited number of clients and often with inadequate dosing. Users had increased STIs incidence probably for risk compensation issues, but higher doxyPEP frequency suggests protection against chlamydia and S/C. DoxyPEP needs to be implemented within appropriate national guidelines to reduce STIs circulation.

## THPEC213

### Awareness and willingness towards doxycycline post-exposure prophylaxis for bacterial sexually transmitted infections among men who have sex with men

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**Background:** Doxycycline post-exposure prophylaxis (doxy-PEP) has been demonstrated to prevent bacterial sexually transmitted infections (STIs) among men who have sex with men (MSM). This study aimed to investigate the awareness and willingness towards doxy-PEP among MSM in the real-world setting.

**Methods:** From October 2023 to January 2024, we enrolled MSM aged 18 years and greater, including people with HIV (PWH) and pre-exposure prophylaxis (PrEP) users at a university hospital in Taiwan. Participants completed an online self-administered questionnaire interview upon enrollment to obtain information on the sexual behaviors, history of STIs in the past year, and their willingness to use doxy-PEP.

Multivariable logistic regression analysis was conducted to identify the factors associated with both the willingness to use and the prescription of doxy-PEP.

**Results:** A total of 922 participants with a median age of 38 years, including 796 PWH and 153 PrEP users, were enrolled, with 90.9% reporting having been engaged in anal-penile



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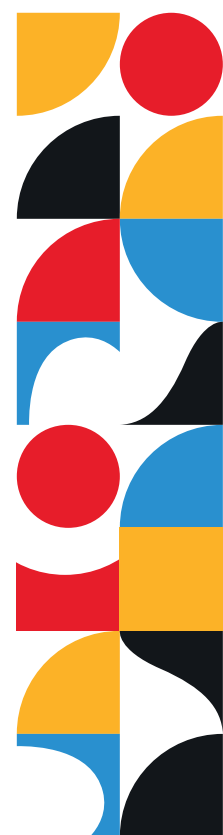
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or oral sex and 38.1% having acquired STIs in the previous year. Overall, 787 participants (85.4%) expressed willingness to use doxy-PEP after unprotected sexual activities. In multivariable analysis, the willingness to use doxy-PEP was associated with having recommendations from health-care providers (adjusted odds ratio [AOR], 1.85; 95% CI, 1.13-3.04). Among participants with fixed partners and those with non-fixed partners, the main reasons for the willingness to use doxy-PEP were the fear of contracting STIs (63.6% vs. 75.6%) and the concern about the spread of acquired STIs to others (62.3% vs. 70.4%), respectively. Of the 787 participants expressing willingness to use doxy-PEP, 329 (41.8%) received both counseling and prescriptions for doxy-PEP. In multivariable analysis, participants' prescriptions of doxy-PEP were associated with having a history of STIs (AOR, 1.64; 95% CI, 1.17-2.31), unprotected sex (AOR, 3.07; 95% CI, 1.39-6.76), and recommendations from healthcare providers (AOR, 1.69; 95% CI, 1.06-2.69), and being informed of clinical trial data (AOR, 1.52; 95% CI, 1.10-2.10).

**Conclusions:** Sexually active MSM in Taiwan exhibited a high willingness to use doxy-PEP, which correlated with their perception of STI risk. Providing information, education, and counseling by the healthcare providers may facilitate the initiation of doxy-PEP among at-risk populations.

## THPEC214

"We used to treat a bit blindly: it was a syndromic diagnosis". Physicians' perceptions of comprehensive management of sexually transmitted infections among sex workers in Côte d'Ivoire

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**Background:** The ANRS 12381 PRINCESSE project proposed a comprehensive, community-based sexual and reproductive health (SRH) care package, including the man-

agement of sexually transmitted infections (STIs), for female sex workers (FSWs) aged  $\geq 18$  years in the San Pedro area. Our objective was the analysis of physicians' perceptions of the overall management of STIs.

**Methods:** The PRINCESSE health package (November 2019 - June 2023) included quarterly syndromic STI screening, vaginal and anal swabs for annual testing for chlamydia trachomatis and neisseria gonorrhoea, and appropriate free STI treatment. It was offered in both mobile and fixed clinics. At cohort closure in June/July 2023, in-depth individual interviews were conducted with the four physicians involved in the project.

**Results:** The offer of STI screening and treatment was well received by the medical team. For the physicians, the acquisition of new knowledge about STI treatment, the opportunity to carry out laboratory tests directly on site and in a fixed clinic, and the fact that they could provide STI treatment kits directly to clients were an asset of the project and a source of motivation to work in the long term. This has also fostered a relationship of trust between the physicians and FSWs.

However, operational difficulties, including frequent delays in the supply of STI kits and the late return of medical analyses, have at times undermined this relationship of trust and made it difficult to provide timely and appropriate STI treatment and regular follow-up in a context that was already tense due to the high mobility of FSWs. Another limitation was the lack of care for the stable partner(s) of treated FSWs, as this did not allow the chain of contamination to be broken and possible re-acquisition to be avoided. Finally, the inaccessibility of certain sites due to poor road conditions during the rainy season also made STI treatment difficult.

**Conclusions:** STI screening and treatment were seen as an appropriate response to the SRH needs of FSWs. However, both structural and operational barriers have made implementation complex. Point-of-care tools, such as rapid STI testing, could be useful for this particularly mobile population.

## THPEC215

### HIV Pre-exposure prophylaxis (PrEP) outpatient clinic as a prevention tool for sexual transmitted diseases (STDs) and for vaccinations among MSM

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**Background:** Pre-exposure prophylaxis (PrEP) is effective in HIV prevention, despite an increase of sexually transmitted disease (STDs), such as *N. gonorrhoeae* (NG), *C. trachomatis* (CT), *M. genitalium* (MG) and syphilis.

Primary objectives: incidence, prevalence, and predictors of STDs; frequency of vaccination for HAV, HBV and HPV and triple vaccination associated factors.

**Methods:** Retrospective single-center study including men who have sex with men (MSM) aged ≥18 who started PrEP at our clinic (Genoa) between October 2018 and October 2023. We considered the incidence rate per 100 person-years, according to different anatomical sites and PrEP intake mode. The prevalence of STDs was evaluated at T0 (start of PrEP), T1 (six months after T0), and T2 (12 months after T0). Univariate and multivariate analyses were used to assess predictive factors for STDs.

**Results:** Of 137 MSM with a median age of 36 years [inter-quartile range, 30 to 45] 64% were taking PrEP on demand and 36% continuously. The prevalence of genital and extragenital STDs was 4.2% and 5.1% at T0, 0 and 4.7% at T1, 8.3% and 9.4% at T2. The 100 person-years incidence rates were 22.23 (95% confidence interval [CI] 21.41-23.07) for NG, 11.91 (95%CI, 11.21-12.53) for CT, 38.07 (95%CI, 37.00-39.16), for MG and 14.73 (95%CI, 14.12-15.36), for syphilis. Predictive factors for CT were drugs abuse ( $p=.023$ ) and sildenafil use ( $p=.037$ ); for syphilis fisting practice ( $p=.017$ ), popper ( $p=.033$ ), sildenafil use ( $p=.017$ ) and intake errors ( $p=.027$ ); for MG 'continuous' PrEP ( $p=.003$ ), sildenafil use ( $p=.003$ ) and chemsex practice ( $p=.015$ ); for NG drugs abuse ( $p=.007$ ) and 'continuous' PrEP ( $p=.013$ ). 14% of participants were fully vaccinated against HAV, 20% against HBV, and 19% against HPV. 54% received at least one dose of the three vaccines. The only predictor of a lower triple vaccination rate was the lower number of PrEP visits (adjusted odds ratio, aOR = 0.78; 95%CI, 0.67-0.91;  $p=.001$ ).

**Conclusions:** PrEP visits are an opportunity for early recognition of STDs and for free access to vaccinations. The identification of possible predictors of STDs could facilitate heightened focus on individuals exhibiting specific risk factors, making them potential candidates for innovative strategies like doxycycline post-exposure prophylaxis.

## THPEC216

### Cervical cancer rates among women living with HIV in PEPFAR programs by age and country, fiscal years 2018-2023

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**Background:** Women living with HIV (WLHIV) have six times the risk of developing cervical cancer compared to women without HIV. In 2023, PEPFAR programs screened over 2.7 million women for cervical cancer using visual inspection with acetic acid (VIA) (5-25% screen positivity expected). We reviewed the percentage of WLHIV who tested positive by VIA screening to assess the performance of PEPFAR programs.

**Methods:** This study focused on eight countries (Botswana, Eswatini, Lesotho, Malawi, Mozambique, Namibia, Zambia, and Zimbabwe). Routine semi-annual monitoring data from fiscal years (FY) 2018-2023 calculated screening positivity proxy by age, country, and outcome. The positivity rate was calculated by dividing the total number of WLHIV (aged 15+) screening positive for high-risk cervical lesions using VIA at a first-time screen, rescreen (after a previous negative result), or follow-up (post-treatment after positive results) by the total number of WLHIV screened for cervical cancer.

**Results:** Positivity rates were 8.0% in FY18Q4 and 6.4% in FY23Q4, with the lowest rate in FY22Q2 (5.3%) and the highest rate in FY19Q2 (8.02%). From FY18Q4 to FY22Q4, follow-up screenings had the highest positivity (7.1% in FY21Q4 to 16.1% in FY19Q2). In FY23Q2, first-time screens had the highest positivity (7.4%), compared to 6.9% for follow-up and 4.4% for rescreened. Among first-time and follow-up screened WLHIV, 8% displayed suggestive pre-cancerous lesions and 1% showed suggestive invasive cervical cancer. Of those rescreened, 5% had suggestive pre-cancerous lesions. Across the period, WLHIV 25-29 years old exhibited the highest positivity rate (7.1%) and WLHIV aged 50+ exhibited the lowest (3.7%). The highest positivity rate was among 30-34 year olds in FY19Q2 (9.2%). Namibia had the highest positivity rate (15.9%), while Malawi had the lowest (2.6%).

**Conclusions:** PEPFAR-supported cervical cancer screening programs are finding 5-8% rates requiring follow-up, aligning with VIA screening expectations. Research is needed to examine disparities in quality, accuracy detection rates, and performance between VIA and HPV testing methodologies for age groups and countries outside this range. Scale-up of HPV as the primary screening modality to allow for less frequent screening should also be considered.



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## THPEC217

Doxy-PEP interest and use among US cisgender men who have sex with men, transgender women and non-binary assigned male-sex at birth: results from a national online survey

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**Background:** Doxycycline as post-exposure prophylaxis (doxy-PEP) significantly reduces bacterial sexually transmitted infections (STIs) among cisgender men who have sex with men (cis-MSM) and trans-women. In October 2023, the US CDC released proposed guidelines for doxy-PEP, however, information about doxy-PEP use and interest among US cis-MSM, trans-women and non-binary assigned male-sex at birth is limited.

**Methods:** We conducted a national online survey of doxy-PEP use and interest through a social networking application (Grindr) from March-April-2023 with questions about demographics, sexual behavior, HIV/STI history, PrEP use, and doxy-PEP use/interest. We defined doxy-PEP eligibility as having an STI in the past year.

We used a logistic regression model to assess factors associated with doxy-PEP use among those eligible for doxy-PEP.

**Results:** Of 1,428 participants with a median age of 38 years [IQR:30-52], 93.8% were cis-MSM, 3.6% non-binary, 2.6% trans-woman, 49.8% White, 28.5% Latinx, 9.4% Black, with 33% each from the southern and western US. In the last 6 months, participants reported a median of 5 partners (IQR:2-10), 83.4% condomless sex, 49.7% use of poppers, 10.9% binge drinking, 14.1% methamphetamine, and 7.4% cocaine.

Overall, 16.0% were living with HIV and of HIV- participants, 87.4% were aware of PrEP, and 47.8% currently on PrEP. A total of 33.1% (N=471/1422) reported an STI in the past year and considered eligible for doxy-PEP. Among them, only 17.0% (N=80/471) reported ever using doxy-PEP, but most who never used doxy-PEP were interested (93.8%, n=364/388).

Among doxy-PEP users, most reported obtaining it from their health care providers (51.2%) or a sexual health clinic (35.0%); overall, 12.0% reported being denied doxy-PEP by a provider. Doxy-PEP use was associated with number of partners (adjusted Odds Ratio [aOR]: 1.01; 95%CI:1.00-1.03; per 1-point increase), Black race (aOR:3.62; 95%CI:1.18-10.63) and current PrEP use (aOR:3.60; 95%CI:1.53-9.84).

**Conclusions:** A national online survey of social network app users assigned male-sex at birth found high interest but low use of doxy-PEP. Interest was high among those eligible for doxy-PEP, and doxy-PEP use was higher among

Black persons and current PrEP users. Implementation of doxy-PEP will need to ensure equity in access among populations most likely to benefit at individual and community levels.

## THPEC218

Doxycycline for bacterial sexually transmitted infection prevention in British Columbia, Canada

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**Background:** Bacterial sexually transmitted infections (b-STIs) account for an estimated 374 million new infections per year globally. Doxycycline has demonstrated efficacy in preventing b-STIs amongst gay, bisexual and other men who have sex with men (gbMSM) and trans-women living with HIV, and in those at risk of acquiring HIV on HIV Pre-Exposure Prophylaxis (PrEP).

We describe implementation of a b-STI prevention initiative in British Columbia (BC), in response to continued elevated rates of b-STIs amongst gbMSM.

**Description:** A publicly-funded doxycycline for b-STI prevention initiative was launched 1-Dec-2023 for eligible participants of the centralized BC Centre for Excellence in HIV/AIDS Drug Treatment Programs (DTP). Baseline evaluation confirmed elevated b-STI rates, amongst gbMSM participants of DTP programs.

Evidence-based guidance was developed detailing participant eligibility: HIV treatment or PrEP program participation; gbMSM or transwoman; history of b-STI in the previous 12 months or clinically at risk of b-STIs. Medication distribution and counselling were aligned with the centralized system for DTP programs.

Eligibility and prescribing information were posted publicly, and a communication sent to 1700 DTP (antiretroviral therapy [ART] and PrEP) prescribers.

A program database, and monitoring and evaluation plan were developed, including programmatic and clinical indicators (e.g., uptake, impact, adverse drug reactions, unintended consequences).

**Lessons learned:** Early program uptake (1-Dec-2023 through 22-Jan-2024) included 410 enrollees with median (Q1-Q3) age 35 years (30-42), 99% cis-men, including 43% identifying as White, 13% Latin, 11% East Asian, 7% South Asian, and 82% residing in the Greater Vancouver area. Of enrollees, 51% reported a history of b-STI in the previous year, and 40% had received doxycycline prior to enrolment.

Baseline syphilis rate was 7.5 per 100 person-years in 376 HIV PrEP recipients (1416 person-years of follow-up); and 17.0 per 100 person-years in 34 ART recipients (135 person-years of follow-up).

**Conclusions/Next steps:** We describe the integration of a publicly-funded doxycycline for b-STI prevention initiative targeting ART and PrEP recipients in BC, including the generation of therapeutic guidelines, centralized medication distribution, and planned monitoring and evaluation strategies.

While participants with elevated b-STI risk from both DTP programs have enrolled in this b-STI prevention initiative, early uptake has been particularly brisk among PrEP recipients.

## THPEC219

### Prevalence of depression and determinants among HIV positive pregnant women attending both antenatal and ART clinics in rural Malawi

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**Background:** Depression is a widespread mental health concern on a global scale, impacting individuals across the society. World Health Organization (WHO) estimates that 264 million people worldwide grapple with depression. Among people living with HIV, depression is highly prevalent, with global studies estimating its occurrence between 20% and 60%.

In Malawi, prevalence rates range from 9% to 30.3%. For HIV-positive prenatal women, the prevalence of depression is reported between 14% and 55% worldwide, and 23% to 65% in Sub-Saharan Africa.

However, there is a notable gap of the prevalence of depression and its associated risk factors among prenatal women in rural Malawi.

**Methods:** Conducted in Malawi's Nkhata Bay district, our cross-sectional quantitative study utilized randomized systematic sampling for participant recruitment. Data collection employed the validated PHQ9 tool, with analysis conducted using SPSS version 22. The study computed prevalence rates and employed linear multivariable regression to assess determinants of depressive symptoms in HIV-positive antenatal women.

This research, a component of a Master of Science in Community Health Nursing, was approved by College of Medicine Research and Ethics Committee (COMREC), and Nkhatabay District Hospital.

**Results:** Prevalence of depression among prenatal mothers attending both ANC and ART clinics in Nkhata Bay stood at 24%, with 20% having moderate to moderate severe symptoms and 5% with severe depression. In a bivariate analysis depression was associated with poor ART adherence ( $p < 0.0001$ ), alcohol use ( $p = 0.001$ ) and history

of GBV ( $p = 0.018$ ) whilst in a multivariate analysis ART adherence was associated with the reduction in depression symptomatology ( $B = -3.2$ ;  $p < 0.0001$ ).

**Conclusions:** In rural settings, our study revealed significant prevalence of depressive disorders among prenatal women attending both Antenatal Care (ANC) and Antiretroviral Therapy (ART) clinics, aligning with global and Sub-Saharan African estimates. This high prevalence emphasizes the imperative to incorporate mental health, particularly depression care, into ANC and ART services. Notably, the correlation between depression prevalence and factors such as poor ART adherence, alcohol use, and history of gender-based violence underscores the necessity for comprehensive assessments of pregnant women in these clinics. This insight advocates for the implementation of targeted interventions to address the mental health needs this vulnerable population.

## THPEC220

### Transforming family planning access for women living with HIV: the one-stop shop model

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**Background:** Integration of family planning (FP) into HIV care is considered a high-impact practice, but integration into antiretroviral therapy (ART) services remains limited. Increasing access to effective contraception among women living with HIV (WLHIV) not only fulfills their reproductive rights but is also key towards elimination of mother-to-child transmission. The USAID Afya Yangu Northern project integrates FP services into 472 HIV care and treatment clinics in five regions in Tanzania. In 267 health facilities, a one-stop-shop model offers the full FP method mix within the HIV clinic. Within these five regions, 33% of women aged 15-49 in the general population use a modern method of FP (TDHS 2022).

This study aimed to assess results of integrated delivery of FP methods within HIV clinics in providing access to FP for WLHIV.

**Methods:** A cross-sectional review of program data was conducted, using the national HIV care and treatment database to analyze the documentation of FP uptake among WLHIV aged 15-49 years, currently on ART by September 2023, across 472 supported facilities.

**Results:** Among the 81,231 WLHIV on ART, 34,793 (43%) currently use a modern FP method, 38,965 (48%) were documented as not using any FP method, and 7,129 (9%) had an unknown FP status. Among all FP users, 51% used condoms, 35% implants, 6% Depo-Provera injectables, 5%



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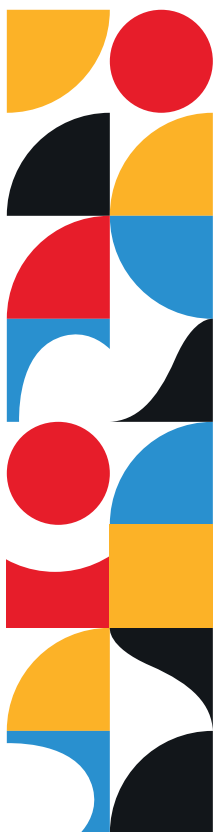
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sterilization, 2% intra-uterine contraceptive device, and 1% oral contraception. The uptake of modern FP is higher within the 267 facilities offering the one-stop-shop model: 48% (30,129/60,306) compared to 25% (4,664/18,925) at the other 205 facilities. The uptake of long-acting and reversible contraception (LARC) at the one-stop-shop sites was 42% (12,751/30,129) compared to 36% (1,673/4,664) at the other sites.

**Conclusions:** FP integration through the one-stop-shop model facilitated access to FP among WLHIV, with a higher percentage of WLHIV of reproductive age using FP compared to the general population.

The offer of a method mix within HIV clinics increased the uptake of LARCs. While challenges exist in ensuring proper documentation, the study highlights the importance of integrated service delivery in providing FP access to WLHIV.

## THPEC221

Assessing the impact of an integrated community service delivery approach in improving HIV and Malaria case identification, HIV viral suppression and other health outcomes at Community level

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**Background:** HIV epidemic continues to be a public health challenge in Uganda. With 1.4 Million people living with HIV of which 82,000 are non-suppressed. Approaches supporting them are siloed and Uganda continues to get 51,000 new infections.

The Integrated Community Service Delivery Approach (ICSDA) is key in improving treatment outcomes, identifying undiagnosed HIV positives, addressing socio-economic issues and Directly Observed Treatment and Support (DOTS). We assessed its impact on improving health outcomes.

**Description:** A comprehensive analysis was conducted using data collected from 3 sub-regions. This involved mapping virally non-suppressed clients and Community Health Workers (CHW) by village to determine the patient attachment ratio and effectiveness, success of socioeconomic programs and DOTS.



We attached all Non suppressed clients to CHWs/peers within their proximity on a ratio of 1:4, provided them with treatment literacy handbooks and a service package which included DOTS, screening and testing of family members for HIV, TB, Malaria, NCD and linkage of households to social-economic programs. They followed the households for 30 days.

**Lessons learned:** A total of 11,243 unsuppressed clients were attached to 2,955 CHWs during the study. 3,373 Males and 7,870 females. The interventions increased viral load suppression rates by 97%, index testing for the contacts of non-suppressed resulted in 13% yield, referral of 2,430 malaria cases to the facility.

Additionally, Socioeconomic interventions showed varied success, with significant strides in vocational training linkage and kitchen gardens. CHWs identified information fatigue and stigma created from many different program peers who visit households and lack of a supportive environment at home as the major factors for non-suppression.

**Conclusions/Next steps:** This approach has shown promising results in improving viral suppression rates and case identification for HIV and Malaria. It is cost effective, reduces duplication, improves efficiency and if scaled, it can support the country to achieve epidemic control

## THPEC222

Interventions to reduce PrEP interruptions among clients at substantial risk of HIV acquisition in Acholi Sub-region following the enactment of Anti-Homosexuality Act in Uganda

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<sup>1</sup>The AIDS Support Organisation (TASO), Gulu, Uganda

**Background:** The passing of Anti-homosexuality Bill (AHB) and subsequent assent to it by the President into the Anti-homosexuality Act (AHA) fueled increased fears of arrests, victimization, violence, stigma, and discrimination among members of key population (KP) in the Acholi Sub-region. Between March-May 2023(Weeks 13-18), appointment keeping & facility attendance dropped by >45% from a weekly average of 110 to 60. Without any mitigation interventions, the risk of PrEP interruptions for clients at substantial risk of HIV was high. This would exacerbate the risk of HIV acquisition and transmission among this high-risk population further curtailing efforts to attain and sustain HIV epidemic control.

This project aimed at instituting adaptations aimed at minimizing interruptions of PrEP continuity among populations at substantial risk of HIV amidst the AHA in Acholi sub-region.

**Methods:** Working with various stakeholders including KP community members, reviewed the implementation climate amidst AHA and instituted KP program adaptations to reduce PrEP interruptions. These included; orientation



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of Peer outreach workers (PoWs) and health workers on the AHA and its implications for KP service delivery while emphasizing need for continuity of non-judgmental & non-stigmatizing service delivery; scaled down traditional moon-light outreaches at hotspots due to safety concerns in favor of discrete door to door delivery of refills; Using the Peer attachment records, doubled airtime facilitation for all POWs to enhance proactive tracking of clients using their peer calendars; and deployed a psychotherapist to enhance screening for mental health and management.

**Results:** The Activity did not only mitigate interruptions but increased the number of clients at substantial risk that continued on PrEP from 1,646 in Q1 to 2,395 by end of Q4 2023. Attendance & appointment keeping was restored to pre-AHA levels.

**Conclusions:** Although the KP implementation climate has remained fluid, KP program adaptations such as a shift to discrete door to door delivery of refills can enhance PrEP continuity. Effective HIV prevention is feasible amidst AHA, and members of KP community can be proactively supported to continue on PrEP through intentional KP program adaptations. Engagement of psychotherapists and enhancing PrEP continuity for all clients with ongoing risk should remain a core priority of PrEP programming.

## Population-specific interventions for HIV prevention

### THPEC223

PrEP use, awareness, and interest among women who inject drugs in Seattle, Washington and Minneapolis, Minnesota

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**Background:** Women who inject drugs (WWID) are disproportionately affected by HIV and experience multiple barriers to PrEP use. We explored patterns of utilization, awareness, interest, and perceived barriers to PrEP use among WWID in two U.S. states.

**Methods:** We conducted sexual health surveys among a convenience sample of WWID at 3 sites in Seattle, WA and at 3 sites in Minneapolis, MN from March-December 2023. Participants were ≥18 years, spoke English, identified

as women, had a lifetime history of injecting drugs, and self-reported a negative or unknown HIV status. Participants were considered PrEP candidates if they reported sharing injection equipment in the past 6 months, no condom use at last sex, and/or transactional sex in the past 6 months. To further explore perspectives on PrEP, we conducted semi-structured interviews with 15 WWID from the Seattle sites. Qualitative interviews were professionally transcribed and analyzed using Rapid Assessment Process.

**Results:** Among 51 WWID, 78% were PrEP candidates, of whom 70% had heard about PrEP but only 8% were currently using PrEP. Among 47 WWID not using PrEP, 49% reported interest in daily oral PrEP and over half (57%) reported interest in injectable PrEP. Qualitative data revealed strong positive attitudes towards PrEP but low perceived risk for HIV, and a preference for long acting injectables over daily oral PrEP. Barriers to PrEP use included adherence challenges, limited self-perceived risk, limited or incorrect knowledge about PrEP, and need to prioritize other health issues and safety concerns.

	Minneapolis		Seattle		Total N=51
	Meets PrEP candidacy criteria N=17	Does not meet PrEP candidacy criteria N=5	Meets PrEP candidacy criteria N=23	Does not meet PrEP candidacy criteria N=6	
Injected drugs in past 6 months	13 (76%)	5 (100%)	14 (61%)	2 (33%)	34 (67%)
Shared injection equipment in past 6 months	N=13 5 (38%)	0 (0%)	N=14 4 (29%)	N=2 0 (0%)	N=34 9 (26%)
Median number of sex partners in past 6 months [IQR]	N=15 1 [1-3]	1 [1-2]	10 [2-57]	0 [0-1]	N=49 2 [1-9]
Transactional sex in past 6 months	5 (29%)	0 (0%)	16 (70%)	0 (0%)	21 (41%)
Heard of PrEP	10 (59%)	N=4 3 (75%)	18 (78%)	3 (50%)	N=50 34 (68%)
No history of PrEP use	14 (82%)	N=4 4 (100%)	19 (83%)	6 (100%)	N=50 42 (84%)
Interested in daily oral PrEP (among those not currently on PrEP)	N=16 3 (19%)	N=4 3 (75%)	N=21 13 (62%)	4 (67%)	N=47 23 (49%)
Interested in long acting injectable PrEP	9 (53%)	N=4 3 (75%)	N=22 12 (55%)	4 (67%)	N=49 28 (57%)

Table 1. Study cohort characteristics.

**Conclusions:** Despite high rates of HIV risk factors, PrEP awareness, and interest, few WWID were taking PrEP and many had complex barriers to PrEP use, including low self-perceived risk, challenges with daily medications, and competing survival needs. Our findings highlight the need for increased low-barrier, women-specific interventions to improve uptake and sustained use of PrEP among WWID.



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## THPEC224

Enhancing PrEP uptake among MSM and male sex workers: lessons from events-based awareness creation in Nairobi, Kenya

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**Background:** In Kenya, men who have sex with men (MSM) and male sex workers (MSWs) face a disproportionately high risk of HIV infection. Pre-exposure prophylaxis (PrEP) offers a powerful prevention tool. Since 2017, Health Options for Young Men on HIV/AIDS and STIs (HOYMAS) has been offering community-led HIV prevention and treatment services including PrEP. HOYMAS applied various approaches to scale uptake of PrEP. However, MSM and MSWs still faced limited awareness and access. HOYMAS PrEP champions initiated an events-based PrEP awareness creation program in 2022 to address this gap.

**Description:** Over a 24-month period in Nairobi, Kenya, the events-based PrEP awareness creation program specifically targeted MSM and MSWs. PrEP champions collaborated closely with their peers to develop culturally appropriate messages about PrEP. The initiative featured engaging events such as trivia, skits, and debates infused in outreach activities held at MSM-friendly venues and hotspots. PrEP champions delivered information and facilitated the enrollment of their peers in PrEP services. This innovative model doubled the number of MSM and MSWs enrolled and retained on PrEP.

**Lessons learned:** The findings highlight substantial increase in PrEP uptake among MSM and MSWs. The program effectively engaged the target populations through culturally relevant strategies, dismantling barriers to information access. Interactive events encouraged open dialogue, heightened PrEP knowledge, and mitigated the stigma associated with PrEP use. Community-led approaches involving MSM and MSWs in message development built trust and ensured culturally relevant communication. Peer PrEP champions played a central role in disseminating accurate information, addressing concerns, and facilitating PrEP uptake, resulting in over 2,000 participants signing up for PrEP services. HOYMAS achieved greater program success through collaboration efforts and referral networks that facilitated access to PrEP services.

**Conclusions/Next steps:** The program underscores the efficacy of events-based awareness creation and community-led approaches in significantly increasing PrEP uptake among MSM and MSWs. The success highlights the importance of tailoring interventions to key populations, building trust, addressing stigma through community engagement, and empowering PrEP champions to deliver culturally relevant information. HOYMAS plans to expand this successful program to other counties and advocate for more comprehensive PrEP access through policy initiatives.

## THPEC225

Leveraging digital media and peer-led interventions to enhance HIV prevention and care among young key populations in the Philippines

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**Background:** The Philippines has seen a rapid increase in human immunodeficiency virus (HIV) infections, particularly among young key populations (YKPs), including men who have sex with men (MSM), transgender individuals, sex workers, and intravenous drug users. Traditional outreach methods have been insufficient in addressing the unique needs and behaviors of YKPs. This study explores innovative strategies to improve HIV prevention, testing, and treatment services tailored for YKPs.

**Description:** An integrative approach combining digital media campaigns and peer-led interventions was implemented. Social media platforms were utilized to disseminate HIV-related information, aiming to reduce stigma and increase awareness. The program included virtual safe spaces, e-counseling services, and a mobile health app providing discreet access to HIV self-testing kits, pre-exposure prophylaxis (PrEP), and antiretroviral therapy (ART) adherence support. Furthermore, trained YKP peer educators conducted outreach activities, shared personal narratives, and offered mentorship, creating a supportive community to encourage HIV testing and treatment initiation.

**Lessons learned:** The multi-faceted strategy saw significant engagement, with a 45% increase in HIV testing among YKPs. Peer-led interventions were particularly effective, resulting in a 30% rise in PrEP uptake and improved ART adherence rates. Digital campaigns reached a wide audience, but the impact was maximized when coupled with real-world peer interactions. Challenges included mitigating misinformation and ensuring privacy and confidentiality in digital spaces.

**Conclusions/Next steps:** The combination of digital media and peer-led interventions presents a promising model for enhancing HIV preventive and care services among YKPs in the Philippines. Future efforts should focus on scaling up these strategies, incorporating comprehensive sexual education, and continuously adapting to the evolving digital landscape. Collaborations with local health departments, non-profit organizations, and YKP communities will be crucial in sustaining these innovations and ultimately curbing the HIV epidemic among Filipino YKPs.

**THPEC226****Risk factors associated with oral PrEP uptake and discontinuation among adolescent girls and young women (AGYW) in Dar-es-Salaam, Tanzania**

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**Background:** In 2021, Sub-Saharan Africa had 67% of people living with HIV globally. Currently, the vast majority (86%) of new HIV infections are among adolescent girls and young women (AGYW) aged 15-19 years. Oral pre-exposure prophylaxis (PrEP) is an effective tool that entails use of antiretroviral drugs to prevent HIV acquisition. An evaluation of early implementation in Dar es Salaam, Tanzania, among AGYW has shown poor PrEP adherence. This study examined oral PrEP uptake, discontinuation rates, and associated factors among AGYW in Dar es Salaam.

**Methods:** We retrospectively analyzed the Tanzania AGYW PrEP registry from January 2022 through June 2022 with 6 months of follow-up. Nine (45%) of 20 facilities offering PrEP in Dar es Salaam were selected using systematic random sampling. Data were analyzed using STATA 18.0. Kaplan-Meier survival analysis was used to explore differences in time on oral PrEP to discontinuation; Cox proportional hazard models were used to determine factors associated with oral PrEP discontinuation.

**Results:** A total of 456 AGYW aged 15-24 years were screened and 395 found to be eligible. Oral PrEP uptake was 87% among eligible AGYW. Median time to first PrEP discontinuation was 2.8 months. Sixty-one percent of AGYW had discontinued PrEP by the end of the 6-months follow-up period at a rate of 182 [95% CI: 161-208] per 1,000 person-months.

Significant risk factors associated with a low discontinuation were aged 20-24 years [adjusted hazards ratio (aHR) = 0.54, 95% CI: 0.38-0.77] compared to aged 15-19 years and residence in Kinondoni Municipal Council [aHR = 0.51, 95% CI: 0.34-0.77] and Ubungu Municipal Council [aHR = 0.45, 95% CI: 0.32-0.64] compared to those in Ilala City, being out of school [aHR = 1.16, 95% CI: 0.67-2.01, ref: in school] and PrEP accessing point ( $P < 0.001$ ).

**Conclusions:** In Dar es Salaam, Tanzania, PrEP uptake and the risk of PrEP discontinuation among AGYW were associated with lower age, being in school, and area of res-

idence. Raised community awareness, improved knowledge of service providers and engaging AGYW peers on adherence groups may facilitate retention of AGYW on PrEP.

**THPEC227****High HIV prevalence among people reporting non-injecting drug use requires a more inclusive approach to HIV prevention**

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**Background:** People who use drugs continue to drive the HIV epidemic in Kazakhstan. In Almaty, according to the 2022 bio-behavioral survey, the respondent driven sample-weighted HIV prevalence among people reporting injecting drug use (IDU) was 2.6% (95%CI 0.8%-4.5%). Data on HIV prevalence among people with non-injecting drug use (NIDU), use of new psychoactive substances (NPS), and polydrug use are not available. HIV prevention and harm reduction services for people with NIDU are also very limited. ICAP at Columbia University jointly with a non-governmental organization (NGO) Revansh, expands access to voluntary HIV testing services (HTS) for all people who use drugs using a social network-based testing strategy (SNS).

**Description:** SNS is implemented in Almaty, Kazakhstan as part of the "Almaty Model for HIV Epidemic Control" project. Trained NGO providers ask their clients living with HIV and those using drugs to invite individuals in their sexual, drug using or social networks to participate in voluntary HTS.

**Lessons learned:** From September 1, 2021, to December 31, 2023, 2,006 people (1,526 men and 480 women) received HTS as part of SNS, including 1,216 (903 men and 313 women) who reported NIDU and 790 (623 men and 167 women) who reported IDU. Of 1,216 people reporting NIDU, 1,101 used NPS, 56 used a mix of different drugs (polydrug use), 47 misused prescription drugs and 9 did not specify drugs used. Twenty-seven people with NIDU (2.2%, 95%CI 1.5%-3.2%) and 42 with IDU (5.3%, 95%CI 3.96%-7.11%) were confirmed as HIV-positive ( $p = .0002$ ). HIV-positivity was 3.6% (95%CI 0.99%-12.1%) among people reporting non-injecting polydrug use, 2.2% (95%CI 1.5%-3.2%) among people reporting non-injecting use of NPS, and 2.0% (95%CI 0.35%-10.5%) among people with non-injecting misuse of prescription drugs.

**Conclusions/Next steps:** The results of our SNS program demonstrate that HIV prevalence among people reporting NIDU are comparable to that among people injecting drugs, emphasizing the importance of comprehensive prevention and targeted intervention strategies across diverse substance use profiles. A more inclusive approach



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to HIV prevention that acknowledges the unique challenges and risk factors associated with various patterns of drug use is needed to address the needs of these heterogeneous populations.

## THPEC228

**SMASH (Social Media and Sexual Health): a feasible approach to boost pre-exposure prophylaxis (PrEP) awareness among Young Black and Latino men through a sex-positive social media campaign**

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**Background:** Young Black and Latino men who have sex with men (YBLMSM) are disproportionately diagnosed with HIV in the US and underutilize PrEP. We developed a campaign that partnered with six local social media influencers to promote PrEP awareness, knowledge, and utilization to their followers using original sex-positive videos.

**Methods:** Through five virtual focus groups with 22 YBLMSM, we identified social media usage patterns to guide the development (casting, messaging, style, approach) of eight full-length video episodes and 28 short promotional clips. We used 321 Qualtrics surveys to confirm that the videos encouraged PrEP engagement. A dedicated website provided PrEP information, hosted the full-length videos, and facilitated linkage to PrEP providers. Social media influencers (all YBLMSM) disseminated the promotional clips on Instagram with links to the website and engaged followers by responding to comments and fostering discussions about PrEP.

We analyzed campaign engagement and reach based on:

1. Views, likes, comments, and shares on the promotional clips on Instagram,
  2. Website clicks using Google Analytics, and;
  3. Views of the full-length videos using YouTube analytics.
- We conducted a content and sentiment analysis of comments on the Instagram postings.

**Results:** Reach and engagement of the promotional clips during the active campaign (March 6 - April 3, 2023) were reflected in 86,379 views, 7,847 likes, 259 comments, and 241 shares from a potential audience of 117,832 followers. The website attracted 245 visitors (22 clicks seeking PrEP

information, 10 clicks identifying a PrEP-prescribing provider). The full-length videos on the website generated 394 views. Post-campaign (April 4 - July 31, 2023), the website had a notable surge in reach and engagement (2,157 visitors, 27 clicks seeking PrEP information, 27 clicks identifying a PrEP-prescribing provider, 246 views of full-length videos). Reactions to the Instagram postings were overwhelmingly positive (*I love this all of this* 🤍🤍🤍; *#getyourselftested*; *U betta educate em boo*; *All the people who died for love are proud that this is even possible, thank u for advocating* 🤍).

**Conclusions:** This study provides evidence that PrEP social media campaigns can reach and engage YBLMSM and showcased the feasibility and acceptability of this strategy for targeted sexual health promotion.

## THPEC229

**High vertical transmission rate among HIV-exposed infants up to 9 months of age born to newly identified breastfeeding women tested at the Well-Child clinic: results from a pilot in Mozambique**

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**Background:** HIV retesting of breastfeeding women (BFW) is key to reducing postpartum HIV vertical transmission. In Mozambique, BFW with unknown/undocumented or negative HIV status are tested quarterly up to 9 months postpartum. As part of a broader performance assessment of a new HIV risk screening tool to optimize testing among BFW, we describe herewith the results of women's HIV positivity and the vertical transmission rate among their infants.

**Methods:** Data were collected from August 2022-November 2023, in 48 health facilities of Cabo Delgado, Nampula, and Zambézia provinces. HIV tests results of women, and follow up data of women with HIV and their newly exposed infants were captured in the REDCap™ platform.


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Positivity rate was defined as the proportion of BFW with a positive HIV rapid diagnostic test result; vertical transmission rate as the proportion of infants of seroconverted mothers having two positive virologic test results. Descriptive analysis was performed using STATA V.15.

**Results:** A total of 70705 HIV tests were performed, of which 90.2% ( $n=63772$ ) had a documented previous HIV negative test result. From all tests performed, 70297 (99.5%) had a negative, 333 (0.5%) a positive, and 75 (0.1%) indeterminate result. Among the positives, 267 (81%) seroconverted after a documented previous HIV negative test result.

Among exposed infants, 279 (83.8%) were linked to Child-at-Risk Clinic and had a virologic HIV test done, of whom 42 (15.1%) tested positive (Figure). Linkage to care was 93% among BFW ( $n=309$ ) and 98% ( $n=41$ ) among infants.

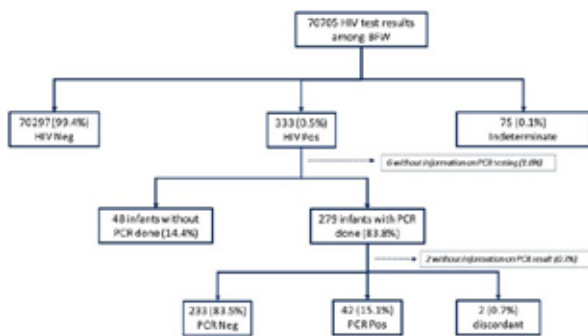


Figure. HIV positivity among retested lactating women, and HIV positivity among tested exposed infants.

**Conclusions:** Despite a relative low proportion of BFW being identified with HIV, the vertical transmission rate among infants up to 9 months of age born to newly-diagnosed women is high.

Results underscore the need for optimized retesting strategies, where a risk screening tool could target on identifying BFW and referral of newly exposed infants as soon as possible.

## THPEC230

Effect of adolescent girls and young women HIV prevention interventions on selected behavioral and biomarker indicators in Uganda

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**Background:** Despite global reductions in new HIV infections among adolescent girls and young women (AGYW) over the past decade, AGYW continue to be at elevated risk of acquiring HIV.

We assessed the effect of HIV prevention interventions on selected behavioral and biomarker indicators among AGYW aged 10-24 years to inform future scale-up.

**Methods:** We used serial cross-sectional data collected from eight intervention districts and six comparison districts in July 2018 ( $n=8,236$ ) and July 2023 ( $n=5,449$ ). Between 2019 and 2023, AGYW in the intervention districts received skills-based training, enterprise development assistance or educational subsidies, reinforced with social and behavior change communication messages.

We collected data on eight behavioral indicators (sexual debut by age 15; proportion reporting 2+ sexual partners [past 12 months], condom use at last sex, HIV testing uptake [past 12 months], teenage pregnancy, comprehensive HIV knowledge, intimate sexual partner violence and intimate physical partner violence) and obtained blood samples for HIV and syphilis testing.

Exposure to AGYW interventions was defined as participation in or receipt of at least one intervention. Impact was determined using a difference-in-difference approach to determine the net effect of the interventions. Data were analyzed using STATA, version 16.0.

**Results:** In both surveys, half of the AGYW were in school; 60-70% were aged 18-24 years. Overall, intervention coverage increased from 31 to 60% of targeted sub-counties in the intervention districts; however, intervention exposure was moderate (48%,  $n=2,639$ ).

Exposure to the interventions had a marginal effect on almost all (7 of 8) behavioral indicators (net effect: 0.7 to 14%) but weighted HIV prevalence was higher among exposed than unexposed AGYW (1.56% [95%CI: 0.73, 3.34] vs. 0.94% [95%CI: 0.49, 1.78]).

Within the intervention districts, improvements were noted in 3 of 8 behavioral indicators: teenage pregnancy, sexual debut before age 15 and current modern contraceptive use (net effect: 2.0 to 6.8%) but weighted HIV prevalence increased in the intervention and non-intervention districts (by 0.2 to 0.4%).

**Conclusions:** AGYW interventions had a small net effect on the behavioral indicators but did not impact on HIV prevalence.

These findings suggest a need for increased exposure and coverage of AGYW interventions in Uganda.



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## THPEC231

"If I'm not okay, I won't take the pills": anticipating the effects of depression and PTSD on PrEP use among PrEP naïve pregnant persons in South Africa

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**Background:** Emerging evidence suggests that mental health (MH) challenges influence uptake of and adherence to PrEP. Risk for HIV acquisition increases during pregnancy and postpartum; therefore, HIV prevention behaviors are particularly important during these periods.

We explored the anticipated impacts of MH on likelihood of PrEP initiation and adherence among pregnant persons (PP) in South Africa, where the HIV prevalence is the highest in the world.

**Methods:** PP completed a survey that investigated MH barriers to PrEP uptake. A subset with likely depression and/or PTSD completed a qualitative interview, which probed MH symptoms and anticipated impacts of symptoms on likelihood of starting and continuing PrEP during pregnancy/postpartum. The data were analyzed via thematic analysis.

**Results:** Twenty-three participants completed 30 interviews (7 were interviewed twice, during pregnancy and post-delivery); on average, they were 25.1 (SD=4.0) years old and had 2.1 (SD=1.0) previous pregnancies. Twelve participants met criteria for probable depression, 2 for PTSD, and 9 for both.

Participants articulated a range of symptoms (e.g., persistent negative emotions, anhedonia, decreased energy/fatigue) that might impact PrEP-related behaviors. Three themes related to anticipated impact of symptoms on likelihood of PrEP uptake and adherence emerged:

1. Intentionally skipping doses due to negative emotions and anhedonia ("I wouldn't take it when stressed because I feel like not doing anything"),
2. Delayed pick up from the clinic/pharmacy due to negative emotions and decreased energy ("I might come late to collect it, maybe I am not feeling alright on that day"), and
3. Forgetfulness due to trauma-related negative emotions ("I am scared and running away from what is happening in this house, so I might forget").

Despite symptoms, some participants anticipated no mental health interference with PrEP use ("I will take it, stressed or not, my stress is controllable").

**Conclusions:** This study offers insights on the ways in which MH symptoms may impact PrEP use during pregnancy and postpartum. Specific strategies that reduce

the impacts of negative emotions, anhedonia, and associated withdrawal/avoidance could help PP who are experiencing symptoms of depression and PTSD uptake and maintain PrEP use during this critical period.

## THPEC232

Empowering futures: the DREAMS program's impact on economic independence and HIV mitigation among adolescent girls and young women in Uganda

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**Background:** PEPFAR's Determined, Resilient, Empowered, AIDS free, Mentored, and Safe (DREAMS) program was designed to mitigate higher HIV transmission rates among adolescent girls and young women (AGYW) aged 10-24. In many countries, including Uganda, HIV prevalence among young women aged 15-24 years is three times higher (3.3%) than the rate observed in men (0.8%). The DREAMS program offers an evidence-based comprehensive package targeting factors contributing to AGYW vulnerability to HIV: limited economic opportunities, educational barriers, and gender-based violence

**Description:** Two Ugandan military bases, supported by University Research Co., LLC, with funding from the U.S. Department of Defense, enrolled 1,525 AGYW in DREAMS between October 2022 to September 2023 using a peer-led model. Local artisans conducted training on financial literacy and trade skills for a month. AGYW were guided on selecting income generating activities and forming Village Saving and Loan Association (VSLA) groups to create opportunities for income generation. Start-up kits were provided to all AGYW and 57 critically vulnerable AGYW were further provided with vocational skills training as part of the DREAMS package. A qualitative evaluation, conducted two months post-program completion, involved interviews with 289 AGYW using in-depth guides and two focus group discussions. Collected data were transcribed and thematically analyzed using Microsoft Excel to assess the effectiveness and outcomes of economic empowerment initiatives.

**Lessons learned:** Among the 289 AGYW interviewed, 44% (n=127) successfully generated income by acquiring skills in making and selling liquid soap. Seventy-four percent (n=215) initiated small trades, such as retail shops or secondhand clothes, using funds accumulated through VSLA savings. The majority, 87% (n=251), reported achieving a



level of financial independence through the project. Vocational training directly contributed to immediate employment, with four AGYW securing jobs immediately after completing the training.

**Conclusions/Next steps:** The socio-economic strengthening component of the DREAMS program not only fostered entrepreneurial economic opportunities but also led to immediate employment for four AGYW, showcasing the program's ability to increase economic stability and employment for increased family empowerment. These findings stress the importance of programs that address numerous aspects of individuals' lives in order to reduce HIV vulnerability.

## THPEC233

### HIV knowledge, use of HIVST, and PrEP awareness among adolescents in Rwanda

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**Background:** Ensuring that adolescents have access to highly effective HIV prevention tools is critical to mitigating transmission and achieving UNAIDS' 95-95-95 targets. We assessed HIV knowledge, HIV self-testing (HIVST) use, and awareness of pre-exposure prophylaxis (PrEP) among Rwandan adolescents.

**Methods:** We conducted a cross-sectional analysis of data from a cluster-randomized trial conducted in 60 schools across 8 Rwandan districts. In 2023, 5552 adolescents aged 13-22 years completed in-person surveys on HIV and family planning/reproductive health knowledge and behavior. HIV knowledge was assessed using ten questions on prevention, transmission, and treatment, and calculated as a score (1-10 questions correct);  $\geq 7$  correct answers was classified as 'high' knowledge. Prevalence ratios (PR) and 95% confidence intervals (CI) were estimated using generalized linear models to compare HIV knowledge, HIVST use, PrEP awareness, and interest in using PrEP by sex and sexual activity status.

**Results:** Overall, 71.9% of participants had high HIV knowledge (median score: 7). While more than half (51.6%) had ever tested for HIV and 32.4% had tested in the past year, few participants (1.7%) reported use of HIVST. More sexually active participants had used HIVST than their non-sexually active peers (3.4% vs. 1.1%, PR: 3.01, CI: 2.01-4.53). Most participants (72.3%) had not heard of PrEP. Sexually active participants ( $n=1447$ , 26.6% overall) were significantly more likely to have heard of PrEP (32.4% sexually active vs. 25.9% non-sexually active, PR: 1.23, CI: 1.13-1.35).

After describing PrEP, 53.2% of participants expressed interest in taking it; with more interest from sexually active participants (58.7% sexually active vs. 51.2% non-sexually active, PR: 1.15, CI: 1.09-1.21). There were no significant differences in HIV knowledge, use of HIVST, PrEP awareness, or interest in using PrEP by sex.

**Conclusions:** In one of the largest surveys of Rwandan adolescents to date, we found nearly no use of HIVST and low awareness of PrEP, although many adolescents were interested in using PrEP once informed about it. These findings highlight a need to expand access to HIV prevention products to adolescents who could benefit.

## THPEC234

### "...we are one sided, most boys have not been taught anything": qualitative assessment of the perceived role of boys and young men in the DREAMS program in Zambia

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**Background:** Adolescent girls and young women (AGYW) in sub-Saharan Africa countries like Zambia are at high risk of HIV acquisition. The Determined, Resilient, Empowered, AIDS-free, Mentored, and Safe (DREAMS) initiative was developed to mitigate this risk. Combination HIV prevention programs such as DREAMS have demonstrated moderate success in reducing HIV risk among AGYW. However, despite being critical stakeholders, adolescent boys and young men (ABYM) are often left out of such intervention activities, creating an HIV risk knowledge gap between ABYM and AGYW, with implications for program effectiveness. We highlight concerns with omitting ABYM from DREAMS following a qualitative assessment of DREAMS program implementation.

**Methods:** Between April and July 2023, we conducted a three-site qualitative case study assessment of DREAMS in three districts of Zambia. We conducted in-depth interviews and focus groups with program implementers ( $n=51$ ), AGYW beneficiaries and non-beneficiaries aged 16-21 ( $n=66$ ), and interviews with key stakeholders ( $n=6$ ). Gaps in programming to ABYM were addressed by participants, and further incorporating ABYM in DREAMS was a key recommendation. We identified and captured these findings using thematic analysis.



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**Results:** There were three sub-themes raised by participants concerning the implications of omitting ABYM from most of the DREAMS programming:

1. ABYM are left with inadequate knowledge on sexual reproductive health and rights (SRH); gender issues, including abuse prevention, and HIV risk behaviours,
2. Perpetuation of gender inequitable relationship norms, and;
3. Concern for ABYM's empowerment and opportunities.

Implementers were the most concerned, but did acknowledge DREAMS ABYM engagement efforts via peer education on SRH, and exposure to some anti-gender-based violence messaging. To safeguard AGYW, implementers suggested providing more comprehensive services to ABYM, including education on SRH, gender issues, and abuse prevention. Some proposed a parallel DREAMS program for ABYM.

**Conclusions:** DREAMS successfully reached large numbers of at-risk AGYW in Zambia with HIV services, demonstrating potential effectiveness and effective implementation. However, implementers suggested that without reaching ABYM, the program benefits to AGYW may remain more muted. They recommended expanding services delivered to ABYM in the community in order to scale-up HIV prevention and elimination, and ultimately create healthier communities in Zambia.

## THPEC235

Missed opportunities for HIV screening and common characteristics among those who screened positive during ED opt-out screening in Philadelphia, PA

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**Background:** In Philadelphia, the 2022 Surveillance report estimated that there are 18,658 people living with HIV as well as 382 newly diagnosed cases. The ACEP and USPSTF have released guidance to screen routinely in areas where the prevalence of HIV is over 0.1%. Despite this recommendation, screening in the ED setting has remained low. It has been suggested that opt-out ED testing is effective. By examining the characteristics of individuals screening positive in the ED, the hope is to improve outcomes and community health by better screening practices.

**Description:** The study population included 94 people over the age of 18 who tested positive from 2016 – 2022 at three different University of Pennsylvania ED sites. Demographic information, risk factors, linkage to care and the details of the individual's ED visit was examined. Opt-out screening was started at one of the ED sites in 2020 for all people over 15 years old.

**Lessons learned:** An opt-out strategy led to a 400% increase in HIV testing. Of those who tested positive, most were not regularly followed in the primary care setting

and 79.6% had no evidence of seeing a primary care within the last 5 years. Conversely, 49.5% of people had been seen in an ER within 6 months of testing positive. In regards to CD4 counts at ED diagnosis, 20.3% had counts of less than 50 whereas the majority of people had counts between 200-800. Linkage to care for those who tested positive was very successful overall with 61.5% of people making to an appointment with an infectious disease specialist within 2 weeks. At one year, 53.4% were undetectable and 8% had low level viremia.

**Conclusions/Next steps:** The implementation of ED opt-out screening caught a significant number of individuals who may not have been screened otherwise given lack of primary care follow up and traditional risk factors. Linkage to care from the ED setting was very successful and a majority of people are achieving control of their HIV. At least half of this cohort lacked traditional risk factors (MSM, IV drug use) and may not have been screened based on risk alone.

## THPEC236

Programmatic mapping and size estimation of people who inject drugs to plan targeted HIV prevention and harm reduction programs in Iran. A nationwide study

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**Background:** The HIV epidemic in Iran has been largely driven by people who inject drugs (PWID). However, despite the implementation of harm reduction services, a

fraction of the PWID remains without access to services. This programmatic mapping aimed to determine the spatial distribution of hotspots of PWID, estimate the number of PWID, the coverage of prevention services and plan the best location placement for maximum coverage of services in Iran.

**Methods:** A cross-sectional key informant-driven mapping and enumeration methodology was used, between August 2020 to March 2021 in 82 selected cities located in 24 provinces in Iran. Data and spatial analysis was done using SPSS and ArcGIS software respectively.

**Results:** We identified a total of 4,270 active hotspots, of which 3,350 were for injecting drug users (78.5%). The estimated total population of PWID was 14,737, comprising 13,593 (92.2%) males, and 1,144 (7.8%) females, with the following age segregation: 261 (1.8%) were <18 years old, 3,643 (24.7%) were 18-29 years old, 10,061 (68.3%) were 30-59 years old, and 775 (5.2%) were >60 years old. This study found widespread drug use in most areas of the country (Figure 1).

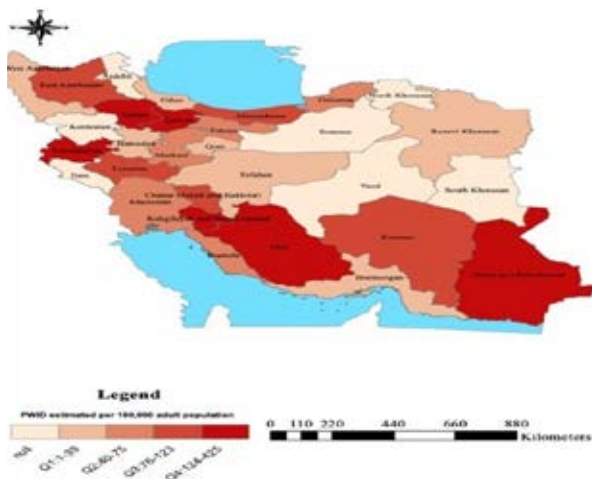


Figure 1.

Only half of the high-risk injection areas have active programs, with 24% service overlap (Fig.2).

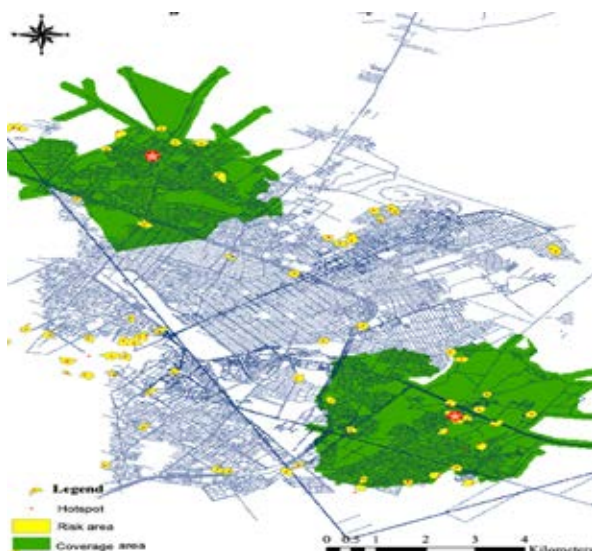


Figure 2.

Under resource limitation with a 47% reduction in the centers and a 93% reduction in the independent outreach teams, there will be a 14% decline in services.

**Conclusions:** This study provides valuable insights for optimizing the allocation of limited resources. By targeting these high-impact areas, we can enhance harm reduction efforts in Iran.

## THPEC237

### Factors associated with pre-exposure prophylaxis (PrEP) uptake among female, male and transgender female sex workers in seven provinces in Thailand - a national cross-sectional study

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**Background:** Despite Thailand offering free PrEP under Universal Health Coverage since 2019, only 8% of users are sex workers (SW) - males, females, and transgender females (Thailand Ministry of Public Health, 2023). On the basis of these findings, a national PrEP study among SW populations was conducted to investigate PrEP uptake and associated factors.

**Methods:** A cross-sectional study, led by SWING Foundation and BIRD (Bangkok Interdisciplinary Research and Development), was implemented between April and December 2023. The study enrolled Thai male sex workers (MSW), female sex workers (FSW) and transgender female sex workers (TGSW) in hotspots, aged ≥18 years old, HIV-negative, and engaged in sex work in the past three months. To identify factors associated with PrEP uptake, covariates with a p-value <0.20 in the univariable analysis were entered into the full logistic regression model (backward selection). Adjusted odd ratios (AOR) with 95% confidence interval were calculated.

**Results:** A total of 1,511 SW from seven provinces were enrolled: 621(41%) FSW, 452(30%) MSW, and 438(29%) TGSW. FSW were more likely to be older (median age 37 years old) than TGSW (31 years old) and MSW (30 years old). PrEP uptake was low across the SW population (9%). However, TGSW (65 -14.8%) and MSW (63-13.9%) were more likely to report PrEP use than FSW (8-1.3%). In multivariable logistic regression, key factors associated with PrEP uptake (p<0.05) included: metropolitan sites (Bangkok: AOR = 2.34-Pattaya: AOR = 3.67); study populations (MSW: AOR = 8.41-TGSW = 3.81); HIV testing in the last 12 months (AOR = 6.77); sexual violence in the last 12 months (AOR = 2.07); more than 5 clients in the past week (AOR = 2.05); good knowledge of PrEP (AOR = 4.05); and know of peer using PrEP (AOR = 1.76). Reporting any concerns on PrEP was inversely associated with PrEP use (AOR = 0.42).



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**Conclusions:** PrEP uptake among SW in studied sites remains low despite free PrEP, reported high-risk behaviors and unsafe work environments. Improving risk awareness, enhancing PrEP knowledge and reinforcing HIV testing are crucial for PrEP scale up among SW. PrEP influencers can be mobilized in support.

## THPEC238

Cascade of care: mother-to-child HIV transmission prevention during COVID-19 pandemic in a reference center in Rio de Janeiro, Brazil

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**Background:** In Brazil, the prevention of mother-to-child HIV transmission (PMTCT) program reached several milestones, including several cities already moving towards vertical HIV transmission elimination. In Instituto de Puericultura e Pediatria Martagão Gesteira (IPPMG), reference center for PMTCT in Rio de Janeiro, we observed, since 2020, an increase of 20% of incidence of children living with HIV (HIC).

To understand this increase, we compared the cascade of PMTCT from the HIC born during the COVID-19 pandemic in two cohorts.

**Methods:** We studied two cohorts, both followed up at the IPPMG:

Cohort 1. Comparison between HIC born in the pre pandemic period (HIVPP): 2010 to 2019, and during the pandemic period (DPHIV): 2020-2023.

Cohort 2. Comparisons were performed between children born in the pandemic period, living with HIV (DPHIV) and HIV exposed but not infected (HEU). We used Fisher exact test and Student T-test for the comparisons.

**Results:** Cohort 1: Sixty-four HIC were followed in our Center: 47 HIVPP and 17 DPHIV. Among HIVPP mothers, 25 (61%) had access to antenatal care (Table 1).

Cohort 2: From 2020 to 2023, we followed 177 children: 17 DPHIV and 160 HEU. Three (18%) mothers from DPHIV group and 4 (3%) in HEU group did not have access to antenatal care ( $p<0.01$ ) (Table 1).

**Conclusions:** Comparing the PMTCT cascade of care from HIC born during or before the pandemic, we observed that ARV access improved, as well as neonatal care, since half of PPHIV group were breastfed, and none of the DPHIV. In the cohort 2 comparison, we were able to observe that the access to antenatal care and ARVs during the pandemic period were major determinants of the increased incidence on MTCT in our center.

	DPHIV N=17 (10%)	HEU N=160 (90%)	P-value*	HIVPP N=47 (73%)	P-value**
Antenatal care access	13 (81%)	156 (98%)	0.14	25 (61%)	0.14
Gestational age at Antenatal care initiation (mean)	16	11	0.07	14	0.69
Antiretroviral (ARV) access during pregnancy	8 (53%)	156 (98%)	<0.01	6 (16%)	<0.01
Gestational age at ARV initiation (mean)	21	9	0.01	27	0.44
ARV use during delivery	8 (67%)	67 (56%)	0.49	8 (44%)	0.23
Elective cesarean section	4 (27%)	61 (40%)	0.31	10 (24%)	0.86
Neonate use of ARVs	14 (93%)	132 (96%)	0.68	19 (73%)	0.12
Breastfed	0 (0%)	4 (2%)	0.55	19 (50%)	<0.01

Table 1: Comparison of MTCT Cascade of care between HIVPP, DPHIV and HEU:

\* comparisons between DPHIV and HEU

\*\* comparisons between DPHIV and HIVPP

## THPEC239

Empowering adolescent girls and young women (AGYW): peer-led mobilization for enhanced HIV prevention services in Siaya county, Kenya

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**Background:** High rates of new HIV acquisition among adolescents and young people, particularly young women, underscore the urgent need for improved access to HIV prevention services and sexual reproductive health knowledge in Kenya. In response, the CMMB, through the Global Fund HIV program, aimed to amplify access and scale up HIV services specifically for adolescent girls and young women (AGYWs) in Siaya County. This study showcases the efficacy of leveraging AGYW peers as peer educators (PEs) to bolster the demand and uptake of HIV-related services among AGYWs.

**Description:** Drawing insights from the program's initial phase (2018-2019), the involvement of AGYW PEs as mobilizers for HIV biomedical and behavioral services emerged as a pivotal lesson. Recognizing that AGYWs congregated in social settings and faced discomfort engaging with community health volunteers (CHVs), the program established a selection criterion and recruited AGYW PEs. These PEs underwent comprehensive training on HIV, gender-based violence, and peer education methodologies, adhering to national guidelines. Their primary task involved sensitizing peers in the community, mobilizing them to access HIV prevention services during community outreaches, and facilitating client flow processes and referrals. Monthly review meetings with the PEs and service



delivery data analysis facilitated comparisons between service access and uptake from 2018/2019 to 2020/2021.

**Lessons learned:** The outcomes in 2020/2021 showcased a remarkable 222.8% surge in access and uptake of HIV prevention services, including a substantial 166.5% increase in access to HIV Testing Services. Screening for additional critical services like STIs, TB, and cervical cancer also notably improved by 93-97%. These findings highlight the potency of AGYWs in strengthening referrals for services among their peers.

**Conclusions/Next steps:** The use of AGYW PEs significantly outperformed CHVs in augmenting the demand and uptake of HIV services among AGYWs, presenting a commendable return on investment. This successful model advocates for further implementation and scale-up to fortify HIV prevention efforts within AGYW communities.

## THPEC240

*PrEP on the Street (PrEP na Rua) in prostitution houses: expanded access to HIV pre-exposure prophylaxis among sex workers in the city of São Paulo*

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**Background:** Sex workers are one of the population segments with the highest concentration of HIV cases, having an acquisition prevalence of 4.9%. Considering the vulnerability of this population to STIs and Aids, the STI/Aids Coordination of São Paulo instructed and provided support so the Municipal Network Specialized in STI/Aids (RME) could offer pre- (PrEP) and post-exposure (PEP) HIV prophylaxes to prostitution houses through the *PrEP na Rua* project.

The goal was to facilitate access to Rapid Tests (RT) for HIV and syphilis, as well as expand access to PrEP as a form of HIV prevention for women sex workers in São Paulo.

**Description:** From August 2022 to December 2023, 116 testing and prevention activities were carried out in prostitution houses in the city. In all of these activities, PrEP was offered to the workers assisted, along with registration, HIV RTs, point-of-care creatinine exam and distribution of medication on site. In 103 of the activities, syphilis RTs were also carried out. The activities were carried out with reduced teams, of 2 to 4 professionals, aiming to adapt to the environments. The activities were carried out on dates and times planned with the locations, while the businesses were operating or before they opened.

**Lessons learned:** 903 HIV RTs were carried out, with 2 confirmed positive cases, and 720 syphilis RTs, with 88 positive cases, among cisgender women, transexual women and transvestite sex workers. Of the total number of services

provided by the RME in the activities that happened in these professionals' workplaces, approximately 60.5% (547) resulted in the initiation or continuation of the use of PrEP by these women.

**Conclusions/Next steps:** The population assisted showed significant interest in using PrEP as a form of HIV prevention. It became clear that it is necessary to go beyond the conventional care model, in which users go to specialized health units in search of care and prevention. By offering the RME service to this group in their work environment, it is possible to bring sex workers closer to those health services, enabling a comprehensive care for the individual.

## THPEC241

*A cross-sectional assessment of mental health, perceived risks, and actual risks of acquisition of HIV among female sex workers in a Nigerian semi-urban community*

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B. Eze<sup>1,2</sup>, C. Idabor<sup>1,2</sup>, A. Ugwuja<sup>1,2</sup>, I. Ekwueme<sup>1</sup>, G. Ezenri<sup>1,2</sup>,  
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**Background:** Apart from being at a high risk of HIV acquisition, female sex workers (FSW) are exposed to a variety of mental health challenges, especially in low and middle-income countries like Nigeria with a high burden of HIV. This study aimed to assess the mental health status, perceived risks, and actual risks of HIV acquisition among FSWs in Nsukka, Nigeria.

**Methods:** Using a cross-sectional design, a validated 25-item questionnaire was used to seek responses from 98 randomly selected FSW in Nsukka, a sub-urban city in Nigeria. The distribution considered all the clusters of the metropolis where the FSW resided from June-August 2023. While mental health was measured as the presence or absence of depression and anxiety, perceived risk was measured in a 5-likert scale from *extremely unlikely* to *extremely likely*. Appropriate descriptive and inferential statistical analyses were conducted on the collected data using IBM-SPSS (Version-28), with significance level set at  $p < 0.05$ .

**Results:** All the 98 FSW participated in the study: 71(72.5%) of them were aged 19-35 years, with 66(67.3%) identifying as unmarried. Majority of the FSW, [44(44.9%)], reported that they commenced sex work at ages 19-25 years, with 54(55.1%) indicating that they consume psychoactive substances prior to sexual activities. In addition, 54(55.10%) FSW engaged in sex work every day, with 61(62.2%) using condom always. Those that reported being depressed in the last two weeks prior to the study were 44(44.9%); 19(43.18%) FSW experienced depressive symptoms for several days in a week.



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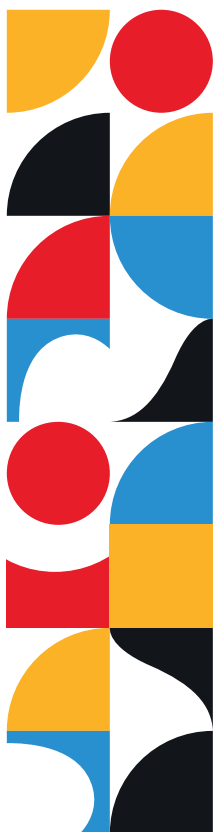
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FSW that perceived themselves to be at a high risk of acquiring HIV were 87(88.78%), with 61 of such people using condom during their last sexual intercourse ( $p=0.034$ ); 77 had never used pre- or post-exposure prophylaxis ( $p=0.046$ ).

**Conclusions:** There is a high prevalence of depressive symptoms among the FSW in the study area. Majority considered themselves to be at a high risk of HIV acquisition, although more than half of them were not actually at risk, as they reported the frequent use of condom during sex. Health promotional measures such as pre-exposure prophylaxis that would target this category of individuals are hereby recommended, in addition to routine mental health screening.

## THPEC242

Leveraging the strength of stakeholder engagement in increasing uptake for a digital health service for underserved populations in Zambia

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**Background:** Marginalized and underserved populations are one of the recognized drivers of new HIV transmissions in Zambia. The USAID DISCOVER-Health Project, implemented by JSI, is closing the gap by increasing access to healthcare for truck drivers in Zambia, a known underserved population and at risk. These men are often unable to set consistent appointments given the mobile nature of their work, or wait for hours at a busy clinic for drop-in appointments, leading to their health needs not being met.

In 2023, the project launched the Health Hub: *Men on the Move* to provide integrated health services, including HIV prevention and treatment services, to this population through leveraging the strength of stakeholders.

**Description:** The Health Hub is a digital platform for person-centred health service access, supported by mobile health vans that offer service delivery wherever the driver is located while on the move. Between May and June, 2023, the project mapped out the key players, whose buy-in to the Health Hub would prove key to its success. These 120 stakeholders included heads of government departments, the Truckers' Association of Zambia, truck park owners, civic and religious leaders. The project organised in-person and virtual meaningful engagement sessions; addressing concerns and highlighting benefits.

**Lessons learned:** The stakeholder engagements secured their support of the program, and the influence of these trusted and respected figures increased the acceptance and uptake of the Health Hub program by the truck drivers. As a result, between June and November, 2023, 2,575 truck drivers accessed HIV testing services, 2,455 were

linked to PrEP and 23 to ART, 25,885 external condoms were distributed and 216 were seen for general conditions including malaria.

**Conclusions/Next steps:** Thoroughly engaging diverse stakeholders ensured a strong, well-supported program that was tailored to the truck drivers, greatly increasing access to HIV testing, prevention, and treatment services. Stakeholder engagement is an essential step in the successful implementation of new program interventions. Opportunities to expand these lessons to primary health care offerings are promising.

## THPEC243

Optimising access: community-based delivery of PrEP to key populations in 7 districts of Zambia: lessons from the USAID CHEKUP I project

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**Background:** Compared to HIV prevalence in the general population (11%), HIV prevalence among key populations (KP): female sex workers (FSW), gay men and other men who have sex with men (MSM), and transgender persons (TG) is alarmingly high in Zambia. Pre-exposure prophylaxis (PrEP) is efficacious in preventing HIV acquisition among at-risk individuals. We describe the utility of community-based delivery of PrEP to KP and highlight challenges and solutions to PrEP continuation.

**Description:** The USAID-funded Controlling HIV Epidemic for Key and Underserved Populations (CHEKUP) I is implementing a KP HIV prevention, care, and treatment program in 7 districts of Zambia. Community-based KP Wellness Centers linked to government health facilities but managed by key populations civil society organizations (KP CSOs) conduct community mobilization and outreach activities to improve access to PrEP. Clinicians recruited by KP-CSOs provide PrEP in the Wellness Centers and through community outreach. The government health facilities supply the Wellness Centers with HIV testing kits and PrEP drugs whilst government health facilities conduct clinical monitoring of KP on PrEP.

**Lessons learned:** Between December 2021 and September 2023, 25,708 KP - 10108 MSM, 15,182 FSW, 412 TG, and 6 PWID were reached - with 2,959 out of 12,664 (23%) being found to be living with HIV. Out of 9,714 who were not living with HIV, 6,517 (67%) were initiated on PrEP. Overall, PrEP continuation at first refill (at 1 month after PrEP initiation)

stood at 49% (3,165), whilst subsequent PrEP continuation (at 3-month intervals) improved to 62% and 65%, at third and fourth refills, respectively, and then dropped to 44% at fifth refill.

**Conclusions/Next steps:** Community-based delivery of PrEP is crucial in optimizing uptake among hard-to-reach population groups such as KP. However, PrEP continuation fluctuates, often influenced by concerns about stigma, pill burden, and fear of being perceived as already living with HIV. Alternatively, KP opted for other prevention methods such as condoms and lubricants. Therefore, continued efforts to address barriers to PrEP uptake and continuation through sensitization on the benefits of combination HIV prevention, adherence support, KP-peer promoter pairing, and implementation of PrEP support groups are critical to ensure long-term PrEP uptake and continuation.

## THPEC244

Multiple objective adherence measures offer insights into longitudinal changes in PrEP use during pregnancy among South African women who used oral PrEP for HIV prevention during a safer conception study

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**Background:** Oral HIV PrEP is safe and recommended for pregnant women vulnerable to HIV. However, PrEP adherence can be challenging. Longitudinal data on drug concentrations, coupled with electronic monitoring of daily dosing (pillcap), among women prior to and during pregnancy are limited.

**Methods:** We conducted a safer conception trial from 2017-2021 to evaluate how the HealthyFamilies PrEP intervention could support PrEP use among women aged 18-35 planning for and with pregnancy in Durban, South Africa. This secondary analysis is restricted to enrolled women who used PrEP, had a pregnancy, and a live birth (n=24). PrEP adherence was assessed using plasma tenofovir (TFV), tenofovir diphosphate (TFV-DP) in dried blood spots (DBS), and electronic pillcaps at quarterly follow-up. Plasma TFV $\leq$ 10ng/mL and TFV-DP $\leq$ 16.6fmol/punch were below detectable limits. Data were analysed descriptive-

ly. Pre-pregnancy refers to the quarter prior to pregnancy, and pregnancy was divided into trimesters.

**Results:** Among 24 women, 63% were aged 18-24 years, 38% were nulliparous, and most (92%) did not know their partner's HIV-serostatus. Median pillcap adherence among 23 women ranged from 57% to 72% and was highest pre-pregnancy (72%, IQR:54%-85%) and during trimester 3 (72%, IQR:30%-94%). Among 22 women, median TFV concentrations were 50.7ng/ml, 10.0ng/ml, 10.0ng/ml and 10.0ng/ml and TFV-DP were 74.0fmol/punch, 38.2fmol/punch, 16.6fmol/punch and 16.6fmol/punch, respectively, during pre-pregnancy, trimesters 1, 2 and 3 (Sample availability per timepoint available in table). Fifty seven percent and 62% of women had detectable concentrations of TFV and TFV-DP pre-pregnancy; however, this declined to 15% of women in trimester 3. Among three women with consistent adherence to >80% of doses by pillcap, one sustained detectable concentrations of TFV and TFV-DP.

Adherence measure#	Pre-pregnancy	Trimester 1	Trimester 2	Trimester 3
Median % of days pillcap opened and IQR	72 (54-85)	57 (22-72)	61 (16-95)	72 (30-94)
Median TFV (ng/ml) and IQR	50.7 (10.0-68.7)	10.0 (10.0-46.6)	10.0 (10.0-10.0)	10.0 (10.0-10.0)
Median TFV-DP (fmol/punch) and IQR	74.0 (56.9-303.0)	38.2 (16.6-99.8)	16.6 (16.6-16.6)	16.6 (16.6-16.6)
% with detectable TFV (>10ng/ml)	57	38	18	15
% with detectable TFV-DP (>16.6fmol/punch)	62	40	19	15

#MEMS data were available for 14, 19, 16 and 11 women during pre-pregnancy, trimester 1, trimester 2 and trimester 3 respectively. Plasma TFV samples available for 14, 21, 17 and 13 and TFV-DP for 13, 20, 16 and 13 women, during pre-pregnancy, trimester 1, trimester 2 and trimester 3 respectively.

**Conclusions:** TFV and TFV-DP concentrations declined during pregnancy with some discrepancies between pillcap measurements and drug concentrations. Physiologic changes during pregnancy and/or behavioural factors such as non-pill ingestion, could contribute to differences in measurement. Gaps exist in determining drug concentrations needed to confer protection to optimize counseling and prevention support.



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## THPEC245

### Indication for the use of PrEP among middle-aged and older adults in South Africa

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**Background:** Pre-exposure prophylaxis (PrEP) is one of the most significant breakthroughs in HIV prevention; however, its uptake in South Africa is limited and 200,000+ people acquire HIV every year. A significant proportion of infections are occurring in middle-aged adults. The objective of this study was to assess PrEP indication among middle-aged and older South Africans.

**Methods:** We estimate PrEP indication in a sample of 40+ year-old, rural South Africans, using Wave 1 and 2 survey data from the community-based cohort "Health and Aging in Africa: A Longitudinal Study in South Africa (HAALSI)". We first identify potential PrEP eligibility based on a negative HIV status and a body weight of 35+ kg. Within this sample, we define the group with an indication for PrEP based on a recent self-reported history of having had sex without a condom, as per *South African Guidelines for the Provision of PrEP to Persons at Substantial Risk of HIV Infection*. We estimate PrEP indication within and across both survey waves, overall and disaggregated by sex and age.

**Results:** Of the 2,096 individuals potentially eligible for PrEP in Wave 2, PrEP indication was 44% (95% CI: 42 - 46) overall, 61% (CI: 58 - 65) in men, and 29% (CI: 27 - 32) in women. By age group, PrEP indication ranged from 69% (CI: 62 - 75) for 40-49 year-olds to 27% (CI: 24 - 30) for those aged 70+. We found that 40% (CI: 38 - 42) were PrEP indicated in both waves and 21% (CI: 20 - 23) in one wave. Further, being male, younger, and married were significantly associated with higher odds of PrEP indication.

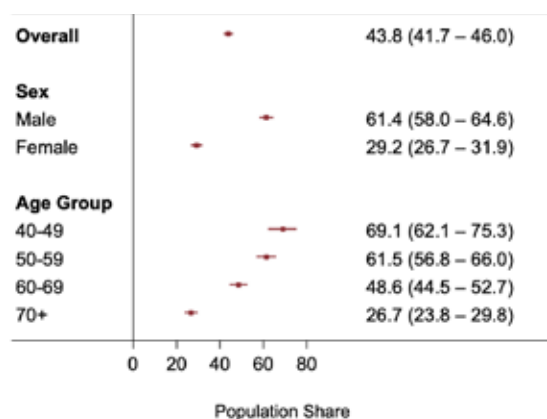


Figure 1. Indication for PrEP Use. Among all PrEP eligible HAALSI Wave 2 respondents (HIV negative and 35+kg). Sampling weights applied.

**Conclusions:** We find high rates of PrEP indication among middle-aged and older South Africans – calling for greater attention to be placed on HIV prevention and PrEP targeted specifically towards these age groups.

## THPEC246

### Missed opportunities for HIV and STI prevention among positive Mpox cases in Puerto Rico

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**Background:** A multi-country outbreak of Mpox (monkeypox) was declared in 2022-2023. Puerto Rico (PR) has documented a total of 211 Mpox cases. Although all populations are at risk for Mpox, most cases were among men who have sex with men (MSM)—a group already disproportionately affected by HIV in PR. During the outbreak, it was evident that the main route of transmission was through close contact, either through sexual activity or direct contact with the virus through saliva or seminal fluid. It presented an opportunity for HIV/STI prevention. We aimed to characterize the experiences of Mpox diagnosis and HIV prevention efforts among individuals diagnosed with PR.

**Methods:** An exploratory qualitative study was conducted with 30 of the confirmed Mpox cases in PR. The semi-structured interview guide addressed sociodemographic characteristics, Mpox knowledge, risk perception, HIV and STI history and engagement in preventive care. Audio files were transcribed and organized in Dedoose for thematic analysis.

**Results:** All (n=30) participants were male, 83% (n=25) identified as gay, and 70% (n=21) had a bachelor's degree or more. Around 66.7% (n=20) had private insurance, and 76.7% (n=23) worked full-time. Participants included people living with HIV and people with a negative or unknown HIV status. Several participants mentioned not receiving a referral for HIV/STI testing: "I was not referred to any [HIV/STI testing] by them [clinic]." Another participant responded: "What are STIs?" when asked if referred to further testing. Another participant shared: "Yes [for HIV/STI test referral] but not because of Mpox. I do it regularly because I use PrEP". Additionally, an HIV-positive person mentioned not being advised on the potential impacts of Mpox on HIV treatment. At the same time, a participant with HIV was told that he did not need to get vaccinated [for Mpox] because he already had the antibodies and did receive other STI test referrals.

**Conclusions:** Individuals with an Mpox diagnosis and not referred to HIV or STI testing represent missed opportunities for HIV/STI prevention. To avoid missed opportuni-

ties for those already accessing care, prevention efforts should include strategies to recognize at risk populations rapidly and engage them in prevention or treatment services.

## HIV testing

### THPEC247

Detecting and linking HIV cases among first-time testers using HIV self-testing approach: lessons learned from the STAR Initiative in Cameroon

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**Background:** The 2023 UNAIDS report indicates that only 86% of people living with HIV/AIDS (PLWHA) know their status; thus, new testing strategies are required to cover the gap. We characterized the profile of HIV first-time testers (FTs) and determined the HIV seropositivity rate using oral HIV self-testing, its effectiveness, and linkage to treatment.

**Methods:** A cross-sectional study was conducted in three regions of Cameroon from April 2021 to August 2022. Oral HIV self-testing kits were distributed using primary and secondary distribution types. The distribution models used were:

- Antenatal care/maternal and child health clinic/postnatal clinic (ANC/MCH/PNC),
- Partners of PLWHA;
- Workplace;
- Community;
- Other health facility-based testing (HTS).

**Results:** A total of 6032 FTs were enrolled; 69.9% were males. Self-testing kits were mainly distributed using primary distribution type (78.1%). Majority of FTs were in the community distribution model (69.6%). About 82% of them were <30 years (<20 years: 26.5%, 20-29 years: 55.7%). Concerning the self-testing result, 97.1%, 2.3%, and 0.6% were respectively non-reactive, reactive, and indeterminate/invalid. Compared to those aged <30 years, reactivity rate was higher among those ≥30 years (1.2% versus 7.0%,  $p<0.001$ ). According to distribution models, reactive test was highest among partners of PLWHA (21.4%), followed

by HTS (5.1%),  $p<0.001$ . Of all the reactive tests ( $n=137$ ), 70.1% came for HIV confirmation following the national algorithm; 54% ( $n=74$ ) of them were confirmed HIV positive. The overall HIV seropositivity rate following national algorithm was 1.2%. In the multivariate model, compared to primary distribution type, secondary distribution type positively predicted HIV seropositivity (aOR [95% CI]: 20.387 [2.473-168.033]).

Also, compared to ANC/MCH/PNC model, seropositivity was positively predicted by partners of PLWHA model (aOR [95% CI]: 15.635 [8.557-28.568]) and workplace model (8.838 [1.206-64.774]).

**Conclusions:** About 7/10 and 8/10 HIV FTs were respectively males and individuals <30 years. HIV seropositivity among FTs was positively predicted by secondary distribution type; and partners of PLWHA and workplace distribution models. Oral HIV-self testing is an effective approach to detect HIV acquisition among FTs and link them to treatment.

### THPEC248

The family approach to reaching children living with HIV: the home-based screening strategy developed by the Bokk Yakaar association in rural Senegal

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**Background:** Pediatric care in Senegal is facing difficulties. In 2022, the care cascade for children living with HIV was 43x41x32, far from the targets set in the 90-90-90 period. In Fatick, central Senegal, the Bokk Yakaar association uses the family approach to screen children, monitor them and support them in achieving an undetectable viral load.

PLWHAs say that the lack of means to move children to health centers and the risks of breaching confidentiality are the main reasons for the timidity of screening. Bokk Yakaar is trying to answer these two (02) questions: how can children born to HIV-positive mothers be screened without breaching confidentiality? How can we boost the cascade of children at regional level?

**Description:** To develop its strategy, Bokk Yakaar has set up a system to reassure parents.

Bokk Yakaar invites them to discussion groups on the subject of screening children.

Together with laboratories, the association trains its health mediators in the use of rapid tests. In this way, the mediators tour the villages of PLWHA families and screen the children in complete confidentiality.

Positive tests are sent to the districts for confirmation. The association provides mothers whose tests are reactive with transport to the districts to take their children.



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Confirmed positive children are put on ARVs and integrated into a care program.

**Lessons learned:** For 2022, the association organized 8 outings, with 3 to 4 villages per outing. These screenings reached 94 children, including 45 girls and 49 boys. Nine HIV-positive children (5 boys and 4 girls) were identified and put on treatment.

The home testing strategy was effective, given the parents' support.

Thanks to the parents' preparation, there was no breach of confidentiality during outings.

With the follow-up, the association supports 97 children living with HIV. As a result of this follow-up, 68% of the children monitored had a positive HIV test result.

**Conclusions/Next steps:** The family screening strategy and the family approach remain an effective solution. These strategies compensate for the lack of means to move children and are adapted to the management of confidentiality and the weight of stigmatization, which is very high in rural areas.

## THPEC249

### Effective case finding experience from Thailand's national index partner testing program, 2019-2023

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**Background:** To achieve the first 95 target, the Thailand Ministry of Public Health (MOPH) has implemented Index Partner Testing (IPT) since 2019. We report results of this strategy implemented nationwide from October 2019 to September 2023.

**Description:** MOPH trained health care providers (HCP) and PLHIV network staff to offer IPT to eligible clients seeking services at any of the 107 participating government health facilities in 34 provinces. Eligibility criteria included ≥1 years of age, newly diagnosed PLHIV, PLHIV with unsuppressed viral load, and any PLHIV reporting new partners. Contacts included sexual or injecting drug partners within the past year, and biological children or mothers if child was the index client (IC). HCP offered four referral methods for contact testing: client referral, provider referral, dual referral, or contract referral. Results were recorded in the national electronic monitoring program and summarized using SAS.

**Lessons learned:** Of 19,501 PLHIV offered IPT, 65.4% (12,770/19,501) were eligible and willing to provide contact information. Main reasons for refusal included having no contact information (42.2%) and feeling uncomfortable in sharing (19.4%). Known HIV-positive contacts were excluded from index testing (n= 1,418).

Average index to contact ratio remained constant throughout the years at 1:1. Of 9,190 contacts elicited, 6,358 (69.1%) tested for HIV with a 25.2% (1,607/6,358) HIV-positivity yield.

Of 6,358 IC who selected a referral method for contact testing, client referral (60.7%; 3,862/6,358) was the most popular method, followed by provider referral (22.3%, 1,420/6,358) and dual referral (15.4%, 981/6,358).

Median baseline CD4 among contacts increased from 318 cells/mm<sup>3</sup> in 2020 to 352 cells/mm<sup>3</sup> in 2023. Linkage to ARV services among contacts was 88.2% (1,418/1,607) overall and 91.6% (394/430) in Bangkok. Of HIV-negative contacts, 23.9% (1,135/4,751) started PrEP.

**Conclusions/Next steps:** IPT identified a 2.7-fold increase in HIV-positivity among contacts and a higher median baseline CD4, suggesting that HIV-positive individuals were identified earlier in their course of infection. Additional strategies to improve linkage to PrEP services are urgently needed to prevent onward HIV transmission. Continued efforts to address barriers to IPT services (i.e., improve provider's skill, introduce HIV self-testing) will increase effectiveness of this case finding method.

## THPEC250

### Reaching adolescents and young people: use of HIV self-test kits as an alternate approach to HIV case finding in the South-South region of Nigeria

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**Background:** HIV self-testing (HIVST) is a proven opportunity for adolescents and young people (AYP) to know their HIV status. The U.S. President's Emergency Plan for AIDS Relief (PEPFAR), through the United States Agency for International Development (USAID)-funded Accelerating Control of HIV Epidemic projects, supported distribution of HIVST kits among AYP, in addition to conventional HIV rapid test kits (RTKs). We compared the positivity and linkage rates between HIVST and RTK modalities among AYP in Southern Nigeria.

**Methods:** This retrospective study used program data extracted from the District Health Information System for AYP (10-24 years) tested for HIV using HIVST and RTKs

between August 2022 and September 2023 in 153 health facilities in Akwa Ibom and Cross River states, Nigeria. Adolescent peer supporters distributed HIVST kits directly to their peers. All positive HIVST results were confirmed using RTKs, per national guidelines. Sex, testing outcome, and linkage to treatment of the two modalities were abstracted.

Outcomes assessed included proportion of clients diagnosed positive (positivity rate), positive concordance rate for HIVST with RTK, and linkage rates for the testing modalities. Paired t-test was used to compare the concordance rate, and chi-square the linkage rates between HIVST and RTKs. P values <0.05 were considered significant.

**Results:** Overall, 23,441 HIVST kits were distributed to AYP, and 86 (69 female, 17 male) tested positive, while 274,107 were tested with RTKs, and 2,452 (2,049 female, 403 male) tested positive. The positivity rate was lower for HIVST (0.4%) than for RTK (0.9%). Of the 86 AYP that screened positive through HIVST, a confirmatory RTK test demonstrated a positive concordance rate of 97.7% (84/86) (t=0.45; p=0.66).

	Number of AYP reached for HIV testing		Number of AYP tested positive		Positivity rate (%)		Number linked to treatment		Linkage rate (%)	
	HIVST	RTK	HIVST	RTK	HIVST	RTK	HIVST	RTK	HIVST	RTK
Female	12,232	174,611	69	2,049	0.6%	1.2%	67	2,023	97.1%	98.7%
Male	11,209	99,496	17	403	0.2%	0.4%	17	399	100.0%	99.0%
Total	23,441	274,107	86	2,452	0.4%	0.9%	84	2,422	97.7%	98.8%

Table 1. Comparison of positivity and linkage rates for the two HIV testing modalities

AYP diagnosed using RTK had better linkage rate than those diagnosed via HIVST (98.8% vs 97.7%) [ $\chi^2=0.02$ , p-value=0.89].

**Conclusions:** The conventional testing to AYP case finding proved to be a more efficient approach than HIVST, though the latter is a viable alternate option to improve reach.

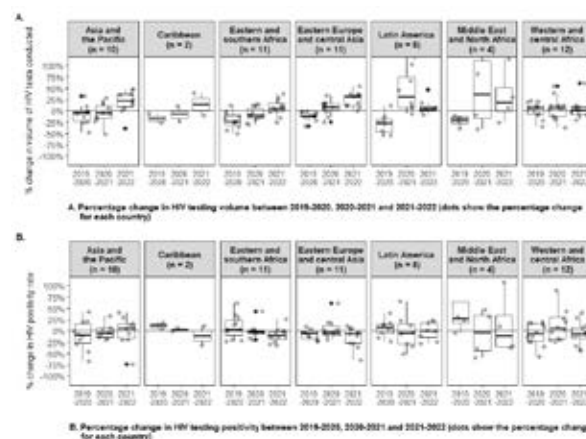
## THPEC251

### Regional variations in HIV testing volume and positivity between 2019-2022: analyses of Global AIDS Monitoring data

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**Background:** Many countries reported decreased HIV testing volumes and HIV diagnoses in 2020, coinciding with restrictions during the coronavirus (COVID-19) pandemic. It is unclear whether these diagnoses reflect less testing or fewer HIV acquisitions due to COVID-19 related restrictions. We assessed country-level changes in HIV testing volumes, positive tests and test positivity rates between 2019-2022.

**Methods:** We analysed data on the number of HIV tests conducted, HIV-positive tests reported (including retests) and proportion of tests with a positive result (test positivity rate) (2019-2022), reported by 58 countries spanning seven UNAIDS regions through Global AIDS Monitoring. Percentage change in HIV testing volumes and HIV-positivity rate for consecutive years between 2019-2022 were calculated within countries and compared across regions. We also examined the relationship between changes in testing volumes and HIV-positivity rate between 2019-2022.



**Results:** Between 2019-2020, across 58 countries, HIV testing volume reduced by a median of 11.5% (interquartile range: -1.2%, -25.5%) and in all regions except in West and central Africa. Between 2019-2020 HIV positivity was unchanged (relative median: -1.1%; IQR: -17.9, +17.7). Testing volumes increased marginally between 2020-2021 (+6.1%;



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-12.8%, +15.5%) but remained below 2019 levels. In countries where testing volumes reduced in 2020 but increased in 2021 (n=27), HIV-positivity reduced slightly (-6.4%; -17.7%, +2.7%). Between 2021-2022, testing volumes increased (+8.8%; +0.5%, +33.2%) to above 2019 levels and testing positivity rates remained relatively unchanged (-5.0%; -24.6%, +8.8%).

**Conclusions:** HIV testing volumes generally recovered following reductions in 2020 and surpassed pre-2020 levels in all regions where decreases were reported. HIV positivity remained relatively constant following increases in testing volumes, suggesting that HIV acquisitions not diagnosed in 2020 may have been diagnosed in 2021-2022. Efforts should be intensified in countries where testing reduced to identify individuals living with HIV who may have been missed.

## THPEC252

High acceptability and linkage to public HIV centers after using an oral HIV self-test among transgender women in Lima, Peru

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**Background:** In Peru, around 20,000 people with HIV are unaware of their diagnosis. To reduce the diagnostic gap, the complementary use of HIV self-testing is globally recommended, especially in high-risk communities such as transgender women (TW). In Peru, studies have shown optimal acceptability of the hypothetical use of HIV oral self-testing but raised concerns about willingness to be linked to a healthcare facility to continue the HIV care process. We evaluated the acceptability of an oral HIV rapid self-test (second-generation) after its use and the percentage of participants with a positive result linked to a public HIV center for a second rapid test (fourth-generation) as confirmatory testing, among TW in Lima-Peru.

**Methods:** From March-2022 to April-2023, TW were recruited using a prior study database, through peer referrals, or from areas with high concentration of TW (i.e., sex work venues). Demographic information was collected and an oral HIV self-test kit with instructions was provided upon enrollment. Participants were contacted every 48-72h to annotate if they had used the test or refused to use it. Participants sent via WhatsApp a picture of their test result and completed a post-test acceptability questionnaire. TW with a positive result were scheduled an appointment to an HIV center to get the second rapid test, and were followed up to confirm attendance, for rescheduling, or to annotate attendance denial.

**Results:** After excluding two participants who lost their kits, 169 TW were included in the analysis: mean age (32.7 ± 8.2), 66% were sex workers, and 47% had unprotected

sex in the last 6 months. Acceptability variables showed that: 100% used the test, 100% considered it to be easy/very easy to use, 84% trusted the test result, 88% preferred a self-test over non-self-tests, 89% preferred oral self-tests over capillary-blood self-tests, and 85% were willing to perform again an oral self-test if available for free. Seven TW had a positive result and were referred to an HIV center; 100% completed the second testing (positive=6, negative=1).

**Conclusions:** Acceptability of oral HIV self-testing and linkage to public HIV centers were high in this high-risk community. Oral HIV self-testing is appropriate for this TW in Lima, Peru.

## THPEC253

Improving HIV case finding for people living with HIV in South-Eastern Nigeria through the use of spatial data infrastructures

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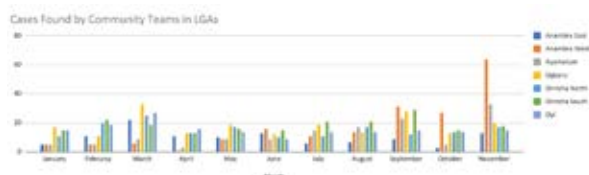
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**Background:** HIV prevalence in Nigeria stands at 2.1% among adults aged 15-49 years. This is partly attributed to challenges in accessing people living with HIV (PLHIV) in geographically isolated regions. Spatial Data Infrastructures are one of the numerous innovations showing promising advancements towards upscaling HIV case identification in unidentified settlements.

The study utilized SDI to understand spatial distribution of HIV cases. By mapping endemic areas, HIV cases were compared between January and July 2023 (when SDI was not used) and between August and November 2023 (when SDI was used).

**Methods:** The study was conducted in Anambra North, South-eastern Nigeria. We utilized SDI, including microplans and local lists of towns, to locate settlements where HTS had not been previously offered. Microplans, developed based on settlement data were used to facilitate settlement coverage. Hotspot maps were created from the HTS geolocation data of testers captured on the Kobocollect App by processing the same data with Kernel Density Estimation. The analysis assisted teams identify areas with a high prevalence of HIV in places where HTS was offered. Data from kobocollect were overlayed on settlement boundaries to determine settlement coverage within the district.

**Results:** Our study showed varying trends across both periods - when SDI tools were utilized and when they were not used - across the various LGAs (Figure 1). Overall, the period when SDI was used recorded relatively higher case identifications than the period prior.



**Conclusions:** The use of SDI tools to facilitate new case identification in the district yielded commendable results. Our analysis revealed twice as many cases identified across the periods compared. This is the first reported study on the use of SDI for HIV case finding in Anambra State and Nigeria. Replicating similar strategies across other states with increased HIV prevalence holds better promise for timely intervention to PLHIV in yet-to-be-identified locations.

## THPEC254

### Impact of alcohol drinking venue characteristics on yield of HIV status-neutral testing in rural East Africa

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**Background:** Drinking venues are high-risk sites for HIV transmission in East Africa. Understanding how venue characteristics impact HIV status-neutral testing yield may guide targeted venue outreach.

**Methods:** We mapped all drinking venues (N=506) in eight rural communities (~10,000 persons each) in Kenya (N=4) and Uganda (N=4), in an ongoing cluster randomized trial of mobilization strategies to promote biomedical HIV prevention uptake. We characterized venues enrolled (N=503 [99%]) and distributed recruitment cards (day and night) inviting patrons and workers ≥18 years for free, clinic-based, status-neutral HIV testing, prevention, and treatment at nearby health clinics. We evaluated if venue characteristics were predictive of yield of a) newly-diagnosed HIV, b) known HIV, out-of-care, and c) self-reported HIV risk, adjusting for age, sex, and country, among persons who came for screening.

**Results:** Staff distributed recruitment cards at 275 venues (Kenya=60, Uganda=215). Most venues were informal dens (242/275 [88%]), offering local and commercial brew (53%) or local brew only (33%) vs commercial alcohol only (14%); 47 venues (17%) had rooms for sex work; 17% offered condoms, and median number of patrons was 10/day. Staff

distributed 4,281 cards: 1574 (37%) to women; 2707 (63%) to men. Of 3,364 (79%) persons who came for screening: median age=34 years (IQR:26-45); 60% were men; HIV positivity was 773/3364 (23%). Among persons without known HIV, yield of newly-diagnosed HIV was 63/2654 (2.4%). Among persons with previously-diagnosed HIV, 34/710 (4.8%) reported being out-of-care.

Of persons who tested HIV negative, 1132/2591 (44%) reported HIV risk. Venues with greater patrons/day and with rooms for sex work were associated with significantly increased yield of newly-diagnosed HIV (Table). Serving commercial alcohol was associated with significantly increased yield of persons reporting HIV risk.

	Formal bar (ref=informal drinking venue) Odds Ratio [OR] (95%CI), p-value	Number patrons per weekday OR (95%CI) for each additional patron, p-value	Presence of rooms for sex work OR (95%CI), p-value	Serve commercial alcohol only (ref=local brew only) OR (95%CI), p-value	Condoms available on-site OR (95%CI), p-value
Newly diagnosed HIV+	0.96 (0.41-2.28), p=0.928	1.04 (1.02-1.07), p=0.001	1.81 (1.00-3.28), p=0.050	1.53 (0.63-3.75), p=0.349	1.46 (0.64-3.33), p=0.370
Known HIV+, out of care	0.30 (0.04-2.15), p=0.231	1.01 (0.98-1.04), p=0.701	1.18 (0.28-5.01), p=0.820	0.90 (0.34-2.35), p=0.825	1.16 (0.35-3.83), p=0.814
Increased HIV risk (HIV-)	1.30 (0.90-1.89), p=0.163	1.02 (1.00-1.04), p=0.122	1.27 (0.89-1.80), p=0.188	1.6 (1.06-2.40), p=0.026	1.50 (1.0-2.26), p=0.052

*Table: Odds of identifying each of the following category of person screened, by venue characteristic.*

**Conclusions:** Over three-quarters of persons at 275 drinking venues linked to HIV screening. Nearly half of persons who tested negative reported HIV risk. Drinking venues with rooms for sex work and more patrons/day were associated with higher yield of persons with newly-diagnosed HIV and those serving commercial alcohol had higher yield of persons reporting HIV risk.

## THPEC255

### Patterns of polysubstance use and associated risk factors among people who use heroin and crack residing on the US-Mexico border

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**Background:** People who use opiates in combination with stimulants are at greater risk of engagement in HIV risk behaviors. Research indicates that the proportion of individuals who combine both types of substances is higher among North American ethnic and racial minorities. The



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US-Mexico border is a primary corridor for the transshipment of cocaine and heroin destined for the US. However, research on polydrug use and HIV testing on the US-Mexico border is limited.

**Methods:** People who use heroin and crack (N=335), 80% male, were recruited from the cities Ciudad Juarez, Mexico (53%) and El Paso, Texas (47%) located on the US-Mexico border using respondent-driven sampling. Participants answered a cross-sectional survey assessing substance use, demographic characteristics, and history of HIV testing. A two-step cluster analysis was undertaken to identify discrete classes of polydrug use. Type of substance, route of administration, and use frequency were included in the analysis as indicators. Generalized mixed estimating equations were computed with class membership and other variables measured accounting for the nested data structure due to type of sampling used.

**Results:** A three-class solution was selected as the most parsimonious. Group 1 (43% of the sample, 4 substances consumed, was characterized by high crack use, and low use of heroin (injected form), prescription opiates, and cocaine (inhaled form); Group 2 (37.6%, 5 substances consumed, was characterized by high use of heroin and cocaine (injected form), moderate use of prescription opiates, and low use of cocaine (inhaled and injected forms); Group 3 (19.4%, 7 substances consumed, was characterized by high use of crack and heroin (injected and inhaled forms) and moderate use of prescription opiates, cocaine (inhaled and injected) and crystal meth. Significant associations emerged between class membership and age, city of recruitment, housing, history of incarceration, and HIV testing whereby membership in the third class was associated with older age, residing in the USA, being un-housed, history of incarceration, and not testing for HIV compared to membership in the first class ( $p < .05$ ).

**Conclusions:** Investigating patterns of polydrug use in an under resourced, binational, setting is necessary to inform the tailoring of behavioral interventions aimed at promoting HIV testing.

## THPEC256

Improving access to HIV services ethically through community-based HIV-Self-Testing with Haiti National AIDS Control Program of MoH to reach the first 95: lessons learned and challenges

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**Background:** In Haiti, HIV-prevalence is 2% and blood test the primary method to determine HIV-status requires equipments. Given the testing requirements, burden of stigma and needles' fear, many individuals were left out.

Through the lens of health equity, HIV-self-testing (HIVST), which is an oral test was introduced in community settings (CB-HIVST) to improve access to HIV-testing services (HTS).

**Description:** In January 2019, we collaborated with the National AIDS Control Program of the Ministry of Health to develop HIVST guidelines, data reporting tools, the national HIVST algorithm and training package. We designed an HIVST assessment tool to identify high-risk eligible individuals. We trained community health workers (CHWs) in collaboration with Haiti National Public Health Laboratory of the Ministry of Health to ensure that CHWs accurately assist eligible clients perform the HIVST, interpret the results and advise them on follow-up accordingly. Anyone with reactive-HIVST received assistance to freely access HIV-blood test to confirm HIV-status at a facility/mobile clinic. We conducted community-based sensitization sessions targeting priority populations: male/sex workers/public transportation drivers/migrants/homeless/pregnant women without prenatal-care. We partnered with faith-based leaders/Voodoo temples to increase awareness about CB-HIVST and its limitations.

**Lessons learned:** The integration of CB-HIVST into the prevention package helped people become aware of potential HIV-exposure and confirm their HIV-status in stigma-free and confidential environment. We present the data about CB-HIVST over two-fiscal years. In FY21 (October 2020-September 2021), we assisted 1079 clients with HIVST from which 11% ( $n=116/1079$ ) were reactive and accompanied or efficiently referred to receive the HIV blood test per Haiti national guidelines. In FY22 (October 2021-September 2022), 5167 HIVST were reported from which 12% ( $n=618/5167$ ) came back reactive. In both fiscal years, the proportion of reactive HIVST was higher among females 55% ( $n=64/116$ ) in FY21 and 61% ( $n=376/618$ ) in FY22 compared to males. All clients with reactive-HIVST received counseling and support to access HIV-blood test timely with the opt-out option. Clients diagnosed HIV-positive were linked to care for ART-treatment initiation whereas the others were offered PrEP. Despite being a screening oral-test, targeted HIVST outreach increased access to comprehensive healthcare by addressing major barriers: transportation fees, waiting time, stigma, blood test and beliefs particularly for voodoo practitioners/males reluctant to seek preventive services.

**Conclusions/Next steps:** CB-HIVST helped bring services to individuals unaware of HIV-exposure. That strategy is relevant to reaching the 95-95-95-UNAIDS goals. HIVST needs to be readily available at all of our borders crossing points and rural areas nationwide.

## THPEC257

### Empowering individuals with choice: online distribution of HIV self-testing to facilitate engagement in PrEP services in Thailand

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**Background:** HIV self-testing (HIVST) is free for all Thais, but the Pribta-Tangerine Clinic in Bangkok is the only clinic in the country to integrate HIVST in pre-exposure prophylaxis (PrEP) services, allowing the use of a non-reactive HIVST to start or refill PrEP online. We assessed the effects of using HIVST as an entry-point to PrEP engagement and retention.

**Methods:** Demand creation for HIVST started in April 2022, and since May 2022, free blood-based HIVST kits can be ordered through Pribta-Tangerine Clinic's online platform. Clients receive an HIVST package, and are followed up online for test results by clinic counselors. People who voluntarily disclose a non-reactive result are offered PrEP delivered by mail, and those with a reactive result are invited for confirmatory testing and antiretroviral therapy (ART) initiation.

**Results:** From May 2022-September 2023, we distributed 776 HIVST kits to 606 individuals (38.1% men who have sex with men, 36.3% transgender women, 10.6% cisgender women, 6.9% transgender women sex workers, 5.1% cisgender men, 2.0% female sex workers, 1.0% male sex workers). 202/606 (33.3%) were first-time HIV testers, and 451/606 (74.4%) shared test results. Of these, 32/451 (7.1%) were reactive, 24/32 (75.0%) received confirmatory testing, 18/24 (75.0%) were confirmed positive and initiated ART. Of 419 (92.9%) non-reactive clients, 177/419 (42.2%) clients engaged with online PrEP services: 102/177 (56.4%) used a non-reactive HIVST result to initiate PrEP, 53/177 (29.9%) received a PrEP refill, and 22/177 (12.4%) restarted PrEP. Among 177 PrEP clients, 127 (71.8%) choose daily PrEP and 50 (28.2%) event-driven PrEP. 40/102 (22.6%) of those who initiated PrEP returned for follow-up online or in-clinic during this period.

**Conclusions:** HIVST, offered online by our clinic, is an effective tool to engage, re-engage and retain individuals in HIV testing and PrEP services. A wide variety of populations and a high level of first-time testers ordered HIVST online, and almost half of non-reactive clients used the HIVST result to receive PrEP without a visit to the clinic. To leverage the potential of HIVST to increase access to HIV testing and simplify PrEP delivery, widescale online availability of HIVST and integration in PrEP services throughout Thailand is urgently needed.

## THPEC258

### Incentives to increase linkage to confirmatory testing after HIV self-testing from community pharmacies among vulnerable adolescent girls and young women in Mwanza, Tanzania

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**Background:** Non-monetary incentives are among strategies that are suggested to promote linkage to care, including confirmatory testing and PrEP, after HIVST among hard-to-reach populations who rarely use conventional health care services.

This study evaluates effectiveness of incentives in increasing linkage to confirmatory testing after HIVST among AGYW in Tanzania.

**Methods:** From December 2022 to May 2023, we conducted a two-arm randomised controlled trial with 360 AGYW enrolled at 8 pharmacies in the Nyamagana and Illemla Districts of Mwanza Region. AGYW were randomized 1:1 into intervention or control arm. Participants in the control arm received:

1. Education on HIV, HIVST and PrEP from trained pharmacists or peer educators at community pharmacies;
2. One HIVST kit; and
3. Encouragement to access further care after HIVST as per national guidelines at one of 6 partner health facilities.

Participants in the intervention arm received the same education, HIVST kit, and referral and also were offered the opportunity to earn a non-monetary incentive upon linking to confirmatory HIV testing at partner health facilities. Participants were followed for up to 2 months. Data were analysed using chi-square analysis and logistic regression accounting for clustering to determine effectiveness of incentives in increasing linkage to confirmatory testing. We estimated HIV positivity rate and PrEP uptake among AGYW who linked to confirmatory HIV testing.

**Results:** The mean age of the AGYW in our study was 20.5 years (range 15 to 24). The majority of AGYW (240=66.7%) presented for confirmatory testing after receiving the HIVST. The proportion attending confirmatory testing after HIVST was 21.5 (95% CI 11.9 to 31.0,  $p=0.000$ ) percentage points higher in the intervention group compared to control group (77.2% vs. 55.7%).

The HIV positivity rate among the 240 AGYW participants that presented for confirmatory testing was 1.3%; all AGYW with HIV were initiated on ART and 18.1% of AGYW who were HIV-negative were initiated on PrEP.



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**Conclusions:** Community pharmacies are a promising location to engage AGYW living with and at-risk of HIV with HIV prevention and care. Incentives significantly increased the linkage to confirmatory testing after HIVST which enabled AGYW to access ART and PrEP.

## THPEC259

Using acute HIV-1 sequence and diagnostic data from the FRESH and RV217 cohorts to evaluate acquisition timing estimation with application to the Antibody Mediated Prevention (AMP) trials

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**Background:** The Antibody Mediated Prevention (AMP) studies provided proof-of-concept for broadly neutralizing antibodies (bnAbs) to possibly prevent HIV-1 trans-

mission. Timing HIV acquisition aids in the interpretation of clinical trials of HIV prevention modalities, especially in trials like AMP, where the antibody interventions have time-varying antibody concentrations. The day of diagnosable infection (DDI) can be estimated using diagnostic test data, as well as using methodologies that evaluate the diversification of the within-host HIV quasispecies using sequencing-based methodologies.

**Methods:** We applied the HIV time-estimating pipeline that was recently employed in the AMP trials to samples collected from 41 study participants drawn from the FRESH and RV217 cohorts. These cohorts were selected due to their frequent sample schedule, which resulted in a narrow window between the participants' last negative and first positive HIV-1 RNA detection dates (2-7 days, median 4 days). These early diagnoses minimized the window of uncertainty for the true time of RNA detection. One to three samples per participant from later timepoints were used to represent HIV acquisition scenarios from AMP's monthly sampling schedule. Bias of modelled DDI estimates was compared to the true date of first detectable RNA, the Root Mean Square Error (RMSE) describes variability in these estimates across participants.

**Results:** Sequence-based estimation of the DDI yielded reasonably accurate and precise estimates for both antibody-negative samples (bias 4 days, RMSE 8 days) and samples collected up to 5 weeks post acquisition (bias 0-5 days, RMSE 6-8 days), but not samples collected after 5 weeks post acquisition (bias 15 days, RMSE 20 days). Overall, the HIV time estimation approach using diagnostic data performed well (bias 0, RMSE 6 days) and integrating sequence-based estimates with diagnostic-based estimates yielded bias -1, RMSE 6 days.

**Conclusions:** This study emphasizes the importance of monthly HIV testing in future HIV antibody-mediated prevention trials. Data suggest monthly sampling is needed both for acquisition time estimation and to characterize the initial founding virus population prior to diversification. In these samples the diversification from founding virus occurred 4-6 weeks post-DDI. This diversification may obscure the founding strain(s) and negatively impact power to detect acquisition sieve effects.

## THPEC260

Faith-engaged community posts expand HIV case finding, treatment and viral suppression among men in Zambia in the context of COVID-19, April 2018 – March 2022

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**Background:** HIV testing and treatment coverage among men remains suboptimal in Zambia because they are less likely to access facilities. To address this gap, Circle of Hope (CoH), a local faith-based organization, developed the community post (CP) model. CPs are staffed by a multi-disciplinary team offering a range of services including HIV testing, anti-retroviral treatment (ART), and viral load testing.

We summarize the effect of these CPs on HIV case finding, ART initiation, and viral load suppression among men.

**Methods:** Routine indicators reported to PEPFAR by Zambia CoH were analyzed for the two years prior to the COVID-19 pandemic (April 2018-March 2020) and for the first two pandemic years (April 2020-March 2022).

Indicators include the number of HIV tests conducted and positive results received (both overall and for index testing), the number of people living with HIV (PLHIV) initiated on ART, the percent of PLHIV on ART retained at 12 months, and the percent of ART clients with a documented suppressed viral load (<1000 copies/mL).

**Results:** Between April 2018 and March 2022, the number of CPs increased from 9 to 38. The male proportion of these key indicators also increased: the number of men tested (45% to 47%,  $p<.00001$ ), the number of men diagnosed (37% to 42%,  $p<.00001$ ), and the number of men living with HIV initiated on ART (41% to 45%,  $p<.0001$ ). The number of men receiving ART at the CPs increased from 3,320 (38% of all PLHIV) to 13,580 (43%,  $p<.000001$ ). Retention at 12 months and viral load suppression among men also increased over this period (from 94% to 97% and 95% to 96%, respectively).

Over 6,000 men were diagnosed through index testing services over the four-year period, with percent positivity increasing from 56% in April 2018 to 62% in March 2022 ( $p<.005$ ).

**Conclusions:** The COH model was successful at identifying men living with HIV, enrolling and retaining men in HIV treatment services, and assisting them to achieve and maintain viral suppression even during the COVID-19 pandemic. Expanding this community-based model may



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therefore help close HIV testing and treatment gaps among men and advance HIV epidemic control in Zambia and beyond.

## THPEC261

Dynamic trends in first-time HIV testing and positivity among key populations: a three-year records in Bangkok and Pattaya

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**Background:** Early HIV testing is essential for prevention and treatment efforts, particularly among key populations. This analysis examines data from SWING clinics in Bangkok and Pattaya to understand trends in first-time HIV testing and the associated positivity rates, reflecting on the broader global challenge of engaging at-risk groups in early testing.

**Methods:** We analyzed HIV testing records from 2021 to 2023 at SWING clinics, focusing on first-time testers across demographics, including age, key populations (MSM, MSW, FSW, TG, TGSW), and nationality. Trends and positivity rates were assessed to identify changes over time and disparities among groups.

**Results:** The number of first-time HIV testers at SWING clinics in Bangkok has shown an upward trend from 1,275 in 2021 to 2,470 in 2023. Similarly, Pattaya experienced an increase from 523 first-time testers in 2021 to 2,684 in 2023. However, the proportion of new HIV positive cases among these first-time testers has been declining, from 8.5% in 2021 to 7.3% in 2023 in Bangkok, and from 9.6% in 2021 to 2.3% in 2023 in Pattaya.

This downward trend is consistent across all age groups, nationalities, and key population subgroups. Notably, MSM and individuals under 24 years of age had higher rates of positivity, but these have decreased significantly over the years, with a marked reduction in Pattaya's youth population. Non-Thais demonstrated a consistently higher positivity rate than their Thai counterparts, indicating specific vulnerabilities.

Characteristics	Total number of HIV testers			% of first-time testers among the total			% of HIV positive among the first-time		
	2021	2022	2023	2021	2022	2023	2021	2022	2023
<b>Bangkok</b>									
Age group									
<18	5,486	6,617	11,817	13.8	12.5	10.8	9.3	8.7	7.6
≥18	3,869	2,311	5,454	50.0	58.6	54.8	7.2	7.3	7.1
Key Populations									
MSM	4,718	6,315	9,464	18.7	17.3	15.9	11.3	10.3	9.3
MSW	1,211	1,738	1,917	35.0	34.3	33.0	10.0	9.8	10.6
FSW	1,111	1,980	3,200	22.7	24.3	19.3	9.8	9.2	9.2
TG	187	313	494	14.3	29.2	1.2	3.7	17.9	0.0
TGSW	80	217	231	45.0	8.4	0.0	16.7	2.8	0.0
Nationality									
Thai	6,788	10,137	14,311	14.0	17.3	15.6	7.9	7.1	6.9
Non-Thai	274	511	990	27.8	21.3	25.3	21.4	18.4	11.3
Total	7,062	10,648	15,301	18.0	17.3	14.1	9.0	7.9	7.3
<b>Pattaya</b>									
Age group									
<18	810	906	1,856	32.3	33.6	45.8	7.1	5.9	3.8
≥18	2,187	4,009	6,584	48.1	24.7	29.3	12.3	9.3	9.1
Key Populations									
MSM	968	811	964	23.5	14.0	14.0	7.9	16.1	10.1
MSW	489	536	707	27.0	25.1	18.0	16.7	8.8	5.9
FSW	1,327	3,028	5,904	12.1	32.9	48.0	3.1	5.4	9.1
TG	89	89	112	16.1	9.1	0.0	9.1	0.0	0.0
TGSW	247	411	551	17.8	18.7	1.8	11.3	15.9	0.0
Nationality									
Thai	3,817	4,719	7,811	17.2	16.5	22.4	8.0	7.4	5.0
Non-Thai	110	396	459	30.0	21.4	35.9	45.5	14.3	8.2
Total	3,927	5,115	8,270	17.0	18.7	31.6	9.0	9.9	5.9

**Conclusions:** While the program successfully increased overall HIV testing uptake, the data suggests a need for enhanced outreach to higher-risk groups. Particularly, first-time testers, including younger and non-Thai key populations, show a significant proportion of HIV positivity, underscoring the importance of targeting these at-risk groups in future testing and prevention strategies.

## THPEC262

Feasibility, acceptability and effectiveness of a nationwide, web application-guided, home-based HIV and syphilis self-screening program in Thailand

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**Background:** Expanding HIV screening is needed to reduce the number of untreated people living with HIV and identify at-risk individuals. We assessed the feasibility, acceptability and effectiveness of a nationwide, web application-guided, home-based HIV and syphilis self-screening program.

**Methods:** Individuals aged ≥15 and residing in Thailand could order a Bioline™ HIV/Syphilis Duo kit on the project website, prompting immediate shipment by post. Participants used their smartphone to scan the kit's QR code, access a web-based application providing step-by-step self-screening video instructions until results interpretation, and photograph the test cassette for later verification by a health professional. Regardless of the results, they could make an appointment for counseling online and/or present at a health facility for confirmation and referral. Those with an HIV negative result reporting high-risk behaviors were advised on and given practical information for getting PrEP. The program was promoted through social media.

**Results:** Between 28 September and 31 December 2023, 1,030 eligible users from 72 of the 77 provinces in Thailand ordered a kit. Kits were shipped within a median of 2 days after order (IQR: 1-3) (shipment median cost: USD 0.89). Of the 1,030 participants, 642 entered the web-based application within a median of 4 days after order (IQR: 4-6) and 455 uploaded a picture of the cassette. Of them, 259 (57%) were born female and median age was 24 years (IQR: 21-29). 21 participants correctly interpreted a positive HIV test, including 17 previously unaware (Table).

Of the 443 participants who completed the satisfaction survey, 436 (98%) reported being satisfied with the shipment and 441 (>99%) with the self-screening process.



	HIV	Syphilis
Screening results interpretable on the picture and valid	423/455 (93%)	423/455 (93%)
Negative screening results correctly interpreted by participants	387/388 (>99%)	375/379 (99%)
Positive screening results correctly interpreted by participants	21/35 (60%)	34/44 (77%)
Participants previously unaware of their status	17/1,030 (1.7%)	23/1,030 (2.2%)

**Conclusions:** Many participants did not report their results. However, at least 1.7% discovered that they were living with HIV and 2.2% with syphilis. This strategy offers an additional tool for case finding, with comparable effectiveness to screening clinics but at much lower cost.

## THPEC263

Integrated HIV testing program for female sex workers and their male clients: a community coverage approach to reach men who purchase sex beyond the "regular partners"

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**Background:** Sex work is associated with a higher HIV risk of HIV acquisition for both the sex worker and the partner in the Democratic Republic of the Congo (DRC). Many strategies have been developed to reach subgroups of female sex workers (FSW) for HIV prevention, testing, and treatment support, while the strategies for reaching men who purchase sex (MWPS), as part of the general population, have relied heavily on the use of index testing among FSWs.

However, many of the MWPS identified via index testing strategies are those that are easier to contact such as long-term regular clients, boyfriends, or husbands, thus programs may be missing the more "occasional" MWPS. We describe activities aimed at reaching "occasional" MWPS who are males in and around FSW hotspots without any link with any index testing activities

**Methods:** The DRC PEPFAR/USAID-funded Meeting Targets and Maintaining Epidemic Control (EpiC) project developed a community strategy for FSW hotspot testing, prioritizing extensive testing for men in and around the hotspot. We compared data from October 2022 to September 2023 on case finding rates (CFR) among FSW and their MWPS clients. The analysis differentiated between those reached through index testing and the community coverage approach.

**Results:** Between October 2022 and September 2023, 324 and 1,615 new HIV-positive MWPS were identified through index testing and the community testing model, respec-

tively. CFR were comparable for both populations with-in index testing 24.8% (324/983) among MWPS and 24% (281/888) among FSW. Within the community coverage model, we found a CFR of 6.1% (1615/24862) among MWPS and 5.04% (1221/23024) among FSWs.

	Community HIV screen/test				Index HIV screening/test			
	HTS neg	HIVST neg	HIV positive HTS	Case Finding rate (%)	HTS neg	HIVST neg	HIV positive HTS	Case Finding rate (%)
FSW	21,983	1041	1221	5.04	888	0	281	24
MWPS	24074	788	1615	6.10	983	0	324	24.8

**Conclusions:** Through our FSW/MWPS community coverage strategy, we identified not only a very high HIV CFR among MWPS compared to the adult general population prevalence, but also a strategy to reach the "elusive" hard-to-reach "once-off" or occasional clients of FSWs often missing from traditional index testing.

Additionally employing community coverage testing with MWPS provides us with large numbers of HIV-positive men in which to continue index testing to reach more intimate sexual partners and children.

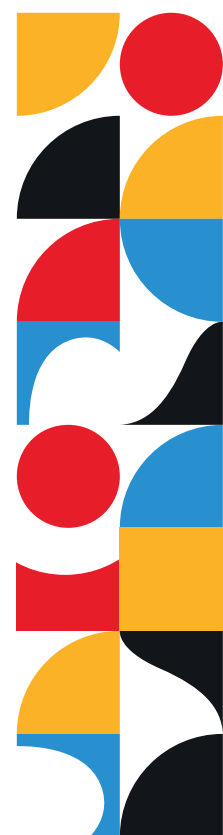
## THPEC264

Feasibility and acceptability of nurse-initiated GeneXpert birth HIV and maternal viral load testing as a task shifting approach: mixed methods study among mothers and nurses in Tanzania

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**Background:** In Tanzania, centralized infant HIV testing at 6 weeks is associated with long result turnaround times, low rates of infant ART initiation, and poor retention in HIV care. A cluster-randomized trial was conducted in Tanzania and Mozambique to establish the clinical impact of point-of-care early infant HIV diagnosis (POC-HEID) at birth and 4-8 weeks, linked with nurse-supported immediate ART initiation in neonates diagnosed with HIV versus standard of care 4-8 week testing only.





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This study assessed whether the intervention was acceptable by nurses and clients and feasible within programmatic settings in Tanzania.

**Methods:** This was a convergent mixed methods study conducted in four regions from November, 2021 to February, 2023. We purposively sampled nurses and mothers living with HIV at the end of trial participation. Questionnaires were administered to 35 nurses and in-depth interviews were conducted with 13 mothers. Descriptive and thematic analysis were applied.

**Results:** The majority (60%) of the nurses were working at district hospitals and 74% in the reproductive and child health department. On average, nurses strongly agreed that trainings provided were sufficient. All nurses stated that handling GeneXpert machines was easy, although 69% sometimes experienced invalid test results. A majority (69%) disagreed that the intervention added work burden. Furthermore, 20% reported that immediate ART initiation for neonates was complicated. All nurses recommended national scale-up of birth POC-HEID. Mothers were knowledgeable about the intervention. They expressed positive attitudes on early receipt of results and immediate infant ART initiation. However, they were concerned for their neonates about painful blood pricking. Due to non-disclosure, some mothers faced difficulties in providing ART or prophylaxis to neonates.

**Conclusions:** Our findings demonstrate that birth POC-HEID coupled with immediate infant ART initiation is feasible to be implemented by nurses and is acceptable to clients in Tanzania. However, enhanced counseling and disclosure support is important if adherence to neonatal ART is to be maintained at home.

## THPEC265

[Pediatric active case finding a missing piece of the puzzle: case of seven districts in Zimbabwe, 2023](#)

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**Background:** Nationally and globally there has been great strides in improving testing, treatment, and the prevention of mother to child transmission program options for children living with HIV, yet only 65% of the children living with HIV (Global HIV statistics) have been identified for linkage to treatment. The Orphans and vulnerable children program have been uniquely placed in the community to access the "well" children in the community.

**Description:** A community who complements the efforts of the clinical partner in all health facilities in seven districts. All children under the age of two were followed up on using the community health workers list to ascertain their HIV status; this includes infants exposed to HIV who did not show any symptoms. Additionally, the program

collaborated with the health facilities that maintained a list of all HIV-positive infants without a final outcomes, and home visits were carried out in conjunction with the clinical partner to test children that were not tested.

**Lessons learned:** During the exercise, 743 infants and children were monitored; 413 of them had a known HIV negative for HIV, 196 had a recent HIV negative test, 11 tested HIV positive, and 123 are still being followed up as they relocated and the contacts they had provided were not going through. All the eleven children were linked to care and are responding well on treatment. The outcomes and yield were aided by team work. Numerous social protection issues were found and forwarded to the social development department.

**Conclusions/Next steps:** The initial stage of the continuum of paediatric care and treatment is the identification and diagnosis of HIV infection in children. In spite of this, many HIV exposed infants and children are never offered the opportunity to have an HIV diagnostic test. To come together and change things, several players must work together in a collaborative effort. Other approaches are necessary to identify the well-asymptomatic HIV positive children in the community; index case testing needs to be complemented by other novel strategies.

## THPEC266

[Integrating point-of-care recency testing into routine index testing does not increase HIV positivity among traced contacts in Lusaka, Zambia: a prospective cohort study](#)

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**Background:** Evidence-based strategies to improve index testing efficiency are lacking. To optimize routine index testing in Zambia, we piloted integration of HIV recency testing into CDC/PEPFAR-supported index testing. Here, we report the effects of such "recency-focused" index testing on key performance indicators along the index testing cascade.

**Methods:** We enrolled a prospective cohort of consecutive adults ≥18 years who tested HIV-positive at two health facilities in Lusaka, Zambia and consented for routine HIV index testing. Participants underwent rapid testing for recent infection (RTRI) at the point-of-care and laborato-

ry-based viral load testing according to the national recent infection testing algorithm (RITA). We returned RITA results to participants and offered those with RITA-recent HIV an additional round of partner elicitation, assisted partner notification, contact tracing and testing after the clinic completed routine index services. We collected data on index testing indicators and compared them using descriptive statistics.

**Results:** Between 20 May 2021–10 March 2022, we screened 393 people newly diagnosed with HIV, of whom 344 (88%) were eligible, 322 (94%) consented, 321 (99%) enrolled, and 4 (1%) were excluded. Of those enrolled, the majority (n/N=200/317, 63.1%) were female with median age 30 years (interquartile range (IQR): 25–37 years). Contact elicitation ratios varied by RITA status (Table).

	RITA Long-term Participants (N=297)	RITA Recent Participants (N=20)			
	Initial Contact Elicitation n (%)	Initial Contact Elicitation n (%)	Contact Re-elicitation n (%)	Total Contact Elicitation n (%)	
Contact Status					
Reported contacts (Elicitation ratio)	479 (1.72)	39 (1.95)	14 (0.70)	53 (2.65)	
Contact tracing failed	74 (15.4)	3 (7.7)	3 (21.4)	6 (11.3)	
Contacts already known to be HIV-positive	165 (34.4)	16 (41.0)	3 (21.4)	19 (35.8)	
Contacts tested	240 (50.1)	20 (51.3)	8 (57.1)	28 (52.8)	
Contacts testing HIV-negative	173 (72.1)	14 (70.0)	6 (75.0)	20 (71.4)	
Contacts testing HIV-positive	67 (27.9)	6 (30.0)	2 (25.0)	8 (28.6)	

Table. Index testing cascade metrics for study participants classified as RITA Long-term versus RITA Recent (N=317).

No statistically significant difference was seen in the proportion of new HIV cases identified among contacts of participants with RITA-recent HIV (n/N=8/28, 28.6%), compared to contacts of participants with long-term HIV (n/N=67/240, 27.9%) (p-value= 0.942).

**Conclusions:** While it was feasible to integrate POC recency testing into routine index testing, it did not improve index testing efficiency as measured by the change in HIV positivity among contacts traced and tested through the national program. Although our study was limited by small numbers of recent infections, our results do not support the routine use of individual-level recency testing as a strategy to improve HIV index testing efficiency.

## THPEC267

### The I'm Ready Program: effectiveness of a mobile app to reach first-time testers and key populations with HIV self-testing in Canada

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**Background:** In 2022, there were 1,833 new HIV diagnoses in Canada, a 24.9% increase from 2021, and 1 in 10 people living with HIV remain undiagnosed. This study examines the effectiveness of the *I'm Ready* program that uses a smartphone app (iOS/Android) to provide access to HIV self-testing (HIVST) to reach the undiagnosed, first-time testers and key populations across Canada.

**Methods:** *I'm Ready*, Test app launched in June 2021 after licensure of HIVST in Canada in November 2020. Participants anonymously request up to three free HIVST, which are delivered where someone lives or picked-up at one of 90+ participating community organizations.

Canadian residents participate by downloading the app, create an anonymous profile, and complete short surveys before and after self-testing. Participant characteristics and key variables including sexual risk behaviour and first-time testers were summarized using descriptive statistics.

**Results:** By December 2023, a total of 14,071 participants enrolled in *I'm Ready*, from which 7,888 (56%) ordered a self-test kit. Of those who reported, 62% (n=7,350) identified with at least one key population and 84% (n=8,176) indicated high-risk sexual behaviour. For testing behaviour, 37% (n=3,662) were first-time testers and 32% (n=3,162) had last tested more than 1 year ago.

First-time testers were significantly more likely to:

- Live in small/rural communities (OR=1.5, p<0.01);
- Be from the Atlantic provinces (OR=1.4, p<0.01);
- Identify as sexual minorities (OR=2.2, p<0.01); and
- Be ≤24 years old (OR=2.66, p<0.01).

There was a total of 29 positive test results submitted (3,361 or 43% of participants submitted a test result) for an overall positive testing rate of 0.86% (29/3,361). Of these new positives, 63% identified as being from a key population and 74% were first time testers or last tested >1 year ago.

**Conclusions:** Using a smartphone app like *I'm Ready* is a critical technology component needed to effectively distribute HIV self-testing kits to support reaching people who are undiagnosed and 1<sup>st</sup> time testers, especially key populations and those who are underserved, as well as



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people who are younger, who identify as sexual minorities, and who live in small/rural communities and in the Atlantic provinces in Canada.

## THPEC268

Identifying and linking the missing children, adolescents and young people: experiences from the HIV testing services optimization efforts in Uganda

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**Background:** HIV Testing Services (HTS) programs are operating within increasingly complex environments with more limited resources and declining number of people living with HIV identified. The Uganda HTS program is considering how to effectively manage declining testing yields as more people living with HIV (PLHIV) are on treatment, plateauing donor resources dedicated to testing, disparities in testing coverage among different population groups and challenges with linkage, retention and re-engagement in care. Children, adolescents and young people living with HIV have been sub-optimally identified in Uganda.

Significant efforts have been directed towards identifying the missing children, adolescents and young people by implementing innovative and iteratively revised HTS approaches to reach them.

**Methods:** MOH developed a national HTS optimization plan that was implemented in the period October 2021 to September 2023. The interventions prioritized for identification of the missing children and adolescents included the scale up of innovative HTS strategies including HIV Self-Testing (HIVST) and other targeted approaches such as Index Testing including Assisted Partner Notification with testing of biological children and Social Network Testing. Systematic screening of children and adolescents at Outpatient department (OPD) and other facility entry points was also implemented.

**Results:** A total of 5,892,705 children, adolescents and young people aged 0 to 24 years were offered HTS during the reference period, with 77,707 (1.3%) testing positive and 72,201 (93%) linked to care. Of those tested, 517,118 were aged 0 to 9 years, 2,113,583 aged 10 to 19 years and 3,262,004 aged 20 to 24 years. The highest positivity rate was realized among the 0-to-9-year aged children (2.0%). Majority of the clients were tested in the facilities (80.5%). Higher yield (1.6%) reported in community compared to facility testing (1.25%). Total of 557,828 HIVST kits were distributed with 5,303 (~1%) reporting a positive HIVST.

**Conclusions:** Implementation of innovative case finding strategies among children, adolescents and young people is highly feasible. Scale up of targeted community

based approaches can lead to higher identification rates for PLHIV. Integration of HIVST into HTS can lead to significant number of PLHIV identifications among children, adolescents and young people.

## Cascades of HIV care and treatment

### THPEC269

"It's not the virus that kills you, it's the community": Stigma and HIV care engagement among sex workers, sexually diverse men, and transgender women living with HIV in Jamaica

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**Background:** In Jamaica, sex workers (SW), men who have sex with men (MSM), and transgender women experience criminalization and are overrepresented in the HIV pandemic, yet their experiences of living with HIV are understudied.

To address this gap, we explored experiences of stigma and linkages with the HIV care cascade among cisgender women SW, MSM, and transgender women living with HIV in Jamaica.

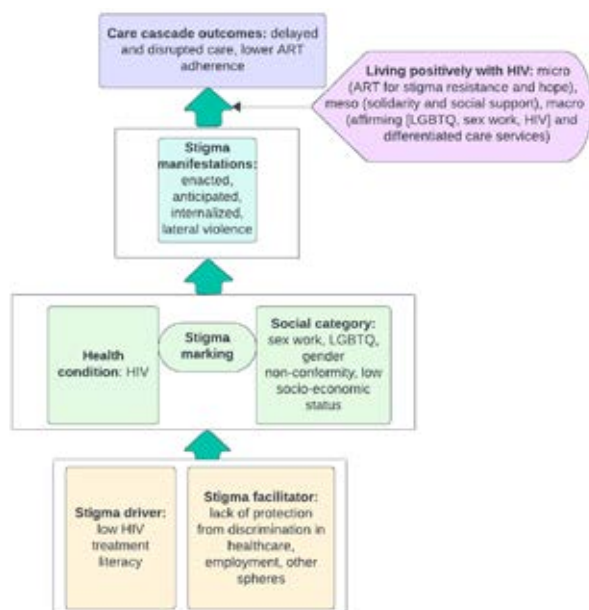
**Methods:** This community-based qualitative study involved n=9 focus groups (FG), n=1 FG per population (SW, MSM, and trans women living with HIV) in each of three sites: Kingston, St. Ann, and Montego Bay. We also conducted n=10 key informant (KI) interviews.

We applied thematic analysis informed by the Health Stigma and Discrimination (HSD) Framework, a cross-cutting framework that examines stigma drivers and facilitators, marking, manifestations, and outcomes.

**Results:** FG participants (n=67) included SW (n=18), MSM (n=28), and trans women (n=21); we interviewed n=10 KI (n=5 cisgender women, n=5 cisgender men). Participant narratives revealed low HIV treatment literacy as a stigma driver, notably misinformation about ART benefits and HIV acquisition risks. Stigma facilitators included a lack of legal protection from discrimination. Stigma marking targeted health (HIV) and intersecting identities (sex work, LGBTQ identities, gender non-conformity).

Stigma manifestations included enacted stigma in communities and families, and internalized stigma—including lateral violence. HIV care cascade impacts included reduced/delayed HIV care engagement and ART adherence

challenges. Participants also discussed strategies to live positively with HIV, including: ART adherence as stigma resistance; social support and solidarity; and accessing affirming institutional support.



**Conclusions:** Findings underscore the role of multi-faceted intersectional stigma processes in shaping the lived experiences of key populations living with HIV in ways that constrain access to resources, social support, and ultimately to HIV outcomes. In addition to addressing intersecting stigma, future research and programing can bolster multi-level stigma-resistance strategies for living positively with HIV.

## THPEC270

### Predicting retention in care before and after the COVID-19 pandemic among people with HIV (PWH)

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**Background:** Poor retention in care is associated with worse HIV-related outcomes. We examined the impact of the COVID-19 pandemic on retention in care and identified predictors of falling out of care among PWH in the U.S.

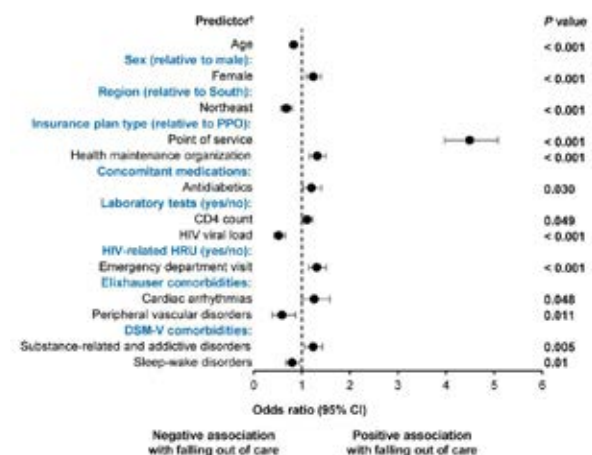
**Methods:** Retrospective data from the IQVIA PharMetrics® Plus database were assessed to compare retention in care in the 12-month period before and after the COVID-19 pandemic (index date: March 1, 2020), using odds ratios estimated from logistic regression models. A LASSO model was developed using cross-validation to identify predictors of falling out of care during the post-pandemic period.

**Results:** Overall, 19,782 PWH were included (median age 51 years, 81% male). Most HIV-related medical claims closest to the index date arose from primary care (50%) or infectious disease specialists (28%). A significant decrease in the likelihood of retention in care was observed post-versus pre-pandemic using three metrics: HIV-related healthcare visits (-35%), laboratory testing (-45%) and antiretroviral therapy (ART) adherence (-10%) (all  $P < 0.001$ ; Table). Using ART adherence, 14,011 PWH were retained in care pre-pandemic and selected for LASSO model development (c-statistic: 0.70); of these, 15% fell out of care during the post-pandemic period. Predictors of falling out of care included younger age, female sex, insurance plan type, use of antidiabetic medications,  $\geq 1$  pre-pandemic CD4 count test,  $\geq 1$  pre-pandemic HIV-related emergency department visit, cardiac arrhythmias and addictive disorders (Figure).

Retention in care metric	Pre-pandemic period retention in care, n (%) N=19,782	Post-pandemic period retention in care, n (%) N=19,782	Reduction (%)	Odds ratio* (95% CI)	P value*
HIV-related healthcare visits <sup>†</sup>	13,335 (67.4)	11,308 (57.2)	35	0.65 (0.62, 0.67)	<0.001
Laboratory testing <sup>‡</sup>	14,284 (72.2)	11,638 (58.8)	45	0.55 (0.53, 0.57)	<0.001
ART use during the HIV identification period <sup>§</sup>	18,941 (95.7)	18,941 (95.7)	–	–	–
ART adherence <sup>¶</sup>	14,011 (74.0)	13,637 (72.0)	10	0.90 (0.88, 0.93)	<0.001

\*Odds ratios, 95% confidence intervals and P values were calculated from generalized estimating equation logistic regression models; <sup>†</sup>Participants with  $\geq 2$  HIV-related outpatient visits  $\geq 90$  days apart within the 12-month period; <sup>‡</sup>Participants with  $\geq 2$  CD4 count or viral load tests  $\geq 90$  days apart within the 12-month period; <sup>§</sup>6-month HIV identification period (September 1, 2018, to March 1, 2019); <sup>¶</sup>Participants with proportion of days covered by ART (i.e., total number of days with medication on hand)  $\geq 0.9$  within the 12-month period  
ART, antiretroviral therapy; PWH, people with HIV

Table. Retention in care among PWH in the pre- vs. post-pandemic period.



\*Odds ratios, confidence intervals and P values were calculated from a regular logistic regression (i.e., unpenalized) using all covariates selected by the LASSO logistic model. <sup>†</sup>Age, sex and insurance plan type were assessed on index date; all other demographics were assessed during the 12-month pre-pandemic period, not including the index date  
DSM-V, Diagnostic and Statistical Manual of Mental Disorders, 5th Edition; HRU, healthcare resource utilization; PPO, preferred provider organization

Figure. Odds ratios\* of LASSO predictors significantly associated with falling out of care in the post-pandemic period.



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**Conclusions:** The COVID-19 pandemic significantly affected retention in care in PWH. Predictors from the LASSO model advance our understanding of retention in care and could be used to identify and engage PWH at risk of falling out of care in clinical practice.

## THPEC271

### The influence of community-based interventions on multi-month dispensing of ART in children and adolescents living with HIV

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**Background:** Multi-month dispensing (MMD) is a vital strategy for differentiated service delivery (DSD) to enhance care and treatment outcomes of people living with HIV. However, MMD coverage in children and adolescents living with HIV (CALHIV) is limited.

This study examines the association between interventions provided by the community based ACHIEVE project on MMD coverage in CALHIV receiving ART in Tanzania.

**Methods:** Data from 43,668 CALHIV aged 0-17 years who were beneficiaries of the ACHIEVE project as of 31 July 2023 was used. MMD, a clinical characteristic of the CALHIV obtained from health facilities, was the outcome variable in three categories: not on MMD, MMD 3-5 months, and MMD 6+ months.

Data analysis involved cross tabulations and multivariable mixed-effects ordinal logistic regression model to identify how different interventions of the ACHIEVE project influenced MMD in the CALHIV.

**Results:** The analysis included CALHIV aged 10.5 years on average, 52.3% of whom were female. Their MMD status as of 31 July 2023 was 31.3%, 11.2%, and 57.5% for not on MMD, 3-5 months, and 6+ months, respectively.

After adjusting for several characteristics, the likelihood of CALHIV to be on MMD was positively influenced by the ACHIEVE project interventions, including longer duration in the project (6-11 months: aOR = 3.65, 95% CI 2.85-4.69; 12+ months: aOR = 3.73, 95% CI 2.91-4.79), provision of ART calendar (aOR = 1.61, 95% CI 1.47-1.77, caregiver participation in savings groups (aOR = 1.23, 95% CI 1.13-1.34), teen club attendance (aOR = 2.57, 95% CI 2.32-2.84), and provision of health insurance (aOR = 1.25 95% CI 1.16-1.35).

**Conclusions:** The findings reveal a significant, positive association between interventions provided by the ACHIEVE project and the likelihood of CALHIV to be on MMD. This highlights the potential role of community-based programs in DSD for improving MMD utilization.

## THPEC272

### Integration of traditional healers with local health facility service delivery

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**Background:** The uptake of ART among MSM in SA is complicated by the need for some clients to undertake traditional remedies before attempting to initiate ART. These clients strongly believe in traditional medicine and seek care from traditional healers. Traditional medicine is by no means an alternative practice in South Africa, with an estimated 72% of the Black African population in South Africa relying on this form of medicine. This proportion of clients consults with traditional healers before accessing public health services.

**Description:** To address prevention and treatment gaps the uMgungundlovu POP INN team engaged with traditional healers in the local areas and invited them to the clinic for discussions about HIV prevention, treatment, and care from December 2020. During the period of October 2022-September 2023 uMgungundlovu found 198 HIV positive cases, however, 169 cases were linked to care using same-day ART initiation. Eleven traditional healers in the uMsunduzi sub-district were invited to the clinic to begin collaborative efforts.

The aim of the collaboration was to establish and build a strong working relationship with traditional healers that will educate and empower them about HIV/AIDS and other related diseases.

**Lessons learned:** Traditional healers were trained in HIV testing services, treatment, and care. Four traditional healers with HIV knowledge have since been integrated with the POP INN clinics and provide HTS, condom distribution, and referrals between their practices and the clinics. The collaboration has assisted in the retention of clients and re-initiating of lost clients. Training the traditional healers on HTS has provided a strong referral system, this has expanded to the eThekweni site where two additional traditional healers have been integrated and trained. Engaging with communities and traditional healers through Mpowerment groups resulted in 23 clients reached and provided with prevention packed (PrEP).

**Conclusions/Next steps:** Collaboration with traditional healers at Aurum POP INN uMgungundlovu continues to grow and expand to the provision of PrEP consultations and referrals from the traditional healers to the facility. The traditional healers' premises will also be used as 'pick up points' for the clients to reduce and mitigate transport costs, reduce institutional stigma, and bridge the gap between culture and mainstream medicine.

## THPEC273

"It is beyond anonymity": reasons why PLHIV continue to opt for ART services from a distant location compared to place of residence, Andhra Pradesh

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<sup>3</sup>Andhra Pradesh State AIDS Control Society, Vijayawada, India

**Background:** Andhra Pradesh (AP) State AIDS Control Society rolled out several 'Differentiated Service Delivery Models' including multi-month dispensation (MMD), rapid antiretroviral therapy (ART) initiation, and decentralized ART in the community, reducing interruption in treatment (IIT) rates from 4.1% to 1.5% during September 2020-2022.

**Methods:** To further prevent IIT, we identified 20,761 of 213,375 people living with HIV (PLHIV) travelling >50 kilometers (kms) to access ART and sought to decentralize ART closer (<50kms) to their residence. During November 2022-April 2023, staff from 53 ART centers, contacted PLHIV traveling >50 kms either telephonically or in-person during pill pick-up, and systematically provided options on the benefits of decentralized ART services, and recorded responses in routine program tools.

We calculated the proportion of PLHIV who opted for decentralized care closer to their residence and odds ratio (OR) to determine if gender, current age, and ART duration were associated with acceptance of decentralized care.

**Results:** We contacted 18,047/20,161(90%) of eligible PLHIV and 8,336(46%) agreed to care closer to their residence. Reasons for not opting for closer care included benefit of availing other interdepartmental-health services in the current location (n=3,675; 38%), proximity to workplace (n=1,275; 13%), ART staff familiarity (n=1,011; 10%), while 28% (n=2,744) cited anonymity and 6% noted self-perceived stigma (n=535) (Figure-1).

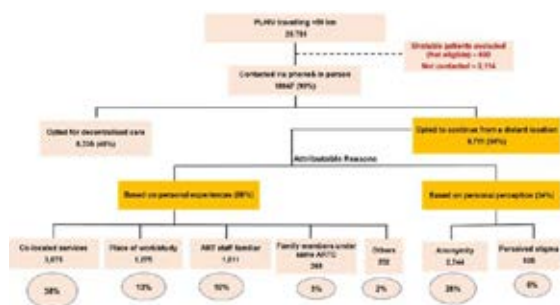


Figure 1. Reasons why PLHIV prefer Antiretroviral Therapy access from a distant location of more than 50 kilometres, Andhra Pradesh - 2023.

Those who decided to receive ART closer to their residence were more likely to be on ART for <3 years (n=2,007; 54%) [OR:1.47, 95% CI:1.37-1.58] and female gender (n=4,481; 48%) [OR:1.15, 95% CI:0.08-1.22] compared to those on ART for >3 years (n=6,329; 44%) and male and transgender [3,836 (44%); 19 (43%)].

**Conclusions:** Slightly less than half of PLHIV opted for closer ART care when offered, although women and PLHIV on ART less than 3 years preferred this option. Reasons for not accepting closer ART care included desire to access co-located health services and anonymity.

## THPEC274

Successes and persistent gaps in achieving UNAIDS 95-95-95 target for sexually exploited minors and female sex workers, men who inject drugs, and men who have sex with men in Vietnam

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**Background:** The HIV epidemic in Vietnam is concentrated among key populations (KP) including people who inject drugs (PWID), sexually exploited minors (SEM) and female sex workers (FSW), and men who have sex with men (MSM). We characterize progress toward UNAIDS 95-95-95 targets in these populations.

**Methods:** We analyzed data from the National Sentinel Surveillance Plus Behavior which used venue-based (where KP gathering) sampling. Surveys were conducted with male-PWID (20 provinces, 2019), SEM/FSW (13 provinces, 2018 and 2020) and MSM (11 provinces, 2018 and 2020). We measured UNAIDS 95-95-95 targets with the 1<sup>st</sup> 95 as HIV status awareness among participants self-reported HIV-positive or viral load [VL]<200 copies/ml if reported HIV negative/unknown); 2<sup>nd</sup> 95 as being on ART self-reported or VL<200 copies/ml if denying ART use); and 3<sup>rd</sup> 95 as being virally suppressed (VL<1000 copies/ml). National level analysis was adjusted for the clustering effect.

**Results:** The UNAIDS 95-95-95 estimates are shown in Figure 1. Notably, for SEM/FSW the 1<sup>st</sup> 95 estimate increased significantly from 33.3% (95% CI 20.4-49.4) in 2018 to 79.8% (95% CI 59.2-91.5) in 2020.

For MSM the 1<sup>st</sup> 95 estimate decreased from 53.9% (95% CI 43.5-64.0) in 2018 to 45.1% (95% CI 35.0-55.5) in 2020. The 2<sup>nd</sup> 95 and 3<sup>rd</sup> 95 estimates were above 95% for SEM/FSW,



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and for MSM, in 2020. For male PWID, the 1<sup>st</sup> 95 estimate was 89.9% (95% CI 85.9-92.8), the 2<sup>nd</sup> 95 was 96.4% (95% CI 93.5-98.1), and the 3<sup>rd</sup> 95 was 94.6% (95% CI 91.9-96.5) in 2019.

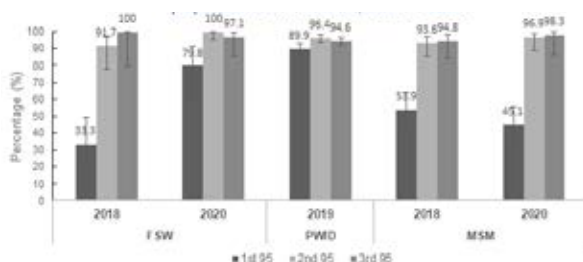


Figure 1. HIV care continuum cascades among key populations in Vietnam, 2018 - 2020.

**Conclusions:** Although these results suggest the 2<sup>nd</sup> and 3<sup>rd</sup> 95 targets are being achieved for three KP, our study revealed significant gaps in meeting the 1<sup>st</sup> 95 target, especially among MSM. Much improvement in the 1<sup>st</sup> 95 target for SEM/FSW are noted. Efforts are needed to prioritize HIV case finding in provinces where the gaps are.

## THPEC275

The impact of 2014 military conflict in Donbas Region and the Autonomous Republic of Crimea on 95-95-95 HIV cascade among people who inject drugs receiving opioid agonist treatment in Ukraine

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**Background:** Opioid agonist therapies (OAT) for people who inject drugs (PWID) have been available in Ukraine since 2004 with 1,868 PWID receiving OAT in Donbass Region and the Autonomous Republic [AR] of the Crimea with over 30% of whom lived with HIV before the onset of Russian invasion of Ukraine in 2014.

This study assessed the effect of 2014 military conflict on 95-95-95 HIV cascade among people on OAT living with HIV residing and receiving treatment in areas affected by the conflict.

**Methods:** Data from the Ukrainian national registry of people on OAT containing 1,868 PWID receiving OAT as of January 2014 in conflict areas (Donbass and AR of the Crimea) were analyzed. Logistic regressions were conducted to compare the 95-95-95 HIV cascade indicators among people on OAT living with HIV referred from government-controlled areas (GCA) and non-government-controlled areas (non-GCAs) as of the end of 2021.

**Results:** Total number of people on OAT living with HIV affected by the 2014 military conflict was 674, among whom 528 were referred from GCAs compared to 146 patients from non-GCAs. The majority of them were male (over 80%), in 35-44 years old age category (74%) with less than 14 years of drug use experience before OAT initiation (62%)

and receiving high dosing of methadone as their OAT drug (96%) mostly take-home from OAT site (72%). As for the 95-95-95 HIV cascade, all HIV-positive OAT patients (n=674) were aware of their HIV status, however only 53% of those referred from non-GCAs were on ART compared to 83% among those referred from GCAs ( $p<0.00001$ ) with 37% and 59% being virally suppressed among HIV-positive patients referred from non-GCAs and GCAs respectively ( $p=0.0021$ ).

**Conclusions:** This study provides critical insight into how conflict and displacement affect people OAT living with HIV. OAT program in AR of the Crimea was shut down. Few patients were successfully referred from non-GCAs to treatment sites in GCAs, and the 95-95-95 HIV cascade indicators are significantly lower in those from non-GCAs. Given the obtain results it is crucial to retain people on OAT living with HIV given the on-going russian full-scale invasion of Ukraine.

## THPEC276

Finding missed opportunities across the PMTCT cascade to improve interventions to reduce the transmission of HIV among Infants in Mozambique DOD-supported facilities

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**Background:** In Mozambique, mother-to-child transmission (MTCT) of HIV has reduced from 12% in 2022 to 10% in 2023. As part of the U.S. Department of Defense-funded program, Jhpiego works with the Forças Armadas de Defesa de Mozambique (FADM) to implement a comprehensive HIV program, which includes the elimination of MTCT. The purpose of this study was to identify missed opportunities in preventing MTCT.

**Methods:** This is a retrospective descriptive analysis of missed opportunities across the PMTCT cascade leading to HIV vertical transmission, using data from October 2022 to September 2023. De-identified data on HIV status, antiretroviral therapy (ART), viral load suppression (VLS), antenatal care (ANC) visits of mothers, and early infant diagnosis (EID) were extracted from monthly programmatic reports.

**Results:** From October 2022 to September 2023, 1094 HIV-exposed infants (HEI) were expected based in proxy measure HIV positive woman but only 889 (81%) were identified across nine sites. 99.5% (n=885) EID PCR DNA samples were collected; of those identified, 3% (n=29) were diagnosed with HIV and 86% (n=25) started ART. Of the 29 infants diagnosed with HIV, 51% (n=15) were <2


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months of age and 49% (14) were aged 2-9 months. A total of 67.9% (19/28) of the pregnant mothers attended ANC visits in FADM-supported sites and the remaining 32.1% (9/28) were followed up at other MOH health facilities. About 42% (8/19) of pregnant mothers were already on ART at the start of their pregnancy; 53% (10/19) were newly diagnosed as HIV-positive and 90% (10/11) started ART. About 36% (10/28) had VLS (< 1000 copies/ml), 14% (4/28) had unsuppressed VL, and 50% (14/28) had no VL testing requested. Of the 29 infants diagnosed with HIV, 65.5% (19) were identified through EID testing. The remaining 34.5% (9) had interrupted follow-up in MoH sites and were identified in routine screening at the Expanded Vaccination Program.

**Conclusions:** This initial analysis reveals missed opportunities across various PMTCT cascade stages, including VL monitor, retention of HIV-infected pregnant and breast-feeding women on ART, insufficiently monitoring HIV-exposed children and inconsistent PCR collection impacting MTCT. Additionally, conduct thorough studies at each stage for detailed insights into targeted interventions.

## THPEC277

### Factors associated with repeat treatment interruption among men in Malawi: findings from two randomized control trials

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**Background:** Men living with HIV (MLHIV), especially those who have already experienced treatment interruption (TI) of antiretroviral therapy, need additional support to reinitiate and to avoid repeat TI. We assessed factors associated with repeat TI among men with a history of TI in Malawi.

**Methods:** We used data from the IDEAL and ENGAGE trials conducted in 28 facilities in eight districts of Malawi (ClinicalTrials.gov#NCT04858243; #NCT05137210). Trials aimed to assess impact of male-specific interventions on retention. Eligible participants were: MLHIV ≥15-years; living within facility catchment area; not in care at time of enrolment (never initiated, missed initial refill after initiation, or ≥28 days late for a refill appointment). This secondary analysis only includes men who (re)initiated ART during the trial. Our primary outcome of interest was repeat TI during the trial period (≥28-days late for a refill appointment), measured through validated medical chart data. We identified factors associated with repeat TI using mixed effects logistic regression.

**Results:** The trials enrolled 1309 men; we included 1190 (91%) men who re-initiated ART in this analysis. Among those included, 42% (498/1190) experienced repeat TI during the 6-month trials period (Table).

Variable	Total % (n=1190)	Retained in care % (n=692)	Had a repeat TI % (n=498)	aOR <sup>a</sup> (95% CI)
Younger age (<40 years) <sup>1</sup>	52.6 (626)	46.2 (320)	61.5 (306)	1.92 (1.51-2.44)***
Unmarried (single or not in a steady relationship)	30.3 (361)	27.2 (188)	34.7 (173)	1.43 (1.11-1.85)***
Not owning a productive asset <sup>2</sup>	66.5 (791)	62.7 (434)	71.7 (357)	1.57 (1.22-2.03)***
Perceived stigma from status disclosure	80.9 (963)	81.2 (562)	80.5 (401)	1.01 (0.75-1.37)
Disclosed status to anyone	92.2 (1097)	92.9 (643)	91.2 (454)	0.80 (0.52-1.25)
Mobility (spent >30 nights away from home)	8.3 (99)	5.1 (35)	12.9 (64)	2.76 (1.77-4.31)***
Hazardous alcohol consumption <sup>3</sup>	28.6 (340)	25.4 (176)	32.9 (164)	1.38 (1.06-1.78)**

<sup>1</sup>Reference group is men aged 40+ years

<sup>2</sup>Includes a bicycle, motorcycle, car or oxcart

<sup>3</sup>Consuming more than 4 drinks on the last drinking episode

\*p<0.1, \*\*p<0.05, \*\*\*p<0.01

<sup>a</sup>Adjusting for trial arm and health facility

Table: Factors associated with repeat treatment interruption.

Men had a median age of 39-years (IQR 32-46), 30% were unmarried and 67% did not own any productive assets (bicycle, motorcycle, car or oxcart); during trial period 8% were mobile (spent >30 nights away from home) and 29% had hazardous alcohol use. Mobility increased the odds of repeat TI three-fold (aOR 2.76; 95%CI 1.77-4.32). Younger age (<40-years) (aOR 1.93, 95%CI 1.52-2.45), being unmarried (aOR 1.43, 95%CI 1.11-1.85), not owning a productive asset (aOR 1.57, 95%CI 1.22-2.03) and hazardous alcohol use (aOR 1.38; 95%CI 1.06-1.78) were significantly associated with repeat TI.

**Conclusions:** Mobility, younger age and not owning productive assets were strongly associated with TI in this population. Interventions tailored to these sub-populations are needed.





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## THPEC278

From being labeled 'vectors of HIV' to strategic partners: the case of female sex-workers at the center of HIV programming and interventions using community-led strategies in Kampala and Wakiso, Uganda

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**Background:** Female sex workers (FSWs) face stigma and discrimination being labeled as vectors of HIV which excludes their efforts and affects their agency in the fight against HIV. The Alliance of Women Advocating for Change (AWAC), a Female sex worker-led organization, designed a 3 years program dubbed 'Leveraging FSW structures and strength in HIV care and prevention' that placed FSW at the center of HIV programing, enhance their agency and address negative connotations to FSW as vectors of HIV but rather key partners in the fight against HIV in Uganda.

**Description:** Thirty (30) grassroots female sex-workers were engaged in Community Client-led ART delivery, Peer Outreaches, Community Health and Livelihoods Enhancement Groups (CHLEGs) and Door-to-door testing modalities to enhance ART services, PrEP uptake and awareness on PEP and other HIV related services in Kampala and Wakiso districts, Uganda between Oct 2020 to Sept 2023.

**Lessons learned:** In 3yrs, 30 grassroots FSWs extended services to fellow FSWs including; 10910 initiated on PrEP, 572 initiated on ART, 482 received ART Refills, 5679 received PrEP refills, 127 were reached with Viral Load bleeding, 149 received Intense Adherence Counseling, 3200 received GBV Services (Counseling and Treatment), 89 FSWs using and injecting drugs were reached with one time use needles and syringes to curb new incidences and 94 FSWs living with HIV were screened for Cervical cancer. More so, 500 children (218M, 282F) of FSWs were identified and tested for HIV, of whom 22 (8M, 14F) were tested positive and initiated ART. Overall, FSWs structures, leaders and the FSW fraternity became more strengthened and actively engaged in the fight against HIV in Kampala and Wakiso districts in Uganda.

**Conclusions/Next steps:** FSWs are better reached by FSWs and this has increased their uptake of HIV services in Kampala and Wakiso, Uganda. This program gave evidence that FSW are key partners working at the center of HIV programming, leveraging on their structures, agency and efforts to fight against HIV hence controlling new incidences and increasing adherence thus contributing to U=U. Future programming should be deliberate at creating spaces and platforms to amplify the role of FSW at the center of the fight against HIV.

## THPEC279

Strategic interventions for reducing dropped cases from ARV treatment cascade (LFU) and tracked for HIV care management: a case study from Uttar Pradesh, India

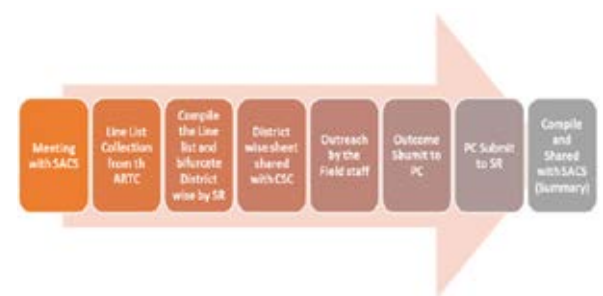
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**Background:** "Lost To Follow-Up" (LFU) in HIV care refers to diagnosed individuals missing scheduled counselling and treatment, complicating tracking due to factors like fake identities and migrations. Stigma contributes to LFU risks, complicating clinical studies. Identifying and controlling LFU factors is challenging, with outreach vital for nuanced insights. IHAA's care program, since 2013, spans 310 centers nationwide, serving 1.9 million PLHIV.

In Uttar Pradesh, densely populated and facing migration challenges, Vihaan identified 1,87,229 LFU cases, tracing back 140,695 at a 75% success rate. Despite progress, significant efforts are needed for re-engagement. VAAPSHI LFU Drive (Jan. 2023 to Feb. 2023) aimed to minimize LFU cases in UP.

**Description:** The strategy included meticulous planning, data collection, segregation, weekly tracking, utilising virtual platforms for coordination and outreach mapping, and collaboration with stakeholders. The roadmap of activities undertaken is given in the flowchart.



**Lessons learned:** The success of the initiatives hinged on strengthened outreach through team training, consistent follow-up via phone calls and home visits, and identification of limited treatment awareness among clients. Challenges, such as inadequate contact information, underscored the need for innovative locating methods. During the VAAPSHI LFU Drive, 9853 line lists were received, with an impressive 87% contact rate.

Of these, 3756 clients (44%) were successfully brought back into the care system, while 870 (10%) were reported deceased, and 706 (8.2%) opted out.



**Conclusions/Next steps:** The strategic initiatives implemented in the drive yielded valuable insights, emphasizing the need for ongoing improvements in HIV care. The following conclusions and recommendations emerged:

- Strengthen collaboration between ART Centres and CSCs for positive client engagement.
- Enhance literacy programs for improved understanding of treatment regimens.
- Innovate locating methods using technology-driven or community-centric approaches.
- Tailor interventions for clients agreeing to visit ART Centres for successful retention.
- Implement a robust state-level monitoring mechanism for ongoing data validation and adaptive strategies.

## THPEC280

Closing the viral load suppression gap among pediatric clients in Southern Nigeria: a retrospective study

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**Background:** Sub-Saharan Africa has experienced a scale-up of antiretroviral therapy (ART) resulting in the improvement of the survival of children living with HIV. Viral Load (VL) monitoring is critical to HIV patient health management, and when suppressed to an undetectable level, helps in the reduction of HIV transmission. Suppressed VL is a critical component of the 95:95:95 paradigm and Children and Adolescent Living with HIVs (CALHIV) has lagged behind the Adults Living with HIV (ALHIV) in suppression rates. The study aims to showcase a program's effort to improve viral suppression in CALHIV on the Accelerating the Control of HIV Epidemic (ACE)- Cluster 6, a USAID-funded project in Southern Nigeria within a period of one year.

**Methods:** This retrospective cohort study used electronic medical record data of all pediatric clients (children < 15 years) with VL results  $\geq 1000$  cp/ml as of December 2022 living with HIV and who received HIV care at the ninety-five (95) USAID-supported sites on the project from February 2022 till August 2023. The analysis was done using STATA 13.

**Results:** From the 3314 pediatric clients actively on ART as of December 2022; 2747, clients had their VL done (83%) and 2423 clients were virally suppressed (88%). There were

324 (M: 154 F: 170), 22% virally unsuppressed clients identified out of which 164 (M: 88 F: 79), 51% were previously inactive on ART and were all tracked. After a period of nine months of Enhanced Adherence Counseling (EAC), Home Visits, Operation Triple Zero (OTZ) Club meetings, and Drug Therapeutic Committee interventions; 314 out of the 324 (97%) were virally suppressed. All the 10 (3%) the virally unsuppressed clients were inactive on ART during the nine months.

**Conclusions:** Scaling up routine VL monitoring for infants and children in resource-constrained areas like Nigeria is essential to achieve viral suppression. The importance of EAC, Home visits, OTZ cannot be overemphasized for a better overall health outcome as shown in the study. Based on UNAIDS 95-95-95 goals, it is important that programmes focus more on the needs of the pediatrics and young adults through peer support and EAC for better outcomes.

## THPEC281

Community-based HIV care accelerates viral suppression in gold-mining sites in Mali: ANRS 12392 – Sanu Gundo

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**Background:** In Mali, informal gold mining sites (IGMS) are characterized by circular migration, convergence of key populations, geographic isolation, and the absence of health services. There is an important potential risk of acquisition and dissemination of HIV.

This study aimed to assess the impact of a proximity community-based HIV care compared with services delivered by the public sector on linkage-to-care, retention, and viral suppression among HIV-positive people diagnosed in two IGMS.

**Methods:** ARCAD Santé PLUS in Mali, offered community-based medical consultations including HIV testing in two IGMS. Adults newly tested/confirmed positive for HIV in Kofoulatié were offered with the community-based HIV care (intervention group) and those in Diassa were referred to the public sector, as recommended by the national guidelines (control group). Sociobehavioral and clinical data were collected quarterly for 12 months, along with dried blood spots at M0, M6, and M12 (2020-2022). The intervention's impact was assessed by comparing



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between groups the percentages of linkage to care at M3, viral suppression (<200 cp/mL) at M6, and retention in care at M12 (using logistic regressions), and the mean viral loads at M6 (using Wilcoxon test). To account for confounding factors, we adjusted our analysis using propensity scores.

**Results:** Out of the 9774 individuals offered an HIV test, 170 tested positive and were enrolled (56 men; 41 female sex workers; 73 female non-sex workers). The linkage to care at M3 was 86% (IC95: 80-91), and retention in care at M12 was 93% (88-96), with no observed difference between groups. At M6 (n=79), the intervention group exhibited significantly lower mean viral loads (42,325 cp/mL vs. 5,986 cp/mL;  $p=0.039$ ) compared to the control group, along with higher proportions of viral suppression (73% vs. 44%, Odds Ratio 4.05 [95% CI: 1.52-11.8],  $p=0.007$ ). No significant differences between the groups were observed at M0 ( $p=0.2$ ).

**Conclusions:** The community-based HIV care intervention had a faster effect in decreasing viral loads after 6 months, compared with public services. Implementing on-site community-based HIV testing and care is a promising strategy for controlling HIV epidemics within and emanating from remote areas that convey mobile, vulnerable, and at-risk populations for HIV.

## THPEC282

### Food insecurity and longitudinal HIV care continuum outcomes among people with HIV entering HIV care in Cameroon

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**Background:** Food insecurity has been associated with suboptimal health outcomes, including among people with HIV (PWH). The impact of food insecurity on outcomes across the HIV care continuum remains poorly understood. Multi-state analytic methods can advance our understanding of how individuals experiencing food insecurity engage with HIV care over time.

**Methods:** Data were collected from 426 PWH aged 21 or older entering HIV care at 3 clinics in Cameroon between June 2019 and March 2020. HIV clinic data were extracted for all participants through January 1, 2022. Food insecurity was measured using the Household Hunger Scale. The proportion of individuals and time spent in six mutually exclusive and exhaustive HIV care states was estimated: linked to clinic; engaged at clinic, prescribed ART; disen-

gaged from clinic; re-engaged at clinic; known death; known transfer out. Estimates were compared for those with versus without food insecurity at baseline using differences.

**Results:** Overall, 417 PWH contributed 819.4 person-years of follow-up. A total of 28% of participants reported moderate or severe food insecurity at enrollment into HIV care. Individuals with (vs without) moderate or severe food insecurity were more likely to have a documented transfer out two years following HIV care engagement [Figure; 18.6% (95% CI 13.3%, 23.5%) versus 8.9% (95% CI 6.4%, 11.2%); percent difference=9.7%]. The difference in the total time spent on treatment and engaged (or re-engaged) in HIV care at their original clinic among those with (vs without) food security was 22.1 days.

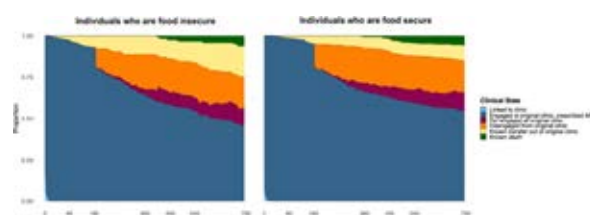


Figure. HIV care outcomes among PWH in Cameroon, stratified by food insecurity.

**Conclusions:** Food insecurity was associated with suboptimal HIV care outcomes in the first two years of HIV care among this cohort of PWH in Cameroon. These findings underscore the importance of addressing the material needs of PWH and support integration of food assistance and economic empowerment interventions into HIV care.

## THPEC283

### New indicators to measure non retention and re-engagement in HIV care in England

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**Background:** Regular HIV care consultations are key to reducing ill health and to ensure HIV remains undetectable thereby preventing onward transmission. British guidelines advise people with HIV to access care annually. We describe the characteristics of people living with HIV who did not attend HIV care within 15 months of their last appointment and who re-attended after a care gap.

**Methods:** All adults (≥15 years) reported through HIV and AIDS reporting system (HARS) seen for HIV care between 2019-2022 in England were included. Non retention in care was defined as not attending any UK clinic within 15 months of last attendance (including virtual/phone consultations). Successful re-engagement was defined as attending in care after a 15-month gap including a viral load (VL) was <200 copies/mL within 6 months of re-attendance. Clinic follow-up was used to exclude those who emigrated.

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**Results:** Among 86,161 adults seen for care between October 2019 and September 2020, 6,392 (7.4%) were not retained by end of 2021. Both the number (and proportion) not retained in HIV care increased in from 4,669 (6%) in 2019 to 6,819 (7%) in 2020 and decreased to 6,390 (7%) in 2022. Younger people (16% for people aged 15-34 years) were more likely to not be retained compared to older groups (12%), and people born abroad (8%) compared with those born in England (5%).

Among the 6,392 not retained in care by end of 2021, 3,203 (50.1%) re-attended care by end of 2022. Of these 1,658 (52%) had VL <200 copies/mL at that re-attendance suggesting receipt of ART outside specialist HIV care or was not recorded; excluding these individuals reduces non-retention to 5.5% (4,734) by end 2021.

Of the 1,545 with no evidence of viral suppression at subsequent re-attendance, 964 (62.4%) had VL<200 copies within 6 months of re-attendance and were classed as successfully re-engaged.

**Conclusions:** Around 5% of people with diagnosed HIV are not retained in care annually, half of whom successfully re-engage up to a year later. A higher proportion of younger people and those born abroad were not retained. These new indicators can evaluate interventions to improve engagement in care.

## THPEC284

Rates of recent prior antiretroviral therapy exposure among treatment initiators in South Africa

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**Background:** The era of universal treatment for HIV has seen high rates of both disengagement from antiretroviral therapy (ART) programs and re-engagement after interruptions, with modeled rates of non-naïve initiators >50% in many places. Most re-engagers are reluctant to admit prior antiretroviral exposure, and non-self-reported data on the proportion of re-initiators are scarce. We conducted ART metabolite testing to assess the proportion of people who present for initiation with evidence of recent ART use.

**Methods:** We enrolled clients who reported newly initiating ART or re-initiating ART after an interruption >90 days at three facilities in Mpumalanga, KwaZulu-Natal, and Gauteng provinces in South Africa and collected individual characteristics, self-reported previous treatment experience, reasons for stopping treatment, and service

delivery preferences. Dried blood specimens (5 x 50mm) dried blood spots on a Whatman 903 Protein saver card) from venous blood samples were collected during routine ART initiation. Liquid chromatography tandem mass spectrometry was performed to measure for metabolites of tenofovir diphosphate (TDF), which are typically detectable for approximately 90 days, allowing detection of prior use for up to 3 months.

**Results:** We enrolled 89 participants (median age 32.5, 62% female), of whom 16 (18%) self-reported previously taking ART but with a current interruption >3 months. Test results indicated that 18 (20%) participants had detectable metabolites of TDF in their specimens.

Among these 18, 17% had a level consistent with regularly taking 4-6 doses per week, 44% 2-3 doses per week, and 38% <2 doses per week. Of those with detectable TDF metabolites, only 4 reported ever previously using ART. Gender, age, and location were not associated with a detectable metabolite result.

**Conclusions:** At 3 clinics in 3 provinces of South Africa, one of five initiators who self-reported being ART naïve or in an interruption >3 months did have evidence of recent (<90 days) TDF use.

This is a lower proportion than anticipated based on modeled estimates, possibly due to self-selection out of the study, but it is still a substantial minority. Future work should explore reasons for reluctance to disclose prior ART use, how to identify re-engagers at initiation, and interventions needed to support re-engagers.

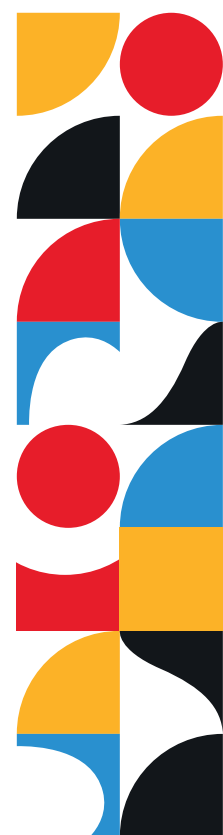
## THPEC285

A case-based management approach to strengthen the follow-up of HIV-exposed infants in Tanzania

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**Background:** The success of prevention of mother-to-child transmission of HIV (PMTCT) programs relies on the ability to monitor the full cascade until the final outcome of HIV-exposed infants (HEIs). In Tanzania, the mother-child cohort register was introduced to enhance follow-up, but it is still paper-based. Through its successive USAID-funded projects in Tanzania, the Elizabeth Glaser Pediatric AIDS Foundation established a case-based management (CBM) approach in 2019 to strengthen follow-up of HEIs. The CBM approach includes on-site mentorship, an electronic dashboard to visualize PMTCT cascade data, virtu-





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al data review meetings, and service provider WhatsApp communication groups. This study evaluates the progress made to date.

**Methods:** A retrospective analysis was conducted on the annual PMTCT cohorts at 472 health facilities in five supported regions, documenting the final outcome status of HEIs at 18 months of age. Data were extracted from the national mother-child cohort registers and care and treatment databases from October 2016 - September 2023.

**Results:** Overall, the annual number of HEIs dropped from 5,433 in 2017 to 4,696 in 2023, and the percentage of HEIs with a documented final outcome status increased from 61% (3,288/5,433) to 91% (4,290/4,696). The number of HEIs with a confirmed positive HIV test dropped from 196 to 80, with the positivity among those tested dropping from 6.1% in 2017 to 1.9% in 2023. Out of the 406 HEIs (9%) in 2023 with unknown status, 55% were recorded as transfer-out and no final outcome was captured in the system. See figure showing the annual trend.

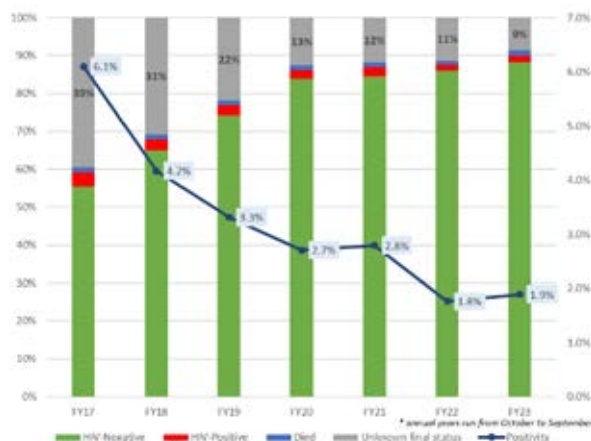


Figure. Trend in proportion of HIV exposed infants with final outcome status.

**Conclusions:** The intensified CBM approach improved the follow-up of HEIs. We recommend scaling up the CBM model that includes the use of digital health tools to enable timely and complete monitoring of mother-baby pairs across all service delivery points and facilities to further close the MTCT cascade gaps.

## THPEC286

### Inequalities in access to treatment and viral suppression among vulnerable people living with HIV/AIDS (PLWH) in Brazil

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**Background:** Brazil has made significant improvements in its HIV/AIDS care cascade over the past decade. This study aims to demonstrate the inequalities in access to treatment and viral suppression among vulnerable PLWH in the country.

**Methods:** We analyzed programmatic data from all PLWH in Brazil who were linked to health care, i.e., had at least one antiretroviral prescription and/or conducted at least one viral load (VL) or CD4 test during the study year. We estimated the proportion of linked PLWH who were on treatment and achieved suppression (VL<50copies/mL) after six months of treatment according to age group, race/skin color, schooling, and exposure category. Statistical differences were verified using Chi-square tests.

**Results:** In 2022, 842,000 PLWH were linked to the Brazilian public healthcare system. Significant differences were observed across all analyzed variables (p-value<0.001). Among those with higher schooling (12+ years), 90% were on treatment and 84% were virally suppressed, compared to 85% and 74% respectively among those with up to seven years. These indicators increased with age: 81% were on treatment and 54% were suppressed among PLWH aged 5-8yo, and 90% and 82% for those aged 50+yo. Higher vulnerability was observed among indigenous PLWH (84% were on ART; 70% were suppressed), followed by black/brown individuals (86% and 75%, respectively). In 2021, among 781 PLWH linked, we observed that women who used injectable drugs exhibited the poorest indicators (86% on treatment and 77% suppressed), compared to men who have sex with men (92% and 89%, respectively).

**Conclusions:** Our study revealed that, despite improvements in the 95-95-95 goals in Brazil, national advancements were not evident among the most vulnerable populations. In addition to stigma and discrimination, the lack of essential rights such as food, education, housing, and sanitation represents a significant barrier to improving the health of this population.

To overcome these obstacles, implementing intersectoral interventions is essential. Therefore, under the coordination of the Ministry of Health, the Brazilian Government launched the National Program for the Elimination of Socially Determined Diseases. This program, which brought together fourteen other Ministries, is promising in fully enacting health policies for the entire population, leaving no one behind.

## THPEC287

### Rates of first post-onset-of-the-pandemic (pop) HIV care visits and utilization of telehealth at a large academic medical center: study findings from North Carolina

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**Background:** Telehealth was used to maintain HIV care continuity during the COVID-19 pandemic in the United States.

We assessed secular trends in rates of first post-onset-of-the-pandemic HIV care visits and telehealth use among people living with HIV (PWH) receiving care from a large university-based HIV clinic in North Carolina (NC).

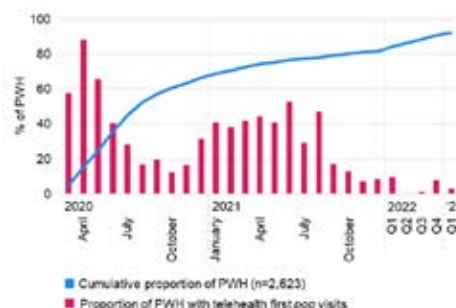
**Methods:** First post-onset-of-the-pandemic (pop) HIV care visits describe the first individual HIV care visit per person following the onset of the COVID-19 pandemic, including people new to the clinic and established clients (henceforth: first pop visits).

Aggregated electronic health record (EHR) data from the Duke University Infectious Disease clinic in NC were extracted using Epic's SlicerDicer tool to graphically assess temporal patterns of engagement in HIV care and the utilization of telehealth between March 2020 and March 2023. Monthly rates of first pop visits were calculated as the proportion of PWH who had their first HIV care visit during each month from March 16, 2020.

**Results:** EHR data from 2,623 PWH who received care between January 2019 and March 2023 were extracted. Most PWH had a first pop visit (94%) between March 16, 2020 and March 31, 2023. Rates of first pop visits were highest between March and August 2020; thereafter the cumulative trend flattened (Figure 1).

The proportion of telehealth among first pop visits peaked with 88% telehealth visits in April 2020. Telehealth use decreased thereafter before showing a second peak in the first half of 2021.

**Conclusions:** Telehealth accounted for a high proportion of first pop visits at the beginning of the pandemic and bridged in-person HIV care interruptions. The observed second peak in telehealth use for HIV care first pop visits suggests that telehealth could help to mitigate care interruptions among PWH.



Notes: Figure 1 shows the cumulative proportion of PWH who had a first post-onset-of-the-pandemic (pop) visit (blue) and the proportion of PWH with telehealth first pop visits among monthly visit rates (red) after the onset of the COVID-19 pandemic in mid-March 2020. Q1-4 refer to the end-of-the-quarter cumulative proportion of PWH who had first pop visits (blue) or quarterly averages of telehealth rates among those PWH (red) across months of the quarter of the respective calendar year. Abbreviations: PWH People living with HIV; pop post-onset-of-the-pandemic.

Figure 1. Engagement in first post-onset-of-the-pandemic (pop) HIV care visits and utilization of telehealth.

## THPEC288

### Longitudinal HIV care continuum outcomes among people living with HIV newly enrolling in HIV care in Kwazulu-Natal, South Africa: a multistate analysis

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**Background:** Cyclical engagement and disengagement of people living with HIV across the HIV care continuum remains a persistent public health challenge. This study aims to provide new insights into longitudinal care dynamics, offering essential knowledge for tailored interventions in a region of South Africa with high prevalence.

**Methods:** We extracted electronic health records for individuals aged 16+ who initiated HIV care at six public healthcare clinics in Kwazulu-Natal between March 2021-March 2023. We categorized individuals into nine



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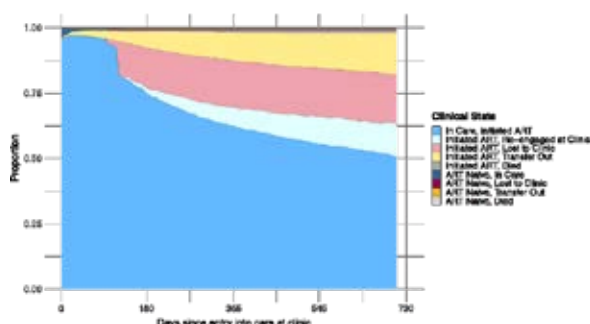
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mutually exclusive and exhaustive HIV care states related to antiretroviral therapy (ART) initiation, retention, transfers, and mortality from the time of enrolment until database closure. We used multistate models to estimate the proportion of individuals in each care state over time and the restricted mean time spent in each state, accounting for transitions in and out of non-absorbing clinical states and competing events over time.

**Results:** 3833 individuals were included (60.6% female, median age 32 [IQR 26-39]). 95.5% initiated ART the same day they enrolled in care. At 12 and 24 months after enrollment, 69.6% and 62.6% (50.9% continuously retained [95% CI: 48.9, 53.2]; 11.7% re-engaged [95% CI: 9.9-13.7], Figure) of individuals were in care, respectively. At 6- and 24-months after enrollment, 16.0% and 19.9% were lost and 6.7% and 16.2% had transferred, respectively. After loss from care, 25.8% and 34.2% were re-engaged at 6- and 12-months following disengagement, respectively. The restricted mean time spent in care across the first 24 months was 540 days.



**Conclusions:** Although same-day ART initiation was high, a large proportion of people living with HIV cycle in and out of care over time, with loss from care increasing over time and just a small proportion returning to care. Interventions that promote sustained engagement and return to care are urgently needed to improve later-stage care cascade outcomes.

## THPEC289

Reach 95-95-95 using the monthly analysis and reporting approach of HIV program indicators by health districts in Senegal: district approach

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**Background:** In Senegal, the HIV epidemic is concentrated with a prevalence of 0.5%. The location-based and population-based approach presents the AIDS epidemic as the sum of several interconnected local epidemics, within which key populations and certain regions are more affected. The South and South-East regions have prevalences varying from 0.9 to 1.5%. They border coun-

tries where the HIV epidemic is generalized. Key populations have prevalences ranging from 5.2% to 27.6%. In 2021, the HIV program implemented the district approach which allows the calculation and analysis of cascades in order to monitor progress towards 3X95 of the country's 79 districts.

**Description:** This approach based on priority populations and their locations aims to prioritize districts through scores based on 7 areas and 11 performance criteria from program indicators. It identifies problem districts and GAPS to be filled to improve their performance. Achieving 3\*95 at the district level posed a problem due to poor completeness and timeliness of the routine data transmitted. The national and district targets resulting from the Spectrum estimates were never achieved because the providers did not master the methods of calculating and analyzing the cascades, in addition to the lack of coordination and regular analysis of the data. To support this strategy, a monthly reporting and cascade analysis process is put in place.

**Lessons learned:** This approach made it possible to analyze the cascade of districts with a level of disaggregation by age and sex. The data is collected using the waterfall generation tool. The cascades are analyzed, the gaps identified and an improvement plan is developed and implemented by the district. At the end of 2022, 41,560 PLHIV are estimated in Senegal, 36,714 know their serological status (88%), 33,423 are on ARV (91%) and 30,144 have achieved viral suppression (90%). Of the 79 districts in the country, almost half reached the first 95. More than 2/3 reached the second and third 95.

**Conclusions/Next steps:** This approach with targeted cascade analysis was able to set clear and achievable objectives and help improve district performance. It enabled regular monitoring of the program towards achieving 3\*95. It has greatly improved the quality of district data.

## THPEC290

Transition to paediatric Dolutegravir: a before and after study of virologic suppression rate among paediatric treatment cohort in Rivers State, Nigeria

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**Background:** The virologic suppression rate in children with HIV is suboptimal, and their progression to AIDS is faster, posing an over 80% risk of death within five years without effective treatment. Dolutegravir (DTG) exhibits superiority over protease inhibitor-based regimens, especially lopinavir/ritonavir (LPV/r), with lower treatment

failure risk in infants and young children. This study aims to compare viral suppression rates in children with HIV (CLHIV) weighing under 20kg transitioning from LPV/r to a paediatric Dolutegravir (pDTG)-based regimen.

**Methods:** A quasi-experimental study conducted in Rivers State Nigeria among CLHIV on treatment - ART (less than 20kg at the time of regimen transition and initially on LPV/r based regimen ) and transitioned to pDTG-based regimen between October 2021 and February 2022. Descriptive statistics using counts and proportions for categorical variables and means and standard deviations for continuous variables. Test of association using McNamar Chi-square. P-value 0.05.

**Results:** There was a total of 744 CLHIV in the cohort of study; out of which 377 (50.7%) were females while 367 (49.3%) were males. The mean age before and after the transition to pDTG were 4 years and 5 years respectively. Before the transition to pDTG, 88.2% (656) of children were virally suppressed. After the cohort was transitioned to pDTG, viral suppression increased to 90.2% (671). The disaggregated percentage of viral load suppression after transition to pDTG showed that the undetectable viral load among the suppressed cohort was 99.7%, while before transition to pDTG, it was 84%. 52 of the total CLHIV that were suppressed before the transition to pDTG became unsuppressed after the transition to pDTG while 67 of the total CLHIV that was unsuppressed before transitioning to pDTG became suppressed after transitioning to pDTG but these proportions were not statistically significant (p-value = 0.167).

**Conclusions:** Transition to pDTG improved viral load suppression by 2.04% (not statistically significant). However, CLHIV with undetectable viral load increased significantly following the use of DTG-based ART. Though pDTG seems to have some advantage over LPV/r in achieving undetectable viral load in suppressed, further studies may be necessary to explore other essential factors that may be operational in achieving viral suppression in CLHIV.

## Monitoring the spread, impact and prevention of new or resurgent pathogens

### THPEC291

Emerging challenges: prevalence and associations of sexually transmitted infections in individuals with Mpox - Insights from a Major Brazilian referral health service

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**Background:** Mpox remains an important emerging concern, increasingly associated with sexual transmission, particularly in conjunction with bacterial sexually transmitted infections (bSTIs).

We aimed to describe the prevalence of each/any concurrent bSTIs diagnosis and associated factors among participants with mpox, assessed at a prominent Brazilian referral health service.

**Methods:** Prospective cohort that enrolled 554 participants aged 18+ years with confirmed mpox (detectable MPXV DNA by real-time PCR) between June 2022-January 2024 in Rio de Janeiro, Brazil. For this cross-sectional analysis, we included only participants who performed any bSTI testing at baseline.

We offered testing for chlamydia/gonorrhea (real-time PCR detection in anorectal swab) and syphilis (active diagnosis if VDRL>1/8). The baseline prevalence of each/any concurrent bSTI was calculated, and sociodemographic, clinical and behavioral characteristics were assessed based on any concurrent bSTI diagnosis (yes/no). Qualitative variables were compared using Chi-squared/Fisher's test, while quantitative variables were assessed using Wilcoxon rank-sum test.

**Results:** Among 554 participants (83% tested for at least one bSTI at baseline), 91% were cisgender men, 61% Black/Pardo, and 58% had primary schooling or less.

Median age was 33 years (IQR:28-39). Prevalence of any bSTI was 38%; the most common was primary syphilis (24%), followed by anorectal chlamydia (10%) and gonorrhea (9%).

Compared to those with no bSTI, a higher proportion of participants with any concurrent bSTI tested positive for HIV (68% vs 44%, p<0.01) and for HCV (10% vs 5%, p=0.04), reported anal sex in the last 30 days (83% vs 72%, p=0.03), reported any bSTI in the previous year (50% vs 22%, p<0.01), presented clinical symptoms of proctitis (32% vs



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21%,  $p < 0.01$ ), and had detectable MPXV PCR in rectal swabs (77% vs 66%,  $p = 0.02$ ). Household mpox transmission was less frequent in individuals with any concurrent bSTI (4% vs 9%,  $p = 0.05$ ), and we found no differences regarding sociodemographic characteristics.

**Conclusions:** We identified a high prevalence of concurrent bSTIs among persons diagnosed with mpox. Additional anorectal STIs might represent higher odds of acquiring HIV.

This study emphasizes the importance of integrating mpox evaluation into a comprehensive sexual health approach, providing an opportunity for expanded screening, treatment, and prevention strategies for HIV/STI.

## THPEC292

Increasing COVID-19 vaccine coverage among art clients through a comprehensive vaccination intervention in Kasungu district, Malawi

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**Background:** By early 2023, Malawi had registered nearly 90,000 confirmed COVID-19 cases with 2,700 deaths. Vaccination started in 2021 and persons living with HIV (PLHIV) were a priority group. Kasungu, a rural district in central Malawi, has around 20,000 people alive on ART. Despite evidence that vaccination reduces COVID-19 severity in PLHIV, vaccination coverage among ART clients in Kasungu district remained low. Several factors, including misconceptions and vaccine hesitancy, initial vaccine shortages, lack of vaccination service accessibility and vaccinators at ART clinics contributed to this.

To address these challenges, a multi-pronged COVID-19 vaccination intervention took place from April-September 2023 at 12 ART clinics in Kasungu district.

**Description:** Partners in Hope (PIH), a Malawian, non-governmental organization, supports HIV services in Kasungu district with PEPFAR/USAID funding. PIH developed a comprehensive COVID-19 enhanced vaccination intervention that addressed both demand- and supply-side constraints. We trained HIV service providers to vaccinate and lay cadre staff to screen for vaccination eligibility. We procured dedicated cooler boxes to allow vaccine availability in ART consultation rooms. Based on PIH research that indicated the importance of vaccine safety messag-

es from trusted sources to address vaccine hesitancy, we implemented intensive awareness campaigns at facility and community level, using new, locally appropriate information materials. PIH involved previously vaccinated ART clients, health care workers, and local leadership to share their favorable vaccination experience in frequent health education sessions.

Monitoring of vaccination progress informed bi-weekly health facility-level performance reviews. After six months, full vaccination coverage among ART clients in Kasungu district had increased from 4,386/14,048 (31%) to 8,581/14,157 (61%), much higher than in the general population (around 3%).

**Lessons learned:** Formative local research to understand barriers to vaccine uptake was critical to address vaccine hesitancy as part of our intervention. Overcoming infrastructure and human resource capacity challenges, intensive health facility-based monitoring and evaluation, and strong collaboration with key stakeholders, including ART clients, policy makers and local community leadership, led to success of a district-based COVID-19 vaccination campaign.

**Conclusions/Next steps:** This approach can be scaled-up for PLHIV and others at high risk of COVID-19 and can be used to address other vaccine-preventable disease threats.

## THPEC293

Low prevalence and incidence of hepatitis C virus infection among individuals using PrEP in the Dutch national PrEP program between 2019-2022

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**Background:** Studies have shown that men who have sex with men (MSM), particularly those using pre-exposure prophylaxis (PrEP), are at increased risk of sexually-acquired hepatitis C virus (HCV) infection.

We evaluated HCV prevalence and incidence, along with their associated determinants, in a cohort of PrEP using individuals in the Netherlands.

**Methods:** In 2019, the Netherlands launched a five-year national PrEP program that offers PrEP to eligible individuals. We used prospectively-collected data from individuals registered in this program between 2019-2022. Individuals generally underwent annual testing for HCV antibodies, and additional HCV-RNA testing was conducted when antibodies were detected.

We calculated HCV prevalence at first PrEP visit in the program and overall incidence rate (IR) per 100 person-years (PYs) during follow-up. Univariable logistic and Poisson regression models were used to identify determinants associated with prevalent or incident HCV-infection, respectively.

All determinants were self-reported, except for sexually transmitted infection (STI) diagnosis, and referred to the six months preceding the visit.

**Results:** Among 10,563 individuals that were included, HCV antibodies were prevalent in 66 (0.6%) individuals and was associated with PrEP use within 12 months before the first visit in the national PrEP program [odds ratio (OR)=3.03, 95% confidence interval (CI)=1.79-5.13], receptive condomless anal sex (CAS) (OR=2.73, 95%CI=1.25-5.98), chemsex or group sex, STI diagnosis at visit (OR=2.37, 95%CI=1.29-4.37), and injecting drug use (IDU) (OR=6.61, 95%CI=2.35-18.61). Among 9,851 individuals with 17,150 person-years (PY) of follow-up, 64 incident HCV-infections [IR=0.37 per 100 PY, 95%CI=0.29-0.48] were identified. All were primary incident infections.

Factors associated with incident HCV-infection were receptive CAS [incidence rate ratio (IRR)=2.59, 95%CI=1.12-6.02], chemsex or group sex (IRR=1.83, 95%CI=1.01-3.30), STI diagnosis at visit (IRR=1.96, 95%CI=1.07-3.60) and IDU (IRR=6.15, 95%CI=2.20-17.18).

**Conclusions:** Prevalence and incidence of HCV were low among individuals in the Dutch PrEP program, likely reflecting early HCV testing advice for MSM using PrEP from 2017 onwards, the high uptake of effective DAA treatment for acute and chronic HCV infections, and widened access to PrEP. Instead of annual HCV testing, behaviorally driven testing for HCV could be considered.

## Monitoring and population-level interventions for non-HIV outcomes

### THPEC294

Exploring colon cancer screening in people living with HIV at an urban community health center

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**Background:** In 2023, over half of people living with HIV in the USA were age 50+, and at risk for age-related malignancies. Ensuring quality care requires following established guidelines for routine healthcare maintenance, in addition to optimizing HIV care and viral suppression. Callen-Lorde, a NYC-based community health center, is dedicated to providing care to the LGBTQ communities and people living with HIV.

Our robust quality management group ensures that clients receive high-quality, culturally competent, and appropriate care throughout the life course.

**Description:** As part of an ongoing project to monitor colon cancer screening (CCS) utilization, we aimed to ensure that no communities were underserved by a clinic-wide initiative that includes mailing home-based Fecal Immunochemical Test (FIT) kits, in-house fecal occult blood test (FOBT), and providing referrals and reminders for colonoscopy. We utilized the electronic health record (EHR) to assess CCS among individuals living with HIV aged 50+. Disparities were evaluated by race, ethnicity, gender identity, housing status, and viral load suppression.

**Lessons learned:** We served 1,519 individuals living with HIV aged 50+ in December 2023, of whom 1,494 were eligible for routine CCS (ages 50-75). This group is racially and ethnically diverse; Black (n=372, 27.5%), White (n=558, 41.2%), Hispanic/Latinx (n=355, 26.2%), Asian (n=29, 2.1%), and multiracial individuals (n=36, 2.5%). The majority are cisgender men (1246, 83.7%) and transgender women (168, 11.3%). Viral suppression was high at 94.3%. Overall, only 510 (34.1%) had a documented CCS. This did not significantly differ by race, ethnicity, birth-sex, gender identity, or housing status. Clients with a last viral load  $\geq 200$  copies/mL were less likely to have undergone CCS (18.8% vs. 35.1%;  $p=.002$ ). Potential barriers to CCS include low client knowledge/awareness, provider-related (including time constraints, prioritization of HIV care over preventive care and incomplete EHR documentation), and structural, e.g., cost, transportation, appointment scheduling and insurance-related issues.



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**Conclusions/Next steps:** We learned that despite high levels of engagement in HIV care and viral suppression, CCS rates were suboptimal and below the Healthy People 2030 target of 74.4%. A targeted campaign (ColonCARE+) is underway to address barriers and improve adherence to routine CCS. We plan ongoing monitoring to measure the impact of these interventions.

## THPEC295

The impact of the COVID-19 pandemic on depression and panic among people living with HIV in the U.S.

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**Background:** The COVID-19 pandemic and subsequent impacts of shelter-in-place have impacted the mental health of vulnerable populations.

This study examines changes in depression and panic symptoms following the shelter-in-place mandate in March 2020 among people living with HIV (PLWH) across the U.S.

**Methods:** We assessed depression (measured by the Patient Health Questionnaire [PHQ-9]) and panic disorder symptoms (measured by the Panic Disorder Severity Scale [PDSS]) in response to COVID-19 between March 2018 and 2022. Data were collected among PLWH enrolled in the Center for AIDS Research Network of Integrated Clinical Systems (CNICS), which follows participants in 8 HIV clinics across the U.S. We fit interrupted time series (ITS) mod-

els to examine changes in the probability of moderate or severe depression and panic over time, adjusted for age, race, sex, geographic region, and HIV viral load.

**Results:** Overall, 7,121 PLWH completed questionnaires in this timeframe (total of 19,873 assessments); the median age was 51-years (Interquartile range [IQR]= 39-58), and 20% were female. There were significant increases in moderate/severe depression symptoms over time ( $p=.001$ , **Figure 1A**), and in panic symptoms ( $p<.001$ , **Figure 1B**) in the two years following onset of COVID-19 compared to the period two years prior. After COVID-19, participants were more likely to report moderate/severe depression symptoms if they had an HIV viral load  $>200$  copies/mL ( $p=.032$ ), and were more likely to report moderate/severe panic symptoms if they were homeless ( $p=.011$ ).

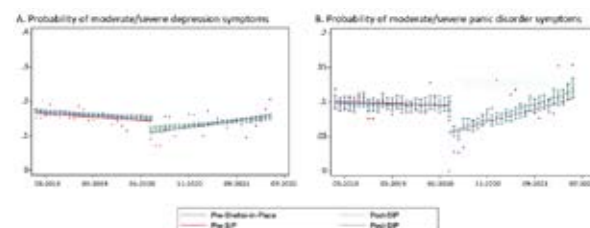


Figure 1.

**Conclusions:** Findings demonstrate the detrimental impact of COVID-19 on the mental health of PLWH during a time when access to mental health services was further limited. Results underscore the need for increased access to integrated mental health and HIV care services in the U.S. In the context of lingering mental health impacts of the pandemic, targeted mental health interventions integrated within HIV care may lead to improved mental health outcomes among PLWH.

## THPEC296

Social-behavioral predictors of blood pressure profiles in a longitudinal cohort of people living with HIV and cardiometabolic disorders

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**Background:** Cardiometabolic disorders (CMDs) are rising among people living with HIV in sub-Saharan Africa, signaling an impending public health crisis. Uncontrolled hypertension is a key target for public health intervention, as it is a major, yet largely modifiable, risk factor for premature cardiometabolic diseases. To inform future interventions, we leveraged longitudinal data from the

*Healthy Hearts* couples cohort study in Malawi to identify blood pressure (BP) profiles and test for associations with modifiable, socio-behavioral factors.

**Methods:** Couples having at least one partner living with HIV and hypertension/diabetes completed quarterly visits consisting of a survey and clinical assessment. Using systolic (SBP) and diastolic (DBP) blood pressure readings from three visits, we used latent class analysis to identify BP profiles among those with CMD and HIV.

Multinomial logistic regression was used to examine associations between BP profiles and baseline social-behavioral factors at the individual, dyadic, and social-structural levels (e.g., correct CMD knowledge, medication adherence; partner support for CMD, couple illness communication; access to care, food insecurity). Models controlled for demographics.

**Results:** Participants (N=120) were gender-balanced (53% male), 52 years on average, and had low education (75%). The best fitting model was a three-profile model (entropy=0.90, posterior probabilities all >0.95, LMRT  $p=0.03$ , PBLRT <0.001). Profiles were characterized as Normal BP (24% of sample; SBP 114-120, DBP 74-79), Elevated BP (53%; SBP 138-148, DBP 86-92), and Highly-elevated BP (23%; SBP 166-174, DBP 104-111).

The odds of being in the Highly-elevated BP profile (compared to Normal BP) was associated with higher partner support ( $B=0.43$ ,  $p=0.01$ ) and higher illness communication ( $B=1.26$ ;  $p=0.03$ ). The odds of being in the Elevated BP profile was associated with lower adherence to anti-hypertensive medication ( $B=-2.24$ ;  $p=0.03$ ) and higher CMD knowledge ( $B=0.23$ ;  $p=0.02$ ). No other factors were associated.

**Conclusions:** Relationship dynamics were associated with elevated BP over other factors, suggesting the importance of close relationships in BP management.

Participants in elevated BP profiles reported better communication, partner support, and CMD knowledge, perhaps due to more severe disease and greater exposure to health education.

Good adherence reduced the risk for elevated BP. CMD interventions should consider involving partners early on to manage BP, and provide adherence support.

## THPEC297

### Syndemic Health/Sexual risks on predicting depression among urban refugee youths: a Latent Class Analysis

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**Background:** Widespread social and health disparities experienced by refugee youth warrant urgent attention. Social ecological factors (e.g., violence, sexual relationship power, and food/water insecurity) that are closely associated with HIV vulnerability may also contribute to depression. Despite well-established direct relationships, the synergistic effect of these contextual factors on refugee youth depression remains unclear.

Using latent class analysis (LCA), this study aims to examine the patterns of health/sexual risks among urban refugee youths in Kampala, Uganda, and to explore their associations with depression.

**Methods:** A longitudinal survey was implemented with urban refugee youths living in informal settlements in Kampala (N=282). Respondents' social determinants of health (SDOH) risk was evaluated based on responses to six indicators: violence experience (physical/sexual), water insecurity, food insecurity, alcohol misuse, transactional sex, and multiple sexual partners; depression risk was assessed by Patient-Health-Questionnaire-9 at baseline (Wave-3). LCA identified groups characterized by distinctive patterns of SDOH risk.

Adjusting for age and gender, we conducted multivariate logistic regression to explore the relationship between classes of SDOH risk and depression, and whether the identified differences in SDOH risk persisted over time (Wave-4) in predicting depression.

**Results:** Differences in SDOH risk were best described by 3 classes: low-risk (Class-1;  $n = 69$ , 24.5%), medium-risk (Class-2;  $n=185$ , 65.6%), and high-risk (Class-3;  $n=28$ , 9.9%). Both Class-2 and Class-3 were characterized by high food/water insecurity and problematic alcohol use, while Class-3 also demonstrated high partner sexual violence, having multiple sexual partners, and engaging in transactional sex. Class-2 (adjusted odds ratio [aOR]: 2.24; 95% confidence interval [CI]: 1.07, 4.71;  $p=0.033$ ) and Class-3 (aOR: 5.12; 95% CI: 1.71, 15.30;  $p=0.004$ ) showed a higher likelihood of depression than Class-1. Subgroup differences persisted over time. Class-3 presented higher odds of depression at Wave-4 (aOR: 9.46; 95% CI: 3.08, 29.09;  $p<0.001$ ) compared to Class-1.

**Conclusions:** Social determinants of health, including poverty indicators and sexual health risks, are associated with depression among refugee youth.



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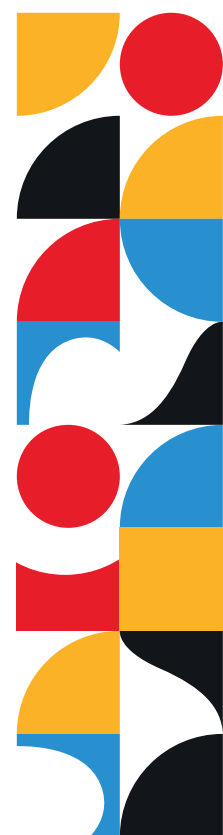
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These findings extend our understanding of syndemics in refugees' sexual and mental health domains. Mental health interventions should consider multicomponent programs, and a comprehensive approach is recommended when examining mental health concerns and needs among youth refugees.

## THPEC298

Community-based monitoring and improving access to mental health services for people living with and vulnerable to HIV in EECA countries

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**Background:** According to EACS, depression prevalence reaches 40% among people living with HIV. Studies have shown that the risk of death from suicide for people with HIV is 100 times higher than the average population. Depression impacts HIV treatment adherence. Mental health is a priority when it comes to improving the life quality of people living with and vulnerable to HIV. Our project aims to improve access to mental health services for people living with and vulnerable to HIV by raising mental health awareness, training peer counselors about depression screening, monitoring accessibility and availability of mental health services, and developing recommendations to improve mental healthcare access in Eastern Europe and Central Asia.

**Description:** The project includes:

- Establishing a working group on HIV and mental health consisting of sex workers, people using drugs, men having sex with men, transgender people, and people living with HIV;
- Developing a manual for HIV peer counselors focused on depression screening and referral to mental health services;
- Workshops for peer counselors from each key population focused on depression screening and referral to mental health services;
- Monitoring access to mental health services.

**Lessons learned:** 80 key population representatives took part in the workshops; over 100 people received copies of the manual; 522 people from 10 countries took part in the monitoring survey. Preliminary results show that 53% of the respondents never received mental health counseling from their clinicians; 60% never sought mental health services. Key barriers to mental healthcare included stigma and discrimination (19.2%), financial constraints (18.9%), and mistrust in mental health professionals (18%).

**Conclusions/Next steps:** The key recommendations are to raise awareness of EECA clinicians about the need to monitor and manage mental health issues in people living with and vulnerable to HIV, build the capacity of

mental health providers in HIV-related issues, and raise awareness of people living with and vulnerable to HIV about mental health and access to services.

Future steps include in-depth data analysis, recommendations for improving access to mental health services for people living with and vulnerable to HIV in EECA; expanding the monitoring system; training for HIV peer counselors on mental health issues.

## THPEC299

Positive Outcomes-11: a short version of the Positive Outcomes patient reported outcome measure to assess health and wellbeing among people living with HIV

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**Background:** Positive Outcomes (PO) is a multi-dimensional measure of wellbeing for people with HIV. It was included as an optional, additional questionnaire in the Positive Voices 2022 (PV2022) UK survey.

We aimed to identify a shorter version of PO for research and assess the association of original and shorter versions with other health and wellbeing measures.

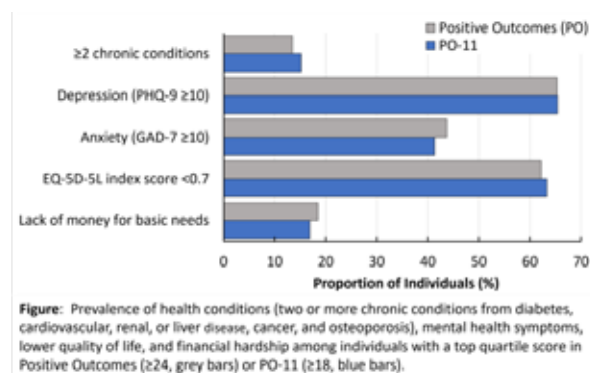
**Methods:** PO assesses wellbeing over the previous four weeks with 20 questions in four domains (physical, emotional, social and sexual wellbeing), with answers scored 0 to 4 (higher scores reflecting poorer outcomes). We used exploratory factor analysis (EFA) to identify latent factors and define a shorter version.

We analysed associations of the full and short versions with other health and wellbeing measures using total scores and a cut-point defining the top quartile with poorest wellbeing.

**Results:** Altogether 897 (19.5%) individuals completed the optional PO questionnaire in PV2022: 695 (77.5%) men, 190 (21.2%) women, median age 53 years (IQR 44-59), 673 (75.0%) white and 137 (15.3%) black ethnicity, and median time since diagnosis 15 years (IQR 10-20). EFA identified two factors, with the first of 11 questions (pain, stomach/bowel problems, memory/concentration, sleep, usual activities, anxiety, depression, feeling good, feeling at peace, money worries, and social support) providing a reliable mea-



sure of physical, emotional, and socioeconomic wellbeing (Cronbach alpha=0.89). Total scores of PO and the shorter PO-11 correlated well with the EQ-5D-5L index ( $R^2$  0.41 and 0.50, respectively), PHQ-9 depression ( $R^2$  0.66 and 0.72), and GAD-7 anxiety ( $R^2$  0.56 and 0.60). Participants with PO or PO-11 scores in the top quartile had a high prevalence of chronic health conditions and mental health symptoms, lower quality of life, and greater financial hardship (Figure).



**Conclusions:** The short PO-11 provides a statistically valid measure of wellbeing that may be useful as a research or screening tool among people with HIV.

## THPEC300

### Maternal sexually transmitted infections and congenital anomalies among newborns in the United States

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**Background:** Maternal sexually transmitted infections (STIs) might be associated with increased risk of congenital anomalies in newborns, yet the available evidence remains limited and less comprehensive. We aimed to estimate the association between maternal STIs (including chlamydia, gonorrhea, and syphilis) and the risk of cause-specific congenital anomalies among live singleton births in contiguous United States (US).

**Methods:** We included data from 14,602,822 live singleton births occurring from 2016 to 2019 across 525 counties in the US. We used logistic regression to estimate the association between each maternal sexually transmitted infections and the risk of total congenital anomalies and diagnostic categories after adjusting for socio-demographic and pregnancy-related factors. We conducted subgroup analyses to identify potential susceptible subpopulations.

**Results:** A total of 41,755 congenital anomalies (2.9 per 1000 births) were documented during the study period. Chlamydia infection was associated with increased risk of total congenital anomalies (odds ratio [OR] of 1.20 [95% CI: 1.12, 1.28]), cleft lip with or without cleft palate (OR: 1.26 [95% CI: 1.08, 1.47]), Down syndrome (OR: 1.64 [95% CI: 1.27, 2.13]), and hypospadias (OR: 1.26 [95% CI: 1.08, 1.47]). Syphilis infection was associated with a higher risk of omphalocele (OR: 2.87 [95% CI: 1.28, 6.46]).

These associations were homogeneous across subgroups defined by maternal age, maternal education, pre-pregnancy BMI, and infant sex, with the exception of maternal race and ethnicity. However, we found no evidence for the association between gonorrhea infection and congenital anomalies.

**Conclusions:** Among live singleton births in the US, chlamydia and syphilis infection may be associated with an increased risk of congenital anomalies. Further studies are recommended to elucidate the underlying pathophysiological mechanisms for the association between maternal STIs and neonate congenital birth anomalies.

## Methodology to support epidemiological studies

### THPEC301

#### Using electronic health record data to establish HIV case surveillance in Zimbabwe: de-duplication using active machine learning

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**Background:** Establishing national HIV case surveillance (NCS), a longitudinal individual-level dataset from the time of being diagnosed with HIV throughout the continuum of care using existing health records from multiple sources is an important public health activity.

A probabilistic matching algorithm deduplicating client records across facilities and data sources based on the similarity of demographic information has been used to establish the NCS in Zimbabwe. We described the training, evaluation, and outcomes of this algorithm.





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**Methods:** An active learning-based deduplication algorithm from the Python Pandas-dedupe package was used. A subset of client demographic data, abstracted from the national client registry, including clients' first and last name, sex, and date-of-birth, was used for model training and evaluation. A random selection of 2,000 records from one clinic with the highest and another with the lowest client volume within each of 10 provinces formed the model validation dataset of 40,000 records; these were manually checked for duplicates to provide ground-truth labels. The evaluated model was then run on the full dataset of 1,048,575 individual-level records from national data warehouse (NDW) with HIV-positive status. Predicted duplicates were tabulated by North and South region.

**Results:** Of 120,000 records were used to train the model, 1,500 were manually labeled in the active learning process. The accuracy of the algorithm on the validation set was 95% and the F1 score was 0.77 (Table-1). The matching/deduplication process reduced the number of records from 1,048,575 to 904,152 records of unique individuals (14%). 77,617 duplicates were within the North region, 42,845 were within the South, 5,401 were across North-South, and 78,059 were not duplicates.

Number of records	True positives	True negatives	False positives	False negatives	Accuracy	F-1 score*	Precision	Sensitivity
40,000	2,701	31,899	791	853	0.95	0.77	0.77	0.76

The sum of True positive, True negative, False positive, and False negative equals the number of predicted individuals based on the model and may not equal the number of records since one person could have ≥ one records.

\*F1-score =  $2 * (\text{precision} * \text{sensitivity}) / (\text{precision} + \text{sensitivity})$

*Table 1. Evaluation of the Matching and De-duplication Algorithm Used in Zimbabwe's HIV Case Surveillance on the Validation Dataset*

**Conclusions:** Zimbabwe has demonstrated that establishing NCS using individual-level data from the NDW with similar demographic information is doable. Choosing an appropriate matching algorithm and process underpinned the successes.

We found additional deduplicates across different sub-national levels suggesting that matching process at the national level might improve quality of the CS data. Routine training and evaluations of the matching algorithm including attributes are important to consistently generating reliable CS data.

## THPEC302

### Using Geographical Information System in a spatiotemporal analysis of HIV epidemic in Senegal

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**Background:** Public health and location are intimately related. Although Geographical Information Systems can increase understanding of spatial variance of the HIV epidemic; its application in Sub-Saharan Africa is restricted. The HIV pandemic is affected by strong spatiotemporal variation in Senegal.

Using spatial analysis tools support by the national database, this study is aimed at examining the spatiotemporal trends of HIV epidemic (HIV Population and HIV related deaths) in Senegal from 2013 to 2022.

**Methods:** The first step in this study was to "georeference" all HIV treatment sites in Senegal using their GPS coordinates. The second step consisted of assigning each site its attributes (HIV population and deaths) from 2013 to 2022. The "Inverse Distance Weighting" and "Trend Analysis" tools of ArcGIS 10.1's software were used to generate continuous surfaces of the HIV epidemic from point data. These interpolation techniques determine values by a weighted combination of a set of sample points.

**Results:** Our study produced a modeling revealing wide spatio-temporal variation of HIV population and deaths from 2013 to 2022 in Senegal. The areas of greatest HIV concentration were located in Dakar (31%) and in the southern regions (Kolda, Sédhiou and Ziguinchor), polarizing together (25% of the total PLWHIV of the national database). A significant increase has been also noticed along the national road network stretching from (Thies, Mbour, Fatick, Kaolack, Kaffrine, Tambacounda and Kédougou), which now accounts for 28% of the national database. Although HIV-related deaths have seriously declined, it is much more concentrated in the regions of Kolda (2.9%), Sédhiou (4.37%), Ziguinchor (2.15%), Kédougou (3.24%), Tambacounda (2.36%), Fatick (2.54%) and Kaffrine (3.35%), with rates greater than the national average (2.09%) in 2022.

**Conclusions:** Our research provides evidence of strong geographic clustering of HIV population and deaths in the South and Trans-boundary regions of Senegal. Intervention strategies should be therefore more emphasized in improving access to HIV services especially in those hotspot areas. The study also suggests a deeper spatial analysis of the HIV epidemic in the trans-boundary areas of Senegal.



## THPEC303

### Population size estimation of men who have sex with men including transgender women in ten provinces of Vietnam in 2023: results from a three-source capture-recapture study

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**Background:** In Vietnam, estimated HIV prevalence among men who have sex with men (MSM) have increased in recent years. Estimating the population size of MSM is essential for improving inputs into epidemiological models and to provide data for focused HIV prevention interventions.

**Methods:** In 2023, we implemented a three-source capture-recapture study (Source 1: dating app user count, source 2: distributing unique objects, and source 3: respondent-driven sampling survey) to estimate MSM population sizes in 10 Vietnam provinces. Eligible participants were assigned male at birth, aged 18 years and older, had anal sex with another man in the past 12 months, and lived/worked in the province for at least three months. Bayesian Latent Class Modeling was used for analysis.

**Results:** Prior and updated MSM size estimates by province are shown in Table 1.

Region	Province	Estimate	95% CI	Prevalence of MSM among general male population (%; 95%CI)	Prior estimate and prevalence of MSM among general male population (%; 95%CI)
North	Thai Nguyen	2,200	2,100 - 2,300	0.65 (0.62-0.69)	3,100 (0.95)
	Hai Phong	6,400	4,800 - 8,500	1.27 (0.95-1.68)	4,700 (0.95)
	Ha Noi	50,300	44,400 - 53,700	2.27 (2.00-2.42)	33,600 (1.81)
	Total	58,900	51,300 - 64,500	1.93 (1.68-2.11)	41,500 (1.42)
South	Long An	12,100	10,900 - 13,300	2.51 (2.26-2.76)	4,600 (0.97)
	Kien Giang	13,700	12,300 - 15,500	2.81 (2.51-3.16)	4,800 (0.97)
	An Giang	18,200	14,100 - 21,000	3.94 (3.06-4.55)	4,800 (0.97)
	Can Tho	20,100	17,000 - 22,700	5.64 (4.77-6.38)	4,200 (1.19)
	Ba Ria-Vung Tau	7,900	7,100 - 8,900	2.54 (2.29-2.85)	3,100 (0.97)
	Ho Chi Minh City	105,900	94,400 - 129,300	3.77 (3.36-4.61)	55,000 (2.04)
	Binh Duong	27,200	22,100 - 33,500	2.84 (2.31-3.50)	8,000 (0.97)
	Total	205,100	177,900 - 244,200	3.50 (3.03-4.16)	84,500 (1.49)
Overall		264,000	229,30 - 308,700	2.96 (2.57-3.46)	126,000 (1.46)

Table 1. Population size estimation of men who have sex with men using three sources capture-recapture method, Vietnam 2023.

We estimate 264,000 (95%CI: 229,000-309,000) MSM, corresponding to 2.96% (95%CI: 2.57-3.46) of adult male population, in the 10 provinces. The percentage of MSM among adult males ranges from 0.65% (95%CI: 0.62-0.69) in Thai Nguyen to 5.64% (95%CI: 4.77-6.38) in Can Tho. The percentage is higher in the South (3.50, 95%CI: 3.03-4.16) compared to the North (1.93, 95%CI: 1.68-2.21). Current estimates in 9 provinces are higher than estimates from 2019.

**Conclusions:** MSM size estimates show substantial increase from prior MSM two-source capture-recapture estimates in Vietnam, especially in the South where HIV prevalence increasing, may reflect social evolution and culture differences toward homosexuality between regions. These findings will be extrapolated for a national MSM size estimate, as inputs for people living with HIV estimates, and for HIV prevention programming.



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## Social science theories, concepts and methods

### THPED304

Applying the Health Belief Model in determining the association between knowledge, perception, and willingness towards HIV testing among women of childbearing age (WOCBA) in Iloilo City, Philippines

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**Background:** The rate of new HIV cases in Filipino pregnant women has increased steadily from 2010-2020, though the proportion remains low. DOH guidelines emphasize HIV testing for women of childbearing age (WOCBA), but their willingness for testing remains under-explored.

This study uses the Health Belief Model to explore the association between knowledge, perception, and willingness to undergo HIV testing among WOCBA in Iloilo City.

**Methods:** A cross-sectional online survey was conducted between February 19 and March 1, 2023. Using the HBM, the questionnaire was divided into:

1. HIV-related knowledge (20-item true/false),
2. Perceptions of susceptibility, severity, benefits, and barriers towards HIV and HIV testing using a 5-point Likert scale (1-strongly disagree; 5-strongly disagree), and
3. Willingness to HIV testing measured by an 10-point rating scale (0- not willing; 9-very willing) and tested for internal consistency (Cronbach's alpha=0.84).

Descriptive statistics with composite scoring of Likert scales, and multivariable regression analysis was used in analyzing the data.

**Results:** The 300 WOCBA were mainly from low-to-poor income earners (93.7%), had a median age of 29 (IQR=25-33), and reported a mean gravidity of 2.5 pregnancies (SD=1.6). Almost half never had an HIV test during their pregnancy (46.3%) but reported a high willingness to get an HIV test (mean=7.4; SD=2.9). Their average HIV-related knowledge scored 14.9 (SD=2.12) while the composite scores revealed that the WOCBA had low perception towards barriers of HIV testing and HIV-related severity/threats (mean=1.36; SD=0.60, and mean=3.06; SD=1.20, respectively), moderate perception towards susceptibility to HIV (mean=3.40; SD=0.30), and had higher perception towards the benefit of HIV testing (mean=4.64;SD=0.41). The regression analysis revealed that the willingness to

HIV testing among WOCBA were positively associated to their HIV-related knowledge ( $\alpha$ OR=1.21, 95%CI=1.02-1.43,  $p=0.025$ ) but negatively associated to perceived barriers to HIV testing ( $\alpha$ OR=0.42, 95%CI=0.24-0.71,  $p=0.001$ ) and WOCBA's gravidity ( $\alpha$ OR=0.78, 95%CI=0.63-0.95,  $p=0.014$ ).

**Conclusions:** In conclusion, WOCBA in Iloilo City demonstrated a generally high willingness to undergo HIV testing, emphasizing the need for accessible HIV education and screening, particularly among those with fewer pregnancies. Addressing perceived barriers is crucial for ensuring universal coverage of HIV prevention efforts.

This study contributes valuable insights for public health strategies aimed at promoting HIV testing among WOCBA, fostering a foundation for targeted interventions.

### THPED305

Applying a design-thinking approach for male-friendly ART services: lessons learnt from Blantyre, Malawi

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**Background:** Design-thinking emerged from marketing and is characterized by collaborating with users in the design of products. It follows different stages of developing a product or service: empathizing, defining the problem, ideating, prototyping and testing the product or service. In Global Health, it has been used to model services and products with users, based on their needs.

As men's utilization of health- and HIV-facilities lags behind women's, we used this approach to design male-friendly HIV delivery services in Malawi.

**Description:** We empathized through in-depth interviews ( $n=72$ ) with men on ART in Blantyre, Malawi, men in surrounding communities, and local stakeholders, by familiarizing ourselves with men's health facility issues. This enabled us to define the problem and categorize ideas for ideal male HIV services emerging from the interviews. Together with the Lighthouse Trust, we purposively selected ideas in early 2022 based on best fits for solving the identified problems and conducted a total of 4 workshops with male clients and men in surrounding communities in October/November 2022.

Participating men prototyped models by using a variety of materials (e.g., colorful paper, stickers, pens, cardboard, modelling clay). In 2 deliberative workshops with all stakeholder groups, participants developed implementable HIV service-delivery models. Workshops were audio-recorded transcribed, and analyzed using thematic and discourse analysis deal male HIV services emerging from interviews.



**Lessons learned:** We present methodological and practical challenges faced in implementing the design-thinking process in Malawi.

While the workshops were all successfully conducted, challenges in the prototyping workshops included sampling, choice of venue, tight time-frames, usage of materials and group dynamics as well as recording and transcribing pair work; in the deliberative workshops, an additional challenge was mixing people of various educational levels including health care workers and clients.

**Conclusions/Next steps:** The participatory approach of design-thinking works in a resource-limited setting and can be recommended for other projects. Participants enjoy the method and develop interesting models, but attention should be paid to the selection process of participants, group dynamics and the challenge of recording group work in a confined space. Also, a longer time-frame for conducting these creative and deliberative workshops will help produce implementable models.

## THPED306

**By youth, for youth: a community-based participatory research approach to mental health assessment among youth with HIV in India**

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**Background:** Youth with HIV (YWHIV) confront distinct mental health challenges necessitating interventions informed by their lived experiences. Failure to do so, as evidence suggests, can perpetuate a self-reinforcing cycle of misaligned and ineffective support, further exacerbating existing vulnerabilities.

This study addresses this gap by employing a community-based participatory research (CBPR) approach, empowering YWHIV to actively co-create and implement a culturally responsive mental health assessment program.

**Description:** Six youth investigators (YIs) aged 18-24, born with HIV and residing in the southern Indian states of Karnataka and Tamil Nadu, underwent certification in human subjects' protection and survey administration techniques. YIs actively shaped the research process by culturally adapting standardized assessments (PHQ-9, GAD-7) through iterative discussions with experts, drawing on their own perspectives.

After a 2-day training incorporating pedagogy, role-play, and debate, YIs assessed 206 YWHIV peers across urban and rural settings, prioritizing rapport, authenticity, and ethical conduct. On-site professional counselors ensured well-being for YIs and participants, offering timely guid-

ance, referrals, and crisis intervention. Following each assessment, YIs documented their experiences and reflections in surveys and written essays.

**Lessons learned:** Continuous feedback mechanisms and debriefing sessions improved YI training by addressing concerns about tool understanding, trust-building, and sensitive topics. YI Involvement improved the research process by optimizing tools, combating stigma, and facilitating reliable data collection. Fuller participation and fewer refusals were observed. YIs created a safe space for participants to express emotions openly, leading to candid conversations and stronger social connections. Beyond data collection, the YIs' participation significantly boosted their own knowledge, self-confidence, and research skills.

**Conclusions/Next steps:** This study serves as an illustrative model of CBPR in mental health research among YWHIV, highlighting the importance of feedback, supportive supervision, and youth engagement in fostering an impactful research environment.

The next phase of this research will continue collaboration with YWHIV to develop peer-led interventions that can enhance the delivery of mental health services within the community.

## THPED307

**Breaking stigma and saving lives: the revolutionary impact of CyberRwanda's digital HIV awareness, testing, and prevention campaign**

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**Background:** CyberRwanda addresses Rwanda's high rates of unplanned teen pregnancies and HIV transmissions by providing access to adolescent health information and services. The self-care digital platform, targeting young people aged 12-19, is implemented by Y Labs in collaboration with the Society for Family Health - Rwanda, guided by the Ministry of Health and Rwanda Biomedical Center.

**Description:** A Randomized Control Trial (RCT) involving 6,000 students in CyberRwanda-implemented schools spanned 2021-2023. The study, with baseline, midline, and end-line assessments, aimed to determine if CyberRwanda could enhance modern contraceptive use, delay child-bearing initiation, and increase HIV testing and prevention among adolescents.

**Lessons learned:** The evaluation results highlighted significant improvements in HIV awareness and testing among participants engaged with CyberRwanda. Notably, the number of participants reporting ever testing for HIV increased progressively over the study period: 2323 (38.2%) at baseline, 2810 (48.7%) at midline, and 2863 (51.6%) at end-line. Additionally, individuals reporting condom use as an HIV prevention method was as follow: 685



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(39.8%) at baseline, 877 (50.9%) at midline, and 596 (40.4%) at end-line. Although a slight decline was observed at the end-line, the overall trajectory reflects a growing awareness of condom use for HIV prevention during the study period.

Furthermore, a positive behavioural shift was noted in CyberRwanda's implementation. Strategies to dispel myths and reduce HIV stigma led to youth openly discussing HIV-related topics in school clubs. Research findings revealed a notable change, with increased willingness to engage in conversations and share personal experiences—a positive shift in attitudes and perceptions surrounding the topic.

**Conclusions/Next steps:** In summary, CyberRwanda is a pivotal digital tool that imparts knowledge and triggers positive behavioural shifts among young people, ultimately contributing to increased HIV awareness and reduced stigma. As the project advances towards national-scale implementation, it aims to strengthen these behavioural transformations further, making significant strides in adolescent health and HIV prevention efforts across Rwanda.

## THPED308

Information-Motivation-Behavior (IMB) theory-based intervention to address high-risk AIDS behaviors among men who have sex with men: a systematic review and meta-analysis

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**Background:** This study aims to evaluate the effectiveness of Information-Motivation-Behavioral Skills (IMB) model-based interventions in reducing high-risk behaviors for AIDS among men who have sex with men (MSM). Despite extensive health initiatives, MSM continue to exhibit high rates of HIV/STIs and risky behaviors. Previous interventions using the IMB model have shown varied outcomes.

This review systematically aggregates existing evidence to determine the efficacy of the model in addressing the unique health challenges faced by MSM population.

**Methods:** This meta-analysis focused on randomized controlled trials (RCTs) conducted amongst MSM to test interventions that utilized the IMB model as a theoretical framework, compared against placebo, control/standard care. Comprehensive searches were done in the following databases: Scopus, Embase, Cochrane trials library, PubMed Central, Medline, ScienceDirect and Google Scholar and trial registries like Clinicaltrials.gov till December 2022. Risk of bias assessment was done using Cochrane Risk of bias 2 (RoB2) tool. Meta-analysis was carried out using random-effects model with inverse

variance technique. With 95% confidence intervals (CIs), pooled standardised mean differences/mean difference (SMD/MD), and/or risk ratios (RR) were reported. Methodological guidance and reporting were taken from PRISMA 2020 checklist.

**Results:** In total, 10 RCTs were included. Half of the studies had higher risk of bias. The pooled SMD for HIV-related knowledge was -0.08 (95%CI: -1.48 to 1.32), for HIV-related motivation was 0.20 (95%CI: -0.27 to 0.67), for HIV-related behavioural skills was 0.32 (95%CI: -0.23 to 0.87), for condom usage was 2.72 (95%CI: -0.75 to 6.19), for number of sexual partners was 0.22 (95%CI: -0.13 to 0.57). The pooled RR for unprotected anal intercourse (UAI) was 0.83 (95%CI: 0.73-0.94), HIV positivity was 1.04 (95%CI: 0.45-2.38). Sensitivity analysis revealed that none of the outcomes differed significantly in terms of the degree or direction of the link.

**Conclusions:** Intervention based on IMB model has better effectiveness compared to standard care in reducing the number of MSM people having UAI. However, it did not have any impact on any of the other HIV risk reduction behaviours. This review also supports the need for more RCTs on intervention containing both e-component and interaction component based on IMB model for HIV risk reduction behaviour.

## THPED309

Application of the Information-Motivation-Behavioural Skills model to ART adherence in recently diagnosed People Living with HIV – preliminary results

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**Background:** The success of any anti-retroviral therapy (ART) program depends on adequate adherence. High adherence rates ≥95% are required in order to achieve positive virologic suppression, increased CD4 count and fewer hospitalisations. The Information-Motivation-Behavioural Skills (IMB) model is a behavioural theory model used to assess adherence and provides a simple explanation for complex health behaviours.

This paper aims to describe ART-related information, motivation and behavioural skills among people living with HIV (PLWH), as well as adherence to ART.

**Methods:** Baseline data on ART-related information, motivation, behavioural skills and adherence was collected within a randomised controlled trial with 316 PLWH in 12 sub-districts in Cape Town, South Africa, from May 2021 to May 2022. The data was analysed using SPSS (version 28) for descriptive statistics. Chi-squared test of independence was used to assess the relationship between the model constructs and demographic characteristics (age, gender and level of education), as well as adherence.



**Results:** 85.4% of PLWH self-reported as adherent to ART, based on four day recall. High ART-related information was reported, with 78.5% of PLWH scoring above 60%. ART-related personal motivation was low ( $M=2.04$  on a 1-5 scale,  $SD=0.89$ ), ART-related social motivation was high ( $M=3.74$  on a 1-5 scale,  $SD=0.55$ ), household social support was high ( $M=72.5$  on a 0-100 scale,  $SD=25.12$ ) and ART-related behavioural skills were high ( $M=4.13$  on a 1-5 scale,  $SD=0.53$ ). There was no statistically significant relationship between each of the model constructs and age, gender and level of education.

Adherence was significantly related to household support and behavioural skills ( $p=0.01$  and  $p=0.01$ , respectively), but not to information or motivation.

**Conclusions:** The results underscore the need to enhance personal motivation in order to improve adherence. Behavioural skills are important in promoting adherence, in agreement with the IMB model. Household-based social support has also emerged as an important contributor to adherence.

The use of theory-based models to understand factors that influence ART adherence directly and indirectly helps to optimize adherence for PLWH. Use of these models acknowledges the need for a comprehensive approach to effect behaviour change.

## Social and behavioural aspects and approaches to HIV and living with HIV

### THPED310

Getting to the Heart of Stigma: lessons learned from stakeholder engagement workshops to inform the development of stigma reduction toolkits

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**Background:** The Getting to the Heart of Stigma study explored factors facilitating HIV-related stigma, its manifestations in various institutions, and the outcomes for affected populations in KwaZulu-Natal, Mpumalanga, and the Free State provinces in South Africa.

The researchers involved in the study aimed to use the findings to inform action. Out of this grew the idea of developing stigma reduction toolkits to address intersectional stigma using the research findings.

**Description:** The research team conceptualized two workshops to interrogate, validate, and translate the evidence of the Getting to the Heart of Stigma study into action toolkits that can be used for advocacy. Stakeholders from civil society were invited to attend two workshops. A participatory co-learning dissemination approach that included dialogue throughout all the sessions was adopted. This approach allowed participants to share their experiences of stigma within their communities, places of work, healthcare facilities, schools, or homes.

**Lessons learned:** The research team learned the significance of stakeholders involved in co-creating knowledge for action. A participatory approach to validating the study findings and developing evidence-based guidelines is critical for creating a contextually nuanced stigma response relevant to key and vulnerable populations' needs.

The research team also learned that dissemination is not a once-off event but involves and should include several stakeholder engagements.

**Conclusions/Next steps:** The next steps will include collaborating with the South African National AIDS Council (SANAC) to explore pathways to reduce stigma as well as partner with civil society organizations to implement a feasibility and accessibility study.

This phase will be followed by rolling out the adapted toolkits and assessing the impact thereof on reducing intersectional stigma experienced by people living with HIV.

### THPED311

"Lean On Me Support Group" transforms lives: a success story in Baringo County, Kenya

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**Background:** Baringo County, is known for its picturesque landscapes, grappled with high rates of alcoholism and HIV/AIDS. Recognizing the intricate connection between these two health issues, local health authorities partnered with community leaders to establish the "Lean On Me Support Group." The group targeted individuals facing the dual burden of chronic alcoholism and the need for consistent adherence to ARV drugs.

In the year 2022-2023 we analyzed 39 out of 70 persons living with HIV and seeking ARVs health services at Marigat Sub County Hospital who were struggling with Alcoholism that negatively affected their treatment outcomes.

**Description:** The support group adopted a holistic approach to address the physical, mental, and social aspects of its members' lives. Regular counseling sessions were provided to help individuals cope with the challenges of both alcoholism and living with HIV/AIDS. Also Peer Support Mentorship, Education, Awareness and Community Integration.



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**Lessons learned:** Members of the Lean On Me Support Group reported a significant improvement in their adherence to ARV medications. The group's emphasis on education and peer support contributed to better understanding and commitment to treatment plans, Hence Viral Load Suppression rate improved from 13/39 (33%) in August 2022 to 36/39 (92%) in May 2023. Also Reduction in Alcohol Consumption, Enhanced Mental Well-being and Community Transformation through this support group.

**Conclusions/Next steps:** The "Lean On Me Support Group" in Baringo County stands as a beacon of hope, showcasing the transformative power of community-based interventions. By addressing the unique challenges faced by individuals dealing with chronic alcoholism and HIV/AIDS simultaneously, this initiative has not only improved treatment outcomes but has also contributed to a positive shift in community attitudes. The success of this support group serves as a model for similar interventions in regions facing similar health challenges, demonstrating that a holistic and community-driven approach can make a lasting impact on individuals' lives.

## THPED312

### Sexual violence, antiretroviral adherence, and viral suppression among reproductive age women in African population-based surveys

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**Background:** Women living with HIV (WLH) face challenges in antiretroviral therapy (ART) adherence and achieving viral suppression despite expanded access to ART. Using data from Population-Based HIV Impact Assessment (PHIA) surveys, we have previously shown sexual violence against women (VAW) is an important risk factor for poor ART adherence.

Here we examined the association of sexual VAW with viral suppression, and explored the extent to which this is moderated by ART adherence.

**Methods:** A pooled, weighted, secondary analysis was conducted among WLH on ART, age 15-49, from PHIA cross-sectional surveys (2015-2018) from nine sub-Saharan African countries. We explored the distribution of WLH by self-reported exposure to VAW, and by viral suppression and self-reported ART adherence status ( $\leq 1$  missed day in past 30 days). Logistic regression was used to exam-

ine the association between lifetime sexual violence and unsuppressed viral load ( $\geq 1000$  copies/mL), after adjusting for key confounders.

**Results:** Among 5,038 WLH, the prevalence of VAW was 15.2% (95%CI:13.3-17.1%), the prevalence of suboptimal ART adherence was 19.8% (95%CI:18.1-21.5%), and the prevalence of unsuppressed viral load was 13.6% (95%CI:12.0-15.2%). Women with a history of VAW were more likely to be virally suppressed and report suboptimal ART adherence than women who did not report VAW (24.6% versus 14.4%) (Figure).

There was no evidence for an association between VAW and unsuppressed viral load ( $\alpha\text{OR}$ :0.98, 95%CI:0.62-1.48).

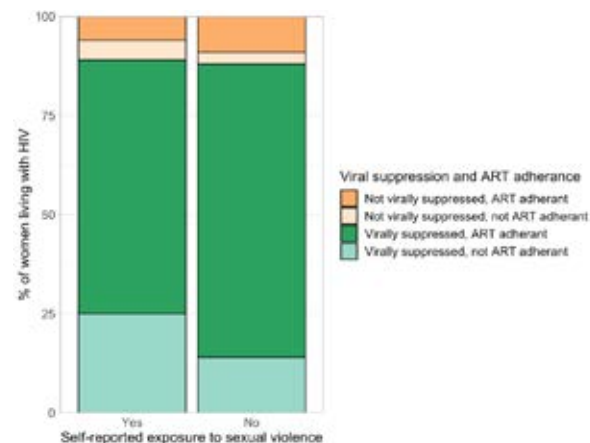


Figure.

**Conclusions:** We found evidence for an association between sexual violence and ART adherence, but not viral suppression. A substantial proportion of women were virally suppressed yet reported suboptimal ART adherence, and this was particularly notable in women who experienced sexual violence.

Future population-based studies should consider biomarker measures for ART adherence, such as hair sample concentrations, as self-report measures may be subject to bias. Future research is needed to further investigate the relationship between VAW and ART adherence and viral suppression.

## THPED313

### Health stigma & discrimination experienced by adolescents living with HIV and comorbid depression in Malawi

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**Background:** Among 65,000 adolescents living with HIV (ALWH) in Malawi, nearly 19% also suffer from depression. HIV stigma is a major contributor to depression and adversely impacts engagement with HIV care, particularly adherence to antiretroviral therapy (ART). ALWH in Malawi experience HIV stigma as stereotyping, social exclusion, low social support, and abuse; and these experiences are associated with poor mental health. Despite recognition of the deleterious effects of HIV stigma in this population, we have limited knowledge of how stigma is experienced by ALWH.

In this analysis, we use the Health Stigma and Discrimination framework to describe stigma faced by depressed ALWH in Malawi, and its impact on health and social well-being.

**Methods:** As part of our formative work adapting a counseling intervention, the Friendship Bench (FB), for ALWH, we recruited 25 ALWH from adolescent ART clinics in Lilongwe from January to April 2023. Adolescents aged 13-19 with a prior HIV diagnosis and a positive depression screen on the Beck Depression Inventory-II were eligible for the study. We also recruited 4 caregivers of ALWH, and 10 individuals involved in a prior study adapting the FB for perinatal women living with HIV.

We conducted in-depth interviews, focus group discussions, and social support mapping sessions. Data was analyzed via deductive and inductive coding, and thematic analysis.

**Results:** Analyses identified the major drivers of HIV stigma as fear of HIV transmission, and stereotyping ALWH as weak and unable to achieve dreams. The most common manifestations of HIV stigma were gossip, mockery, and physical and social distancing. Internalized stigma manifested as worthlessness and shame.

Decreased adherence to ART was a commonly cited outcome of HIV stigma. Broader impacts of HIV stigma include social exclusion, substance use, poor mental health, and suicidality.

**Conclusions:** This study is the first to specifically describe the stigma and discrimination faced by depressed ALWH in Malawi. It verifies our prior knowledge that stigma is a significant barrier to healthcare and adversely impacts

quality of life. Further studies are needed to understand the intersectional stigma of HIV and depression, explore resiliency factors amongst ALWH, and develop interventions to address stigma across multiple socioecological levels.

## THPED314

### Intersectional impact of the COVID pandemic on multiple forms of HIV-related stigma and discrimination: findings from a UK sample (n=653)

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**Background:** This study examined the intersectional impact of the COVID pandemic on stigma and discrimination experienced by people living with HIV (PLWH) in the UK.

**Methods:** A co-produced survey was circulated to all HIV service users (> age 18) in Sussex, UK during the first lockdown. Multiple logistic regressions and marginal effects models examined socio-demographic predictors of enacted stigma, internalised stigma, disclosure concerns, and data security concerns.

**Results:** Out of 653 respondents, the majority identified as male (n=522, 80.6%) and gay (n=451, 69.8%), representative of PLWH in Sussex. Respondents from ethnic minority backgrounds comprised 16.9% of the sample (n=109). 44 (6.8%) PLWH reported more frequent experiences of enacted HIV stigma since the start of COVID; 211 (32.6%) reported heightened internalised stigma; 273 (42.1%) heightened worries about HIV disclosure; and 285 (44.0%) heightened worries about data security. Younger PLWH (aged 20-39) were more likely to experience enacted stigma than 40-59 year-olds (AOR: .36, 95% CI: .16-.85) and PLWH over 60 (AOR: .24 (.08-.73), as well as internalised stigma (AOR: .53, 95% CI: .33-.86 for 40-59 year-olds; AOR: .25, 95% CI: .14-.46 for PLWH aged 60+).

Compared to men living with HIV, more women living with HIV (WLWH) experienced internalised stigma (AOR: 2.39, 95% CI: 1.13-5.05) and data security concerns (AOR: 2.51, 95% CI: 1.21-5.21).

Compared to white PLWH, ethnic minority respondents were more likely to have data security concerns (AOR: 3.24, 95% CI: 1.84-5.70). Gay PLWH were less likely (AOR: .49, 95%



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CI: .26-.93) to have concerns about HIV status disclosure than heterosexual PLWH. The marginal effect model findings indicated that, of all demographic groups, minority ethnic WLWH were most likely to report heightened concerns about data security (80.5%, three times more likely than white men).

Young WLWH were most likely to report worsening internalised stigma since the start of the pandemic (66.4%, four times more likely than older men).

**Conclusions:** Early responses to COVID inadvertently heightened multiple forms of HIV-related stigma and discrimination, with women, ethnic minority and young PLWH being disproportionately affected.

Future health emergency responses and HIV service changes must prioritise the needs of marginalised communities and PLWH with intersecting vulnerabilities.

### THPED315

*"I live my own life": HIV-related stigma coping strategies in older adults living with HIV in a suburban community in Northern Thailand: a qualitative study*

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**Background:** Despite a longer life expectancy on antiretroviral treatment (ART), HIV-related stigma remained a public health challenge affecting people living with HIV (PLHIV) globally.

We explored the experiences of long-term HIV survivors to learn about their HIV-related stigma coping strategies.

**Methods:** A qualitative study was conducted from March-July 2023. We performed semi-structured interviews with 31 older adults living with HIV(OALHIV) aged ≥50 years who attended HIV clinic care at Fang Hospital, Chiang Mai, Thailand. The transcribed audiotapes were reviewed, hand-coded, and categorized using thematic analysis.

**Results:** The median age of study participants was 60 years(IQR 56-64); 90% received ART for >10 years, 65% were female. Their stigmatized experiences included social rejection, employment discrimination, and public ridicule. Several themes about stigma coping strategies emerged.

- Limiting social relationships. After being discriminated against, many OALHIV were still hired daily to earn a living. However, they limited other socialization outside working hours to avoid untoward situations.
- Refraining from specific situations to avoid ostracism. They attended community activities but avoided getting involved in sensitive areas like food preparation.

- Relying on informal social support from family members. The supportive persons included a partner or spouse in an old or new family, children, grandchildren, siblings, nephews, or nieces. Support could be financial, meals, or encouraging words.
- Non-disclosure of HIV status and social isolation. Some OALHIV reported living alone and not telling anyone about their HIV. They received only formal support from healthcare providers, not from other villagers.
- Preemptive disclosure of HIV status and educating others. Many female OALHIV reported their social disclosure involuntarily after the death of their husband or their illnesses or voluntarily by direct conversation. While most joined peer support groups, some were trained and became counselors, educators, or case managers in their villages before the availability of ART. In ART era, they also helped with adherence counseling in the clinic. Moreover, some had roles in voluntary HIV counseling and testing and sexual education in public schools. All community contributions allowed them to feel worth living.

**Conclusions:** A better understanding of stigma coping strategies will enable healthcare providers to counsel and design stigma reduction interventions that most fit their life context.

### THPED316

*Mitigating the impact of Covid 19 on women living with HIV: addressing mental and psycho social impact of Covid 19 amongst women living with HIV in Eswatini*

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**Background:** Covid was first detected in Wuhan China in December 2019. World Health Organization (WHO) declared the epidemic a Public Health Emergency on 30<sup>th</sup> January 2020, and a pandemic on 11<sup>th</sup> March 2020.

The first case in Eswatini was diagnosed on 14<sup>th</sup> March 2020. Women living with HIV were severely impacted by the pandemic, some had covid themselves and faced discrimination, others lost family, friends and breadwinners. Some lost livelihoods as companies and borders closed for informal cross border business people.

Accessing services was also a problem due to lockdown. This resulted to psychological and mental health consequences such as depression, insomnia and post traumatic stress (PTSD) hence the need for mental health interventions for women living with HIV.

The pandemic happened at a time where there was po-



political unrest and people were shot, lost limbs and buildings were burnt making the trauma worse.

**Description: Method:** The project provided emotional comfort for those who were emotionally overwhelmed and disoriented. This was done through Training workshops for women living with HIV on Psychological First Aid and resilience so they provide a community supported model for peer women living with HIV.

Conducted one day debriefing sessions for 900 for women living with HIV in support groups from 30 support groups and linkages to nearest health centres for mental health services.

**Lessons learned:** The impact is long term and there is need to scale up psychological and mental wellness interventions. There is need for training of more community cadres on psychological first aid to build capacity of PLHIV on mental health issues and screen for mental health disorders. There is need for a comprehensive study on the impact of COVID-19 on mental health, focusing on women living with HIV and TB survivors.

The dual burden of chronic diseases coupled with the psychological trauma caused by the pandemic, has led to an increased need for psychological support.

**Conclusions/Next steps:** Strengthening Mental Health Resilience for women living with HIV demonstrated the importance of providing targeted mental health support for women living with HIV during a crises.

The project's success highlights the need for continued mental health education and resources for vulnerable populations.

## THPED317

### Fostering resilience: a psychosocial support program for women living with HIV in rural Ghana

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**Background:** Studies show that as many as half of people living with HIV (PLHIV) have one or two psychiatric disorders and these individuals are less likely to achieve viral suppression than those without mental illness. Studies also assert that psychosocial support interventions have shown promising outcomes viral suppression and breaking stigmas.

In Ghana, not only are Women Living with HIV (WLHIV) often stigmatized due to sociocultural sentiments, mental health support for them is limited. This program aimed to address psychosocial needs, reduce stigma, and empower WLHIV.

The support group aims to establish safe spaces as well as disseminate crucial information about HIV, treatment options, and healthy living while fostering a sense of community to reduce isolation and combat stigma for WLHIV.

The program also strives to empower participants by building self-esteem, confidence, and resilience, offering opportunities for skill development in communication, problem-solving, and self-advocacy.

**Description:** Conducted at the Antiretroviral Clinic of the Upper East Regional Hospital, in the Upper East Region of Ghana (Ghana's second poorest region nationwide). This project was led by the hospital management in collaboration with the Internal Medicine department and spanned from November 2022 to November 2023. Fifty-two WLHIV participated, engaging in weekly 1-2 hour sessions for a minimum of 24 weeks. The initiative started with individual support sessions before transitioning to a group format.

**Lessons learned:** Among the 52 participants, 88% reported enhanced empowerment and knowledge about HIV services, 92% reported improved mental health, and 73% identified mental health support as crucial for ARV medication adherence. A total of 18 referrals were made for psychiatric conditions, and 13 for medical complications.

**Lessons learned:** Tailored support is crucial due to diverse participant needs, and psychosocial support positively impacts medication adherence and overall health. Cultural sensitivity is essential, and ongoing education is vital to keep participants informed about advancements in HIV treatment and care.

**Conclusions/Next steps:** The programme addresses psychosocial needs of WLHIV and demonstrates the significance of culturally sensitive and tailored support in enhancing mental health and overall well-being. The program's success highlights the importance of integrating mental health support into HIV care models.

## THPED318

### Creative communications on the benefits of U=U: using audience insights and evidence to generate demand for HIV prevention and treatment services among MSM and other key populations in Central America

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**Background:** In Guatemala, El Salvador, Honduras, Nicaragua, and Panama 77% of men who have sex with men (MSM) age 18 and above who participated in a 2021 online survey indicated that the consequences of an HIV positive diagnosis were the main reason for not getting tested for HIV.

**Description:** In November 2022, the Pan American Social Marketing Organization (PASMO), under USAID's Prevention Services against HIV project, conducted a participative co-development and co-design "Empathy, Insights, Prototyping" (EIP) workshop in Guatemala with MSM, pro-



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gram staff, the communications and marketing team, and its Advertising Agency to explore and prototype communications around undetectable = untransmittable (U=U) to address barriers among key populations, especially MSM, to HIV testing services (HTS). PASMO collected the input from the online study and audience insights from the workshop to develop a creative brief that would guide a social and behavior change communications (SBCC) campaign to communicate the benefits of U=U within the context of HTS uptake and reduced HIV-related stigma.

**Lessons learned:** PASMO and its Advertising Agency carried out creative processes to decode and translate U=U for target audiences with a clear call to action to know one's HIV status, producing a campaign concept and logo "continua con tu vida". The campaign uses imagery, colors, and messages that transmit hope, and the opportunity to continue with your life knowing as there is modern and effective treatment for HIV that can lead to undetectability and non-transmission to partners.

**Conclusions/Next steps:** In 2024, under a new locally-implemented HIV Prevention, Care, and Treatment project with USAID funds, PASMO will complete the validation the campaign materials and messages with target audiences, especially MSM and people living with HIV, prior to its launch and will develop a comprehensive media plan to reach primary and secondary audiences at various levels. In parallel, and as part of a broader SBCC strategy, PASMO will integrate the campaign's U=U messaging to training and educational materials for healthcare providers and their clients to transmit the benefits of U=U along the HIV continuum of care to increase HTS uptake and treatment adherence and thus contribute to the global 95-95-95 goals in Central America.

## THPED319

**When good isn't good enough: exploring how HIV providers conceptualize patient-provider interactions with people living with HIV who use drugs using a harm reduction framework**

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**Background:** In addition to structural interventions like syringe services and Naloxone distribution, harm reduction (HR) is also a *relational* approach to care encompassing principles such as patient autonomy and pragmatism that can be implemented in healthcare teams

to improve outcomes for people living with HIV (PLWH) who use drugs. Evidence suggests that using a relational HR framework to operationalize care for PLWH who use drugs may improve the patient-provider relationship, thus positively impacting HIV outcomes.

We previously found that attitudes towards people who use drugs are negatively associated with acceptance of HR; however, little is known about how HIV providers conceptualize the patient-provider relationship with PLWH who use drugs.

**Methods:** We interviewed providers (n=23) working at three HIV clinics in the United States to assess their interactions with patients. Providers included anyone who had worked at their respective clinic for ≥ 1 year and who had face-to-face contact with patients (e.g., front desk staff, research coordinators, nurses, physicians, and social workers). Data were coded thematically via Dedoose.

**Results:** While HIV providers described both positive and negative interactions with patients, we found some providers conceptualize positive interactions as being antithetical to HR. Examples of how providers described positive interactions in line with HR principles: when patients appear comfortable with and trusting of their provider, conversations that are easy or pleasant, when patients feel heard by their provider, and when providers feel they are responsive to patient needs.

However, other providers described positive interactions counter to the HR principle of autonomy, describing "positive" or "good" interactions as those in which patients are compliant of what providers ask of them, or make provider-directed behavioral changes.

**Conclusions:** Our findings reflect the current lack of relational HR practice among some providers. Provider descriptions of positive interactions in line with relational HR in their conceptualization of patient-provider interactions with PLWH who use drugs have potential to guide efforts in increasing acceptability of HR in HIV care.

Given evidence showing HR improves outcomes for those who use drugs, our findings suggest missed opportunities to incorporate relational HR principles into the patient-provider relationship in HIV primary care settings.



## THPED320

## Adam's Love We Care: a multifaceted eHealth intervention for early linkage to HIV treatment and optimizing retention in care among Thai HIV-positive MSM

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**Background:** We developed Adam's Love We Care, a multifaceted eHealth intervention aimed at optimizing early linkage to care, antiretroviral therapy (ART) adherence and retention in care among Thai men who have sex with men (MSM) living with HIV.

**Methods:** Between April 2017 and June 2022, a 12-month pilot intervention study was conducted. Key intervention components included:

1. Interactive website,
2. Individualized eCounseling,
3. HIV educational video sessions,
4. Online-to-offline (O2O) ART linkage referrals,
5. Daily electronic ART reminders personalized for content, timing and delivery,
6. Clinic notifications sent 15, 7 and three days prior to the visit.

Follow-up surveys were conducted at 3, 6, 9, and 12 months. Random effect model was used to assess the effect of the intervention on ART adherence.

**Results:** Of 118 Thai HIV-positive MSM enrolled, 87.3% self-identified as gay, 11.9% as bisexual and 0.8% as transgender women, with median age 26 (IQR 23-30.75) years, majority (58.5%) located in Bangkok, and most (87.2%) with a monthly income <1,000 USD. Median time between online referral and actual ART linkage was 2 [IQR 1-7] days. Following ART linkage, 16 participants dropped out, and the remaining 102 underwent Adam's Love intervention. Over half (56.9%) preferred to receive two-way daily ART reminders via LINE app, while 43.1% preferred SMS. Most (89.2%) opted for discreet reminders such as Good Morning/Night, Greetings, and Adam's Alert.

The mean number of individualized eCounseling sessions was 4.28 (SD 2.49). The online HIV educational video sessions engaged 79 MSM who attended a median of 4 [IQR 1-4] unique video sessions. Clinic visit reminders yielded a total of 407 visits (median 4 [3-5.25] visits/participant).

Participants who completed all four video sessions had a higher mean adherence score than those who did not receive video intervention (89.8 vs 75.1, 95% CI: 3.42 – 26.0,  $p=0.011$ ). After receiving the multifaceted eHealth intervention, self-reported ART adherence significantly improved at month 9 and month 12 ( $p=0.012$ ).

**Conclusions:** Our eHealth study intervention shows promise in ensuring linkage to care and short-term retention on ART among newly diagnosed MSM. The intervention is novel and highly scalable to address the HIV care needs of vulnerable populations.

## THPED321

## Changing provider behavior to make 'U=U' a motivator for treatment adherence in Zambia

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**Background:** There is overwhelming evidence supporting undetectable=untransmittable (U=U). However, there is a general gap in the use of U=U in HIV prevention and management. The USAID DISCOVER-Health project, implemented by JSI, integrated U=U into their work with providers to change how this cadre shares messages on prevention and manages client treatment.

The goal was to change provider behavior to improve the use of PrEP in discordant couples and adherence to ART by tapping into client motivation mechanisms.

**Description:** The DISCOVER-Health project supported providers in Zambia's Copperbelt and Central provinces to routinely use U=U in messaging and to differentiate counseling based on motivational drivers of discordant couples, suppressed and unsuppressed clients.

Partners living with HIV were counseled that within the first six months of beginning and adhering to ART they were likely to achieve U=U.

Partners not living with HIV were counseled to start PrEP at the same time that their partner began ART (six months before achieving U=U). Among unsuppressed clients, messaging focused on the benefits of attaining U=U. Among suppressed clients, messaging focused on remaining undetectable.

**Lessons learned:** While U=U is part of national guidelines, provider behavior change efforts to enshrine it into their way of working, making U=U an organizational norm, was critical to comprehensive and consistent transferrence to clients. U=U messaging during discordant couples counseling proved effective in motivating partners living with HIV to adhere to treatment; viral load test coverage increased from 83% (Oct-Dec 2021) to 94% (Jul-Sep 2023) and viral suppression increased from 96% (Oct-Dec 2021) to 98% (Jul-Sep 2023). The rate of PrEP continuity after six months was also higher among discordant couples that



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received U=U counseling versus other populations. Sharing this impact with providers reinforced the organizational norm to default to U=U counseling.

**Conclusions/Next steps:** Using U=U in messaging during client counseling is effective in improving access to services and continuity of HIV prevention and treatment methods. Provider behavior change, with a focus on organizational norms, to support tailoring of U=U messaging to client motivations and needs during all counseling visits can be an efficient and effective way to achieve national viral suppression and HIV prevention goals.

## THPED322

### Determinants of HIV status disclosure to sexual partners among young adults living with HIV at the Academic Model Providing Access to Healthcare

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**Background:** Young adults living with HIV (YALWH) are a vulnerable population globally, and especially in Sub-Saharan Africa where the vast majority of YALWH reside. YALWH's desire to fulfil their sexual and reproductive needs put them at risk of transmitting HIV to their sexual partners. Non-disclosure of their HIV status to sexual partners increases this risk.

A deeper understanding of the process of YALWH's disclosure of HIV status to sexual partners will be critical to developing interventions aimed at preventing new transmissions.

**Methods:** A cross-sectional mixed methods study was carried out among a representative sample of YALWH (aged 15-24 years) at the Academic Model for Providing Access to Healthcare (AMPATH)-Rafiki clinic in Western Kenya between September and December 2023. Prevalence of HIV status disclosure to sexual partners was determined through a baseline survey of all participants. A sample of 257 those in sexual relationships participated in 4 focused group discussions to identify the barriers and facilitators to HIV disclosure, and to assess experiences and outcomes related to disclosure.

Analysis was completed using SPSS version 21 for proportions and thematically coded using N-VIVO software.

**Results:** Among 257 YALWH ages 15-24 median age 19 years, (53.6%female) disclosure to any person was 71.5%, only 36.6% had disclosed their status to sexual partners. YALWH reported difficulties and unwillingness to disclose their HIV status to sexual partners, despite being aware of the risk of transmission. The reasons and motivation for disclosure included fear of partners finding out by themselves, guilty conscious, relationship status and need for

support. Challenges experienced included too much anxiety, insufficient knowledge to disclose and inability to handle emotional reactions post-disclosure and not being in control of the relationship.

**Conclusions:** Current data shows an increase in number of new transmissions among young adults occasioned by casual sex and non-disclosure of HIV status. Only a small proportion of YALWH have disclosed their HIV status to their sexual partners.

Findings suggest an urgent need for interventions to support disclosure of HIV status to sexual partners to reduce the number of new transmissions among the young adult population.

## THPED323

### An intervention to reduce discrimination, stigma, and sexual violence among men who have sex with men in South Africa; findings from a serial cross-sectional study

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**Background:** In many countries, men who have sex with men (MSM) are frequent victims of discrimination, stigma, and sexual violence. Our study aimed to evaluate the impact of a community-based intervention aimed at reducing discrimination, stigma, and sexual violence among MSM in South Africa.

**Methods:** We analyzed baseline and post-intervention data collected in the Mpumalanga Men's Study. It included data from three cross-sectional surveys conducted in 2013 (pre-intervention baseline measurement), 2014 (post-intervention measurement 1), and 2015 (post-intervention measurement 2) in Gert Sibande district.

Eligible participants were MSM over 18 years old who reported anal/oral sexual activity with a man in the previous 6 months. Respondent-driven sampling was utilized for recruitment. The intervention launched in April 2013 and included several components implemented by community volunteers such as small-group workshops, informal and formal outreach, and community gatherings. The intervention was a systematic adaptation of the Mpowerment Project. In each survey, discrimination, stigma, and sexual violence were measured by Likert scales and WHO VAW Instrument. The intervention continued throughout assessment phases.

We assessed the changes in the study outcomes by comparing baseline with the two post-intervention measures. We performed analysis of these (binary) outcomes while accounting for confounding effects of several covariates using logistic regression models.



**Results:** A total of 307 MSM at baseline, 326 in 2014, and 311 in 2015 were enrolled in the study. Discrimination was reported by 52.1% at baseline, 30.3% in 2014, and 11.6% in 2015. Any type of stigma was reported by 14.7% at baseline, 2.1% in 2014, and 1.3% in 2015.

Sexual violence was reported by 47.9% at baseline, 11.7% in 2014, and 1.9% in 2015. In the covariate adjusted logistic regression analyses, significant reductions compared to baseline levels were observed in 2014 and 2015 for discrimination (Adj. OR = 0.49 and 0.17), stigma (Adj. OR = 0.13 and 0.11), and sexual violence (Adj. OR = 0.12 and 0.03), all with  $p < 0.001$ .

**Conclusions:** Our findings suggested that the high prevalence of discrimination, stigma, and sexual violence experienced by MSM in an African setting has substantially reduced over time which may have resulted from a multi-component community-based intervention.

## THPED324

Changing the conversation about HIV: using visually striking artwork and real stories in a co-designed public campaign to reduce HIV stigma in Queensland, Australia

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**Background:** In Australia, HIV is rarely discussed positively in the media. The resulting lack of visibility, awareness, and contemporary knowledge of HIV, leaves misconceptions, prejudices, and discrimination to dominate. Sadly, research indicates HIV stigma is still present amongst mainstream Australians. QPP created a targeted campaign to reduce HIV stigma, by introducing everyday people living with HIV (PLHIV), through vibrant imagery, video, and concise storytelling, encouraging self-education and exploration through [www.qpp.org.au/hi](http://www.qpp.org.au/hi).

**Description:** Informed with lived experience from both QPP and creative agency Wonderkarma, we harnessed co-design paired with an extensive brief including research and region-specific data to develop campaign concepts. These were presented to focus groups of PLHIV from our national network, and 'stigmatisers' via market research. An Australia-wide transparent and inclusive search for 'Campaign Ambassadors' was used, with support available to ensure psychological safety and well-being of all applicants. The final creative messaging encouraged media companies to donate additional media. Beginning during IAS2023, the campaign was presented on TV, radio, newsprint, social and outdoor media for 2 weeks throughout Brisbane and further afield.

**Lessons learned:** Post-campaign analysis revealed that 67% of people found the campaign effective in changing opinions around HIV stigma. 83% said the creative made them feel that PLHIV should not be discriminated against.

84% now believe that you can live a long and happy life with HIV after seeing the ad. And 84% now understand that HIV affects people from many different backgrounds. \$976,134 AUD of media and agency costs were donated, on top of an \$25,447 AUD investment, allowing the campaign to inform over 1,551,125 people and drove over 30,000 visits to the QPP website.

The key to success was using co-design, market research, agency expertise, and most importantly, the lived experience of PLHIV to hero in the campaign. Donated investment illustrated the importance of buy-in by media to maximise impact.

**Conclusions/Next steps:** The campaign was effective in communicating that HIV affects all types of people who shouldn't be discriminated against. Next is to use data and developed content with the aim of securing funding for nationwide release in collaboration with our partner organisations.

## THPED325

Building resilience through peer mentorship among adolescents and young adults with perinatal HIV: the impact of the I'mpossible Fellowship intervention in India

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**Background:** While peer-led mentorship models show encouraging results of improved adherence and viral suppression among youth with HIV, such studies are rare in Asia.

This study evaluates the I'mPossible Fellowship (IF), a peer-led intervention in southern India empowering adolescents and young adults with HIV through a comprehensive approach supporting their health, educational and psychosocial needs.

**Methods:** The IF intervention was implemented among 220 adolescents and young adults with perinatal HIV (AYAWH) in Karnataka state in 2021 (general population baseline of 64% viral suppression and 50% school cessation rate). The intervention, delivered by 10 older AYAWH ('fellows') who were each matched with 25 younger peers, consisted of mentorship support regarding health, education and livelihood via mobile phones and support group meetings.

After one year of IF intervention, 216 peers (4 were not reachable or declined consent) were surveyed on socio-demographic, educational and treatment status,



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and were administered the Child and Youth Resilience Measurement (CYRM). Determinants of low resilience were identified using multivariable logistic regression.

**Results:** Mean age was 19y (range 9-25y), 65% identified as male, 43% lived in group homes, and 50% were double orphans. All were on ART for a mean of 9.6y, recent median CD4 was 700 cells/ $\mu$ l (IQR 550-855), and 91% were virally suppressed (VL<150). Among 33% who discontinued high school, 7% re-entered the educational system.

Total median CYRM resilience score was high at 74 (IQR 69-78, max 85). In multivariate regression, correlates of low resilience (CYRM score  $\leq$ 25 percentile) were loss of both parents (aOR 3.34, 95%CI: 1.59-7.01), school cessation (aOR 2.38, 95%CI: 1.08-5.24), and inability to discuss problems at ART center (aOR 3.26, 95%CI: 1.52-6.97).

**Conclusions:** Initial analysis of the I'mPossible intervention indicated success in treatment outcomes, educational retention and resilience. Among those with lower resilience scores despite high levels of viral suppression, additional support to address parental loss and maintain educational trajectories is needed. Immediate next steps include tailoring the intervention for the most vulnerable AYAWH.

## THPED326

Health or income? How men living with HIV in Malawi experience and navigate decisions between income generation and ART refills

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**Background:** People living with HIV who live in extreme poverty often face challenging trade-offs between accessing care and meeting economic needs. We explored how accessing HIV care impacts economic security among Malawian men, where over two-thirds of the population live in extreme poverty (<\$1.90/day).

**Methods:** We conducted a mixed-methods, secondary analysis on data from the IDEAL and ENGAGE trials, which examined the impact of person-centered care interventions on ART initiation and retention among men (ClinicalTrials.gov#NCT04858243; #NCT05137210).

Eligibility criteria included: male;  $\geq$ 15 years; and not engaged in HIV care at enrollment. We conducted baseline and endline surveys (4-6 months after enrollment) on socioeconomic factors and their experiences with the interventions. We also conducted three rounds of in-depth

interviews 4-6 months after enrollment with a random sample of participants, stratified by ART initiation and retention outcomes and self-reported client mobility.

**Results:** We conducted 1,309 baseline surveys, 1,206 end-line surveys, and 99 in-depth interviews. 1,017 men had complete socioeconomic data. 91% attended ART appointments during the study period. Median age was 39 years (IQR:31-46), 39% (399/1,017) had informal employment reliant on piecework, 55% (559/1,017) lived in extreme poverty, and 59% (596/1,017) had no financial savings. Most men reliant on piecework lost income when they attended ART appointments, since they could not seek or be recruited for work.

Pieceworkers and men without savings who lost income described experiencing food insecurity for their family, with nearly half their families "going hungry" that night. However, most men chose attending ART refills over income generation because HIV treatment was considered critical to sustaining health and earning potential.

Participants with formal employment or their own businesses described strategies to remain engaged in HIV care while generating income, such as obtaining permission to pick up refills from supervisors and coordinating staffing replacements. However, these strategies were not options for those participating in piecework.

**Conclusions:** Men living with HIV in Malawi often balanced the desire to prioritize ART refills with their daily needs due to extreme poverty. Interventions offering differentiated service delivery models with multi-month dispensing or shorter facility visits for clients, are urgently needed to minimize economic vulnerability among this population.

## THPED327

An arts-based narrative enquiry: naming HIV to children - young people and parents share the stories that matter to inform future practice

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**Background:** Children living with HIV are likely to have acquired HIV from their mother in pregnancy, at birth or through breastfeeding (perinatally acquired). Children are not routinely told they are HIV positive. Stigma, fear and guilt are barriers echoed by parents and professionals. This must be balanced by the child's right to know. This qualitative study used arts-based narrative inquiry to explore the stories of young people who have experienced the process of being told they are HIV positive and parents whose child is aware of their HIV diagnosis.

**Methods:** Sixteen young people and ten parents were recruited via voluntary sector organisations in the UK. Participants shared their experiences in one of four focus groups. Young People were living with perinatally ac-

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quired HIV and aged between 15 and 21. 11 participants in the young people's groups and 2 participants in the parent's group were born in the UK.

Participants used arts to create something of their choice giving participants a voice which enabled people to share their stories. The focus group discussions were recorded. Reflexive thematic analysis was used to analyse the data.

**Results:** Creative pieces made by participants included masks and boxes illustrating the experiences of stigma and self-stigma highlighting the need to hide HIV.

Young people reported HIV was named between ages 8-13. Most participants were told at home.

The way in which parents find out about their HIV matters. Parents experienced feelings of fear and guilt before naming and report relief and calm once their child had HIV named. Young people highlighted parents feelings and emotions as barriers to HIV naming and drivers of self-stigma.

The language used and heard when talking to children about HIV plays a role in negative emotions, self-stigma and stigma.

Secrecy within the family home exacerbates self-stigma. Participants reported experiencing stigma which resulted in challenges in sharing their diagnosis, negative experiences in schools and difficulty adhering to medication.

**Conclusions:** There is a clear consensus that HIV must be named to children at a younger age. Parents and professionals require appropriate support on this journey. Public education is urgently required to reduce stigma.

## THPED328

### Barriers in accessing HIV related healthcare by transgender women in Surat, Gujarat - Learnings from a Student Study Project

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**Background:** Transgender communities have been subjected to discrimination, stigma and violence leading to exclusion from mainstream employment and towards high-risk sex work. Persistent stigma in healthcare settings further affects their access to healthcare and health-seeking behaviour.

This study explored the barriers in accessing HIV healthcare services by persons living with HIV (PLHIV) who were transgender women (TGW) in Surat, India from the perspective of both the providers and the community.

**Methods:** Semi-structured telephonic interviews as part of the dissertation were conducted with 10 HIV positive TGW and 8 providers (4 doctors, 4 counsellors) over a period of 2 months (February 2020- March 2020) along with

field observation. Study participants were recruited by snowball sampling. Interviews were thematically analyzed.

**Results:** Themes that emerged were societal, structural and beneficiary-provider interactions. Societal barriers included discrimination based on their gender presentation and stigma associated from their perceived status of "sacred mother" contracting "such" disease.

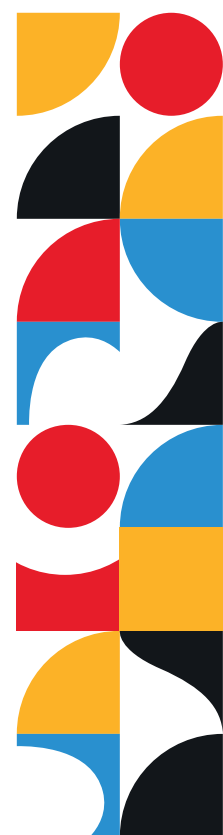
The fear of community isolation upon disclosure and the impact of Guru further posed a barrier in their healthcare access. Those living with biological families initially struggled to disclose their HIV status but found more support after revealing it, unlike those living within community.

Providers recognized that transwomen avoided disclosing HIV statuses to their community or private healthcare providers due to perceived insensitivity. Structural barriers included inconvenient timings, unorganized navigation, long waiting queues, and a lack of privacy during counselling sessions.

Providers focus on processes and documentation sometimes delayed services, acting as access barrier. The TGW also shared that while the counsellor interaction aided their access, interaction with doctors posed challenges. Most providers reported of insufficient training to provide medical consultation specific to TGW.

**Conclusions:** Achieving the end of HIV by 2030 possess challenges of stigma associated with gender identity, HIV status in healthcare setting and within community especially with respect to TGW. The study highlights the need for gender sensitivity and inclusivity trainings for healthcare providers and medical colleges with focus on transgender health.

Additionally, TG community gatekeepers should be made aware of community stigma and its' impact to foster greater support to their PLHIV community members.







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## THPED329

### Substance use and HIV treatment adherence in a treatment support trial among female sex workers living with HIV in eThekweni, South Africa

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**Background:** Substance use and dependency has been associated with suboptimal HIV care outcomes among people living with HIV. We qualitatively assessed the impact of substance use on HIV treatment outcomes among female sex workers (FSW) living with HIV and receiving services from TB HIV Care via the Siyaphambili trial in eThekweni, South Africa.

**Methods:** From March 2021 to January 2022, we purposively sampled for in-depth interviews among FSW (n=36) from Siyaphambili, a randomized trial of adaptive HIV treatment support strategies, and service providers (n=12) including case managers and nurses.

Participants described experiences with and perceptions of Siyaphambili's HIV treatment support strategies, decentralized treatment provision (DTP) and individualized case management (ICM). The COM-B model was used to assess participant capability, opportunity, and motivation to engage with DTP and ICM strategies and adhere to ART in the context of substance use.

**Results:** Both FSW and strategy implementors identified substance use as a key barrier to consistent engagement in and adherence to HIV treatment (Figure). Case managers identified substance use as a challenge to FSW participants completing sessions, hindering ICM implementation. ICM support for reducing substance use primarily comprised referrals to external rehabilitation services and ART adherence counseling.

Many FSW reported substance use as a barrier to ART adherence, often going days without taking ART during periods of heavy substance use. FSW reported operating in sex work venues managed by drug dealers, which contributed to ongoing drug use and limited intervention opportunities.

FSW receiving the DTP intervention emphasized its importance for retention in care when unable to travel to the clinic while under the influence of substances.



Figure. COM-B Model describing substance use-related barriers and facilitators to ART adherence and intervention engagement among female sex workers living with HIV and participating in the Siyaphambili trial in eThekweni, South Africa.

**Conclusions:** Substance use remains a major barrier to sustained engagement in ART among people living with HIV in South Africa.

Comprehensive harm reduction and substance use dependency services may be central to optimizing HIV treatment outcomes in South Africa.

## THPED330

### #HelpNowHUB: a model of collaborative resilience and innovation in global HIV response amidst the war emergency in Ukraine

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**Background:** In direct response to Russian war on Ukraine, in early March 2022, Alliance for Public Health launched #HelpNow Service, innovative initiative addressing the distinctive needs of Persons Living with HIV and Key Populations affected by the war in Ukraine. With support of more than 50 regional, and national organizations during weeks of operation Service transformed into comprehensive HelpNowHUB.

Operating over 20 months, #HelpNowHUB with support of local organisations was providing vital services in more than 50 countries and 200 cities to Ukrainian refugees seeking treatment and prevention services.

**Description:** #HelpNowHUB introduced comprehensive approach by combining information provision, virtual case-management, and social/humanitarian support. The key functions of HUB and integrated Services - Information, Navigation, Coordination.

By integrating digital technology with high-level medical professionals at Help24, we not only strengthened the response capacity but also facilitated convenient communication and collaboration between clients and doctors. The inclusion of community-led peer support, robust referral systems, and client algorithms streamlined access to necessary services for refugees in host countries.

**Lessons learned:** #HelpNowHUB provided 37,000 crucial services, highlighting the significance of collaborative resilience, impactful service delivery, humanitarian innovation, and community empowerment.

The HUB's unique approach and support from host organizations facilitated uninterrupted access to vital HIV prevention and care services for Ukrainian refugees.

Key lessons include the importance of adaptable, swift, and responsive humanitarian aid models, promoting self-reliance, and emphasizing global solidarity during crises.



Figure.

**Conclusions/Next steps:** The #HelpNowHUB journey underscores crucial lessons for emergency responses, emphasizing the need for prompt action, collaboration, adaptability, and sustained support in addressing global humanitarian crises, particularly for underserved populations. It showcases the transformative power of empathy in action, demonstrating the profound impact of united efforts in alleviating suffering and fostering hope. In conclusion, #HelpNowHUB serves as a beacon, illustrating the genuine impact of collective action, innovation, and unwavering commitment on individuals and communities facing adversity.

## THPED331

Interventions for stigma reduction in HIV treatment and prevention designed to enhance antiretroviral uptake and adherence: a systematic review

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**Background:** HIV-related stigma poses a threat to antiretroviral therapy (ART) and pre-exposure prophylaxis (PrEP) adherence. Some interventions have been implemented to mitigate this stigma. We conducted a system-

atic review to evaluate the effectiveness of such interventions in reducing HIV-related stigma and improving adherence to ART/PrEP.

**Methods:** We followed PRISMA guidelines to include randomized controlled trials and quasi-experimental studies published between January 2013 and June 2023 after searching MEDLINE, Embase, Scopus, Web of Science, CINAHL, and PsycINFO databases.

Participants include people living with HIV on ART or vulnerable populations using PrEP. Interventions include those targeting stigma reduction. Outcomes include uptake/adherence to ART/PrEP. We used Cochrane Collaboration's risk of bias tools for quality assurance. We used narrative data synthesis due to heterogeneity across studies. We registered this systematic review with PROSPERO (CRD42023455610).

**Results:** We analyzed eight randomized controlled trials (RCTs) featuring population diversity in gender, age, ethnicity (Hispanic/Latino, Indigenous, Black), and geography (Asia, Africa, and North America). The effectiveness of interventions in stigma reduction and medication adherence varied widely. Seven interventions aimed to improve adherence to ART, while one focused on PrEP adherence. Two cognitive behavioral therapy (CBT)-based interventions reduced HIV stigma (~ 78.7% variance) and boosted ART adherence (~ 50.3% variance), while the other two lacked statistical significance (Cohen's d = 0.30). An empowerment intervention (1.3 units stigma-reduction in stigma for 1 unit increase in ART adherence) and a youth peer mentoring intervention (OR 0.63, 95% CI: 0.35-1.13) achieved both goals effectively.

Conversely, a single-session educational-film intervention failed to demonstrate effectiveness (p=.78). PrEP-focused intervention (motivational interviewing called "jump-start") significantly reduced stigma and improved PrEP adherence (37%, effect size 0.10).

**Conclusions:** Interventions incorporating cognitive behavioral therapy, peer support, and motivational interviewing demonstrate the potential to reduce HIV-related stigma and enhance ART/PrEP adherence.

Multicenter RCTs with larger populations, harmonized study designs, and standardized outcomes are required to validate these findings in diverse contexts.



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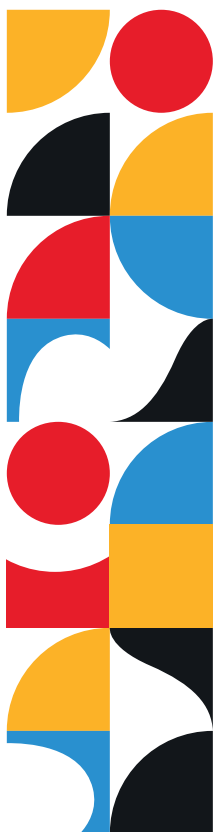
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## THPED333

"They care about us": assessment of telemedicine by people with HIV using this strategy in the public health system of Buenos Aires city

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**Background:** From October-2020 to September-2022, we conducted an implementation study to offer telemedicine(TM) across four HIV units of public hospitals in Buenos Aires. We implemented TM to provide a continuum of care to people living with HIV(PLHIV) while exploring their perceptions of its benefits. TM visits were conducted through phone or video calls. The study started during the COVID-19 outbreak and continued until complete flexibilization came through.

**Methods:** This work analyzes PLHIV's perceptions of telemedicine to understand opportunities for the implementation of this strategy for HIV-care. We prospectively collected qualitative data through virtual open-ended interviews with PLHIV users of telemedicine. Interviewees were identified considering gender, age, hospital unit, and years from diagnosis. Sample size was determined by theoretical saturation according to baseline analytical axis: care trajectories, hospital unit valuation, and opportunities for telemedicine. Interviews were conducted through Zoom® and manually recorded. Rather than a statistical analysis, we favored an ethnographic approach to interviews, focusing on both the diversity and the common experiences. Analysis was done using Atlas.ti®.

**Results:** 39 PLHIV were invited to interviews. 100% agreed and participated. 41%(16) were cisgender women, 2.5%(1) were transgender women, and 56.5%(22) were cisgender men. 51%(20) had up to 10 years since diagnosis. Telemedicine was positively rated by all interviewees. Different arguments were pointed out, such as avoiding commuting to hospitals and reducing consultation time. While some interviewees highly valued the fact of receiving a medical checkup, other PLHIV associated teleconsultations as a way to obtain care in a hostile setting triggered by the COVID-19 outbreak. These valuations were observed mainly in those interviewees who referred to having built a close relationship with their doctors over time. They positively rated the initiative lead by hospitals units to establish a contact in an isolated circumstance.

**Conclusions:** This study sheds light on the affective dimension of HIV-care that goes beyond common medical priorities focused on individual viral load suppression and is not ordinarily quantified by health systems. Rather than

a way of having medical checkups, telemedicine was considered a form of feeling cared for and an opportunity to maintain the personal relationships built over time between PLHIV and doctors.

## THPED334

Adaptation and acceptability of an internalized stigma reduction intervention for women living with HIV in Tanzania

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**Background:** There is growing evidence that internalized HIV stigma negatively impacts the health and well-being of people living with HIV and undermines HIV care, ART adherence and viral load suppression, yet evidence-based interventions to address internalized stigma reduction are limited, particularly in low-and-middle-income countries. In response, we adapted and tested for acceptability in Tanzania the *Maybe Someday: Voices of Women Living with HIV* (WLWH) intervention, developed in the United States.

**Methods:** A 4-stage iterative cultural and linguistic adaptation of the intervention through: translation, synthesis, back translation, and expert committee review before filming in Swahili. Five WLWH actresses chose and read the monologues that they felt represented their life experiences. Acceptability was assessed through mixed methods. 58 WLWH, purposively sampled on geography (urban, semi-urban, and rural) and age (18-24/25+) watched the five monologues comprising the intervention. After viewing each monologue, participants completed a questionnaire and participated in a focus group discussion (FGD). Acceptability was assessed qualitatively through the FGDs and measured quantitatively with a 12-item Swahili Narrative Transportation & Realism Scale (NTRS) (alpha = 0.89).

**Results:** A five-session set of videos, the *Labda Siku Moja: Sauti za Wanawake Wanaoishi na VVU intervention* (Table 1) was identified to be acceptable among WLW in Tanzania urban, semi-urban and rural areas and across ages. Agreement with each of the 12 NTRS items was high across all 5 stories, with 8/12 items above 90% agreement, 3 between 74-82% and one at 56% with no systemic differences in total scores over the 5 stories by geography or age. FGD discussions highlighted resonance of the videos with participants lives and recommendations to create similar videos for other groups living with HIV and share the videos as way to reduce community stigma.

Session # & Story Title	Conceptual Elements of Story
1. Keeping it a Secret	Societal stigma and fear of negative consequences of disclosure; deciding to disclose or not
2. Protecting my Children	Decision-making (how/when) related to disclosing to children
3. Telling my Friends	Decision-making (how/when) related to disclosing to friends; fear of possible effects of disclosure with friends; sense of hope and relief after telling friends
4. I'm not a Bad Person	Stereotypes & perceived community stigma; assumptions about WLWH (sex worker, person who uses drugs, promiscuous); intersectional stigma; being judged
5. Planting a Garden	Intimate relationships (concealment/ disclosure issues); externally enacted stigma with disclosure to sexual partners

**Conclusions:** Internalized stigma-reduction interventions can be successfully adapted from one context (US) to another (Tanzania) and should be further tested for impact on retention in care, and ART adherence.

## THPED335

Healthcare provider stigma as a barrier to HIV care engagement for women who exchange sex and use substances (WESUS) in Kazakhstan in Project Orleu

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**Background:** Kazakhstan remains one of the few countries in Eastern Europe/Central Asia (EECA) region where HIV incidence and mortality continue to increase, and where there exists a large overlap between sex work and substance use. Women who exchange sex and/or use substances (WESUS) are a highly-stigmatized population with significant unmet health needs. Healthcare provider (HCP)-enacted stigma is a major barrier to HIV prevention/care continuum engagement.

We present data on how stigma related to drug use or sex work act as barriers to healthcare access for WESUS.

**Methods:** Project Orleu is a multilevel, intersectional anti-stigma intervention. Between October 2023 - January 2024, we recruited 124 WESUS from 14 regions of Kazakhstan. Participants completed online survey, focused on sociodemographics, sexual behavior, substance use, access to health services, stigma and medical mistrust. To

inform intervention development, we conducted 5 focus group discussions with 4-6 WESUS each (N=22), where we asked about their stigma experiences in clinics.

**Results:** In surveys, participants described poor access to services: 40% couldn't receive necessary health services in past 6 months, 74% had gone without medical care because of high costs, and 37% had been treated poorly by HCPs because of their sex work and/or drug use.

Additionally, 44% of participants said HCPs do not take medical complaints of WESUS seriously. In focus groups, participants stated that WESUSs' "rights are still violated in polyclinics", and described feelings of social exclusion in their interactions with HCPs ("We have borders between us... no matter how they smile at us...we are still in our place").

Participants expressed a desire to be treated with understanding and acceptance by HCPs: ("[Doctors] should have an understanding of the job, who they work for"; "We have to be accepted as we are").

**Conclusions:** Results show limited access to health services and significant medical mistrust among WESUS. Stigmatizing experiences within clinics contributed to these outcomes, highlighting the need for interventions focused on stigma reduction for HCP.

Community-led interventions designed in collaboration with WESUS are likely to have the greatest impact on reducing stigma and increasing engagement in HIV services for WESUS in Kazakhstan.

## THPED336

Community-led mobilization and tailored demand creation for increased HIV service uptake among key populations: the CHILL project

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**Background:** In Cameroon, despite progress in the fight against HIV among key populations (KP), stigma and discrimination continue to be barriers to HIV service access even at community level. PEPFAR introduced through CHP the community based CHILL project to scale up access to tailored HIV service delivery for KPs.

**Description:** From October 2022 to September 2023, CHP with partner Community Based Organizations (CBOs) employed a variety of community led mobilization and demand creation strategies:

1. CHP trained and supported peer leaders for in-person and virtual mobilization, using the QuickRes application, social media, SMS, and phone calls.
2. FSW CBOs focused on educational talks, sensitization at hotspots, and drop-in-center (DIC) social events. MSM and TG CBOs mobilized for HIV services through "grins", "chill-ins," "Pride Campaigns," and cinema pro-



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jections. The CBOs also extended their sensitization efforts into drug use hotspots, known as "tèrres" to mobilize PWIDs.

3. Peers facilitated Social and Behavioral Change, providing HIV/STI screenings, PrEP, and GBV identification. They connected clients to DICs for medical consultations, family planning, mental health, ART support and VL sample collection.

**Lessons learned:** A total of 130,090 KPs (72,033 FSW, 53,276 MSM, 3,403 PWID and 1,378 TG) HIV prevention services (SBCC, condoms, lubricants) of which 2,905 were reached virtually. Of the 130,090 KPs reached, 89,314 were eligible for HIV testing and 41% (36,619) were tested for HIV through conventional HIV testing with over 45% being in the 25-35 age group, while 22,034 received HIV self test kits.

Additionally, 2,933 KPs were tested positive for HIV (positivity rate = 8%) and up to 96.7% (2,838) started ART. Index case testing accounted for 33% (984) of case finding. Among the KPs who tested HIV negative, 4,429 were initiated on PrEP.

Of the other HIV related services, 5,552 clients were diagnosed with an STI and 5,090 (91%) received treatment; 22,292 reported to have suffered a form of GBV (sexual, economic, physical, emotional) and 1,378 received the minimum package of GBV services.

**Conclusions/Next steps:** The CHILL project in Cameroon has significantly succeeded in expanding access to HIV services for KPs while breaking the barriers of stigma and discrimination through community mobilization and demand creation approaches.

## THPED337

City-specific disparities in self-reported antiretroviral therapy (ART) adherence, viral suppression, and psychosocial and institutional factors among transgender women living with HIV in India

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**Background:** This study focuses on city-specific variations in India's ART adherence and viral load suppression and the psychosocial and institutional barriers encoun-

tered by TGW living with HIV to emphasize the need for state-specific targeted interventions to improve ART adherence.

**Methods:** We assessed self-reported ART adherence (>90%) and viral suppression (<1000 copies/ml, as per Indian Government guidelines) among 150 TGW living with HIV in Mumbai (n=75) and New Delhi (n=75) in August-November 2023 using participants' ART booklets. Recruitment was conducted by trained community recruiters via community networks. Additionally, we evaluated psychosocial and institutional barriers (such as mental health, substance use, stigma, and gender-affirming care) faced by TGW living with HIV. Bivariate and multivariable logistical regression analyses were employed to analyze city variation.

**Results:** Among our participant (n=150), 63% adhered to ART (≥90%) and viral suppression (<1000 copies/ml, as per Indian Government cut-out) was 96%. However, there were significant variations across the cities in bivariate logistical regression analysis, with participants in New Delhi less likely to adhere to ART (OR: 0.35, [CI 95%: 0.17,0.69], p=0.003). Even after adjusting for age, age, transgender identity (e.g., Hijra, Kinnar, Jogti), education, and caste, optimal ART adherence (≥90%) remains statistically significant. In the multivariate analysis of potential psychosocial and institutional barriers, we found that participants in New Delhi were significantly more likely to use drugs at least once in the past (aOR: 2.95, [CI 95%: 1.12, 8.48], p=0.03) and experience TGW stigma (aOR: 3.22, [CI 95%: 1.30,8.44], p=0.01) compared to participants in Mumbai.

**Conclusions:** This study is the first to highlight self-reported ART adherence and viral suppression among exclusively transgender women living with HIV in the urban settings of Mumbai and New Delhi. Despite the government's provision of free ART, substantial challenges persist in achieving optimal ART adherence.

The findings emphasize the need for targeted interventions tailored to the unique contexts of each state, particularly cities where transgender women might face higher rates of substance use and experience stigma.

Further research is needed to understand the pathways to suboptimal ART adherence and the role played by psychosocial and institutional barriers.

## THPED338

### Adherence support counseling in beneficiaries of ARV care and treatment

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**Background:** In Mozambique, around 2.4 million people live with HIV and the prevalence is 12.5% among adults. One of the integral services for treatment and care is Adherence Support Counseling, which helps to reduce the negative impact of HIV, support in accepting the diagnosis, treatment, and management of risk factors for adherence.

With the adoption of Test and Start in 2016, Adherence Support Counseling began to be offered by all ART care and treatment providers including Doctors, Nurses, Psychologists, and Lay Counselors.

**Description:** The purpose of adherence support counseling is to ensure that clients are retained, achieve viral suppression, and improve their quality of life. During the sessions, beneficiaries receive counseling to support adherence, assessing risk factors, emotional and social support, provided by the provider offering the clinical consultation. The adherence monitoring indicator is evaluated quarterly, where, of the 2,017,624 beneficiaries 15+ and 114,735 beneficiaries aged 0-14 active on ART, 1,203,963 (61%) of 15+ and 69,656 (63%) of 0-14 years, had follow-up adherence, numbers which have never been achieved before the involvement of all providers.

The achievement should also consider that the some of the differentiated service models contribute to beneficiaries not attending appointments every quarter.

**Lessons learned:** The expansion of psychosocial support to all providers showed that it is possible to capitalize on existing human resources, training them and responding to concerns related to frequent loss of follow-up of users on antiretroviral treatment, keeping them in care and improving their quality of life.

**Conclusions/Next steps:** Next steps: In 2024, training is planned to reinforce the quality of adherence support counseling offered to users, including the identification and training of new providers in health units.

Finally, a data reporting mechanism must be created that covers all users who received counseling to monitor adherence.

## THPED339

### Migration is associated with increased HIV vulnerability among young transgender women in Lima, Peru

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**Background:** Latin America has made little progress in reducing new HIV infections and is currently facing its largest recorded mass migration. Transgender women (TW) in Latin America continue to be disproportionately impacted by HIV in need of early prevention efforts, yet there is limited information on HIV vulnerabilities and migration among this population. This research examines the association between migration, HIV, and related vulnerabilities among young TW.

**Methods:** Between February-July 2022, a cross-sectional survey was conducted with 211 young TW ages 16-24 in Lima, Peru accompanied by laboratory testing for HIV and STIs (syphilis, chlamydia, gonorrhea). Bivariate tests ( $\chi^2$ ) compared HIV and STI prevalence, and related vulnerabilities, between migrants and non-migrants. Poisson regression models estimated adjusted prevalence ratios (aPR) and 95% confidence intervals (95% CI) for the association between time in Lima (non-migrant, 0-1 years, 2-5 years,  $\geq 6$  years) and HIV vulnerabilities (condom use, sex work).

**Results:** Of 204 young TW reporting migration status, 110 were migrants to Lima (54%); 45% arrived in Lima  $\leq 5$  years ago. Most migrants were Peruvian (70% from Peruvian Jungle regions); 14% were from Venezuela. HIV sero-prevalence was 44% among migrants and 39% in non-migrants ( $p=0.67$ ).

Compared to non-migrants, migrants had a higher prevalence of laboratory-confirmed lifetime syphilis (65% vs 41%;  $p<0.01$ ) and small but non-significant increase in the prevalence of recent (chlamydia and gonorrhea) (33% vs 28%;  $p=0.62$ ). Migrants reported worse access to health-care with 29% reporting no medical insurance compared to 12% of non-migrants ( $p<0.01$ ). Among migrants, 78% reported ever engaging in sex work compared to 55% of



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non-migrants ( $p<0.01$ ); migrants were also more likely to report daily sex work (42% vs 8%;  $p<0.01$ ) and violent victimization from clients (23% vs 6%;  $p<0.01$ ). Migrants who arrived in Lima 0-1 years ago were 1.54 times more likely to report past 6-month condomless anal sex compared to non-migrants (95% CI=1.02-2.32).

**Conclusions:** Young TW have high HIV and STI prevalence, and for migrants, intersectional HIV vulnerabilities extend through resettlement. Scale-up of HIV prevention and care for young TW is urgently needed; migrants require immediate and ongoing support through integrated health and social services in urban centres post-migration.

## THPED340

Strategic resource allocation improves HIV self-testing among young persons in Southern Nigeria

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**Background:** Adolescents and young persons (AYP) face several barriers to accessing HIV testing services (HTS). In September 2022, the PEPFAR/USAID-funded ECEWS ACE-5 project allocated 60% of its HIV Self-Testing (HIVST) kits to AYP, which were then distributed by peer AYPs. This study assessed the effect of this strategy on the uptake of HIVST among AYPs in Southern Nigeria.

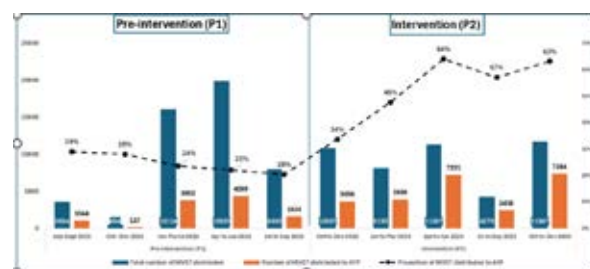
**Methods:** This was a retrospective cross-sectional study using HIVST distribution data from the District Health Information System of 155 health facilities in Akwa Ibom and Cross River States. HIVST kits were distributed through various facility/community-based channels. During the intervention, the HIVST allocated to AYPs was separated from those for other sub-populations at these channels and peer AYPs were primarily responsible for the distribution. The age and sex of recipients, and the number of kits distributed were extracted. Proportions of all HIVST kits distributed to AYP (10-24 years) were compared

15 months before (P1: July 2021-September 2022) and 15 months after commencing the intervention (P2: October 2022-December 2023) using Mann-Whitney U-test.

**Results:** Of the 94,369 HIVST kits distributed over the 30-month period, 52.1% (49,166) were distributed to males and 37.7% ( $n=35,595$ ) to AYP. Of those distributed to AYP, 36% (12,803) were distributed to those aged 15-19 years and 55.8% (19,865) to those aged 20-24 years.

The proportion of HIVST distributed to AYP increased from 22.9% (10,996/48,113) in P1 to 53.2% (24,599/46,256) in P2 ( $p=0.034$ ) (Figure 1).

This increase occurred across all age bands (10-14 years: 1.7% [803/48,113] vs 4.6% [2,124/46,256]  $p=0.034$ ; 15-19 years: 5.7% [2,733/48,113] vs 21.8% [10,070/46,256]  $p<0.001$ ; 20-24 years 15.5% [7,460/48,113] vs 26.8% [12,405/46,246] [ $p=0.002$ ]).



**Conclusions:** Strategic resource allocation improved HIVST distribution among AYP in this setting. Programs looking to expand the use of HIVST among AYP could consider this approach.

## THPED341

Initiation and cessation patterns of opioids and stimulants among female sex workers living with HIV in South Africa: a time-to-event analysis

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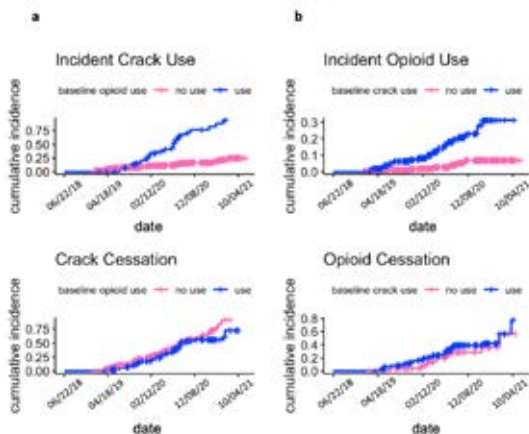
**Background:** Female sex workers (FSW) in South Africa are disproportionately impacted by HIV and substance use disorders. Substance use has been associated with poor

HIV treatment outcomes, necessitating exploration of polysubstance use patterns and predictors among FSW living with HIV.

**Methods:** Data on substance use and relevant covariates were obtained for 777 FSW randomized to the *Siyaphambili* HIV treatment strategies trial implemented through TB HIV Care. FSW were screened for recent marijuana, opioid (heroin and whoonga), crack, and hazardous alcohol use at enrollment and semi-annually from June 2018-January 2022. Individuals were assessed for substance use initiation/cessation after enrollment. Kaplan-Meier plots visualize polysubstance trends in incidence and cessation. Cox proportional hazards models assessed baseline substance use as predictors of initiation and cessation of other substances and adjusted for age, education, homelessness, sex work venue type, and lifetime physical and sexual violence. Calendar time was used as the time metric.

**Results:** Substance use incidence/cessation trends are shown (Figure). Opioid use at baseline was a predictor of crack initiation (aHR=6.86, 95% CI: 3.87-12.19); similarly, crack use at baseline was a predictor of opioid initiation (aHR=4.09, 95% CI: 1.83-9.15). Age was a negative predictor of crack initiation (aHR=0.92, 95% CI: 0.88-0.96) and a predictor of opioid cessation (aHR=1.18, 95% CI: 1.10-1.26) and crack cessation (aHR=1.04, 95% CI: 1.00-1.09). Primarily conducting sex work at an outdoor venue was a predictor of crack initiation (aHR=1.90, 95% CI: 1.01-3.57).

**Figure 1a)** Cumulative incidence of crack initiation and cessation by opioid use status at baseline among FSW living with HIV and participating in the *Siyaphambili* trial in Durban, South Africa; **b)** Cumulative incidence of opioid initiation and cessation by crack use status at baseline among FSW living with HIV and participating in the *Siyaphambili* trial in Durban, South Africa



**Conclusions:** Opioid use was a strong predictor of initiating crack and vice versa, suggesting that concurrent opioid and stimulant use is common among FSW. These findings highlight a need for multipronged substance use interventions for FSW that integrate harm reduction approaches to opioid and stimulant use.

Further investigation into these complex polysubstance use patterns and HIV treatment outcomes could inform HIV care delivery strategies tailored to FSW's preferences and needs.

## THPED342

### The impact of stigma on women's adherence to oral pre-exposure prophylaxis (prep) during the pregnancy and breastfeeding period in Lilongwe, Malawi: a qualitative analysis

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**Background:** Women experience elevated HIV risk during pregnancy and breastfeeding, particularly in sub-Saharan Africa (SSA). PrEP is effective in preventing HIV infection during this critical period, yet adherence to oral PrEP remains low among this population. We sought to understand the barriers pregnant and breastfeeding women taking PrEP face and how it affects their adherence.

**Methods:** We conducted a qualitative study to understand the sources and types of stigma that pregnant and breastfeeding women using oral PrEP experienced, and how stigma affected their adherence to PrEP. We purposively recruited participants from a PrEP clinical trial in Lilongwe, Malawi including: 30 HIV-negative pregnant women using PrEP, 5 HIV-negative Pregnant women that declined PrEP, and 10 health care workers (HCWs) i.e. counsellors and clinician working with women accessing PrEP. All participants completed an individual in-depth interview in Chichewa. We followed a thematic approach to analyze the interview data.

**Results:** Both women and HCWs reported anticipated stigma as one of the barrier to oral PrEP adherence. Women taking PrEP expressed concerns that people might think PrEP is the same as ART for HIV treatment. They feared being perceived as promiscuous when taking PrEP by their partners/family. Three women feared disclosing the reason they were eligible for PrEP to their partners/family e.g. resent sexually transmitted infection. As a result, many did not disclose to their partners/family they were taking PrEP which had a direct impact on adherence causing some women to temporarily or permanently discontinue PrEP whenever the risk of discovery became high. Women reported leaving PrEP at home when they travelled or when going to the hospital for delivery. Women also reported having challenges with drug storage and taking PrEP secretly at home. Leading to extended periods of missed doses.



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**Conclusions:** Women reported anticipated PrEP stigma, which they related to barriers to PrEP use. Strategies at both the facility and community levels to clarify the difference between PrEP and ART may mitigate anticipated stigma. Strategies to support family disclosure and involving male partners in PrEP use may enable families to better support the women's PrEP use. Evidence-based strategies to reduce PrEP-related stigma are urgently needed.

### THPED343

Effects of life instability on later psychosocial syndemic problems and HIV adherence in PLWH in care in South Florida

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**Background:** South Florida is a sociodemographically diverse region with one of the worst HIV epidemics in the U.S. People living with HIV (PLWH) in this setting are impacted by significant structural life instability and psychosocial syndemic problems that interfere with adherence to HIV treatment.

The present study sought to examine the impact of life instability on psychosocial syndemic problems, and in turn, HIV-related care outcomes (i.e., ART adherence, log RNA viral load) over time among South Florida PLWH.

**Methods:** Standard measures of patient reported outcomes were collected from 241 PLWH (51% men, 48% women, 1% non-binary/transgender; 76.3% Black, 22.4% Latino, 2.9% non-Latino White; age M=51.1 years) receiving care at a public clinic in Miami at two time points (M=22 months apart). HIV RNA viral load was extracted from medical records.

The additive index of structural life instability included unemployment, low educational attainment, incarceration history, immigrant status, housing instability, and lack of significant other.

Psychosocial syndemic count included depression, anxiety, trauma, intimate partner violence, and problematic substance use. Regression analyses were employed.

**Results:** Participants reported an average 2.23 life instability factors and 3.05 psychosocial syndemic problems, with only 2.9% reporting neither (no gender differences). At follow up, average self-reported adherence was 95.0% for men and 91.2% for women ( $p<.05$ ) with 12.4% having detectable ( $>200$ ) HIV (no gender differences). Each additional indicator of life-instability at baseline was associated with a 0.22 increase in syndemic count at follow-up (CI: 0.06, 3.87,  $p=.008$ ).

Further, each additional psychosocial problem at follow-up was associated with a 1.32 percentage point decrease in self-reported adherence (CI: -2.6, -0.02,  $p=.046$ ) covarying life-instability and gender.

Adherence was, in turn, associated with log HIV RNA viral load, covarying life instability and psychosocial syndemic problems ( $b=-.035$ , CI: -0.04, -0.03,  $p<.001$ ).

**Conclusions:** Results suggest a temporal relationship between baseline life instability and psychosocial problems, which is associated with difficulties in adhering to ART treatment in PLWH in South Florida, a region with significant HIV inequities. Interventions that address individual psychosocial problems and the structural disparities that drive them may help curb the epidemic in high burden U.S. domestic HIV "hot spots".

### THPED344

Impact of case management on children living with HIV under Chibefwe Catchment Area in Zambia

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**Background:** Project Concern Zambia (PCZ), through the USAID Empowered Children and Adolescent Program (ECAP)II, has been implementing the OVC Case Management Program to support government efforts in reaching the UNAIDS 95-95-95 goal. The program is aimed at contributing to HIV epidemic control through HIV case finding and household-based HIV treatment and care support along the continuum of care. Since 2020, USAID ECAPII has been implementing case management around Chibefwe catchment area in Mkushi through Community Case Workers (CCW).

**Description:** Implemented through community case management, individuals testing HIV+ through community HIV testing services (HTS) are promptly initiated on ART. Efforts extend to tracing and re-engaging clients experiencing treatment interruption (ITT). Monthly home visits target households with children living with HIV (C/ALHIV), ensuring adherence support. CCW utilize program screening tools to identify C/ALHIV facing treatment adherence challenges, focusing on personalized services. Services provided encompass referrals to health facilities when identified challenges necessitate clinical intervention.

USAID ECAPII collaborates with health facility personnel, streamlining viral load sample collection within clients' homes for comprehensive, person-centered care.

**Lessons learned:** Community-based case management has notably improved HIV/AIDS services in Chibefwe. Since the program's inception, the number C/ALHIV on ART has risen from 179 to 223 in 2024. CCW support played a vital role by tracing those not on treatment, addressing ITT, and aiding newly diagnosed individuals to access treatment services. Viral Load (VL) suppression improved from 67% to 99% owing to adherence support and time-



ly home-based VL sample collection. The unsuppressed C/ALHIV count reduced from 29 to 3 over the 3-year period. This success underscores the program's efficacy in enhancing healthcare provision, minimizing disruptions, reducing long queues/waiting time and prioritizing person-centered services.

**Conclusions/Next steps:** PCZ's community-led approach, led by CCW in the Chibefwe catchment area under USAID's ECAP II, has contributed to the UNAIDS 95-95-95 goals. This initiative significantly contributed to the increase in ART enrollment by addressing treatment delays and interruptions through community-led support. The collaborative efforts, including viral load sample collection at clients' homes, resulted in a rise in viral suppression from 67% to 99% over the 3-year period, reducing virally unsuppressed C/ALHIV from 29 to 3.

## THPED345

Trust in 'Undetectable=Untransmittable' (U=U) is associated with lower self-stigma and greater sexual satisfaction in people living with HIV in the UK

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**Background:** Having confidence in the U=U message may enhance well-being in people with HIV. We assessed levels of trust in U=U in people with HIV in the UK, and association with self-stigma and sexual satisfaction.

**Methods:** Positive Voices 2022 is the largest UK national survey of people with HIV. Participants self-completed a confidential questionnaire on socio-demographic, health and lifestyle factors.

We defined:

- Trust in U=U as a response of 'yes strongly believe' to the statement: "A person on HIV treatment with undetectable viral load cannot pass on HIV through sex",
- HIV-related self-stigma as a response of 'strongly agree' or 'agree' to the statement: "I have poor self-esteem because of my HIV status", and;
- Sexual satisfaction (among those reporting sex in the past three months) as a response of 'very' or 'mostly' to the question: "In general, how physically pleasurable have you found your sexual relationships over the last three months?"

We assessed factors associated with trust in U=U, and associations of trust in U=U with HIV-related self-stigma

and sexual satisfaction, using logistic regressions, adjusted for: demographic group; age; time since starting ART.

**Results:** 4607 people participated: 2488 (54%) MSM, 1121 (24%) women, 585 (13%) heterosexual men; 1120 (24%) Black ethnicity; median (IQR) age 52 years (43-60), 99% on ART with duration 13 years (8-18). 4375 (95%) participants reported knowing their last viral load, with 4205 (96%) reporting it as undetectable. 4221/4525 (93%) had heard of the U=U message; 2931/4535 (65%) trusted U=U.

Heterosexual women and men, older participants, those with lower education, greater financial hardship and unmet need about treatment advice were less likely to trust in U=U. People who trusted U=U were less likely to report HIV-related self-stigma (adjusted OR 0.52, 95%CI 0.44-0.60,  $p<0.0001$ ) and more likely to report sexual satisfaction (adjusted OR 1.66, 95%CI 1.34-2.05,  $p<0.0001$ ).

**Conclusions:** A third of people with HIV in the UK had a lack of trust in U=U, despite good awareness of the message. Lack of trust in U=U was associated with HIV-related self-stigma, and lack of sexual satisfaction.

Strategies to improve trust in the U=U message should be prioritised.

## THPED346

Empowering Youth: PrEP4U campaign as an innovative intervention in HIV prevention and demand generation for HIV services

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**Background:** HIV infections in Vietnam are increasing among young people, including students. To achieve Vietnam's goal of HIV epidemic control by 2030, it is imperative that uptake of pre-exposure prophylaxis (PrEP) be scaled up via joint efforts from HIV service delivery partners. Co-designed by USAID/PATH STEPS, Vietnam's Ministry of Health, the Ministry of Education, and youth leaders, the national PrEP4U campaign (where "U" stands for both "you" and "university") uses a suite of edutainment ("educational entertainment") activities at universities and high schools to enhance student knowledge about SRH and safer sex, and encourage the use of HIV and STI testing, PrEP for HIV prevention, and other SRH services.



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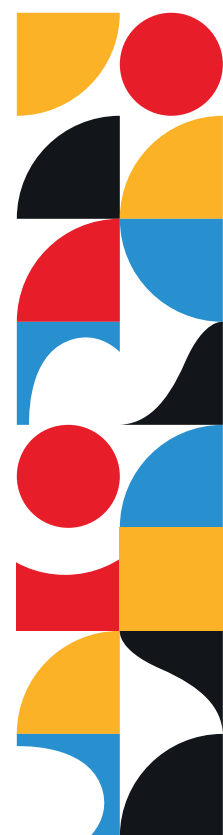
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**Description:** PrEP4U campaign employs diverse approaches such as talk shows, interactive edutainment games, integration with other sex-ed programs at schools, and booth exhibitions where students can interact with staff from community-based primary care clinics and receive HIV testing, PrEP counseling, and referrals for other services. The campaign also runs across online platforms and leverages a network of PrEP4U Ambassadors and a PrEP4U Facebook page blending informative and humorous content derived by youth to motivate viewers to seek PrEP/SRH information and services.

**Lessons learned:** In 2023, STEPS and partners integrated digital innovations in the PrEP4U campaign, such as:

1. An online registration platform to effectively link individuals to free STI testing and HIV services at Glink clinic;
2. An online Virtual Reality (VR) gallery showing SRH information; and,
3. An online survey to evaluate SRH knowledge levels of students.

From March 2022 to –September 2023, PrEP4U campaign hosted 44 offline events and reached more than 11,000 students, distributed 1,445 HIV self-test kits and enrolled 804 individuals on PrEP. The PrEP4U Facebook page has become a hub of trustworthy SRH and PrEP information for students, supporting the campaign to garner over 2.4 million views across-platform since its launch in May 2022.

**Conclusions/Next steps:** Youth-focused PrEP/SRH campaigns with targeted edutainment activities centered around principles of choice, equity, and people-centeredness ensures that PrEP and sex-ed knowledge resonated with different youth segments to achieve Vietnam's twin goals of ending AIDS and ensuring universal health coverage by 2030.

## THPED347

Understanding risk behaviors among HIV+ women during conflict: insights from post-invasion Ukraine - a qualitative study

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**Background:** The war in Ukraine has given rise to a distinctive and concerning increase in HIV among women. In the aftermath of the full-scale invasion in Ukraine, the upheaval significantly complicated the landscape for those managing HIV care. Our research aimed to identify and comprehend the risk behaviors among HIV-positive women in the context of active conflict and displacement in Ukraine. This study seeks to shed light on the factors contributing to the increased prevalence of HIV among women during conflict.

**Methods:** In June and July 2023, we conducted in-depth interviews with 30 HIV-positive women (18 years+) in Kyiv, Uzhhorod, and Lviv, who learned of their status during wartime. Each person received services through our day programs. Employing a narrative analysis approach, our interview protocol explored several themes, including reactions to HIV diagnosis, relationships, misconceptions about HIV transmission, social support structures broken during wartime, and the intricacies of disclosure.

**Results:** Strained relationships emerged as a primary theme, with revelations about high-risk behaviors and trust issues influencing emotional landscapes. Respondents expressed challenging preconceived notions about HIV transmission and personal vulnerability. Narratives focused on introspection, stigma, and, in some instances, suicidal ideation. Misconceptions about HIV transmission were amplified in emergency situations. Fears of contagion added complexity to the experiences of individuals living with HIV. Heightened isolation and resource constraints were reported by a significant portion of the group. Fear of stigma and discrimination led many respondents to conceal their HIV status, underscoring additional layers of challenges faced by individuals navigating both an HIV diagnosis and wartime conditions.

**Conclusions:** This research provides crucial insights into the nuanced experiences of women with HIV during war and displacement, emphasizing the vital role of social support structures. It highlights the urgent need for targeted education and awareness campaigns to address internal struggles and external barriers to disclosure in emergency situations.

The findings underscore the importance of implementing strategies to strengthen support systems, dispel misconceptions about HIV transmission, and proactively address the unique needs of individuals in challenging circumstances, contributing significantly to the well-being of women living with HIV.

## THPED348

Employing differentiated peer-led social behavior change communication channels to promote condom utilization for HIV prevention

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**Background:** The 2020/21-2024/25 National Strategic Plan (NSP) for HIV and AIDS prioritizes condoms as a cost-effective intervention, aiming for a 90% usage rate during high-risk encounters. Uganda Population-Based HIV Im-

pact Assessment (UPHIA) exposed gaps in condom use among the population. In response, the Program for Accessible Health Communication and Education (PACE) executed the Differentiated Condom Demand Generation and Last-Mile Distribution challenge from March to December 2023, targeting Adolescents and Young Persons (AYPs) and Key Populations in Kampala, Busia, and Yumbe districts. The goal was to overcome barriers to condom use and enhance accessibility.

**Description:** PACE, in collaboration with the Ministry of Health, held localized co-creation sessions addressing barriers such as stigma, access issues, myths, high costs, and resistance. Stakeholders actively contributed to innovative solutions, shaping the differentiated peer-led Social Behavioral Change Communication (SBCC) Campaign, "Get it on, stay safe." After audience segmentation, Kampala focused on 15-30-year-olds, Yumbe targeted refugees aged 15-30, and Busia reached individuals aged 15-30 and sex workers aged 15-45. Seventy Condom Champions (Peers), trained to utilize interpersonal communication, reached 11,723 individuals, including those without smartphones. A social media campaigns further engaged 631,865 individuals.

Condom Champions facilitated last-mile delivery of 1,895,618 male condoms at 1,645 GIS-mapped points and providing real-time reporting using a smartphone application. Collaborations with the private sector, including beer delivery tracks, delivered condoms to 56 establishments.

**Lessons learned:** The analysis of 883 endline survey responses yielded valuable insights, indicating that 70% of participants expressed satisfaction with the availability of condoms. Establishing collaborations with the private sector emerged as a sustainable approach to ensuring a consistent supply of condoms. Additionally, the active involvement of peers in co-designing activities proved instrumental in tailoring condom messages to the audience, thereby effectively communicating the importance of condom use.

**Conclusions/Next steps:** The initiative emphasized differentiated, equitable, and people-centered condom programs. Recommendations include expanding the Peer-Led Differentiated Condom Demand Generation campaign, involving Civil Society Organizations (CSOs) for sustainable delivery, and leveraging social media extensively for condom messaging. The findings underscore the importance of continuous efforts to address persistent barriers and promote positive sexual health behaviors among target populations.

## THPED349

### Enhancing HIV treatment adherence through behavioral interventions: addressing stigma, discrimination and human rights violations in healthcare settings

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**Background:** In the Mangaung, Batho location, substantial progress has been made in reducing the burden of HIV, TB, and STIs. Despite these achievements, negative behaviors exhibited by some healthcare workers persist, leading to stigmatization and treatment default among individuals seeking healthcare services. Such behaviors result in treatment interruptions, escalating the risk of illness. The abstract outlines a comprehensive program aimed at addressing these challenges through scalable behavioral interventions.

**Description:** The program, conducted over a specified period in the Mangaung, Batho location, targeted healthcare facilities. It involved engaging healthcare workers to mitigate barriers related to stigma, discrimination, and human rights violations. A patient respondent mechanism was employed, creating a safe space for identified patients to share their experiences, focusing on retention to care, treatment adherence, and the associated risks of non-adherence. Linkage officers played a crucial role in understanding clinical experiences, facilitating smoother interventions.

**Lessons learned:** Findings from the program underscore the significance of behavioral interventions in enhancing HIV treatment adherence. Lessons learned include the identification of root causes of negative behaviors, the importance of patient narratives in addressing healthcare worker attitudes, and the role of family members and community engagement in facilitating interventions for treatment default.

**Conclusions/Next steps:** The outcomes of this program have broader implications for HIV prevention and treatment strategies. Addressing social and behavioral factors, such as stigma and discrimination, is crucial for the success of advanced interventions like long-acting extended delivery antiretrovirals.

The findings emphasize the need for deploying interventions at multiple levels, including structural changes in healthcare settings. As the program continues, further research and evaluation will refine strategies and contribute to the ongoing development of effective, socially informed HIV response efforts.



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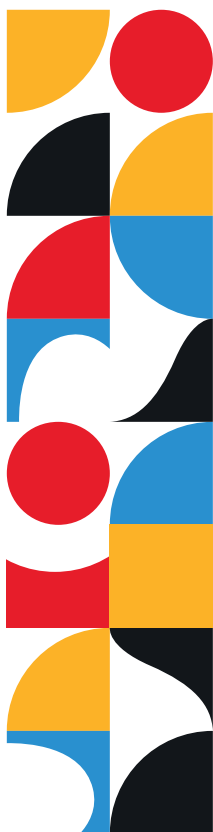
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## THPED350

Bridging knowledge gaps, shifting attitudes, and enhancing processes: tailored interventions for effective HIV disclosure to adolescents

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**Background:** Incomplete disclosure to adolescents can have far consequences such as poor adherence to ART, increased morbidity, onward transmission, emotional challenges, and conflicts with caregivers including educators. Despite the availability of comprehensive ALHIV-focused disclosure guidelines, toolkits, and checklists, significant gaps persist in their effective implementation.

**Methods:** A participatory study was conducted in 2023 involving 519 frontline health care providers at 19 sites in 12 high HIV burden African countries, including eSwatini, Kenya, Malawi, South Africa, Tanzania, Uganda, Zambia, Cameroon, Ethiopia, Nigeria, Angola and Zimbabwe. Using participatory methods, participants undertook a preference ranking exercise to identify and rank the main barriers to effective disclosure to adolescents. Thematic analysis was used to categorise the barriers identified.

**Results:** Key barriers to effective HIV disclosure include lack of developmentally appropriate tools, insufficient skills to clearly explain HIV, and limited knowledge of the legal framework. Attitudinal barriers include caregiver reluctance, fear of stigma, and concerns about emotional distress during disclosure.

Process-related challenges include anxiety about post-disclosure support, inadequate facilities for maintaining confidentiality, and time constraints in busy health facilities.

**Conclusions:** To improve effective HIV disclosure among adolescents, multifaceted interventions are needed to address attitudinal challenges and overcome procedural limitations. Addressing these challenges requires tailored interventions that foster a more supportive environment for adolescents, caregivers and health care providers. Support for adolescents and their caregivers through culturally and age-appropriate resources and literacy materials, and reduction of stigma and fear through awareness campaigns are key. Practices can be improved by strengthening post-disclosure support, investing in facility infrastructure for confidentiality, and addressing time constraints through strategic interventions.

Comprehensive and ongoing training for health care providers is essential. This should be coupled with supportive tools and resources. Finally, and importantly, supporting providers to build emotional resilience is critical. These

multifaceted approaches can create a supportive and informed environment for adolescents and caregivers during the HIV disclosure process, promoting better outcomes.

## THPED351

PLHIV community facilitators leading in Healthcare

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**Background:** The JN+ Community Facilitators Deployment Programme (CFDP) is a peer-to-peer PLHIV support programme with contact points across this continuum of care. The CFDP is community-led and engages PLHIV outreach workers as peer facilitators who support other PLHIV in accessing care and treatment services and also provide support by helping their peers to identify and overcome barriers that are and may affect their adherence to medication and staying in care.

The CFDP since 2017 has grown to streamline its goals and expectations of the peer workers. Facilitators provide knowledge and sensitization to their peers to support the prevention of loss to follow-up and promote ART adherence towards viral suppression.

**Description:** The CFDP engages empowered and virally suppressed PLHIV who can motivate and offer peer support to other PLHIV with treatment adherence challenges, high risk, with detectable and high viral load levels and who may have been previously lost to follow-up. A Community Facilitator (CF) is a PLHIV who works with these PLHIV peers (clients), has satisfied the selection requirements and has demonstrated a willingness to work with nominated and consenting HIV-positive peers. As such, both parties are willing to disclose their HIV-positive status.

**Lessons learned:** The CFDP has increased PHDP knowledge and outcomes among PLHIV. 87% of peers reported that their CF supported their learning and knowledge on the topic. 70% included self-care, sexual risk management and, stigma and discrimination. 91% of peers/clients indicated they feel more motivated to take care of their health and wellness. From 2019 to 2022, the CFDP worked with 1096 peers/clients and at the end of 2022, [767], 68% were retained in care and had achieved viral suppression which was higher than the national average of 50%. and 48% respectively.

**Conclusions/Next steps:** The CFDP has built the knowledge and capacity of CF/peers and client/ peers but has empowered their ability and that of their peers to journey to viral suppression through adherence to ART and retention in care.

The programme's success can be attributed to the active involvement of PLHIV. Engaging the community in treat-

ment planning, monitoring and evaluation has also enhanced the programme's strategic alignment with the National HIV/STI Strategic Plan.

## THPED352

### The Cookie Jar: utilization of social media platforms to accelerate access to HIV prevention services in Botswana

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**Background:** The Fifth Botswana AIDS Impact Survey 2021 (BAIS V) report indicates that Botswana exceeded all UN-AIDS 95-95-95 targets at 95%, 98%, and 98% among adults (15-64 years) living with HIV. The survey also indicates that gaps still exist among PLHIV 15-24 years, 84.5% were aware of their status, 98.5% people are on Antiretroviral Therapy, and 91.6% of people on ART achieved VLS. Tebelopele Wellness Centers (TWC) as a community-based facilities and DREAMS initiative a clinical partner faces difficulties reaching AGYW with HIV prevention services and reduce their vulnerability to acquire HIV due to factors including low PrEP awareness and poor perception of HIV vulnerability.

**Description:** To identify and reach AGYW at risk and refer them for HIV prevention services, TWC combined the use of social media and peer-led mobilization, acknowledging the significance of social media in AGYW daily lives. Established in 2017, the Cookie Jar Facebook Group is a closed, safe space for girls and young women (ages 15 to 24) to discuss issues that affect their lives, health and well-being. It is overseen by AGYW' Health Care Educators (content creators) who work in the facility. Depending on the girl's need, content creators frequently share targeted HIV prevention messages, peer-led talks, referral directories, pathways and mobilize AGYWs who have unprotected sex.

**Lessons learned:** As of September 2023, a total of 1 788 AGYW are active on the group. 820 AGYW were referred for DREAMS screening, out of the 420 AGYWs that tested for HIV, 49 AGYWs living with HIV were enrolled on antiretroviral therapy, 76 for contraceptive mix, 161 for PrEP, 108 for STI Screening and Treatment and 16 for post GBV services. All referrals initiated from the online platform were directed to TWC. The health care educators were able to provide a warm handover process to their referred services. This comprehensive approach ensured a seamless layering of services, and all referrals were successfully completed. We ought to scale up the implementation of Facebook group across Botswana to reach more AGYWs.

**Conclusions/Next steps:** Social media platforms play a significant role in AGYW daily lives and should be utilized to accelerate targeted HIV prevention services.

## THPED353

### People-centred approaches: Community Facilitators' Deployment Programme

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**Background:** The JN+ Community Facilitators Deployment Programme (CFDP) is a peer-to-peer PLHIV support programme that promotes retention in care among PLHIV.

Community Facilitators are trained PLHIV who work with treatment sites across Jamaica, providing mentorship and support to peers to promote adherence and retention in care by mentoring peers to improve adherence and overall health.

**Description:** Since 2017, The Community Facilitators Deployment Programme has supported 18 HIV treatment sites across the island of Jamaica. Trained Community Facilitators utilise a Positive Health, Dignity and Prevention (PHDP) approach for empowering and promoting Leadership among Persons Living with HIV through Treatment Literacy and stigma and discrimination-reducing interventions. For inclusion in the CFDP, both parties are willing to disclose their HIV-positive status and establish a two-party confidential line of communication.

The programme is managed through a simplified approach comprising treatment site supervision which recommends and assigns peers to Community Facilitators, adhering to onboarding and recruitment protocols. This is complemented by administrative and programmatic oversight from a remote secretarial supervisor who reviews peer assignment and conducts check-ins with CFs.

**Lessons learned:** The Community Facilitator's Deployment Programme significantly contributes to retention in care. From 2019 to 2022, the programme engaged and served 1096 PLHIV, with 767 (70%) becoming retained in care - 50% above Jamaica's national average. Support from Community Facilitators also resulted in 519 of their PLHIV peers achieving viral suppression.

Ensuring the programme's integration within national budgetary allocations is essential for sustainability; continued resource mobilisation and support from technical partners will also aid in securing access to global expertise, best practices, and meeting funding gaps.

**Conclusions/Next steps:** The CFDP supports the strategic direction and priorities of the Government and its national HIV programme across multiple entry points within the HIV Care Continuum. Promising practices and innovations have emerged from the implementation of nuanced and creative strategies across the island's four regional health authorities. It also works to support all the target outcomes identified and highlighted by Jamaica's current National Integrated Strategic Plan for Sexual and Reproductive Health (SRH) & HIV.



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## THPED354

### Testing outcomes of HIV exposed infants (HEI) in Botswana

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**Background:** In Botswana, over 20% of women of child-bearing age are living with HIV. Between 2014 and 2018, reported rates of mother to child transmission of HIV in Botswana ranged from 1.4-4.8%. Published paediatric data of 2020 indicated that Botswana did not reach the WHO 95-95-95 goals for 0-14 year olds. Early Infant Diagnosis (EID) is critical in achieving these goals by 2025. Global Communities in collaboration with Botswana-Baylor Children's Clinical Centre of Excellence (BBCCOE) sought to ascertain the HIV testing service uptake for HIV Exposed Infants (HEI) and explored barriers and enablers for testing and care.

**Methods:** In 2020 to 2021, Global Communities and BBCCOE conducted cross-sectional and retrospective cohort study. Data sources included interviews with HEI caregivers, clinic data, maternal medical history, physical examinations of the children, and HIV testing for children who met criteria but did not get tested. Uptake of HEI testing at 6 weeks and 18 months of age, as well as the HIV status of the children was reviewed.

Clinical and demographic data, including patient age, medical history, medications, and laboratory results were collected from the paper birth registers at the hospitals and captured into an electronic medical record. Data analysis was performed using SPSS version 16.0.

**Results:** Findings show that 97.1% of all children in the study received at least one test before the study visit. However, 2.4% of the HEI were deceased by the time of our study with 72.7% of them having not received an HIV test and 2% tested positive. Long distances to health facilities, limited transport money, stigma and discrimination, non disclosure, and multiple caregiving were cited by mothers living with HIV and other caregivers as barriers at community/family level. Health care workers reported limited resources for follow up.

**Conclusions:** Perspectives of mothers living with HIV on the barriers and facilitators for testing among HEI is critical. Policy efforts, health systems strengthening at community level, and consistent PMTCT health education to mothers living with HIV can promote uptake of HEI testing. A multi-level approach is needed to address barriers to HEI testing uptake.

## THPED355

### Perceptions of Long-Acting and Extended Delivery (LAED) HIV treatment regimens among South African youth living with HIV

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**Background:** Compared to children and adults, adolescents living with HIV (ALWH) have poor engagement in HIV care, frequently struggling with treatment adherence and experiencing elevated viremia. Long-Acting and Extended Delivery (LAED) HIV treatment regimens offer great promise in reducing the burden associated with HIV care management. Yet, there are lingering questions about end-user needs and how best to promote LAED among ALWH. Research exploring youth's challenges with HIV treatment adherence, along with perceptions of HIV cure and participation in related research, could inform LAED product development, testing, and promotion strategies. Therefore, this study leverages data on ALWH's perceptions of participating in HIV cure research to inform the global rollout of LAED regimens.

**Methods:** We conducted semi-structured, in-depth interviews with 20 ALWH (aged 13-19 years) in Cape Town, South Africa. Data were analyzed using inductive and deductive approaches to content analyses. Interviews inquired about ALWH's: challenges with treatment adherence, perception of the potential impact of an HIV cure on their lives, views concerning participating in HIV cure research, and delivery modality preferences (e.g., pills or injections, or implants).

**Results:** Most participants associated an HIV cure with relief from the burden of living with HIV care, including daily medications, frequent doctor's visits, and stigma within HIV clinics. While most reported interest in participating in HIV cure research, some expressed concerns, such as the unknown impact of the experimental medications on their bodies or not wanting to be the first trial subjects. Concerning treatment modality, preferences for a pill was most common followed by injections.

**Conclusions:** HIV cure-related research seeking to elucidate barriers and facilitators to adolescent willingness to engage in clinical trial research, along with their preferences regarding treatment modality, can be leveraged to anticipate and address challenges that this population may face with LAED promotion and uptake. Our findings suggest a need for increased attention to educating youth about the importance of LAED research, and its relevance to their lives and futures. However, research is needed to identify and evaluate tools aimed at assisting youth with making informed decisions about their healthcare, including the appropriateness of switching to LAED regimens.

## THPED356

### Paving the way for long acting injectable ARV's in Botswana: a rapid assessment

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**Background:** Long-acting Injectable ARV (LAI) treatment provides an exciting opportunity to shift treatment paradigms if appropriately contextualized. This Rapid Assessment was an opportunity to identify existing resources and opportunities for the proposed intervention that will bolster the planning and uptake of LAI. This Rapid Assessment sought to develop foundational knowledge regarding the policy and operational environment around LAI's, target populations and assess facility readiness for, and develop recommendations to support effective uptake for LAIs in Botswana.

**Description:** In this rapid assessment we:

- Mapped the healthcare system, client flows and client populations in the clinical cascade,
- Identified relevant stakeholders to engage in designing, building and executing innovate Care Delivery Models,
- Evaluated facility readiness, and;
- Provided recommendations on target populations.

Twenty-nine Key Informant Interviews and 7 Focus Group Discussions were conducted at both National level and across 8 selected District with experts from Ministry of Health, Civil Society, PLHIV, local government and private institutions. Five Key Informant Interviews were further conducted among key stakeholders from the private sector across 3 districts. Twenty-nine public facilities and 6 private facilities were assessed for both client and facility level characteristics and readiness.

**Lessons learned:** This rapid assessment was intended as an initial step in developing recommendations to support effective uptake of LAIs in Botswana. Key findings were:

- Establish A national coordinating mechanism to maximize the effectiveness of LAI implementation and align with national strategies,
- Involve representatives from all key populations to participate at all levels of planning and implementation,
- Strengthening routinely collected data for HIV by revising data tools to include key populations disaggregation and aligning M&E systems, as well as leveraging innovative technologies such as real time tracking systems,
- Tailoring demand creation and service delivery for the unique considerations of each high-risk group,
- Prioritizing Public Private Partnership models,

f. Leveraging the existing vaccine cold chain infrastructure to align with LAI distribution

**Conclusions/Next steps:** The Rapid Assessment provided a deeper understanding of the current key health system and population contexts, as well as assessment of facilities for readiness to upscale LAI adoption in Botswana, in an effort to achieve epidemic control.

## THPED357

### Sex workers' engagement with mutual aid both on-the-ground and online: exploring access to grassroots support networks among a community-based cohort in Vancouver, Canada (2020-2022)

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**Background:** Community empowerment has been identified as a key driver of sex workers' (SWs) health, including HIV/STI prevention. We know little about SWs' uptake of 'mutual aid', a model for grassroots support based on principles of direct action and solidarity, especially relating to increased digital/online facilitation of both sex work and mutual aid.

We aimed to measure recent (last six months) engagement of "digital" and "on-the-ground" mutual aid, and their associations with occupational conditions and access to structural supports (e.g., health/social services) among SWs in Vancouver, Canada.

**Methods:** Prospective data (2020-2022) were drawn from a community-based cohort of SWs, operated by experiential and community-based staff. We used novel measures to assess digital (e.g., sharing 'bad date' lists online) and on-the-ground (e.g., safety checks, providing harm reduction supplies) mutual aid, and multivariable explanatory models with generalized estimating equations (GEE) to examine correlates of uptake over two years.

**Results:** Analyses included 290 sex workers, of whom 53.8% were Indigenous and 5.6% non-Indigenous people of colour. 10% identified as gender minorities (vs. cis women). At baseline, 16.8% were living with HIV, and 3.8% were STI seropositive (chlamydia/gonorrhea/syphilis). 57% engaged with any mutual aid over 2-years, which was higher for on-the-ground (45.7%) compared to digital (34.7%). In multivariable analysis (figure 1), SWs facing recent physical/sexual violence and those accessing sex work-specific services had higher uptake of mutual aid, particularly on-the-ground; whereas SWs experiencing incarceration and recent unstable housing had lower uptake of digital mutual aid.



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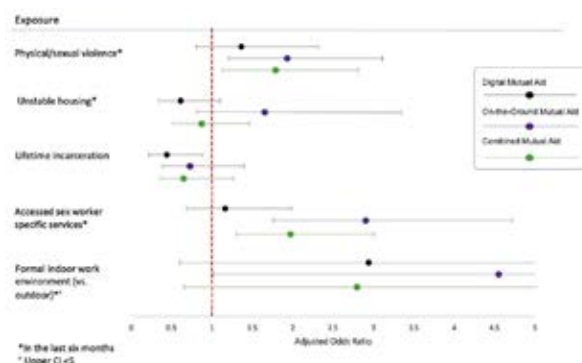


Figure 1. Adjusted odds ratios (AORs) and 95% Confidence Intervals (CIs) of factors correlated with recent mutual aid among women sex workers in Metro Vancouver, Canada, AESHA, March 2020 - March 2022 [n=290].

**Conclusions:** This study presents some of the first data on SWs' uptake of mutual aid. Building on existing community empowerment models, structural interventions to scale-up both "on-the-ground" and "digital" mutual aid models for SWs are recommended as part of HIV/STI and violence prevention strategies for SWs, alongside broader interventions towards full decriminalization of sex work, safe housing, and universal internet access.

## THPED358

The influence of perceived neighborhood disorder on Health-related decisions among people living with HIV: a qualitative study

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**Background:** This qualitative study explores the impact of perceived neighborhood disorder on health-related decisions among people living with HIV. Recognizing the crucial role environmental factors play in health behaviors, the research seeks to bridge a gap in understanding how neighborhood dynamics affect individuals with HIV.

**Methods:** A qualitative research design with interpretive qualitative analysis. The interview guide and analysis were guided by the theoretical frameworks of Broken Windows Theory and Social Cognitive Theory, enabling a comprehensive exploration of the intersection between environmental perceptions and healthcare behaviors. Data were collected through telephonic in-depth interviews with 18 participants attending two HIV clinics in Southern Arizona from June 2022 to February 2023. Interviews were analyzed using the Dedoose software 9.0.17 and narratives were enriched using data triangulation from a validated scale to measure perceived neighborhood disorder.

**Results:** This study indicates that the degree of perceived neighborhood disorder impacts individuals' sense of control, which in turn influences their HIV care-seeking decisions and preferences for care characteristics. Perception of lower degrees of neighborhood disorder correlates with a strong sense of control and a preference for specialized care. As the perception of neighborhood disorder increases, there's a shift toward care settings that balance specialized services with a supportive community environment. A higher perception of neighborhood disorder leads to prioritized care settings that provide a sense of community, support, and discretion, reflecting adaptations to a compromised sense of control.

**Conclusions:** The findings of this research underscore the influence of perceived neighborhood disorder on health-related decisions, emphasizing the role of health-care environments in mitigating this impact. For chronic disease management, such as with HIV, the development of healthcare settings that reinforce patient autonomy and control, alongside community efforts to diminish signs of disorder, is crucial.

## THPED359

Individual, household and community factors affecting ART adherence

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**Background:** Antiretroviral therapy (ART) adherence is crucial for health outcomes of people living with HIV (PLWH). Individuals' adherence is impacted by a complex interplay of individual, community, and household factors, with the household gaining increasing recognition as a significant factor.

This article focuses on the influence of household factors on ART adherence among people living with HIV who have recently initiated ART in Cape Town.

**Methods:** Baseline data for a cluster-randomized control trial were collected from 316 PLWH in 12 districts in Cape Town between 6<sup>th</sup> May 2021 and 22<sup>nd</sup> May 2022. Zero-inflated Poisson models, with cluster-adjusted standard errors, were used to analyse the association between individual, household, and community factors and two measures of ART adherence; self-rated ART adherence, and the number of days that all pills were missed in the last 4 days.

**Results:** At the household-level, psychological and emotional violence increased poor self-rated ART adherence by a factor of 1.40 (p=0.04). Higher levels of household support were linked to lower rates of poor self-rated adherence (exp. coeff. 0.80, p<0.001) and decreased the number of days when pills were missed by a factor of 0.65 (p=0.001). A one-point increase in household asset index scores increased the expected number of days where pills


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were missed by a factor of 1.32 ( $p=0.021$ ). At the individual-level, male gender and reinitiating ART were associated with poorer self-rated ART adherence: participants re-initiating ART were 1.43 times more likely to rate their ART adherence poorly (adj. exp. coeff: 1.43,  $p<0.001$ ) and male participants reported 1.37 ( $p<0.001$ ) times worse ART adherence. Higher education levels reduced missed pill days by a factor of 0.28 ( $p<0.001$ ), and each point increase in HIV knowledge reduced missed pill days by a factor of 0.32 ( $p<0.001$ ). At the community level, higher levels of stigma increased poor self-rated adherence by a factor of 1.20 ( $p=0.02$ ).

**Conclusions:** Household, individual and community factors play an important role in ART adherence. To improve ART adherence, proximal and distal factors must be considered, particularly in addressing gender-based disparities, promoting health literacy, reducing stigma, tackling violence, and enhancing household support.

## THPED360

The endorsement of stereotypes, prejudicial beliefs, and microaggressions toward people living with HIV: an opportunity for growth and discussion

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**Background:** Considerable efforts in HIV prevention and treatment sciences have been focused on understanding the experiences of people who have been stigmatized. What is less understood, however, are the beliefs and perspectives of individuals who hold stigmatizing beliefs towards individuals living with HIV. Further, stigma interventions have primarily focused on coping with mistreatment, leaving out opportunity for directly addressing negative beliefs. Working with individuals who hold negative beliefs must be a key piece of our efforts to eliminate stigma.

**Methods:** Data were collected among individuals who reported identifying as Black/African American, anal sex with a man in the past year, substance use or depression, male sex at birth, and interest in or current use of PrEP. Data were collected among participants residing in the southeastern United States between 2021-2023 ( $N=287$ ). Participants completed survey assessments that included items on prejudice (3-items), stereotypes (3-items), and microaggressions (5-items) towards people living with HIV.

**Results:** Prejudicial beliefs (e.g., People who are living with HIV make me feel nervous) were reported among approximately 10% of the sample for each item. Stereotypes (e.g., Most people living with HIV have acted carelessly) were

reported among approximately 15% of the sample for each item. Endorsement of microaggressions were more frequently reported and with higher variability across items. For example, 48.7% of the sampled agree with "I would have hesitations about having sex with someone who was living with HIV", 67.7% agreed with "Laws that require people who are living with HIV to disclose their HIV status are important to have," and 24.7% agree with "People living with HIV should limit their sex partners to other people living with HIV".

**Conclusions:** It is promising that a large percentage of the sample disagreed with prejudicial and stereotypical beliefs towards individuals living with HIV. However, a small percentage of participants did endorse these beliefs and the percent who reported microaggressions towards individuals living with HIV was considerably higher. Findings may have important implications for U=U messaging, which supports treatment and sustained undetectable viral load as an effective form of HIV prevention. Beliefs appear to persist, however, that may undermine this form of prevention.

## THPED361

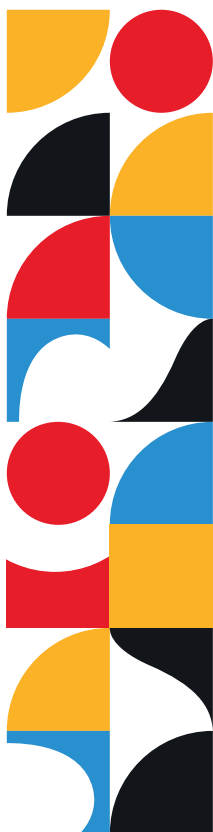
Synergy among multiple stigmas in predicting psychosocial conditions and condomless anal sex among transgender women in India: findings from a longitudinal S3 (stigma, syndemics and sex) cohort study

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**Background:** Limited research in India has assessed the potential synergy among multiple stigmas faced by TGW in contributing to psychosocial conditions and condomless anal sex (CAS). We explored these associations, informed by syndemic theory and intersectionality framework.

**Methods:** We used three-wave data (November 2020 to March 2022: ~ every 6 months) from a cohort study of 500 TGW recruited through community-based organizations implementing HIV prevention interventions in Chennai and Mumbai. CAS was defined as "never" using condoms during anal sex with male non-primary partners during the past 2 months. Using generalized linear modelling approaches (Stata-16), we modeled CAS (wave-3)





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and psychosocial binary outcomes (wave-2 depression [PHQ-9], anxiety [GAD-2], internalized transprejudice, and heavy alcohol use [AUDIT-C]) as a function of interactions between 3 types of stigma scores (wave-1): perceived HIV stigma, sex work stigma and transgender identity stigma.

**Results:** Participants' mean age at baseline was 27.5 (SD=5.6) years and 4.9% self-reported as HIV positive. We estimated a high prevalence of outcome and mediators: CAS (81.2%), internalized transprejudice (46.2%), anxiety (37.9%), problematic alcohol use (15.3%), and depression (14.8%).

**Synergy in the production of CAS:** All three stigmas significantly predicted CAS: HIV stigma (OR=1.67, 95% CI 1.36 to 2.05,  $p<.001$ ), sex work stigma (OR=1.18, 95% CI 1.11 to 1.24,  $p<.001$ ), and internalized transprejudice (3.13, 95% CI 1.15 to 8.52,  $p=.02$ ), with a significant interaction between sex work stigma and HIV stigma (OR=1.02, 95% CI 1.01 to 1.04,  $p=.005$ ).

**Synergy in the production of psychosocial conditions:** Transgender identity stigma (OR=1.11, 95% CI 1.06 to 1.16,  $p<.001$ ) and sex work stigma (OR = 1.03, 95% CI 1.001 to 1.07,  $p=.04$ ) and their interaction term (OR=1.006, 95% CI 1.001 to 1.01,  $p=.03$ ) significantly predicted anxiety. Sex work stigma significantly predicted internalized transprejudice (OR=1.02, 95% CI 1.001 to 1.04,  $p=.03$ ), and there was a significant interaction between sex work stigma and transgender identity stigma in predicting internalized transprejudice (OR=1.003, 95% CI 1.01 to 1.006,  $p=.04$ ).

**Conclusions:** Synergistic interactions between stigmas were identified in their associations with psychosocial conditions (anxiety, internalized transprejudice) and CAS. Multi-level and syndemic theory-based interventions are needed to eliminate intersecting/multiple stigmas and promote mental health and safer sex.

## THPED362

"I got two vaccines. I don't want a third:"  
COVID-19 vaccine skepticism and fatigue among  
Black and Latino MSM at-risk or living with HIV in  
California and New York

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**Background:** Black and Latino sexual minority men (BLSMM) have been disproportionately impacted by viral outbreaks such as COVID-19, Mpox and HIV/AIDS, yet they have continuously been negligibly reflected in vaccine uptake. Previous studies have examined medical mistrust as a reason for low vaccine uptake among marginalized and minoritized populations. However, few studies have explored vaccine skepticism, hesitancy, fatigue, and

acceptance among BLSMM living with or at-risk for HIV. Therefore, the purpose of this study is to explore COVID-19 vaccine skepticism, hesitancy, fatigue, and acceptance among BLSMM at-risk for or living with HIV.

**Methods:** In this qualitative descriptive study, we utilized in-depth, individual, semi-structured interviews as the primary source for data collection. Data were collected between August 2021 and December 2022 from 41 adult participants in California and New York. Interviews were recorded, transcribed verbatim, and analyzed using thematic content analysis.

**Results:** Participants ranged in age from 19-65 years. The majority described their gender as male (93%) with the remaining identifying as 'other.' Black participants comprised majority of the sample (73%), with Latinos accounted for 25%. Participants narratives revealed that COVID-19 vaccine skepticism was fueled by persistent distrust in government, medical and public health institutions.

Vaccine skepticism was also fueled by the politicization of the vaccine development, vaccine dissemination and lack of representation of people of color in leadership positions within the medical field. Vaccine fatigue, seen as exhaustion or inertia of vaccines, was observed among participants—leading many to forgo further protection from vaccine boosters.

Fatigue also appeared as a result of the frequency of various types of vaccinations (i.e., COVID-19, Mpox, flu, HPV, etc.) since the onset of the pandemic.

Additionally, participants suggested that their experience with side-effects and COVID-19 infection experience after vaccination, resulted in exhaustion to receiving any further vaccine COVID-19 boosters or for other infectious diseases.

**Conclusions:** These findings suggest vaccine skepticism, fatigue, and acceptance are complexed issues are influencing vaccine decision-making among BLSMM living with or at-risk for HIV. An understanding of these issues can further inform future implementation strategies for vaccines and new biomedical HIV prevention and treatment modalities such as long-acting injectables among BLSMM in the U.S.



## THPED363

### Streaming ahead or a top-down trickle? Gender-transformative social norms change through our movements: lessons learned from the STREAM Network

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**Background:** Global evidence states that: 25% of all women experience violence (VAW); VAW increases women's HIV acquisition by 1.5%; VAW restricts women's access to SRH services; and that violence against children (VAC) can also lead to adult experience or perpetration of violence. So violence and HIV can have reciprocal life-long links. Global evidence also demonstrates that national-level VAW-reduction efforts only succeed where independent women's rights networks thrive. However HIV policies have largely been siloed, bio-medical, and individualistic, focused on ending women's 'dropouts' and 'adherence failures'; not on supportive society-wide, social-norms change. Therefore we created the STREAM Network, to scale an evidence-based, community-led, holistic, gender-transformative social-norms change-programme, Stepping Stones: to reduce VAW and advance SRHR, through networks/movements.

**Description:** Forty-two East and Southern African long-term male (11) and female (14) Stepping Stones trainers and women living with HIV from there, plus Argentina, Cameroon and India (19), (aged 25-79), gathered in September 2023 to create the international STREAM Network. (STREAM = Stepping Stones Trainers Engaged with Activist Movements). In 2024, team members developed national-specific STREAM Network strategic plans. Each national team seeks to train women and men living with HIV as Stepping Stones facilitators, to run programmes within their own networks and communities: to reduce violence against women and children (VAWC), promote community-wide trauma-aware support for people living with HIV, and uphold their SRHR.

**Lessons learned:** Combining lived experiences of women living with HIV with gendered social-norms-change trainers' skills, across genders, generations, status and borders, creates inspiring new opportunities for shared learning and lasting transformation. Everyone committed to this long-term gendered, rights-based, cross-generational learning process, to support networks of women living with HIV to achieve holistic SRHR for themselves, partners and children. However, national STREAM teams face ongoing challenges through current HIV policy focuses. Top-down, quick-fix, individualistic, bio-medical models inhibit lasting real world movement-led processes: so VAWC and HIV stigma remain rife.

**Conclusions/Next steps:** Long-term, gendered, society-wide, movement-led social norms change is key to effective, ethical and sustainable HIV responses. The STREAM Network will continue to advocate for this, based on the clear global evidence-base of what works to reduce VAW.

## THPED364

### Empowering pastoralist women through climate-smart HIV/AIDS intervention: lessons from the "Afya ya Mama, Afya ya Jami/Afya Timiza" project in Samburu, Kenya

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**Background:** According to (UNAIDS, 2022), HIV prevalence in Samburu County is at 5.6% which is higher than the country's at 4.5%. Study Show that 80% of people affected by climate change are women. The "Afya ya Mama, Afya ya Jami" (Mother's Health, Community Health) project, launched in 2020, aimed to improve access to HIV/AIDS information and services for Samburu women and girls facing heightened vulnerability due to climate change. The project partnered with local women's groups and health facilities to implement a multi-pronged approach.

**Description:** The project spanned three years in five Samburu villages, targeting women and girls aged 15-45. Activities included:

- Mobile outreach clinics: Bringing HIV testing, counselling, and treatment closer to nomadic communities.
- Community health education: Utilizing traditional communication channels and peer educators to raise awareness about HIV/AIDS, sexual health, and climate change resilience.
- Income-generating initiatives: Empowering women economically through drought-resistant farming techniques and micro-business training.
- Gender equality workshops: Promoting women's participation in decision-making regarding healthcare and community resource management.

#### Lessons learned:

- Mobile outreach clinics: Significantly increased HIV testing rates among pastoralist women (30% increase in project villages vs. 15% in control villages) and reduced stigma surrounding HIV/AIDS by 25%.
- Community education: Traditional storytelling and peer support groups facilitated open discussions about sexual health and HIV prevention, leading to increased condom use and family planning practices.
- Income generation: Diversified livelihoods and improved food security reduced women's dependence on husbands, fostering greater agency in healthcare decisions.



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- Gender equality workshops: Enhanced women's leadership in community resource management, leading to improved water security and sanitation infrastructure, which further decreased HIV transmission risk.

**Conclusions/Next steps:** Afya ya Mama, Afya ya Jami/ Afya Timiza" demonstrates that integrating climate change adaptation and gender empowerment into HIV/ AIDS interventions can significantly improve health outcomes for marginalized communities. Replicating this model in other settings, with cultural adaptations, and scaling up with support from government and NGOs can create lasting impact.

Future research should focus on long-term sustainability and measuring the project's impact on mother-to-child HIV transmission and adolescent girls' sexual health.

### THPED365

Association of structural racism and other social determinants of health with HIV late presentation: a county-level analysis in Southern United States

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**Background:** HIV late presentation with advanced disease (LPWA) decreases the life expectancy of people with HIV (PWH) and increases the risk of onward HIV transmission. Racial residential segregation, as one prominent manifestation of structural racism in the United States (US), may impact HIV LPWA via neighborhood differences in access to economic, medical, political, and environmental resources.

Understanding the association of residential segregation and other social determinants of health (SDOH) with HIV LPWA could help improve population-level HIV outcomes above individually based behavior and biomedical factors.

**Methods:** We created a county-level aggregate dataset for analysis by linking South Carolina (SC) statewide HIV diagnosis data and publicly available social contextual data (i.e., the American Community Survey and County-health rankings).

All adult PWH diagnosed from 2012 to 2019 in SC were included in the current study. Individual-level LPWA was defined as having an AIDS diagnosis within three months of initial HIV diagnosis. Linear mixed models were employed to explore potential risk factors of county-level 5-year average percentage of LPWA.

**Results:** Around 30% of new HIV diagnoses were LPWA in SC, and the mean delay time from HIV infection to initial diagnosis for people with LPWA was around 13 years. Counties with more racial residential segregation had a

higher percentage of LPWA (Adjusted beta = 5.079, 95% CI: 0.268-9.889). Regarding other SDOH, the increased percentage of LPWA was associated with fewer Ryan White centers per 100,000 population (Adjusted beta = -0.006, 95% CI: -0.011~-0.001) and higher percentages of population with less than high school education (Adjusted beta = 0.008, 95% CI: 0~0.015).

**Conclusions:** Reducing disparities in LPWA requires multifaceted interventions addressing multiple dimensions of SDOH. Targeted interventions are needed for counties with more Black residential segregation, fewer Ryan White centers, and higher percentages of the population with less than high school education.

### THPED366

Social determinants of health on HIV Pre-Exposure Prophylaxis (PrEP)-to-need ratio in the nationwide United States: a county-level analysis

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**Background:** Despite the promising efficacy of pre-exposure prophylaxis (PrEP) in preventing HIV, its coverage exhibits geographical disparities, and social determinants of health contribute to existing inequalities. This study aims to investigate county-level variability in PrEP utilization across dimensions of structural racism, providing insights for targeted interventions to enhance PrEP uptake in the US.

**Methods:** The 2013-2022 nationwide county-level PrEP-to-Need Ratio (PNR), defined as the ratio of PrEP users to new HIV diagnoses, was sourced from AIDSVu. Sociodemographic and healthcare factors at the county level were derived from publicly available datasets and calculated into indices of social determinants of health (SDoH), including the Black-to-White unemployed ratio, Black-to-White poverty ratio, dissimilarity index, and isolation index. Linear mixed effect regression was employed to identify associations between SDoH and PNR on a nationwide scale and within different geographic regions of the US.

**Results:** The study involved 912 counties with an average PNR of 5.71. Nationally, PNR was significantly associated with higher Black-to-White poverty ratio ( $\beta=0.80$ , 95% CI [0.45, 1.14]), smaller dissimilarity index ( $\beta=-0.31$ , 95% CI [-0.59, -0.03]), and smaller isolation index ( $\beta=-0.75$ , 95% CI [-1.04, -0.46]).

Regionally, Black-to-White poverty ratio was positively associated with PNR in the Northeast ( $\beta=1.63$ , 95% CI [0.44, 2.84]) and South ( $\beta=0.67$ , 95% CI [0.29, 1.05]), indicating the potential impact of targeted programs, such as PrEP-DAP, to assist individuals facing financial barriers in accessing PrEP medications for HIV prevention.


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Dissimilarity index was negatively related to PNR in the Northeast ( $\beta = -2.47$ , 95% CI  $[-3.81, -1.20]$ ) and West ( $\beta = -1.03$ , 95% CI  $[-1.90, -0.17]$ ), while isolation index was solely associated with lower PNR in the South ( $\beta = -0.90$ , 95% CI  $[-1.20, -0.61]$ ), highlighting the impact of racial segregation on potential disparities in access to and utilization of preventive measures against HIV.

**Conclusions:** County-level SDoH play a crucial role in understanding the challenges of scaling up PrEP coverage. The findings underscore the importance of tailored strategies across different regions and provide valuable insights for future interventions to optimize PrEP implementation.

By prioritizing interventions that address SDoH related to racial segregation, public health initiatives can work towards ensuring widespread and equitable distribution of HIV prevention efforts across diverse communities.

## THPED367

Tackling the triple threat in Kenya: evidence on the association between potential protective factors and HIV risk, violence victimisation, and early pregnancy among adolescent girls and young women

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**Background:** High incidence of HIV, gender-based violence and adolescent pregnancy among adolescent girls and young women (AGYW) in Kenya – referred to as the ‘triple threat’ – require urgent intervention. Interventions with positive impacts on multiple components will accelerate improved outcomes and be more cost-effective. Based on INSPIRE strategies, we evaluated the association between three factors – positive gender norms, good parental support and food security – that are hypothesized to improve multiple outcomes and HIV-risk behaviours, violence victimisation, and early pregnancy.

**Methods:** Nationally representative data among AGYW 13–24 ( $n=1344$ ) from the 2018–19 Kenya Violence Against Children Survey (VACS) was used in multivariable logistic regression analyses (weighted and controlling for socio-demographic covariates), with Westfall–Young stepdown adjusted  $p$ -values to account for multiple hypothesis testing. Gender norms measured gender attitudes around sex and attitudes to intimate partner violence (IPV). Parental support captured communication and closeness with parent(s); and parents’ or caregivers’ knowledge of

key aspects of the participant’s life. Food security was defined as no day (past month) that the household went without food.

**Results:** Low proportions of AGYW reported positive gender norms (22%), parental support (28%) and food security (22%). Positive gender norms was associated with lower prevalence of IPV (adjusted odds-ratio (aOR): 0.35,  $p<0.01$ ) and adolescent pregnancy (aOR: 0.61,  $p<0.05$ ). Parental support was associated with lower prevalence of IPV (aOR: 0.52,  $p<0.05$ ), sexual violence (aOR: 0.46,  $p<0.05$ ), and child marriage (aOR: 0.45,  $p<0.05$ ). Food security was associated with lower prevalence of adolescent pregnancy (aOR: 0.54,  $p<0.05$ ) and child marriage (aOR: 0.40,  $p<0.01$ ). Combined, positive gender norms, parental support and food security (i.e., all three factors compared to none) were associated with a 82% lower prevalence of IPV, 72% lower prevalence of sexual violence, 67% lower prevalence of adolescent pregnancy, and 86% lower prevalence of child marriage.

**Conclusions:** The findings indicate that interventions that improve gender norms, good parenting and food security may help to reduce violence victimisation, adolescent pregnancy, and other HIV-risk factors. Moreover, improving each protective factor may have positive impacts on multiple outcomes, and combined effects are greater than individual effects, suggesting the possibility for high impact, cost-effective, multicomponent interventions.

## THPED368

Community versus facility-based services to improve the screening of active HCV in Cambodia: a cluster randomized controlled trial

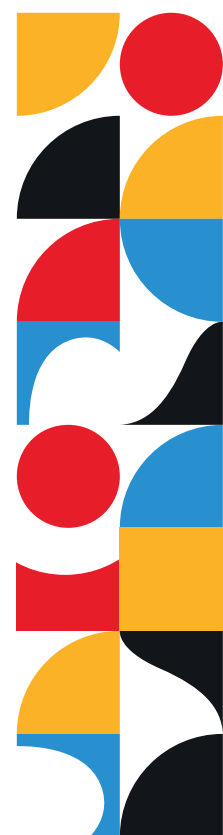
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**Background:** Despite testing interventions among high-risk groups for active Hepatitis C virus (HCV) cases seems to be effective to diagnose cases and increase treatment uptake, new strategies using community-based approaches are needed to reach people far away from healthcare facilities.

This study aims to compare the effectiveness of community-based to facility-based intervention to improve HCV testing uptake among Cambodians aged more than 40 years.

**Methods:** This is a two-arm cluster-randomized controlled trial conducted in 40 villages from 2 provinces which were divided into 8 clusters. Facility-based intervention, in which HCV testing was performed in primary





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health centers after information provided by Community Health Workers (CHWs), was compared to community-based intervention, where HCV rapid test (RDT) using finger stick capillary whole blood was directly performed by CHWs at the participants' home after consent. The primary outcome, HCV RDT testing uptake, was compared between the two groups using multivariate logistic regression.

**Results:** A total of 7692 participants, 3861 facility-based and 3831 community-based, were enrolled between April and July 2022. The median age was 55 years (IQR: 47-65); one-third (30.32%) were between 50-59 years. The majority were female (57.72%), married (76.74%), did not generate income (48.56%), and were farmers (51.28%). Of those, 249 (3.24%) ever tested for HCV, and 103 (1.34%) had  $\geq 1$  household member diagnosed and treated for HCV. After adjusting for covariates, community-based group had higher odd of HCV RDT testing uptake compared to facility-based group (OR=1.61, 95%CI:1.28-2.04). Factors associated with HCV RDT testing uptake include higher income participants compared to those earned  $\leq 80,000$  Riels/month ( $>300,000$ -1,500,000: OR=1.54, 95%CI:1.05-2.26;  $>1,500,000$ -1,800,000: OR=2.40, 95%CI:1.30-4.43;  $>1,800,000$ : OR=0.27, 95%CI:0.13-0.59). Ever tested for HCV participants had higher uptake compared to those who never tested (OR=16.14, 95%CI:8.69-29.94); sellers had lower uptake compared to government officers (OR:0.59, 95%CI:0.37-0.92); and subjects perceived worse health status at the interview time had lower uptake compared to those perceived very good health (Good: OR:0.08, 95%CI:0.03-0.19; Moderate: OR:0.22, 95%CI:0.08-0.56; Bad: OR:0.004, 95%CI:0.0004-0.04).

**Conclusions:** Community-based intervention could be effective to increase HCV testing uptake in high-risk populations. Cost-effectiveness analysis will be conducted for a better understanding after weighing the costs.

## THPED369

### Community-led response in humanitarian settings. Addressing the needs of PLHIV and key populations in Ukraine

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**Background:** HIV-related stigma and criminalization of same sex behaviors, drug use, sex work, and HIV transmission create barriers to life-saving services in humanitarian settings. There are gaps in knowledge among humanitarian sector stakeholders of the needs of PLHIV, sex workers, LGBTI communities and people who use drugs, as well as political barriers to making these needs a priority in the context of increased competition for diminishing resources.

The full-scale Russian war against Ukraine highlighted the urgency of technical support for community-led organizations (CLOs) in Ukraine and border countries to adapt to humanitarian settings and lead in humanitarian responses for their communities.

**Description:** Since the first months of the full-scale war, GNP+, ECOM, EHRA, and SWAN, with UNAIDS support, have been coordinating the efforts of local CLOs to strengthen their capacities of documenting and addressing barriers that PLHIV and KPs face in access to health and humanitarian services; building partnership with humanitarian sectors; addressing humanitarian needs of PLHIV and KPs; and resource mobilization.

**Lessons learned:** This collaboration resulted in a wide range of positive effects on sustainability of CLOs in the war times, new partnerships, CLOs' documentation and research capacities, and sound advocacy with country and EU-level partners. CLOs, previously dependent on international donors, started reaching out to private donors, crypto-philanthropy and crowdfunding platforms, with tangible results. CLOs started shelters that, beyond accommodation and food, provided opportunities for re-adaptation for KP war refugees. Staff of shelters and frontline organizations built skills of systematically addressing needs of GBV survivors in the war context. With limited additional funding, CLM tools were adapted to track the needs of KP/PLHIV refugees and help restore access to HIV services in foreign health systems. Digital


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security skills and access to technology can be rapidly enhanced for KPs. Horizontal connections between CLOs are a precondition for these effects.

**Conclusions/Next steps:** To address the needs of PLHIV and key populations in humanitarian settings, communities themselves need to get access to decision-making platforms and obtain funding to adapt HIV service delivery, CLM, and communication and advocacy strategies to rapidly changing context in conflict and post-conflict zones and neighboring countries and regions.

## THPED370

Lifetime trauma and severity of depressive symptoms among adults Ugandans living with HIV and community controls

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**Background:** The types of traumas experienced by adults living with HIV (ALWH) and their contributions to mental and physical health outcomes are under-appreciated in African adults. Hence, we investigate the frequency and types of traumas, quantify the relationship of trauma to depression, and determine the extent to which this relationship varies by HIV status.

**Methods:** Adults (n=1054) – including 696 ALWH and 348 controls, were enrolled as part of three cohort studies implemented between March 2017 and January 2024 in Kampala Uganda. The sum of lifetime traumatic experiences and the respective types of trauma experienced was quantified per the Stressful Life Events Screening Questionnaire. Depressive symptoms were measured per the Hopkins Symptoms Check List.

Multivariable linear regression models quantified risk differences (RD) and corresponding 95% confidence intervals (95% CI) for the cross-sectional relationship of traumatic experiences to depression with adjustment for cohort, age, sex, years of education and HIV status.

**Results:** An average of 2.2 (SD=2.3) traumatic events were reported with ALWH (mean=2.7, SD=2.4) endorsing more trauma than HIV-unaffected controls (mean=1.9, SD=2.1). Traumatic events endorsed at ≥20% in the sample included experiences of: life-threatening illness (45%), physical abuse (as adult/child, 31.4%), unnatural death of a loved one (29%), life-threatening accident (22%) and miscarriage of a wanted pregnancy (20.5%). Child or adult sexual abuse was endorsed at 10%. Per unit increment in lifetime trauma, depressive symptoms increased by 1.7 (95%CI: 1.3, 2.2) units rising to 6.8 units higher (95%CI: 4.6, 9.0) for persons with ≥ four vs. zero traumatic events.

Most forms of trauma were independently associated with higher depressive symptoms in multivariable analyses without evidence of variation in this relationship by HIV status. Emotional abuse (RD = 4.2, 95%CI: 1.5, 6.2), physical abuse (RD = 4.7, 95%CI: 1.4, 7.6), life-threatening illnesses including HIV (RD=4.2, 95%CI: 3.0, 5.4) and history of sexual assault (RD=3.3, 95%CI: 1.0, 5.7) were types of traumas most strongly associated with depression in this sample.

**Conclusions:** Trauma is a modifiable determinant of depression in Ugandan adults regardless of HIV status. Routine screening of traumatic events by health providers will support trauma-informed holistic management of high-risk individuals including connection to mental health services, when indicated.

## THPED371

Tackling GBV and HIV as twin epidemics: understanding vulnerabilities and examining promising models to improve quality of care for women and high-risk populations

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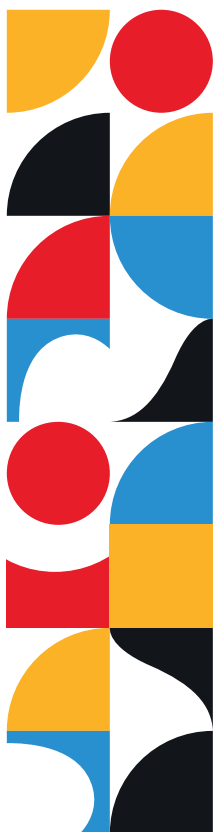
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**Background:** The Tushinde Ujeuri project in Eastern DRC strengthened Community-Based Prevention and Response to Sexual and Gender-Based violence (SGBV), including the Quality of and Access to Holistic Care for Survivors among LGBTIQ+ Individuals.

**Description:** Tushinde (November 2017- October 2023) was implemented through local partners in five Health Zones in the North and South Kivu Provinces of the DRC. The integrated prevention and response activities focused on psychosocial, medical, legal, advocacy, and socio-economic activities.

**Lessons learned:** Tushinde served a total of 26,438 Gender-Based Violence (GBV) survivors with medical and psychosocial care, exceeding the life-of-project goal of 22,516. Approximately 82% of survivors served were female, and 85% were 18 years or older. In the 5 targeted health zones, 33.14% of incidents reported were SGBV-related cases (rape, sexual assault, and forced marriage), 66.86% were other GBV-related cases including physical assault, denial of resource or opportunity, and 35.2% were cases of emotional abuse.

Mental healthcare was the most accessed service, reaching 8,157 survivors. Community-based lay counselors led confidential one-on-one counseling, and therapeutic group exercises to rebuild the confidence and trust of survivors. 18,049 survivors were screened for clinical eligibility for Cognitive Processing Therapy (CPT- intensive 12-week program). Of this 4,724 were found eligible and 2,197 completed the CPT cycle for survivors suffering from PTSD and for whom basic psychosocial care was insufficient. Through Tushinde 23,959 (target 16,086) survivors recov-







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ered with psychosocial support, 7,473 survivors accessed lawyers led legal assistance supported by teams of locally recruited and trained paralegals stationed at each of the five Tushinde Social Centers, 904 Village savings and loans associations were created, enrolling 732 survivors, joined by an additional 24,468 community members to initiate small and medium-sized businesses for financial autonomy; an extremely popular program intervention.

**Conclusions/Next steps:** Studies suggest that women and girls who experience GBV are 1.5 times more likely to acquire HIV. Access to comprehensive and integrated GBV services is integral to mitigating the risks HIV poses, specifically for women and the most vulnerable. Tackling GBV and HIV as twin epidemics should be an integral programming model to mitigate the cause and consequence of HIV, and to strengthen prevention, treatment, adherence, and retention.

## THPED372

Addressing disparities: a systematic review of the TB/HIV co-infection care for migrants, refugees, and Internally Displaced Persons (IDPs) in Africa

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**Background:** In 2022, the World Health Organization (WHO) reported that TB remains a leading cause of death among people living with HIV, and over 25% of TB deaths occurred in Africa. The intersection of TB and HIV in the context of migrants, refugees, and internally displaced persons (IDPs) is a critical global health concern, compounded by unique challenges such as displacement, resource limitations, and social marginalisation. The study aimed to investigate the access to HIV and TB co-infection care among migrants, refugees, and IDPs in Africa.

**Methods:** We systematically searched Scopus, PubMed, and Web of Science databases for studies on TB/HIV co-infection care among migrants, refugees, and IDPs in Africa. Inclusion criteria covered English peer-reviewed articles and grey literature from 2013 to 2023.

Keywords encompassed "TB/HIV co-infection," "migrants," "refugees," "internally displaced persons," "healthcare access," "barriers," "facilitators," and "Africa."

**Results:** Eight (8) studies with a total sample size of 2260 were included in the review. The review revealed the heightened severity of TB within migrant, refugee, and displaced populations, attributing it to suboptimal living conditions, compromised health and nutritional statuses, overcrowding, and inadequate access to TB care and prevention. Notably, there is a dearth of aggregated data on HIV/TB testing rates, particularly for refugees and migrants. Challenges encompass discrimination, disruptions in care during travel or transition to host countries,

fear of deportation, social repercussions of HIV status disclosure, stigma, and language barriers. Co-infection risk factors, including drug and alcohol misuse, casual treatment, and the potential creation of drug-resistant TB reservoirs, further exacerbate the issue. Economic evaluations for refugee- and migrant-specific HIV interventions in these co-infections are lacking, hindering the formulation of targeted, cost-effective strategies.

**Conclusions:** The study illuminates the multifaceted challenges faced by migrants, refugees, and IDPs concerning TB/HIV co-infection care in Africa. Addressing these disparities necessitates a comprehensive approach, encompassing holistic care management, policy improvements, cross-border collaboration, and targeted interventions. The findings underscore the urgency of establishing robust healthcare systems that account for the unique needs of mobile and migrant populations to effectively combat the TB/HIV co-infection burden in Africa.

## Social science, community and HIV prevention

### THPED373

Impact of Incidence Command System on viral load suppression among poorly suppressed clients. Study from ACE-2 Project in Nigeria

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**Background:** Incidence Command System (ICS) is a typical set up where different case management teams (CMTs) at facilities led by ART Coordinator who is the incidence commander. Team comprises of a Data Entry Clerk, Treatment Supporter, Phlebotomist, Counsellor Tester and ART Nurse. The ICS was introduced to lower persistent rise in number of unsuppressed clients due to poor adherence despite enhanced adherence counselling (EAC), use of DTG and multi-month scripting to clients. Each CMT was assigned ≤1000 clients of suppressed and unsuppressed to increase engagement based on client's agreement (physical/virtual) within weeks in addition to monthly EAC.

**Methods:** Retrospective clinical chart reviews of 54,201 total samples collected by October 2022 was compared against 75,166 total Samples collected by September 2023 to measure the impact of ICS on Viral Load suppression.

**Results:** ICS implementation showed excellent improvement on viral load suppression among ACE-2 clients from 92% to 97%. Most significant in children from 31% to 94%. Urban based facilities produce better suppression than those in rural places which could be because tertiary centers were urban based. PHCs improved after ICS from 81% to 95%. The gender did not show difference between the male or female but spiked to 97% after ICS. States with significant improvement after ICS were Jigawa and Kano state from 91% in both to 97% and 96% respectively.

Variable	Before				After			
	Samples Collected	Received result	Virally suppressed	% Virally suppressed	Samples Collected	Received result	Virally suppressed	% Virally suppressed
ACE-2 (Kano, Bauchi, Jigawa)	54,201	43,031	39,764	92(%)	75,166	50,369	48,674	97(%)
Kano State	30,746	23,791	21,639	91 (%)	41,428	25,562	24,629	96 (%)
Bauchi State	15,682	12,798	12,279	96 (%)	21,593	17,501	16,981	97 (%)
Jigawa State	7,773	6,442	5,846	91 (%)	12,145	7,306	7,064	97 (%)
Primary Facility	528	399	363	81 (%)	1,033	474	452	95 (%)
Secondary Facility	38,340	29,551	27,065	92 (%)	53,219	34,422	33,279	97 (%)
Tertiary Facility	15,333	13,081	12,336	95 (%)	20,914	15,473	14,943	97 (%)

Table 1.

Variable	Before				After			
	Samples Collected	Received result	Virally suppressed	% Virally suppressed	Samples Collected	Received result	Virally suppressed	% Virally suppressed
Age								
Children (<19 years)	2,380	1,935	606	31 (%)	3,738	2,484	2,342	94 (%)
Adult (≥19 years)	51,821	41,096	39,158	93 (%)	71,428	47,885	46,332	97 (%)
Male	18,229	14,365	13,279	92 (%)	29,890	17,077	16,509	97 (%)
Female	35,972	28,666	26,485	92 (%)	45,276	33,292	32,165	97 (%)
Site								
Rural	17,466	13,316	12,026	90 (%)	28,682	15,008	14,417	96 (%)
Urban	36,735	29,715	27,738	93 (%)	46,484	35,361	34,257	97 (%)

Table 2.

**Conclusions:** ICS brings clients closer to service providers, leading to improved care at individual level according to client's need. This can be used to solve poor Viral Load suppression among pediatric age groups.

## THPED374

### High satisfaction with point-of-care Chlamydia and Gonorrhoea testing in community-led clinics among clients and key population lay providers in Thailand

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**Background:** *Chlamydia trachomatis* (CT) and *Neisseria gonorrhoeae* (NG) are prevalent sexually transmitted infections (STIs) in Thailand, particularly among men who have sex with men and transgender women. To increase STI testing access, we implemented point-of-care (POC) CT/NG testing in community-led clinics as part of a study. Counseling and testing were delivered by trained key population lay providers.

We assessed satisfaction with POC CT/NG testing among clients and laboratory staff.

**Methods:** The study was conducted between August 2019-September 2021 across four community-led clinics in Thailand. Individuals at high risk of HIV and STIs were invited to complete a survey assessing Cepheid Xpert CT/NG testing satisfaction at baseline and subsequently every three months.

Laboratory staff were asked to complete surveys at month (M) 1, and subsequently every 6 months. Responses of "satisfied" or "very satisfied" were grouped as "satisfied," and "agreed" or "strongly agreed" as "agreed". Data from follow-up visits were compared with baseline using a Two-sample test of proportions.

**Results:** Client participants included 1,696 men who have sex with men and 194 transgender women, median age was 29 (interquartile range 23 - 34) years. The survey was completed 5,975 times (M0: n=1,890, M3: n=1,297, M6: n=1,128, M9: n=956, M12: n=704). From baseline to M12 participant satisfaction with waiting times for results increased (95.64% to 98.01%, p<0.01), preference for testing at community-led clinics over hospitals increased (96.08% to 99.57%, p<0.001), and willingness to pay for testing at these clinics increased (79.79% to 84.66%, p<0.05). Among six lay providers surveyed, 83.34% were satisfied with training at M1, and all were satisfied with testing procedures and time efficiency. At M1 50% agreed that POC NG/CT testing was suitable for community-led clinics. This increased to 100% at M12.

**Conclusions:** Clients and laboratory staff were exceedingly satisfied with POC CT/NG testing delivered in community-led clinics by key population lay providers. Cli-



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ents overwhelmingly preferred community-led clinics as testing locations, and a majority were willing to pay for POC CT/NG testing in this setting. Scale-up of this service delivery approach across Thailand could increase access to STI testing and improve health outcomes among key populations.

### THPED375

Peer-led support for improving oral pre-exposure prophylaxis uptake and adherence: perceptions and preferences of adolescent girls and young women in Kampala, Uganda

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**Background:** Uptake and adherence to oral pre-exposure prophylaxis (PrEP) among adolescent girls and young women (AGYW) in Eastern and Southern Africa remains low. While peer support interventions have improved HIV treatment outcomes among young people living with HIV, their potential for improving oral PrEP use among AGYW at high risk for HIV is unknown.

**Methods:** Between January-July 2023, a qualitative study was conducted among 14-24year old AGYW in Kampala, Uganda to explore their perceptions of peer support for oral PrEP and preferences regarding peer leaders. The study was nested within a randomised controlled trial (RCT) aiming to assess the effect of peer support on oral PrEP uptake and adherence. RCT participants were recruited from urban slums and frequently reported paid sex. They were enrolled at the AIDS Information Centre-Kampala and randomly assigned to health worker counselling (control) vs health worker counselling plus peer support (intervention).

Before intervention implementation, in-depth interviews were conducted with 36 AGYW purposively selected by: study group (intervention, control), age group (14-19, 20-24) and PrEP use (yes, no). Data were analysed thematically using Nvivo Version 14.0.

**Results:** AGYW generally expressed positive views toward peer support, primarily stating that learning from peers with whom they share experiences would increase their confidence in PrEP. Frequent concerns were about confidentiality, misinformation, and lack of cooperation. Ma-

jority of AGYW preferred peer leaders who were living with HIV. Some mentioned that the experience of living with HIV gave peer leaders an edge to educate about HIV prevention while others pointed out that cautionary tales from peer leaders living with HIV would encourage PrEP use among HIV negative AGYW. AGYW showed equal preference for both male and female peer leaders.

Female peer leaders were thought to understand female challenges better, thus encouraging open discussions while males were perceived to have leadership qualities and would equip AGYW with skills to handle male clients.

**Conclusions:** AGYW are supportive of peer support for improving oral PrEP use. Peer support through male peer leaders and peer leaders living with HIV, working within existing HIV prevention and treatment structures may enhance oral PrEP use thereby improving HIV prevention among AGYW.

### THPED376

Developing resilient and sustainable national HIV Testing Services (HTS) programmes through a Community Advisory Board (CAB): a joint cross-country regional approach

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**Background:** Eastern and Southern Africa remain heavily impacted by HIV. Key gaps and opportunities within the HTS space illustrate the need for greater community engagement to inform policy and implementation. Disparities in testing coverage indicate that services are not effectively meeting the needs of at-risk populations. To support effective, person-centred testing and linkage services, there must be avenues for direct and meaningful community engagement.

Community Advisory Boards (CABs) in the treatment space have successfully bridged disconnects between communities and national programs, informing global and national HIV policies and implementation. There is an opportunity to apply this approach to HTS.

**Description:** With support from the Bill and Melinda Gates Foundation, CHAI established a cross-country HTS CAB with members from Malawi, Zambia, and Zimbabwe. Recruitment in Uganda was delayed by the recently enacted anti-LGBTQ legislation but is planned for January 2024. Members were selected from diverse community networks.

Selection included knowledge and personal experience with HTS and most critically, desire and ability to elevate diverse community perspectives to drive HTS policy. CHAI formally launched the CAB in July 2023, supporting CAB members to independently set priorities for CAB activities and empowering them with a strong technical foundation in HIV.

**Lessons learned:** Though the HTS CAB may be nascent, its establishment has provided critical insights into HTS programming gaps and informed new HTS policy. Active participation in HTS and other related technical working groups keeps the members abreast of new developments in HTS and provides them with an advocacy platform. The joint regional approach enables CABs to leverage each other's expertise, share knowledge and replicate best practices. This creates a feedback loop of continuous learning and capacity building in turn strengthening the relevance and contribution of the CABs to national HTS programmes.

**Conclusions/Next steps:** The HTS CAB provides a promising opportunity for Ministries of Health to strengthen the active participation of community members in HIV programming and encourage broader community consultation, participation and engagement in HTS policy development, programme design, and implementation and demand generation. Further monitoring and ongoing support to this work will be critical to better define best practices and understand the impact on HTS programs.

## THPED377

### HEalth Record Optimization for Identifying Candidates for HIV Pre-Exposure Prophylaxis (HEROIC-PrEP): a stakeholder-informed approach to model development and implementation

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**Background:** Electronic health record (EHR)-based models to identify individuals who may benefit from PrEP outperform traditional risk scores and may alleviate challenges associated with PrEP initiation at both the client- and provider-levels. However, pre-implementation work is critical to ensure algorithms are optimized for the local context and that their implementation is acceptable and useful to clients and providers.

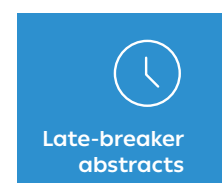
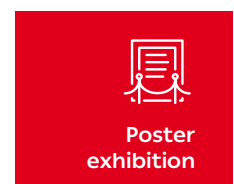
**Methods:** To inform implementation of EHR-based models within large health systems in New Orleans and Baton Rouge, Louisiana, we held focus group discussions (FGDs) with local community advocates, and conducted in-depth interviews (IDIs) with emergency department, primary care, and infectious diseases/HIV-trained clinicians. We asked about their perspectives on HIV epidemiology and PrEP uptake, suggestions on variables to improve

model performance, perceptions of the model, and insights on optimizing model implementation. FGDs and IDIs were audio-recorded and analyzed using thematic analysis.

**Results:** Between January and March 2023, FGDs were conducted with 18 community advocates, and IDIs with 12 clinicians (Table).

	Landscape of HIV and PrEP in the Community	Variables to Input into EHR Model	Perceptions of the EHR Model	Strategies to Optimize Model Implementation
Community Advocates	"I think it's a lot of miseducation as well around PrEP. And I say this because I have experience testing in the local jail and I always ask the question, 'Have you heard of PrEP?' Or I'll start to explain PrEP and they'll be like, 'Oh yeah, yeah, I saw that. That's the gay commercial. I don't need that.' Most people think it's geared toward a certain group of people and it's not. And a lot of them would say, 'Well, what do I need to take that for, I don't have HIV.' You know, it is just a miseducation, I think. And like she said it was rolled out totally geared toward one group of people when it should have been opened up to this is for everybody." - Baton Rouge Focus Group	"I was just agreeing with number of pregnancies because a lot of women are not using birth control and they're not only not using birth control, nine times out of ten of course they're not using condoms because they're pregnant. So, I would say pregnancies as well." - New Orleans Focus Group  "I don't know how you would put it in, but women engaged in unprotected sex because of trauma. So trauma includes rape, sexual assault, sex trafficking, all of that." - Baton Rouge Focus Group	"I just think a risk calculator can be misconstrued. It can be taken the wrong way... Because now in my mind, and I don't know what it's going to look like, and it could actually just be part of a conversation or just the input in the computer. But right now I see back to the future and I see inputting all this data in, you're coming up with us with this is what's going on with you now. And I think depending on who's giving that information, everybody's not going to receive that well. Because if you're a regular nurse office assistant behind the window and, I don't relate to you, and you just like, 'Okay, this is what's going on with you because this is what the computer shows.' I'm going to be highly offended because you don't know what's going on with me." - New Orleans Focus Group	"And that's what I'm saying about how doctors have to have bedside manners. And also, when individuals have HIV or they may even be at risk that they don't have that compassion. Because automatically it's the assumption that they dirty, they deserve it.... Oh yeah, they shouldn't have been using drugs or whatever'... There's no empathy behind medical practice. And I think that there needs to be some type of empathy. And so that means we have to also educate them on how to be compassionate." - New Orleans Focus Group  "And I think that the biggest responsibility lies in the doctor's ability to interview their patient in a way that motivates them to talk. And that is the biggest thing. And I think the way to change that narrative is to educate and train the doctors and physicians in how to motivationally interview their patients and get them to open up." - Baton Rouge Focus Group
Clinicians	"I think in certain circles, I think probably in white gay men you're seeing maybe a more palpable effect on transmission. But I think uptake remains so low outside of that group that I think there's hardly a deflection in the trajectory of the epidemic." - HIV/ Infectious Disease Provider, New Orleans	"I think any of the opiates just because even if it's not a route that can be associated with IV transmission, it may be defining a higher risk behavior in the population. And so I, we've taken care of patients who were having sex for money to have money to buy their pill drugs. And so is there an associated risk for it? So I would probably include just either the general testing for all toxicology tests or specifically maybe include some of the other opiates." - Primary Care Provider, Baton Rouge	"People are worried about their friends and family knowing their business. So a stranger knowing their business is going to be explosive." - HIV/ Infectious Disease Provider, New Orleans  "Oh, I think that's fabulous actually, because the people calling would clearly be trained and probably even more so than some of the providers in the clinic who had acute setting to answer all of those questions particularly and access the resources. So, I mean, I think that would be the ideal situation." - Primary Care Provider, New Orleans	"People, they're already sitting there waiting [in the ER]. So, if some additional person wants to come in and talk to them about this, that or whatever, social work, whatever the issue is, people are generally really receptive to it... because you have a captive audience." - ER Provider, New Orleans  "I think it would be enhanced if there was some education to the providers as far as how effective the medications actually are, because... I didn't realize how truly effective they were. So I think that educating the providers and then putting them in the chart, so it's easier to do, I think would help." - Emergency Medicine Provider, New Orleans

Table. Illustrative Quotes from Community Advocates and Clinicians.







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Community advocates and clinicians reported that HIV most significantly impacts Black communities. Community advocates did not believe that PrEP had reduced local HIV incidence, primarily due to lack of inclusive marketing. Clinicians noted that improving PrEP uptake would require better access to education, PrEP providers, and affordable medication.

Community advocates suggested adding sexual assault history and number of pregnancies to the model; clinicians suggested adding hepatitis B, more STI treatment modalities, incarceration, opiate use, sexual assault history, unintended pregnancies, and number of pregnancies.

Community advocates believed that local populations would have a range of reactions to the model, including skepticism, and suggested that conveying model output in a respectful and compassionate manner would be critical to successful implementation.

Providers voiced concerns about creating a greater workload and favored task-shifting patient discussions to trusted social workers or community health workers. Both community advocates and clinicians believed that provider education would be needed.

**Conclusions:** Although evidence supports the use of EHR-based models to identify PrEP candidates, local stakeholders can provide unique insight into improving model performance and implementation.

## THPED378

### Empowering communities through the 'Ticket to Work' program: a revolving fund approach to HIV prevention and vocational training

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**Background:** The program's primary purpose is twofold: to provide accessible vocational training and to foster HIV prevention within key populations. By utilizing a revolving fund mechanism, it ensures that individuals, particularly those affected by HIV/AIDS, have the opportunity to acquire valuable vocational skills, enhancing their employability and self-sufficiency. Simultaneously, it addresses the social determinants of HIV vulnerability, promotes awareness, and reduces stigma.

**Description:** The "Ticket to Work" program, spanning 2023 to 2028, operates in diverse urban, rural, and peri-urban settings across regions and countries. It employs a collaborative structure involving governmental health agencies, NGOs, and local CBOs, with regional task forces established. Key populations, including MSM, sex workers,

transgender individuals, and people who inject drugs, are actively engaged. Activities encompass community mobilization, education, behavioral interventions, HIV testing, advocacy, community-led initiatives, and research. The program's holistic approach combines vocational training and HIV prevention, empowering communities, and reducing stigma while enhancing employability and income generation.

**Lessons learned:** Key findings from the "Ticket to Work" program include increased vocational skills and employability among participants, higher rates of HIV testing, and reduced HIV-related stigma within communities. Lessons learned emphasize the power of community ownership, tailored interventions, and the sustainability of revolving funds for vocational training. Best practices include holistic approaches, community-led initiatives, and data-driven adaptations.

These outcomes underscore the effectiveness of community-driven, integrated approaches to vocational training and HIV prevention, with potential for broader application in addressing HIV/AIDS challenges.

**Conclusions/Next steps:** The findings and outcomes of the "Ticket to Work" program hold immense significance for HIV prevention, treatment, care, and support. They demonstrate the potential for holistic, community-driven approaches to create lasting change in the context of HIV/AIDS. Increased vocational skills empower individuals to break the cycle of vulnerability, while reduced stigma enhances access to healthcare. The program's success highlights the importance of community engagement and tailored interventions.

Future implications include the need for scaling up such initiatives to reach more communities and regions, fostering policy changes that support integrated approaches, and sustaining efforts to maximize impact on affected communities and HIV prevention strategies.

## THPED379

### Comparative benefits of adopting open-designed Community's methodologies in HIV community led monitoring programs: a case study of Rivers State, Nigeria

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**Background:** This study was conducted in Rivers State, Nigeria, on the benefits of open-designed methodologies in HIV community-led monitoring (CLM) programs. The study scope focuses on enhancing effectiveness, inclusivity, and viability to CLM processes, with the primary objective of reviewing past CLM methodologies (tools, data

collection processes, and triangulation methods), piloting and test-running new open-designed techniques of CLM such as, Setting the Levels (STL) process and community-designed Kobo Collect for future adoption.

**Description:** The open-designed method of CLM is a collaborative and inclusive approach involving diverse communities in designing HIV CLM processes to harness collective intelligence, explore diverse perspectives and increase user satisfaction and acceptance.

The study covered 13 PEPFAR-supported key and general facilities from July 2022 to October 2023. The studied population selected through random sampling comprised 869 key populations, 1216 general populations, and 30 service providers.

For comparison, the 2021 PEPFAR CLM program in the State served as a case study to critique the existing CLM methodology. To achieve this, the communities collaboratively adapted STL tool to local context and accountability forums held to explore community and service providers' perspectives on healthcare.

**Lessons learned:** The study exposed the limitations of the previous CLM methodology to be closed-ended and highlighted the benefits of an open-designed approach. This method allowed for a more comprehensive understanding of local challenges, fostering community engagement by addressing long-ignored issues.

Respondents expressed increased trust in sharing sensitive information, and the adaptive nature of the approach identified timely intervention trends. Triangulating data with service providers improved the clarity of CLM findings.

The key learning from these findings is that incorporating this mechanism in HIV CLM is recommended for enhancing information depth, quality, and promoting community ownership.

**Conclusions/Next steps:** In conclusion, this study highlighted the transformative potential of adopting an open, community-centered approach to HIV CLM as study findings revealed the limitations of closed-ended CLM methods and showcased the benefits of community owned open-designed approaches which calls for a holistic reevaluation of existing strategies.

Therefore, learning from this method and implementing it in CLM will significantly contribute to the effectiveness and sustainability of HIV prevention, treatment, care, and support efforts.

## THPED380

### HPTN 094: engaging key community stakeholders in preparation for mobile clinics providing integrated health services (medication for opioid use disorder and HIV treatment/prevention services) for people who inject drugs (PWID)

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**Background:** The drug overdose crisis remains a public health problem in the U.S. with 112,127 drug overdose deaths estimated during the 12-month period ending in August 2023 a nearly 50% increase in the last 5 years. Factors including access to care, poverty, mental health disorders, and poly-substance use increase HIV transmission/acquisition risk and other health issues in PWID. HPTN 094 aims to address the intertwined public health crises of opioid use disorder (OUD) and HIV among PWID by determining the efficacy of utilizing mobile health units to provide integrated health services [medication for OUD (MOUD) and HIV treatment/prevention medication].

**Description:** Staff training and community engagement activities began 6 months prior to study launch. Each clinical research site (CRS) (Houston, Los Angeles, New York City, Philadelphia, and Washington, D.C.) held local stakeholder engagement consultations to facilitate information exchange and encourage dialogue with advocates, healthcare providers, and PWID. Consultation attendees (n=126) were provided overviews of the PWID opioid and HIV epidemic in the U.S. and locally, and descriptions of HPTN 094 research methodology. Participants provided guidance/feedback on study implementation plans, educational materials, and recruitment materials. Multiple cultural responsiveness trainings for CRS staff (n=64) focused on experiential learning and reflexive thinking to mitigate cultural insensitivity and unintended micro-aggressions.

**Lessons learned:** Consultation feedback resulted in recruitment material alterations to address diversity concerns and to ensure PWID de-stigmatization. Updated recruitment material images reflected diversity indicative of participating communities to encourage inclusivity. Modifications to recruitment, retention and adherence plans included multi-pronged low-cost approaches



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utilizing community-based organizations, PWID social networks, web-based outreach, and traditional media. Stakeholder engagement during pre-implementation activities resulted CRS community advisory board (CAB) creation. CABs served as a consistent resource throughout study implementation.

Adjustments assisted in achieving a 2:1 screening to enrollment ratio. Cultural competency training enhanced staffs' capacity to engage PWID and address health/racial disparities resulting in effective dialogue between participants and CRS staff.

**Conclusions/Next steps:** Better than expected screening to enrollment ratios were attributable in part to proactive interactions with local stakeholders, including PWID. Involving affected communities in problem-solving without judgement and stigma is a critical strategy for partnership building to advance HIV prevention among highly impacted populations.

## THPED381

**Harnessing the power of peers: empowering Kenyan youth to combat HIV and AIDS, teenage pregnancy, and gender-based violence**

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**Background:** Kenya's Adolescents and Young People face a critical crossroads. Despite contributing to the country's highest proportion of new HIV acquisitions (41%), they also hold immense potential for shaping a healthier future. However, they remain entangled in a complex web of challenges – HIV and AIDS, teenage pregnancy, and gender-based violence – fueled by a combination of behavioral, structural, and service delivery obstacles.

Leveraging the critical window of autonomy during adolescence, the Maisha Youth Movement, a national youth-led and youth-serving organization in all 47 counties, implements innovative peer-to-peer engagement strategies to empower young people with information, resources, and tools to make informed decisions about their health and well-being.

**Description:** Since its inception in 2017, Maisha Youth has advocated for better sexual health practices by adolescents and young people. In the 2022/23 financial year, over 3.2 million AYP were reached through dynamic peer-to-peer engagement strategies: advocacy, digital media forums and cocurricular activities tailor-made to resonate with the diverse learning styles and preferences of young people. To assess impact, both qualitative and quantitative measures were tracked, including knowledge increase, service utilization, and youth leadership development.

**Lessons learned:** Maisha Youth's journey has unearthed invaluable lessons, highlighting the potential and challenges of peer-to-peer engagement in the Kenyan context:

1. Peer-to-peer interventions have been met with enthusiasm by young people, who value safe spaces to learn and be heard, fostering trust and open communication.
2. Awareness campaigns and positive portrayal of people living with HIV and youth utilizing condoms have contributed to a more positive perception of HIV prevention strategies.
3. Negative peer influence and misinformation through digital media platforms pose persistent challenges, necessitating continuous efforts to equip youth with critical thinking skills and media literacy.

**Conclusions/Next steps:** Maisha Youth is committed to expanding its peer-to-peer interventions across Kenya through strengthening partnerships and collaborations, advocating for supportive policies and empowering young people.

### Next steps:

- i. Strengthen partnerships within the government, NGOs, and community-based organizations.
- ii. Advocate for policies and programs that support youth-led initiatives.
- iii. Integrate peer-to-peer approaches to broaden HIV prevention and treatment efforts among young people.
- iv. Share best practices and lessons learned with other organizations globally.

## THPED382

**Facilitators and barriers to the enrolment and retention of female sex workers in a sexual health cohort (ANRS 12381 PRINCESSE) in San-Pedro, Côte d'Ivoire**

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**Background:** The PRINCESSE project (11/2019-06/2023) implemented a sexual and reproductive health care package for female sex workers (FSWs) in the San Pedro area of Côte d'Ivoire. The package was offered through a mobile clinic operating on prostitution sites. A total of 489 wom-

en were included, but retention was low, with less than one-third attending quarterly visits. This analysis examines the factors that enable or hinder the adherence and retention of FSWs

**Methods:** A qualitative study, conducted between May 2022 and November 2023, involved 16 biographical interviews with participants, three individual interviews with non-participating FSWs, 10 interviews with participants who were lost to follow-up, and three focus groups. The analysis focuses on the FSWs' perceptions of the benefits and constraints associated with their participation.

**Results:** FSWs reported that the mobile clinic's presence on prostitution sites, the peer educators' advanced strategies, and the site managers' involvement in community mobilization facilitated their commitment to the PRINCESSE program.

Additionally, the welcoming attitudes and skills of the care staff, the distribution of free condoms and lubricating gel, and the provision of free care and medication were reported to facilitate their retention in follow-up.

However, some participants found certain aspects of the care provision burdensome, which limited their program adherence. These included concerns about excessive blood sampling and rumours of blood resale, the mobile clinic being located too far away and exposed to indiscretions, visits being deemed excessively long, and challenges related to the high mobility of FSW participants.

Delays in the transmission of medical analysis results, incomplete coverage of expressed needs by the care offer, and insufficient quantities of condoms and lubricants hindered the retention of many participants.

**Conclusions:** A paradox has arisen. Although the program was perceived to have benefits, it was deemed insufficient to meet the needs of FSWs and was seen as burdensome. Additionally, operational challenges have undermined participants' confidence in the long term. However, the project was able to rely on its team, including caregivers and peer educators, which proved to be an essential factor in keeping FSWs engaged due to the close ties and trust established..

## THPED383

### Early sexual debut in South Africa: comparing results from national population-based HIV surveys in 2017 and 2022

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**Background:** Research suggests that individuals engaging in their first sexual experience before turning 15 years old heightened risks to their sexual and reproductive health, HIV risk as well as negative emotional consequences. We investigated early sexual debut in South Africa in 2017 and 2022 as well as its demographic determinants.

**Methods:** Analysis was based on data collected from two national household-based surveys in South Africa conducted in 2017, and 2022. Both national surveys utilized a multi-staged, stratified cluster design to select 1000 census enumeration areas (EAs) and then 15 households per EA. All people in the selected household who slept there the night before were invited to participate.

Data was weighted and benchmarked against the 2022 census. The analysis focused on adolescents and young adults aged 15–24 years. Proportions and 95% confidence intervals were calculated using STATA 18.0. A z-test for two proportions was used to test for association and comparison of estimated proportions in categorical variables.

**Results:** Early sexual debut has been reported by 11.2% of youth aged 15–24 years in 2022, with 15.7% males and, 6.6% females reporting early sexual debut. The overall 2022 proportion decreased from 13% in 2017. In both survey years, youth in urban areas reported higher rates of early sexual debut (14.3% in 2017 and 12.1% in 2022) than those residing in rural informal (tribal) (10.9% in 2017 and 9.7% in 2022) and rural formal (farm) (10.0% in 2017 and 9.2% in 2022) areas.

In 2022, youth in the Western Cape reported the highest proportion of early sexual debut (16.3%) whereas youth living in Mpumalanga reported the lowest proportion (5.4%). A statistically significant ( $p < 0.05$ ) decrease was seen in Mpumalanga province between 2017 (13.3%) and 2022 (5.4%).

**Conclusions:** The observed overall decline in the proportion of those engaged in early sexual debut in 2022, although not significant when compared to the 2017 survey results, is an encouraging finding. The findings though suggest further research in Mpumalanga province into best practices to reduce early sexual debut as well as a need for strengthening prevention strategies and effective strategies to significantly reduce early sexual debut.



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## THPED384

Training community health providers to provide HIV research education to households: evaluation of the impact

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**Background:** Mistrust of HIV biomedical research processes due to inadequate knowledge can undermine community participation. Enhancing research literacy in communities can reduce mistrust and enhance meaningful engagement and research participation. We sought to determine the impact of training community health promoters (CHPs) to provide HIV research education.

**Methods:** This study employed a stepped wedge design, providing training to 42 (CHPs) from three fishing landing communities on the content and techniques of educating households under their jurisdiction to enhance their research literacy. The CHPs were trained for 4 days utilizing a combination of the CARES Fellowship Training Program and Brody's model of research literacy curriculum and were then deployed to educate households in their jurisdiction in stages. Four households out of 100 assigned to each CHP (N=152) were randomly selected for assessment of the impact of education on research literacy using a 12-item medical researcher trust scale. Data was collected at baseline and after the health education intervention period of approximately 3 months in each community. The 12 items on the trust scale were scored on a 5-point scale ranging from 1 strongly disagree to 5 strongly agree with negatively worded statements reverse-coded with a higher score equating to higher trust.

**Results:** The baseline median overall medical researcher's trust score was 38 which increased to 44 after 3 communities received the education ( $p < 0.01$ ). Further, the Kruskal Wallis test showed that there was a significant difference in the median medical researcher trust score between the first community that received research literacy education from CHPs (median = 44; N = 53) compared to those that were yet to receive the education (median = 38; N = 96)  $X^2 = 25.9$ ;  $p < 0.01$ ). A similar trend was seen when the first two communities received the intervention (median = 45; N = 76) compared to the third community (median = 34; N = 65)  $X^2 = 43.6$ ;  $p < 0.01$ .

**Conclusions:** Training CHPs to give health research literacy education was successful in increasing community research trust, as measured by the medical researchers' trust scale. It is necessary to assess the retention of research literacy gained over time.

## THPED385

Impact of tightening DREAMS eligibility criteria on program enrollment in Zimbabwe

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**Background:** DREAMS provides adolescent girls and young women (AGYW) at risk of HIV with layered HIV prevention services. As Zimbabwe experiences declining HIV incidence among AGYW (by 82% between 2010 and 2022), this abstract examines the impact of tightening eligibility criteria on DREAMS enrollment.

**Description:** In Zimbabwe, AGYW are eligible for DREAMS if they meet any criteria related to alcohol use, orphanhood, school attendance, experience of violence, or sexual history and behavior. Since October 2020, DREAMS has screened 557,864 AGYW, of whom 98% were eligible, as follows: 51% met one eligibility criterion; 31% met two, and 16% met three or more. Of those who met only one criterion; 58% screened in on the basis of school drop out risk alone, and 23% on irregular condom use alone. Combined, these individuals represent 43% of AGYW eligible for DREAMS since 2020.

While 98% eligibility ensured population coverage of HIV prevention services among AGYW, it limited time and resources dedicated to most-at-risk AGYW. Given declining HIV incidence, in October 2023 DREAMS adopted stricter eligibility criteria to better target resources. School drop out risk and lack of condom use with a marital or cohabitating partner will no longer be considered eligibility factors for DREAMS.

**Lessons learned:** Researchers applied historical DREAMS screening data and marriage rates among AGYW from the 2015 Zimbabwe Demographic and Health Survey to estimate the impact of these changes. DREAMS eligibility is expected to drop from 98% to 60% among all AGYW, and from 99% to 44% among 10-14 year olds. This trend is already emerging in preliminary data from 11,027 AGYW, with overall eligibility dropping to 71%, and to 46% among AGYW 10-14 years old. DREAMS will therefore experience a large decrease in enrollment, permitting more resources to be allocated to service delivery for most-at-risk AGYW, including expansion to new geographies.

**Conclusions/Next steps:** Given declining HIV incidence among AGYW, tightening DREAMS eligibility criteria is an effective way to target program resources toward most-at-risk AGYW. DREAMS programs should monitor population-level outcomes among AGYW ensuring that lower program enrollment does not increase STIs, HIV, or adolescent pregnancies.

## THPED386

Evaluation of a culturally responsive and community-based social media campaign to facilitate HIV testing and PrEP uptake among Latino/x men who have sex in men in Washington State

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**Background:** Hispanic/Latino/x men who have sex with men (MSM) in the United States are disproportionately affected by HIV due to structural and social determinants such as language, immigration status, discrimination, and stigma. We harnessed the widespread use of technology and social media and developed a culturally relevant social media campaign in partnership with a community-based organization, Entre Hermanos, in Washington State, and examined its impact on engaging Latinx MSM and shaping HIV prevention behaviors.

**Methods:** Tailored and community-informed social media content was posted on Instagram and Facebook over a 2-month period between January and March 2023 in Washington State. We examined the reach of the campaign using social media data analytics from Facebook and Instagram. Surveys were conducted that assessed self-reported HIV testing and pre-exposure prophylaxis (PrEP) use with Latino/x MSM clients at Entre Hermanos both prior to and following the campaign. Latino/x MSM clients who engaged in services at Entre Hermanos following campaign initiation were also compared to a matched sample of clients from the prior year.

**Results:** The most popular social media post reached a total of 13,425 people in our audience and had a post engagement of 285 users during the 2-month campaign period. A total of 59 Latino/x MSM received services at Entre Hermanos during and 1-month following the campaign and completed the survey—this was a 26% increase in the number of unique Latinx MSM who engaged in services following the campaign compared with a matched calendar period in the prior year. Exposure to the campaign was associated with a small, statistically significant increase in the likelihood of HIV testing ( $d = .04$ ,  $p = .025$ ,  $N = 277$ ), but not on the likelihood of PrEP use.

**Conclusions:** This study underscores the potential of culturally tailored social media campaigns to address HIV-related disparities among Latino/x MSM in the United States.

Further research and ongoing collaboration with community-based organizations will be essential to refine strategies that not only increase HIV testing but also address behavioral determinants that influence the uptake of HIV prevention among Latino/x MSM.

## THPED387

Cultural humility model in HIV prevention can whittle down incidences in Botswana: the case of age, gender relations, religious and cultural values among 15 to 24 ages

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**Background:** More than 70% of Botswana's youth population is familiar with mass-mediated HIV-prevention slogans promoting AIDS drugs as a preventative, but forsake them due to lifestyles by lead roles in the commercials, the findings show.

**Methods:** Funded by the Botswana National AIDS and Health Promotions Agency between April and August 2022, a mixed-method study unearthed sobering results concerning the PrEP and U = U campaigns. Close to 250 male and female students aged between 15 and 24 across 20 pilot sites for PrEP participated in the study. It was hosted on Qualtrics. The hypothesis was to determine the rising HIV incidences against the accessibility to HIV prevention information to test how awareness influences safer sexual choices to stop the spread of the virus. Raw data was imported into SPSS for analysis and interpretation.

**Results:** The unintended outcome of biased advertising campaigns is the indifference the adolescents continue to display in their behaviours increasing the rates of new HIV acquisition in Botswana. The young people scored a 92% rate of awareness and knowledge about preventing HIV. However, "Media Exposure on HIV Prevention Slogans" is not the same as empowering oneself with strategies to apply during intercourse. Still, 72% of the respondents stated that they are not mirrored in drug commercials, therefore, ads are targeting a different demographic. Moreover, 66% decried a lack of cultural sensitivity while another 72% said ads did not respect their religious beliefs.

**Conclusions:** Unless African scientists, medical anthropologists, and health communication scholars pay attention to the dominant cultural and religious realities of Africa to prevent HIV, the grand goal of eliminating AIDS by 2030 as envisioned in the third United Nations Sustainable Development Goal is likely to fail badly in sub-Saharan Africa. The conclusion, therefore, is that the communication strategies should go to the heart of the matter by recognizing the cultural contexts of Botswana. Campaigns must resonate with their beliefs, practices, nuances, and behavioural communication strategies that target homogenous audiences with specific messages rather than a general tone targeting heterogeneous groups, evidence from the study recommends rather strongly.



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## THPED388

Baseline survey on self-stigma among Adolescent Girls and Young Women (AGYW) living with HIV and its impact on access to HIV & Sexual Reproductive Health & Rights services in Uganda

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**Background:** Self-stigma among people living with and affected by HIV is a global public health threat that hampers the use of healthcare services, and adherence to life-saving Antiretroviral Treatment (ART), including HIV prevention methods. Available studies don't give information on self-stigma prevalence among AGYW living with HIV to foster evidence-based advocacy and programming.

The International Community of Women Living with HIV Eastern Africa (ICWEA) conducted a Baseline survey on self-stigma among AGYW Living with HIV and its impact on access to HIV and SRHR in Uganda to contribute to new knowledge in the HIV response in the EA region by providing new dimensions and lessons for achieving the 90x90x90 UNAIDS targets and the Sustainable Development Goals (SDGs).

**Methods:** The baseline adopted quantitative and highly participatory qualitative research approaches. Focus group discussions were held with AGYW aged 10 -19 years who were enrolled or not on ART, both in and out-of-school, in support groups and those that did not belong to any support group. Key informant interviews were held with health workers and anti-stigma champions. A total of 86 individual respondents participated. ICWEA reviewed programme and policy documents on self-stigma both at program, national and international levels.

Data was analysed in STATA and frequency tables, measures of central tendency and charts generated to show frequency and percentages of variables.

**Results:** The survey revealed that 94% of the respondents were aware of self-stigma, how it presents and its existence among AGYW. The teenagers were the most affected at 61% and young women at 56% while those that had never been married were at 54%. 57% of the respondents revealed having ever refused to seek care and treatment and engage with society opportunities due to self-stigma. 16% had not yet enrolled for treatment and said they were not psychologically ready. 35% of the AGYWs respondents indicated that they had undergone some form of discrimination due to their HIV status.

**Conclusions:** The baseline provided evidence for ICWEA and implemented a project dubbed Building Resilience among AGYW to fight self-stigma among AGYW in Uganda and in Burundi May 2021-May 2023 and was a benchmark that tracked its progress.

## THPED389

An urgent need for gender equality and meaningful participation of women in all their diversity in Global Fund processes: a multifaceted global consultation on the Grant Cycle 7

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Republic of, <sup>2</sup>International Community of Women Living with HIV (ICW), Nairobi, Kenya

**Background:** Women and girls in all of their diversity face difficulties in engaging effectively in decision-making processes related to HIV, TB, and Malaria responses. Gender equality is stated as key in the Global Fund's current Strategy; promoting its integration across all programs. However, results from the previous allocation cycle indicate concerning realities about the realisation and prioritisation of gender equality; resulting in persistent inequalities that limit women and girls' access to comprehensive healthcare and knowledge.

**Methods:** In 2023, we conducted a multifaceted global consultation directed to women in all their diversity, specially women living with HIV or at most risk of, including an online multi-country survey that aimed to explore women's engagement and challenges in participating in GC7 processes. 81 responses were collected and comprehensively analysed using descriptive statistics and thematic coding, spanning 23 countries across distinct regions: South Asia, the Caribbean, Latin America, East Africa, South Africa, Central Africa, and West Africa.

**Results:** Our findings indicate a disparity in involvement at various stages: 46.9% of the participants indicated being not as involved as they wanted to be, while 27.1% encountered challenges in actively participating. Only 18.5% felt very involved in country-level dialogues, and merely 6% were part of proposal writing teams. Particularly striking is the limited participation of women in CCMs; 75% of them were not CCM members, highlighting a clear representation gap. We found that more than a half of respondents had either not heard of a gender assessment or stated that no gender assessment had been conducted during the process. Several concerns and challenges were identified: prevailing lack of clarity and transparency around decision-making procedures, accessibility and language constraints, restricted connectivity, and financial limitation and non-remunerated work. Of noteworthy concern is the insufficient representation of indigenous women in country dialogues.

**Conclusions:** Advocacy for increased participation of women and girls was identified as an overarching challenge, compounded by difficulties in effectively promoting gender-transformative programmes within the GC7 process. Clear and transparent decision-making procedures, enhanced accessibility for all, and broader representation across all stages of engagement are essential to ensure meaningful participation of women in all their diversity.



## THPED390

### Sexual health and social engagement among Australian bi+ men: findings from a national survey on sexuality, community experience and network engagement

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**Background:** Bi+ (bisexual, pansexual and other multi-gender attracted) men have often been grouped with gay men in HIV prevention. This approach can mask key differences in HIV prevention needs between bi+ men and gay men by conflating them as one group.

We examined characteristics of bi+ men compared with gay men from a national cross-sectional study on social connection and HIV prevention.

**Methods:** Participants were recruited across Australia through social media and mailing lists to complete an online survey between November 2022 and January 2023. Analyses were restricted to participants who were men (cis or trans) and identified as either bi+ or gay. Demographic characteristics and sexual health outcomes were compared using chi-square and t-tests.

**Results:** 915 responses were included (bi+ men=30.9%, gay men=69.1%). 86.4% of bi+ men and 79.3% of gay men were born in Australia and most participants were cisgender (bi+=96.6%, gay=99.4%). Among bi+ men, 1.8% were HIV-positive, 71.7% were HIV-negative and 26.5% were untested/unknown, compared to 8.2%, 80.2% and 11.6% of gay men ( $p<0.001$ ).

Among non-HIV-positive participants ( $n=858$ ), bi+ men were less likely to have ever taken PrEP (23.0% versus 50.5%,  $p<0.001$ ). Bi+ men were also less likely than gay men to have: condomless anal intercourse with casual male partners (58.0% versus 68.5%,  $p<0.001$ ); tested for HIV in the last 12 months (51.9% versus 66.1%,  $p<0.001$ ); received comprehensive STI testing (22.3% versus 48.4%,  $p<0.001$ ); and received information about sexual health from healthcare providers (47.4% versus 64.7%,  $p<0.001$ ) or from community-based organisations (14.1% versus 31.7%,  $p<0.001$ ).

Compared to gay men, bi+ men reported less social engagement (Mean=2.24, SD=1.27 versus Mean=3.32, SD=1.61,  $p<0.001$ ) and LGBTQ+ people (Mean=2.60, SD=1.43 versus Mean=3.50, SD=1.57,  $p<0.001$ ), however were more likely to receive social support from other bi+ men (Mean=4.52, SD=5.36 versus Mean=2.64, SD=4.22,  $p<0.001$ ).

**Conclusions:** Key differences in PrEP use, HIV/STI testing, community engagement, social support, and sources of sexual health information have implications for engaging bi+ men in HIV and sexual healthcare.

Further research is needed to understand HIV and sexual health needs within bi+ communities to develop tailored bi+ specific interventions to reach higher-risk bi+ men in testing and prevention.

## THPED391

### Gender-based violence (GBV) among women in Botswana: an ongoing threat to HIV epidemic control achievements

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**Background:** GBV among women in Botswana remains a pressing public health concern, potentially jeopardizing the country's strides in reaching epidemic control. We determined case rate of self-reported emotional/physical, and sexual violence, association with self-reported HIV risk among females receiving post-GBV care and psychosocial support at Botswana GBV Prevention and Support Centre (BGBVC) using data from PEPFAR/USAID-funded Meeting Targets and Maintaining Epidemic Control (EpiC) project GBV database.

**Methods:** EpiC conducted a retrospective analysis of program data collected between October 2022 through September 2023 at BGBVC. For this analysis, main exposures of interest investigated were emotional/physical violence, and sexual violence. A composite exposure variable comprising the presence of any violence was generated. Outcome of interest was HIV risk defined by inconsistent condom use, discordant partner, index client and having multiple concurrent partners. Control variables included age, education, employment and relationship status. Multivariable logistic regression models were used to compute adjusted odds ratios (aOR) and 95% confidence intervals (CI) for associations between main exposures and outcomes of interest while adjusting for control variables all analysis were conducted using Stata v15.

**Results:** Out of 920 women screened for GBV, 707 (76.9%) reported emotional/physical violence, and 120 (13.0%) reported sexual violence. Among 820 women reporting both frequency of abuse and experience of violence, 176 (21.5%) reported occurrence daily, and 358 (43.7%) weekly. Among those who screened for GBV, 151 (16.6%) were classified as high risk for HIV. Women who reported sexual or emotional/physical violence were more likely to be classified as high risk for HIV acquisition compared to those who did not report GBV; 147 (17.9%) vs 4 (4.4%); [aOR=6.0; 95%CI (2.1-17.0);  $p=0.001$ ]. Single women were more likely to be classified as high risk compared to those in cohabiting relationships [aOR=2.6; 95%CI (1.3-4.9);  $p=0.002$ . Women



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aged 50years and above compared to under 20 years were less likely to be classified as high risk for HIV acquisition [ $\alpha$ OR=0.08; 95%CI (0.009-0.76);  $p=0.03$ ]

**Conclusions:** Considering the last mile of epidemic control in Botswana, scale up of targeted interventions and prevention methods for addressing both GBV and HIV risk remains critical for sustaining achievements made in reduction of HIV incidence in Botswana.

## THPED392

### CLM as part of national monitoring: the case of Zimbabwe

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**Background:** Community-led monitoring (CLM) is an essential social accountability mechanism used by communities and CSOs to monitor the quality and accessibility of health care services. Zimbabwe is implementing CLM to address structural, and client centric healthcare challenges that have been left unaddressed for many years. Health services are often not designed to respond to the needs of communities, who have limited direct feedback on the experiences of communities and other social accountability opportunities including how health services could be improved.

**Description:** Zimbabwe started implementing community led monitoring in 2010 with ACT piloting it in five districts and later expanding to 32 PEPFAR supported districts. The CLM models in Zimbabwe are varied and funded by several different donors, including PEPFAR, Global Fund, and One Impact.

The country has a national steering committee which receives advocacy data from these models and programs and uses the data to inform policy decisions and to track the progress of CLM activities in the country.

**Lessons learned:** Some of the noticeable changes that have been recorded since the inception of CLM in Zimbabwe include an improvement in availability of commodities in some hard to reach areas up to 60% improvement, community satisfaction (82% of sex workers satisfied with services) and trust in health services and community participation and access to health services (91% of sex workers reported access), better and more reliable health service delivery systems in certain communities, improved relationships between health staff and the communities they serve, and empowerment of communities to demand better health services from providers.

There is also an improved feedback system and resolution of facility/community issues and readily available community feedback on health services.

The buy-in from government of Zimbabwe is a huge achievement as it is crucial for the long-term sustainability of CLM.

**Conclusions/Next steps:** CLM is a proven platform to gather qualitative and quantitative data and with-it availability, accessibility, acceptability, affordability, appropriateness, equity, and quality of the services is measured. Advocacy with service providers and decision makers is less emotional and social accountability is achieved.

## THPED393

### HIV risk perception, trust and PrEP adherence among participants in an HIV prevention trial: a qualitative longitudinal study, South Africa

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**Background:** Effective HIV prevention requires efficient adherence to prevention and treatment methods. Adhering to a method requires a level of assurance or trust that the method is indeed effective. This analysis evaluated trust in relation to HIV risk perception and adherence to pre-exposure prophylaxis (PrEP) among clinical trial participants.

**Methods:** We conducted longitudinal in-depth interviews between February 2022 and October 2023. Thirty participants, ten percent of the overall clinical trial participants were purposively selected, to include equal numbers from those randomised on TAF/ FTC (Descovy) and TDF/FTC (Truvada) different age groups (18-40 years), gender and socio-economic characteristics. All participants came from an area with high HIV prevalence in urban KwaZulu-Natal, South Africa. Twenty-five participants completed three interviews assessing PrEP adherence and facilitators/barriers to persistence. Data analysis was conducted using the trust, confidence and cooperation (TCC) framework to understand the correlation between trust and HIV risk perception and changes in health behaviours.

**Results:** Trust significantly influenced individual perceptions of HIV risk and played a crucial role in influencing behaviours and decisions related to sexual health. Regular and ongoing PrEP adherence counselling, interaction and discussion opportunities during scheduled and unscheduled study visits with study staff, provided ongoing



support, addressed concerns, and reinforced the value of PrEP as an effective HIV preventive measure. Participants' trust in the clinical trial health care providers together with proven effectiveness of daily oral PrEP facilitated consistent PrEP adherence and heightened participants' introspection regarding their past risks. However, this assurance in the efficacy of PrEP also led participants to feel protected and, as a result, trust they were protected and take part in high-risk sexual behaviour such as condomless sex and sex with multiple casual partners.

**Conclusions:** Our analysis showed the interplay between trust in PrEP, perceived HIV risk and PrEP adherence within a HIV prevention clinical trial. The results showed that continuous active interaction with clinical staff played a pivotal role in influencing individuals' choices to embrace PrEP as an HIV preventative measure.

Our findings can highlight the importance of sustained engagement and trust-building in the development and implementation of HIV prevention strategies.

## THPED394

How community mobilizers leading a demand creation strategy is increasing voluntary medical male circumcision uptake in Zambia

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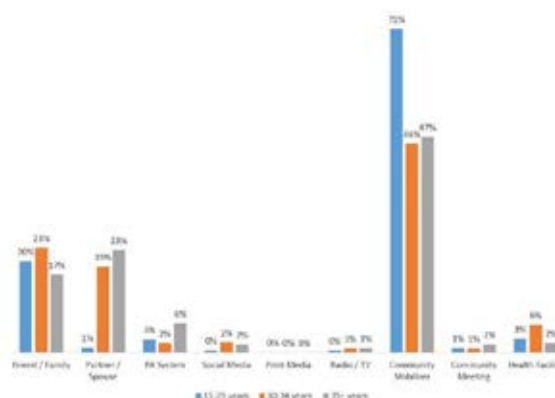
**Background:** Community mobilizers play a critical role in positively influencing decision-making in health matters among men. With circumcision saturation rates estimated at 66% in the priority age group 15-29 years old in urban settings in Zambia, it has become increasingly difficult to reach eligible uncircumcised males. The US-AID DISCOVER-Health project, implemented by JSI, regular community mobilizers were recruited and trained to engage priority male population, learn their insights about voluntary medical male circumcision (VMMC) for increased uptake.

**Description:** The project recruited thirty community mobilisers between October 2021 to September 2022 to increase VMMC uptake; selection was based on age being within target population of 15-29 years, experience in advocacy, peer influence and commitment to promote VMMC. They received training for two days, focused on mobilization skills, interpersonal communication and accurate information on HIV and VMMC. Health records of all men who received VMMC services in 6 health facilities were reviewed and socio-demographic information on the client intake form was extracted to evaluate the impact of community mobilisers.

**Lessons learned:** Table below summarizes variables analyzed. We found that community mobilisers referrals were significantly higher across all age groups compared

to other sources of information. The higher percentage among 15-29 priority age may be attributed to engagement of mobilisers from that age group, to knowledge/skills acquired and identified safe spaces or settings where they hold meetings to educate people.

Community mobilizers are a trusted source of health information in communities and have strategic partnerships with community members serving as a link between the community and health facilities.



**Conclusions/Next steps:** Community mobilisers have an important role in public health programs, such as VMMC, in resource-limited settings. Their ability to provide accurate information during one-on-one and private counselling has proved successful in service uptake saturation.

Particularly men, appreciate receiving discrete health information from trusted and respected familiar figures.

## THPED395

Leveraging digital gamification strategies for communicating next-generation HIV vaccine science to communities living in a high-risk environment in India

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**Background:** Community participation in HIV biomedical research is largely driven by altruism and a desire to contribute to the discovery of new HIV prevention technologies (Hanass-Hancock 2021). To enable truly informed and sustainable participation, it is important for HIV vaccine studies to explain their scientific rationale to communities in an easy-to-understand manner.

To address this unmet need, IAVI partnered with Quicksand to develop a suite of digital games that explain HIV vaccine concepts such as viral diversity, latency, conserved epitopes and broadly neutralizing antibodies (bNAbs) to affected communities.



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**Description:** Through 5 co-creation workshops between scientists and key population representatives in New Delhi in 2021, we identified the key HIV vaccine concepts and messages our communities were most interested in. We also identified culturally appropriate and relevant examples to explain each concept, resulting in the storyline and characters for the 'Village Invasion' game. The game has 7 levels that sequentially introduce players to:

- a) an "island village" representing the human body;
- b) an HIV "super-invader" that rapidly mutates and attacks the immunity "sentinels" protecting the village;
- c) antiviral "shields" that prevent the super-invader from replicating but sometimes develop resistance;
- d) conserved elements (epitopes) on the super-invader's body that do not change despite mutations and disguises; and,
- e) a "super-sentinel" that has the ability to neutralize the super-invader by targeting its conserved epitopes. Post-game discussions enabled players to link game metaphors with HIV science.

**Lessons learned:** The co-creation workshops helped clarify that:

- 1) digital games were played most effectively when guided by peer-facilitators;
- 2) nesting smaller games explaining different concepts within a larger meta-game to introduce the story and characters was useful;
- 3) framing the meta-game as an adventure and quest motivated players to complete all levels;
- 4) leveraging a mixture of puzzle and skill-based games was helpful in demystifying science;
- 5) earning rewards after each level sustained player motivation; and,
- 6) post-game discussions effectively leveraged community self-knowledge and collaborative exploration to decode game metaphors and link them with HIV science.

**Conclusions/Next steps:** Digital storytelling and gamification represent a potentially high-impact strategy to make science communication clearer, more relevant, culturally-rooted and relatable for end-user communities.

## THPED396

### Factors associated with common mental disorders among adults living with HIV in the Western Cape, South Africa

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**Background:** It is crucial to understand the psychological factors that impact achieving viral suppression for people living with HIV (PLWH). This study therefore examined the relationship between depression, anxiety, and their coexistence, collectively referred to as common mental disorders (CMDs), among PLWH while controlling for inter-related factors at the individual, household, and community level.

**Methods:** This study used baseline data collected from 315 PLWH enrolled in 12 clinics in the Sinako cluster-randomised controlled trial in Cape Town, South Africa. Three 4-block hierarchical regressions were conducted on depression, anxiety, and CMDs across the levels of the individual, household, and community.

**Results:** Anxiety:

Gender was negatively associated with generalised anxiety scores ( $\beta = -0.153$ ,  $p = 0.008$ ), with men reporting lower symptoms of general anxiety. Initiating ART for the first time was associated with higher symptoms of general anxiety ( $\beta = 0.156$ ,  $p = 0.015$ ). Higher levels of perceived household social support were associated with lower symptoms of general anxiety ( $\beta = -0.194$ ,  $p < 0.001$ ).

Depression:

The inclusion of social support variables led to the most significant increase in explanatory power ( $\Delta R^2 = .083$ ,  $p < .001$ ), with higher levels of family cohesion ( $\beta = -.154$ ,  $p = .005$ ) and higher scores on perceived household social support ( $\beta = -.256$ ,  $p < .001$ ) associated with lower symptoms of depression. Initiating ART for the first time was also associated with higher symptoms of depression ( $\beta = 1.316$ ,  $p = .012$ ).

Common mental disorders:

Gender was an important factor, with females reporting higher scores of CMDs ( $\beta = -.136$ ,  $p = .018$ ), while initiating ART for the first time was also associated with higher CMD scores ( $\beta = .201$ ,  $p = .002$ ). Perceived household social support was negatively associated with CMD scores ( $\beta = -.175$ ,  $p < .001$ ).

**Conclusions:** It is vital to consider CMDs in the design and implementation of future interventions aimed at improving HIV outcomes in resource-limited settings.

## THPED397

### Using FRAME to adapt an evidence-based HIV-prevention intervention for Zambian adolescent girls and young women

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**Background:** Zambia faces significant challenges in HIV prevention among adolescent girls and young women (AGYW). They have a 3.3% HIV prevalence and are four times more likely to acquire HIV than their male counterparts. Interventions to reduce HIV acquisition among Zambian AGYW require planned adaptations to improve fit within the local context. One evidence-based program – IMARA -- developed in the United States and adapted for South African AGYW has demonstrated significant reductions in STI incidence and mental health distress among AGYW and strong implementation outcomes (e.g., feasibility, acceptability, fidelity).

We describe using the Framework for Reporting Adaptations and Modifications-Expanded (FRAME) to carefully document modifications to IMARA for Zambian AGYW at the pre-implementation phase.

**Description:** The study is a 2-arm hybrid effectiveness-implementation trial comparing ZAIMARA (IMARA adapted for Zambia) to a health promotion program on AGYW STI/HIV outcomes, sexual behavior, HIV testing, and PrEP uptake. Consistent with the FRAME, we recorded planned and proactive pre-implementation adaptations to the curriculum and implementation strategies.

Extensive feedback from local researchers and two community advisory boards (adolescent and adult board) that informed adaptations to IMARA's content and implementation strategies, and we detailed the "When," "Who," "What," "How," "Why," "Goal," and "Reasons" of each modification. Content changes reflected local cultural, social, and gender norms, and modifications to implementation strategies represented the need for capacity building and workforce strengthening.

**Lessons learned:** The FRAME-led adaptation process revealed key insights. FRAME was instrumental in structuring the adaptation process, allowing for a clear rationale and documentation of each modification. It highlighted the challenges retaining core elements while substituting some scenarios in the modules to best fit the local context.

FRAME offered a rigorous approach to capture the active involvement of community stakeholders and other drivers of the adaptation (e.g., sociopolitical, organizational/setting). The FRAME permitted evaluating adjustments through theater testing and iterative revisions to ensure cultural and contextual relevance.

**Conclusions/Next steps:** FRAME is a useful tool to document the adaptation of interventions and implementation strategies. Applications of FRAME across studies will strengthen the science of adaptation and reveal modifications that improve uptake of evidence-based interventions.

## THPED398

### Boosting community-based screening and referrals for HIV testing using digital applications: a first 95 game changer for young people?

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**Background:** Young people are at increased risk of HIV and other STIs and yet are the least likely to uptake HIV testing services (HTS) at health facilities. The Boost digital application for community health workers (CHWs) includes age-appropriate HIV test screening algorithms and referrals for 10-24-year olds.

Our objective was to describe the outcomes of community-based HIV test screenings and impact upon health service uptake among young people.

**Methods:** We conducted a mixed-method evaluation of guideline concordant HIV test screening outcomes and referrals by CHWs among young people (YP) 10-24yrs using the Boost digital application. Facility HIV testing data were abstracted from routine data to explore changes in testing. Focus group discussions (FGDs) were conducted with CHWs to explore acceptability and feasibility of digital screening and referrals and analyzed thematically.

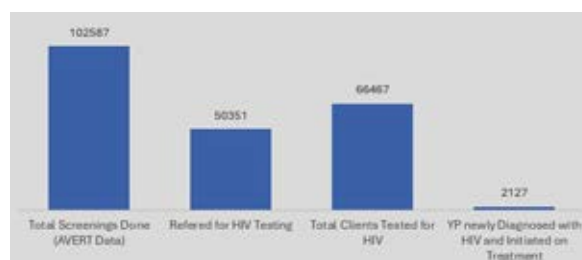


Figure. Routine HIV testing versus boost screenings.

**Results:** From February to December 2023 a total of 102 587 YP10-24yrs were screened using the Boost App, with 49% (n=50,351) screening 'positive' for need for HIV testing. There was a 16% increase in the number of YP HIV tested at health facilities and a 5.3% increase in HIV self-test kit distribution as compared to the same period prior to use of the Boost App., HIV test yield among 10-24-year-olds was 3% with a total of 2,127 YP newly diagnosed with HIV and initiated on treatment. There were significant differences between age- and sex-disaggregated groups with



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regards to the screening questions triggering need for HIV testing. CHWs value the use of digital decision aides for providing accurate health information, screening, and referrals for young people.

**Conclusions:** Digital tools are feasible, acceptable, and effective methods for identifying YP in need of HIV testing. Screening outcomes highlight the importance of differentiated strategies by age band and sex.

## THPED399

Strategies to improve enrolment and retention of male participants with a low likelihood of HIV acquisition in an HIV prevention study. Harare-Zimbabwe

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**Background:** Cisgender male participation in HIV prevention studies in Africa is crucial for the development and implementation of effective interventions. We evaluated our male recruitment approach for the HVTN140/HPTN 101 phase 1 clinical trial of a monoclonal antibody combination in adults with low likelihood of acquiring HIV, implemented at 3 sites in Zimbabwe.

**Description:** After trial closure, personnel from the 3 sites met to outline recruitment and retention strategies used, quantify outcomes, and reflect on best practices. Recruitment strategies included:

1. *Trial ambassadors:* We conducted 10 meetings where we trained participants enrolled in another HIV prevention clinical trial, Community Advisory Board Members (CAB), community health workers and male-focused group representatives to promote the trial in their communities;
2. *Targeted social networks for peer referral:* Former participants posted trial information materials through their University WhatsApp groups;
3. *Snowballing* by enrolled participants.

Participant retention strategies included:

1. A *participant-friendly environment* by providing free Wi-Fi, private working space, and extended clinic hours to accommodate work and academic schedules; and,
2. *Courtesy calls*, approximately 3 in-person visits and several telephone calls per participant.

**Lessons learned:** Of the 36 participants screened, 21 were male: 5 (24%) came from trial ambassadors, 6 (29%) from social networks, and 10 (48%) through snowballing. Male screening to enrolment ratio was 2:1 (12 enrolled). All enrolled males completed scheduled visits until trial exit. Snowballing appeared most efficient, generating 9/20 (45%) males screened.

On reflection, site personnel considered all the strategies to be effective. A distinct advantage of snowballing was that current participants can share their lived experienc-

es with interested peers, which could build trust in the research process and directly answer questions about what to expect from the trial. Using targeted social networks required less involvement of study personnel than training trial ambassadors and it has got a wider reach, however, both approaches serve to raise research literacy among study communities which could benefit future recruitment efforts.

**Conclusions/Next steps:** Future studies among males in this setting should use a multiple approaches. As observed, snowballing contributed most male participants, whilst the initial potential participants came through targeted social networks and trained ambassadors, CAB and appropriate male forums.

## THPED400

'I want someone that looks like me': factors to consider when implementing a community-based medication adherence support for aging individuals with HIV in western Kenya

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**Background:** Access to antiretroviral therapy (ART) has significantly enhanced both the lifespan and well-being of individuals with HIV. Nevertheless, as people grow older, they frequently confront the intricate interaction of multiple health conditions, leading to the need for multiple medications and heightened challenges in adhering to medication regimens. Community-based adherence programs customized to individual patients hold promise in addressing these adherence challenges and improving medication adherence in this population.

**Methods:** In this qualitative investigation, a total of 27 healthcare providers (HCPs), 28 community health volunteers (CHVs), 29 community members, and 56 older adults living with HIV (OALWH) at AMPATH participated. Through in-depth interviews and focus group discussions, the study delved into the factors that support or impede CHVs in providing medication adherence support to OALWH. All interactions were recorded and transcribed for analysis, with NVivo software employed for coding. Subsequent thematic analysis aimed to identify facilitators and barriers that impact the successful implementation of such a community-based medication adherence program.

**Results:** Perceived obstacles to the successful implementation of the program encompassed concerns about disclosure and potential increased stigma, the cost and

accessibility of non-communicable disease (NCD) medications, heightened workload for CHVs, limited medication literacy among CHVs, complex medication regimens, transportation challenges for CHVs, and a healthcare system characterized by compartmentalization, leading to inconsistent communication with healthcare client.

Notwithstanding these challenges, participants identified several factors that they perceived as facilitators to program implementation, including collaborative efforts between HCPs and CHVs, trust between CHVs and OALWH, empowerment of clients, affordability of medication through health insurance, supportive supervision for CHVs, psychological support for clients, provision of equipment for routine monitoring of blood pressure and blood sugars, and the utilization of pill boxes.

**Conclusions:** Despite obstacles like stigma and medication challenges, collaborative efforts, trust, client empowerment, health insurance, and supportive measures emerged as crucial facilitators for successful implementation of a CHV-led community-based medication adherence support program for OALWH.

## THPED401

Ethical engagement of AGYW in Global Fund GC7 process: AGYW perspectives from Eswatini, Lesotho, Malawi, Mozambique, and Zimbabwe

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**Background:** Adolescent girls and young women (AGYW) in Southern Africa continue to face disproportionate risk of HIV acquisition, despite significant progress in understanding and responding to the developmental, biological, structural, and behavioral risks they face.

The HER Voice Fund initiative focuses on investing in the capabilities of AGYW leaders and AGYW-led organizations serving AGYW in their diversity to participate in national policy and planning processes.

**Description:** HER Voice Ambassadors (HVAs) led a process of ethical engagement, towards the development of AGYW priorities for inclusion in Global Fund Cycle 7 (GC7) country funding requests. HVAs led meaningful engagement processes with approximately 250 AGYW aged 15-24 years across 5 countries. HVA analyzed epidemiological trends from recent population-based household surveys, the AGYW-only population size estimation tool (NAOMI), service facilitators and barriers from qualitative and field research client referral data to facilities.

Consultations included diverse AGYW; pregnant and young mothers, those living with HIV, disabilities, and key populations. Participatory methodology was used with vignettes, role-playing activities, and World Café. Consultations resulted in collaborative priorities that were

amplified by AGYW leaders in national planning processes, aiming to influence the GC7 funding request in each country.

**Lessons learned:** AGYWs were well-equipped, demonstrated leadership during Country Coordinating Mechanism (CCM) -led national country dialogues and in development of National HIV/AIDS Health Strategic Plans. Select common themes emerging from HVA-led country consultations included: re-positioning and re-packaging PrEP to address myths; inclusion of HIVST to enhance community-level PrEP initiation; and improved use of data on hotspots to enable sharpened condom programming and distribution. The level of commitment to power-sharing from CCMs varied by country, resulting in some AGYW being excluded from critical consultations and decision-making processes, and in other countries AGYWs were included in the national consultation and proposal development process.

**Conclusions/Next steps:** Meaningful engagement and inclusive decision making cannot be undertaken without a commitment to capacity strengthening and power sharing between adult policy-makers and AGYW. When AGYW feel agency in and ownership over processes that affect them, they are more likely to remain engaged. There is need to strengthen inclusive decision-making processes that extend beyond the GC7 funding request to end AIDS by 2030.

## THPED402

Breaking down sociocultural barriers through education, and awareness strategies amongst young men, to increase access to services by GBV survivors and shift attitudes and behaviors that perpetuate GBV

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**Background:** Research has proven that GBV and HIV/AIDS are both major public health concerns in Botswana. Over two thirds of women in Botswana (67%) have experienced some form of gender based violence in their lifetime including partner and non-partner violence. To deconstruct ideologies that men are unable to open up and express themselves as perpetrators of GBV and because most GBV strategies have been focused on GBV survivors, mostly women, strategies meant to increase men's capacity to prevent and respond to Gender Base Violence (GBV) were implemented through the Tebelopele Wellness Center Men's Clinic.

**Description:** A campaign was implemented in Molepolole, Kweneng East District, Botswana, to provide education, awareness, and access to support services for men, for a period of 12 months. Through the integration into comprehensive clinical post GBV care services, i.e. provision of



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counselling, HIV Testing Services, PrEP, and STI screening and treatment, platforms for addressing socioeconomic issues were developed. Men got access to support services through social and behavior change strategies, i.e. anonymous venting chat box, ultimate bonfire Facebook page, social football clubs and talk shops where ideologies and misconceptions were deconstructed.

**Lessons learned:** A total of 1028 men were reached with GBV messaging through various platforms: men's conference, bootcamps, soccer tournaments, outreach activities and one-on-one sessions. Of those screened for GBV, 29% reported to being GBV survivors and of these, 79% reported emotional violence, 17% reported having experienced physical violence and 4% were sexually violated. 20% of the identified GBV survivors were provided with pre-exposure prophylaxis. Planning with collaborating partners ensured that all aspects of reaching men are addressed but more emphasis on resource support from the collaborative partners is needed to ensure the client's medical and support needs are met.

**Conclusions/Next steps:** In conclusion, by integrating awareness campaigns, provision of SRH services, empathy building talk shops and providing support services, there's a higher likelihood of breaking down sociocultural barriers, fostering attitudinal shifts, and creating an environment where GBV survivors can access the support they need. Collaboration amongst different stakeholders can go a long way in reducing incidences of GBV.

## THPED403

Leveraging gains from behavior change communication to improve PrEP acceptance amongst Adolescent Girls and Young Women (AGYW)

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**Background:** In Eswatini HIV high incidence rates continue soar high at 1.7% amongst females and 1% among men annually. PrEP uptake remains low with the country recording 40% uptake among eligible clients offered. World Vision Eswatini through USAID/PEPFAR funding implements a project aimed at eliminating new infections amongst AGYW aged 15-24. The project is implemented at six (6) constituencies across the country. Over the years the project has sought different approaches to improving interest and subsequently uptake of PrEP amongst its beneficiaries and their sexual partners as another recommended HIV preventative measure.

In this paper the project describes and shares lessons on how the introduction and employment of the services of PrEP ambassadors can positively improve PrEP uptake at communities.

**Description:** The project defines a PrEP ambassador as an expert client who is actively enrolled and is adhering to PrEP treatment and as such deemed to have firsthand knowledge to share on the dynamics of PrEP uptake including risks and benefits. Their responsibility is to exemplify PrEP among their peers through deciphering own experiences of PrEP to educate, clear myths and misconceptions and facilitate accompanied referrals if need be, for improved uptake and retention.

Following counterproductive efforts to mobilize AGYW for PrEP in the first year of implementation, PrEP ambassadors were introduced in the second year, leading to a drastic increase in initiations and retention when compare to the first year. PrEP initiations stood at 28%, 71% and 94% against each year's annual targets for FY21, FY22 and FY23 respectively.

**Lessons learned:** PrEP ambassadors work to educate, clear myths and misconceptions on PrEP for improved access and retention among AGYW. Effectively executed, behavior change communication can positively contribute towards influencing attitudes and health seeking behaviors among adolescent girls and young women.

**Conclusions/Next steps:** The project will look into expanding the scope of PrEP Ambassadors beyond HIV testing and PrEP initiations to integrate other services such as Family planning and ASRH which are as equally important in curbing the spread of HIV.

The project will also use these results to advocate for a similar structure in the Ministry of Health through health care facilities for sustainability.

## THPED404

Implementation of voluntary medical male circumcision mobile outreach in remote closed communities: lessons learned from South Sudan

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**Background:** Access to healthcare in remote, rural settings is a challenge worldwide, particularly in countries with limited infrastructure, and pockets of distant closed communities such as South Sudan. Low literacy in these isolated populations due to limited education access, coupled with limited healthcare, employment options, and other resource limitations exacerbate existing inequities. Since 2006 the HIV Secretariat of the South Sudan People's Defense Force (SSPDF) has offered quality HIV services for SSPDF troops, their family members, and the surrounding communities. In 2018, as part of a comprehensive HIV/AIDS service initiative, the HIV Secretariat be-

gan offering voluntary medical male circumcision (VMMC) services to male troops, their family members, and the surrounding communities. In 2022 VMMC services were expanded including mobile VMMC service delivery to reach remote communities within South Sudan.

**Description:** SSPDF's HIV Secretariate implemented mobile outreach programs in three remote, isolated communities within a 3-hour drive or boat ride from the largest town. A roving team of clinicians was trained to provide services in non-clinical settings. Successful VMMC were completed on approximately 500 clients during each 10-day outreach event. The largest group of clients were aged 15-17 (n=585, 39%), with 531 clients aged 18-21 (35.4%). Clients reported traveling up to 45 km for mobile VMMC services, with 51% traveling over 9 km.

**Lessons learned:** We share lessons learned for successful considerations for implementing mobile VMMC. We documented lessons learned based on factors including site characteristics, service delivery methods used, staff selected, and demand creation methods. Site proximity to schools in-session provided successful recruitment opportunities. Radio programs attracted clients from wide distances. We observed high demand from clients for VMMC services despite barriers of distance and community stigma from cultural norms.

**Conclusions/Next steps:** Provision of healthcare services such as mobile VMMC in areas with limited access to healthcare, low literacy rates, stigma, and sparse populations is a viable approach to reduce health inequities. We will contribute to the public health literature by providing practical guidance for policymakers, healthcare professionals, and organizations involved in designing and implementing VMMC outreach strategies tailored to the unique dynamics of remote and closed communities.

## Key populations and other vulnerable populations: Behavioural, social and cultural issues and contexts

### THPED405

Reinitiating sex work among young men who have sex with men and transgender women who exchange sex in Bangkok, Thailand: substance use, social support, and PrEP use

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**Background:** In Bangkok, HIV incidence is estimated at 11.1 per 100 person-years (95% CI:6.7-17.4) among young men who have sex with men (MSM) and transgender women (TGW) who exchange sex. Among a cohort of young (18-26) MSM and TGW in Bangkok who have exchanged sex in the past year, we examine reinitiation of sex work and outcomes related to sexual behavior, substance use, mental health, PrEP use and other HIV prevention outcomes.

**Methods:** In the COPE study (2017-2020), participants were offered PrEP at baseline assessment and could start or stop PrEP throughout study participation. Analytic sample included 679 participants (1537 follow-up (months 3, 6, and 9 assessments) observations) across three Bangkok sites who reported no sex work in the last 30 days at previous assessment. Each factor was regressed on reinitiation of sex work and its lagged values using logistic regression with fixed effects for study sites and cluster-robust standard errors for participants.

**Results:** Of 679 participants who reported no sex work at previous assessment, 141 (20.8%) reinitiated sex work at their next assessment.

Participants reinitiating sex work were more likely to report having drug use in last 3 months, alcohol or drug use during anal sex in last 7 days, outreach encounters in last 3 months, PrEP discussions and emotional and financial support from young MSM and TGW who sell sex, and PrEP use.



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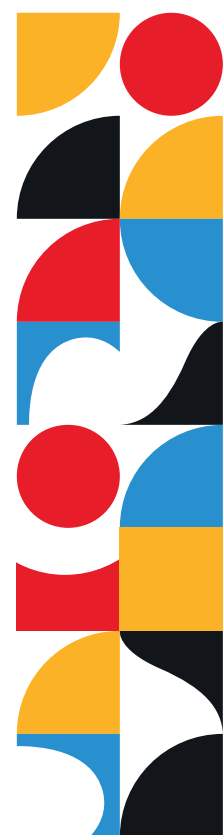
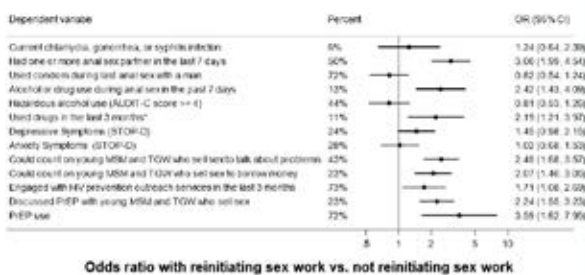




FIGURE The relationship between sex work initiation and individual behaviors, mental health, and community support outcomes among young Thai men who have sex with men and transgender women aged 15-25 years in Bangkok who reported sex work in the last 32 days of the previous assessment (36 = 578; observations = 1937)



Model is adjusted for the lagged values of the dependent variable, study sites, and with cluster-adjusted standard errors for participants  
 \*Drug use: marijuana, cocaine, methamphetamine, ecstasy, psychotropic substances, heroin, heroin, or Viagra

**Conclusions:** Timely and low-barrier access to occupational PrEP is essential given the dynamic nature of sex work among young Thai MSM and TGW. High prevalence of hazardous alcohol use and the association of drug use with reinitiation of sex work suggest the need for combination services for HIV prevention and substance use. Findings suggest leveraging sex-work-related networks and social support could be instrumental in increasing PrEP awareness and use among young Thai MSM and TGW during sex work transitions.

## THPED406

### Association between substance use and PrEP adherence among AGYW enrolled in an HIV prevention study (HPTN 082) in Southern Africa

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**Background:** Adolescent girls and young women (AGYW) in sub-Saharan Africa are at substantial risk of HIV acquisition and would benefit from oral pre-exposure prophylaxis (PrEP) for HIV prevention. Substance use (SU), including hazardous drinking (HD), may result in poor adherence and diminish PrEP effectiveness. The effect of SU on PrEP adherence in AGYW within the African context has not been extensively studied. We sought to determine the prevalence of SU and its association with PrEP adherence in AGYW enrolled in HPTN 082 study.

**Methods:** HPTN 082 enrolled healthy, HIV-negative, sexually active young women (16-25 years) from Harare, Zimbabwe, Cape Town, and Johannesburg, South Africa

between October 2016, and October 2018. Participants were offered oral PrEP and could choose to accept or decline its use. Data on HD was collected using the concise AUDIT-C questionnaire. HD was defined as having an AUDIT-C score  $\geq 3$ . The frequency of use of different illicit substances was collected using the abridged ASSIST questionnaire, with responses scored between 0 (never used a substance) and 4 (daily use of substance). SU was categorized as either low (score= 0), moderate (score=1-10), or high (score $\geq 10$ ). Tenofovir-diphosphate (TFV-DP) concentrations in dried blood spots at weeks 13, 26 and 52 were used to measure PrEP adherence, with poor adherence being TFV-DP concentration  $< 700$  fmol/punch. Repeated measure multinomial regression modelling was used to determine associations between SU and HD vs PrEP adherence.

**Results:** Of the 451 participants enrolled, 427 (94.7%) accepted PrEP. Overall, the prevalence of HD and SU at baseline was 37% and 24% respectively. HD was highest in Cape Town (53%), while SU was highest in Johannesburg (31%). Injection drug use was similar across sites (1%). Cannabis (7%) and sedatives (6%) were the most used substances. HD and SU decreased with continued study participation. After adjusting for site, HD and moderate SU were associated with increasing odds of poor PrEP adherence ( $\alpha$ OR=1.80, 95%CI=1.27-2.58) and ( $\alpha$ OR=1.58, 95%CI=1.11-2.25).

**Conclusions:** SU and HD were high in this study and were associated with poor PrEP adherence. There is a need to integrate HD and SU screening in PrEP initiation and adherence programs for adolescents in Africa.

## THPED407

### Impact of photovoice intervention on trans and gender diverse people affected by HIV and stigma in the border region of Nepal

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**Background:** Trans women in low resource settings make up the largest proportion of trans women globally and are underserved in the HIV response. In 2019, we found that 11.3% of trans women in Nepal had HIV. Anti-trans and HIV stigma were a primary driver of low ART adherence and low HIV care engagement.

We implemented a Photovoice intervention to improve social support to mitigate the effects of stigma on trans women in Nepal.

**Methods:** Two 3-day Photovoice workshops were conducted with trans women in the Terai highways district region of Nepal along the India-Nepal border. Workshops were held in August and December 2023. Pre intervention surveys were conducted to assess HIV status, stigma, and social support.


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Post intervention surveys and qualitative data were collected to assess the impact of the intervention on social support among participants.

**Results:** Most of the 15 participants were between the ages of 30-39 years old (57%), identified as hijra (90%), were very low income (100%) and relied on blessings from their religious work as hijra (57%) and from sex work (57%) for income. Most (93%) participants were living with HIV at enrollment, and 62% said their viral load was undetectable. Most reported that their families were embarrassed by them (71%), that they deserved misfortune because they are trans (42%) and that it was normal for trans women to have HIV (50%).

Post intervention, almost all trans women reported they reached out to their community more for support because of participating in the Photovoice intervention (92%) and felt supported by new friends made at the workshops (78.6%). Most reported they felt they could share their happy or sad moments with friends they made as part of the intervention (86%).

**Conclusions:** Photovoice was an effective method for improving social support and building support networks among trans women at the southern border region of Nepal. Internalized stigma among trans women in the border region of Nepal remained high. Interventions are needed to address external stigma from society to improve the quality of life of trans women in Nepal and to improve their HIV viral suppression.

## THPED408

Exploring differentiated HIV service delivery for men who have sex with men in Africa: a Kenyan qualitative study

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**Background:** This research study presents the findings of a qualitative study conducted in Kenya, assessing the applicability and acceptability of differentiated HIV service delivery models among men who have sex with men (MSM). The study aims to elucidate the unique challenges faced by this population and identify strategies to enhance HIV care through tailored service delivery.

**Methods:** In-depth interviews and focus group discussions were conducted with MSM individuals and healthcare providers in diverse settings across Kenya. A qualitative approach allowed for an in-depth exploration of participants' experiences, preferences, and perceptions related to current HIV service delivery models.

**Results:** Preliminary analysis revealed distinct challenges faced by MSM in accessing and engaging with conventional HIV services, highlighting the need for a more

nuanced approach. Participants expressed a preference for differentiated service delivery models that account for the socio-cultural contexts and stigmatization faced by the MSM community. Factors influencing acceptability included confidentiality, cultural sensitivity, and the integration of comprehensive healthcare services.

The findings underscore the importance of tailoring HIV services to the specific needs of MSM in Kenya. Differentiated service delivery models, such as decentralized testing, community-based outreach, and integration with mental health support, emerged as viable solutions. The study advocates for the incorporation of these insights into national HIV programs to ensure inclusivity and effectiveness.

**Conclusions:** This qualitative study contributes valuable insights into the applicability and acceptability of differentiated HIV service delivery among MSM in Kenya. The results emphasize the need for a more targeted and culturally sensitive approach to address the unique challenges faced by this population.

Integrating these findings into policy and practice has the potential to enhance the impact of HIV services and foster a more inclusive and responsive healthcare environment for MSM in Kenya.

## THPED409

Prevalence and correlates of intimate partner violence among PrEP users in pre-war Ukraine

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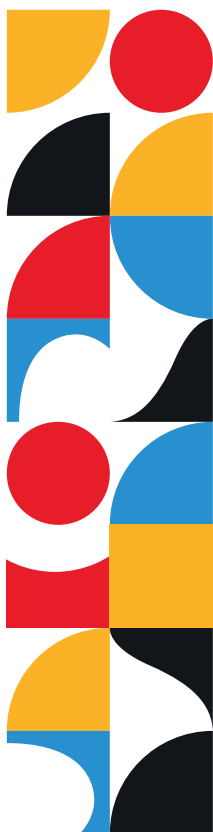
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**Background:** Intimate partner violence (IPV) has been identified as a serious public health threat, however, most research has focused on affected women rather than men. This study assesses the prevalence and correlates of IPV in a sample of gay, bisexual and other men who have sex with men enrolled in a pre-exposure prophylaxis (PrEP) programme in Ukraine.

**Methods:** 1176 men completed an online survey, which was distributed via PrEP case managers between January and February 2022, shortly before Russia's violent attack on Ukraine. The survey was filled out anonymously, capturing possible experiences of economic, emotional, physical and sexual IPV.

We conducted a multivariable logistic regression to assess which COVID-19-related stressors and different sexual and substance use behaviours were associated with an elevated IPV risk.

**Results:** IPV experiences were highly prevalent with 39% of respondents having experienced at least one form of violence in the past six months. Specifically, 27% reported experiences of emotional IPV, and the prevalence of physical





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and economic IPV was at 10% and 8%, respectively. In addition, 8% of respondents reported having been raped by a sexual partner in the past six months. The risk of physical and sexual IPV was significantly elevated among men who disclosed having had sex while on drugs or drunk and among men who had participated in sex parties.

Furthermore, men who faced greater psychological pressures because of the COVID-19 pandemic were at a significantly higher risk of experiencing physical and economic IPV. Men who reported having faced negative financial consequences due to the pandemic were more vulnerable to emotional and sexual IPV.

**Conclusions:** The study highlights high levels of risk and adversity faced by men who have sex with men in Ukraine. While IPV already frequently occurred during the COVID-19 pandemic, vulnerability may further be exacerbated during the ongoing war. Providing multi-layered and LGBT-sensitive support for PrEP users in Ukraine, including IPV prevention efforts, remains a pressing policy task.

## THPED410

Preference for long-acting HIV prevention methods among transgender women at greatest risk for HIV acquisition in eastern and southern United States: findings from the LITE cohort

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**Background:** Despite FDA-approval of two highly efficacious PrEP modalities for transgender women in the United States (daily oral pills; DOP and long-acting injectable; LAI), HIV incidence among transgender women remains high and continues to disproportionately impact young, Black, and Latina transgender women and those in the South. Prior research has identified multi-level barriers to

optimal PrEP use among transgender women, but data on preferred PrEP modalities among this population are limited.

**Methods:** Transgender women without HIV enrolled in The LITE Cohort were asked about PrEP modality preferences as part of their 24-month survey. Using the paired comparison method, we summarized ranked preferences based on an exhaustive set of 10 head-to-head comparisons of 5 PrEP modalities (DOP, LAI, implantable device, topical gel, and intravenous antibodies).

We conducted sensitivity analyses to determine if ranked preferences differed by race, ethnicity, age, geography, or PrEP indication based on CDC guidelines.

**Results:** Between April 2020 and August 2022, 786 transgender women from across the eastern and southern United States completed a 24-month survey. Twenty percent identified as Black, 16% as Latina, 52% were aged 18-29 years old, 47% resided in the South, 34% had a PrEP indication, and 15% were currently using PrEP at the time of the survey. The most preferred modality was the implant (ranked first among 45% of respondents), followed by DOP (21%), LAI (19%), gel (10%), and intravenous antibodies (4%). The implant was ranked highest among Latina transgender women (36%), young adult transgender women (41%), those living in the South (47%), and those with current PrEP indications (45%) while LAI was the top ranked modality among Black transgender women (30%). In a head-to-head comparison restricted to currently available modalities, LAI was preferred over DOP (58% vs 42%). LAI was preferred over DOP regardless of race, ethnicity, geography, age, or PrEP indication.

**Conclusions:** Our findings suggest high interest in implants for HIV prevention, underscoring the importance of ongoing research on implantable drug delivery devices for ARVs. The consistent preference for LAI over DOP among transgender women at highest risk for HIV acquisition highlights the importance of improving access to this modality for equitable PrEP uptake.

## THPED411

AGYW perspectives on PEP and PrEP: online platforms and telemedicine adoption in South Africa

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**Background:** The integration of technology in healthcare, particularly telemedicine and online platforms, is transforming the delivery of health services. This shift is crucial for Adolescent Girls and Young Women (AGYW), given their unique healthcare needs, especially in sexual and reproductive health (SRH).



The study focuses on AGYW's perspectives on these technologies in the context of HIV/AIDS, aiming to align healthcare solutions with their dynamic relationship with technology.

**Methods:** Employing a quantitative research approach, the study investigates AGYW's knowledge, attitudes, and behaviors regarding HIV/AIDS, with a focus on their willingness to adopt telemedicine and online platforms. Using a 5-point Likert scale, electronic surveys are distributed to the entire AGYW population aged 18 to 25, ensuring a cross-sectional snapshot of prevalent factors. The total population sampling strategy reaches 218,279 subscribers of a targeted online magazine, facilitating a diverse and representative sample. A validated structured questionnaire is used, ensuring ethical considerations like informed consent, confidentiality, and voluntary participation. Quantitative data, collected through Likert scale responses, is analyzed using SPSS, employing descriptive and inferential statistics, including ANOVA.

**Results:** Initial findings reveal that 93% of respondents are aware of their HIV status, with 1% reporting multiple sexual partners. Notably, 78% express interest in purchasing HIV self-test kits online, and 57% desire broader online health services. Regarding PrEP, 67% are aware, 17% have initiated PrEP, and 46% are open to online PrEP services. Financially, 60% are willing to spend up to ZAR500 (USD27) for online health services.

**Conclusions:** The study's findings demonstrate a high level of awareness and openness among AGYW toward incorporating online platforms into their healthcare routines. The interest in HIV self-test kits, PrEP, and broader online health services underscores the potential of digital platforms to address reproductive health needs effectively.

The study contributes substantively to the discourse on digital health strategies, emphasizing the importance of aligning interventions with the preferences and priorities of AGYW in South Africa.

Further analysis will refine these insights, guiding the development of targeted interventions in the dynamic landscape of reproductive healthcare.

## THPED412

### Exploring the heterogeneity of psychosocial factors that may influence the acceptability of Pre-exposure Prophylaxis (PrEP) among Men who have Sex with Men (MSM) in the United Kingdom: latent profile analysis

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**Background:** Pre-Exposure Prophylaxis (PrEP) is medication used to prevent the spread of Human Immunodeficiency Virus (HIV). At-risk populations including Men who Have Sex with Men (MSM) are eligible for PrEP for free in the UK. However, HIV surveillance reports indicate stagnated uptake of the drug, alongside increasing rates of HIV infection.

This study aimed to establish latent classes of PrEP and Non-PrEP Users to establish heterogeneous profiles of MSM, based on PrEP acceptability and other psychosocial factors.

**Methods:** 500 MSM participated in an online cross-sectional, psychometric study between June and September in 2023. Latent Profile Analysis was used to discern profiles of MSM based on PrEP acceptability, various psychosocial variables (e.g., trust in science) and behavioural factors (e.g., propensity for condomless sex).

Follow-up ANOVAs then helped to help reduce the defining of spurious classes, that is, to measure distinct group differences between the identified profiles.

**Results:** Four latent profiles of MSM were established by examining Akaike Information Criterion (AIC), Bayesian information criterion (BIC) and Entropy levels. Profiles were then qualitatively defined with the use of theory (e.g., Identity Process Theory), recent literature, and patterns of item means.

The resulting labels were as follows:

1. PrEP Ambivalent,
2. PrEP Accepting,
3. PrEP Hesitant and,
4. PrEP Rejecting. ANOVA (with Bonferroni correction) established significant group differences across each profile, strengthening the typological assumptions of latent groups.

**Conclusions:** This novel study highlights current profiles of MSM and their acceptability of PrEP. It quantifies differences across psychosocial factors, such as LGTBQ+ connectedness, perceived risk of HIV and, condom self-efficacy that may increase or decrease PrEP uptake and use.

To the authors' knowledge, this had yet to be done within this specific population (i.e., UK-based MSM). As such, the use of clustering techniques to establish vulnerabilities to specific PrEP-barriers can now help develop targeted public health interventions. More specifically, a focus on the 'PrEP hesitant' group shows the most in-need of PrEP



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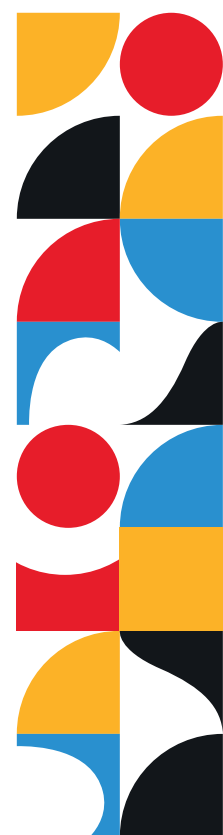
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counselling to establish effective HIV prevention strategies; especially with the high prevalence of condomless sex reported in this group.

Overall, this may ameliorate the uptake of PrEP, helping combat the global HIV epidemic.

## THPED413

**Social cohesion, social support, and network size are linked to reduced psychological distress among transgender women in São Paulo, Brazil**

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**Background:** Empirical evidence highlights the importance of social connections on mental health. Less understood are differential effects based on social connection typology, particularly among populations with multi-level vulnerabilities to HIV acquisition.

We investigated links between three measures of social connection (social cohesion, social support, friendship network size) and psychological distress among transgender women (TGW) in São Paulo, Brazil.

**Methods:** We conducted secondary analysis of baseline data from a randomized controlled trial (ClinicalTrials.gov NCT04114955) assessing efficacy of a peer-led intervention to improve HIV testing, increase PrEP uptake, and reduce internalized stigma among Brazilian TGW (N=392, 2020-2024). Eligible participants were ≥18 years old; assigned 'male' sex at birth and identified as female or transgender; residing in São Paulo; and not living with HIV. Interviewer-administered questionnaires captured participant demographics, sexual behavior, psychosocial well-being, healthcare utilization, and substance use.

We measured psychological distress as a continuous outcome using the Kessler Psychological Distress Scale (K10). Social cohesion was measured using six questions on transgender community identity and strength of community-level relationships (alpha=0.82). Social support, or support from other transgender persons, was measured using seven questions on emotional, informational, tangible, and appraisal support (alpha=0.86).

Personal network size was determined using participants' self-reported log number of transgender friends. Linear regressions evaluated associations between psychological distress and social cohesion, social support, and network size, separately. Models adjusted for age, race/eth-

nicity, income, unstable housing, accessing healthcare in past year (gender-affirming and HIV testing), drug use in prior year, and recent alcohol consumption (Alcohol Use Disorder Identification Test), given associations with the outcome ( $P<0.20$ ).

**Results:** Overall, median age was 32 (IQR 25-40), and 25% were Black. Median K10 score was 28 (IQR 22-34), indicating high prevalence of moderate to severe psychological distress. TGW reporting higher mean social cohesion experienced less psychological distress (beta=-3.27; 95%CI: -4.79;1.75). Similarly, less distress was reported by those with higher mean social support (beta=-2.22; 95%CI: -3.12;-1.27) and more transgender friends (beta=-2.08; 95%CI: -3.41;-0.74).

**Conclusions:** Our findings elucidate associations between social connections and lower psychological distress among TGW in Brazil. Peer-led approaches offering personalized support could anchor interventions to promote positive HIV and mental health outcomes.

## THPED414

**Ethical complexities in HIV testing among African, Caribbean, and Black Migrant communities in Canada: Ubuntu-Pamoja Study**

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**Background:** Existing research on ethical issues in HIV testing, such as perceptions of consent, privacy, and management of HIV-related data and biosamples among African, Caribbean, and Black (ACB) migrant populations in Canada, is scarce.

The study aimed to explore these ethical complexities in community-based HIV testing within the ACB communities in Canada.

**Methods:** A total of 33 ACB migrant individuals (mean age: 34; 20 self-identified as women, 13 as men, 25 self-identified as heterosexual, and 8 as LGBTQIA+) were recruited through flyers, peer networks, and social media. One-hour individual, semi-structured interviews were conducted, focusing on participants' perspectives and experiences with HIV testing, including access challenges, to understand the factors that affect HIV testing utilization. Participants were compensated \$40 for their time. Iterative inductive data analysis was applied to the data using MAXQDA.

**Results:** Participants expressed significant concerns about the collection, sharing, and use of HIV data from healthcare encounters, revealing mistrust towards institutions like police, child welfare, and immigration accessing their health information. Their worries centred on the handling of biological samples, data misuse, HIV criminalization, deportations, and challenging consent, privacy, and bodily autonomy principles. While open to contributing to medical research, they unanimously demanded greater

transparency, informed consent, and control over the secondary use of their health data. Participants emphasized informed consent, the need for clear communication on sample use, and ethical considerations like compensation for sample use in future research.

**Conclusions:** To our knowledge, this is the first study to explore the ethical issues in community-based HIV testing among Black, African, and Caribbean migrants in Canada. The study underscores the need for culturally sensitive approaches in HIV testing and ethical governance in healthcare for ACB communities. It highlights the importance of prioritizing participant empowerment, ensuring transparency, practicing informed consent, and implementing robust data security measures to balance effective HIV information management with the protection of individual rights. A comprehensive, decolonizing, and anti-racist strategy is crucial for transforming HIV testing and healthcare into an equitable and just system.

## THPED415

Incorporating mental health strategies for sustaining progress in HIV/STI epidemic control

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**Background:** Kenya has achieved significant advancements in the advocacy and delivery of comprehensive HIV combined prevention services to the Key Population. However, In early 2023, there was a very hostile environment for the Key population and LGBTQ community which led to a 60% decline in individuals receiving HIV/STI services at the safe space.

**Description:** In response to this crisis, through our "Come We Share" activities, referred to as "Spaces of Grace," we reached out to 95 organizational leaders, peer educators, and paralegals. During these sessions, individuals engaged in open dialogues, sharing personal narratives that addressed challenges related to sexuality, mental health, HIV concerns, Hostile environment, the impact of punitive laws, and the navigation of cultural practices and norms. These discussions were facilitated by psychologists, and necessary interventions were offered. Shockingly, the initiative unveiled that 95% of participants grappled with mental health challenges, with 90 (95%) having anxiety, 45 (47%) having depression symptoms, and 23 (25%) having PTSD. All participants were experiencing activist burnout. They reported increased fear and anxiety about leading the HIV and advocacy activities as it exposed them to the general communities. 42 (42%) Participants reported to have experienced violence in the period. Some had run away from home and others were in self-isolation as they feared for their lives. Critical

questions arose, with many wondering the worthiness of their efforts, and questioning the long-term impact and systemic changes that could be achieved.

Others expressed uncertainties about the sustainability of their advocacy efforts. Others expressed concerns about the lack of substantial investments to support them in emergencies.

**Lessons learned:** The initiative uncovered the profound impact of HIV programming and the hostile environment on the mental well-being of key advocates and community leaders.

In addition, it brought to light the current programming model has neglected the well-being of these pivotal activists, who serve as the backbone of HIV prevention and advocacy programs.

**Conclusions/Next steps:** Future steps involve sustained efforts to reformulate program structures, prioritizing the mental health of these key individuals, as their well-being directly influences the sustainability and impact of HIV initiatives within the Key Population in Kenya.

## THPED416

Factors associated with prediction of sex for hypothetical on-demand PrEP use among young men who have sex with men in the United States

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**Background:** Factors associated with accurate prediction of sex - which is critical for successful on-demand pre-exposure prophylaxis (PrEP) use - among young men who have sex with men (YMSM) in the United States (US) are not well understood.

**Methods:** We followed 120 YMSM (ages 16-24) in the US from April through June 2021 for eight weeks with digital daily surveys assessing their perceived probability of anal sex in the next 24 hours (0-100%), actual engagement in anal sex in the prior 24 hours, and timing of advance knowledge that an actualized anal sex encounter was going to occur ( $\leq 2$  vs.  $> 2$  hours before the encounter). We used generalized linear mixed models to estimate concordance statistics (c-statistics) between predicted probabilities of sex and actual sexual encounters, with stratification by baseline sociodemographic, mental health, and cognitive factors, including executive functioning and impulsiveness. We compared groups using a chi-square test with  $\alpha=0.05$ .



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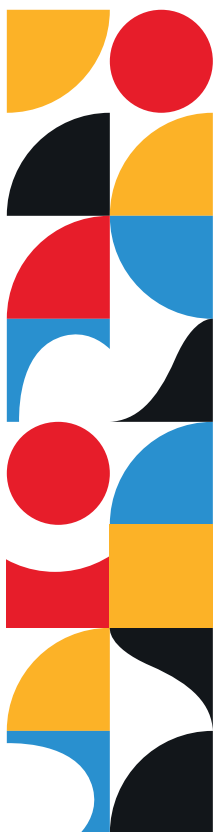
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Additionally, we used generalized estimating equations to estimate unadjusted risk ratios (RRs) for the association between each factor and the risk of an *unpredicted spontaneous encounter*, defined as an encounter for which the prior-day predicted probability of sex was <50% and advance knowledge was ≤2 hours before the encounter, and therefore unlikely to have been protected by on-demand PrEP use.

**Results:** Overall concordance between prediction of and actualization of sex was high (c-statistic=0.87, 95% CI=0.85, 0.88), but persons with executive functioning in the lowest (vs. highest) quartile and impulsiveness in the highest (vs. lowest) quartile had decreased predictive abilities ( $p=0.003$  and  $p=0.004$ , respectively). Risk of an unpredicted spontaneous encounter was higher in Black vs. white participants (RR=1.63, 95% CI=1.38, 1.92) and those experiencing vs. not experiencing depressive symptoms (RR=1.34, 95% CI=1.09, 1.64).

**Conclusions:** On-demand PrEP may be especially challenging for some YMSM, potentially placing them at increased risk of HIV acquisition. Those with depression, impulsivity, or executive function challenges may particularly benefit from interventions that address their mental health and developmental needs. Ultimately, tailored approaches that account for both individual dosing preferences and factors associated with prediction challenges may help to optimize selection of, adherence to, and protection by on-demand PrEP among US YMSM.

## THPED417

Considerations for the inclusion of adolescents in a gonorrhea treatment trial: experiences from the Zoliflodacin study in Cape Town, South Africa

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**Background:** Despite the high prevalence of sexually transmitted infections in adolescents globally, they are often excluded from clinical research. The possible consequence of ethical and regulatory guidance designed to protect children is delayed access to potentially lifesaving interventions.

We sought to demonstrate that older adolescents (16- and 17-year-olds) could be safely enrolled in a phase 3 clinical trial and parental proxy consent safely waived.

**Description:** The Zoliflodacin study (NCT03959527) was a pivotal phase 3 trial evaluating the efficacy and safety of a single, oral, dose of zoliflodacin compared to a combination of a single intramuscular dose of ceftriaxone and a single oral dose of azithromycin in the treatment of patients with uncomplicated gonorrhoea. We reviewed

scientific literature and advocacy calls to include adolescents in adult clinical trials. We consulted with key stakeholders including youth advisers, legal experts, ethicists, trial investigators, the ethics committee, and community advocates before and during trial execution, and identified priority actions to facilitate the inclusion of adolescents without the need for parental consent.

**Lessons learned:** Specific actions to promote the inclusion of adolescents include:

1. Early engagement with community stakeholders and parents, with written documentation of consultations,
2. Dialogue with the adolescent community advisory board on how best to engage adolescents and ensure consent forms were age-appropriate,
3. Consultation with legal experts, ethicists and the ethics committee to draft a robust and detailed ethical justification for the waiver of proxy parental consent,
4. Engaging with regulatory authorities and implementing a protocol requirement for test of cure and standard of care for treatment failure,
5. Implementing enhanced protection measures to mitigate risk including frequent follow-ups, encouraging involvement of a trusted adult and conducting the research in an adolescent-friendly space,
6. Providing the ethics committee with frequent progress reports for minor participants.

**Conclusions/Next steps:** Early and robust stakeholder engagement can facilitate the inclusion of adolescents in phase 3 studies. The Zoliflodacin study was the first treatment study in South Africa to have been granted a waiver of parental consent for older adolescents and will hopefully result in further engagement around the inclusion of adolescents in treatment and prevention clinical trials in South Africa.

## THPED418

Navigating oral PrEP patterns of use: a qualitative longitudinal study of gay, bisexual and queer men's everyday use of non-daily PrEP in Canada

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**Background:** The Canadian HIV pre-exposure prophylaxis (PrEP) guidelines recommend both daily and on-demand dosing for gay, bisexual, and queer men (GBQM), meeting additional risk criteria. Despite this recommendation, a paucity of research has focused on GBQM's experiences and perspectives on alternative PrEP use patterns beyond daily intake.


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We aimed to investigate how GBQM in Canada implemented non-daily PrEP use and the contextual factors influencing decisions to pause, resume, or discontinue PrEP.

**Methods:** As part of PRIMP, a mixed-methods implementation science study, we conducted annual qualitative interviews with former and current PrEP users from Ontario ( $n=18$ ) and British Columbia ( $n=20$ ), Canada, between 2020-2022. A total of 107 interviews were completed across three rounds. Interviews were transcribed verbatim and coded in NVivo using reflexive thematic analysis.

**Results:** We identified two overall non-daily PrEP use patterns: periodic PrEP and on-demand PrEP. Many participants described periodic PrEP involving brief interruptions of a few weeks or months, returning to daily PrEP during heightened sexual activity. Others followed the standard 2-1-1 on-demand PrEP schedule. Several participants reported complete discontinuation with no future plans for PrEP use unless social and sexual situations change significantly. During the COVID-19 pandemic, participants used PrEP periodically, pausing when sexual activities decreased and restarting daily when sexual activities resumed. Others took breaks due to relationship changes or sexual inactivity, restarting PrEP use one week ahead in anticipation of future sexual experiences.

On-demand PrEP was adopted by those experiencing side effects, while some used it to save costs. Some men stopped PrEP use for a sustained period due to becoming monogamous, losing health insurance, experiencing side effects, and low perceived HIV risk. Most participants expressed concerns regarding limited information about non-daily PrEP use, resorting to online sources or relying on insights from peers for guidance.

**Conclusions:** PrEP users adapted non-daily use to evolving contexts, deciding on periodic, on-demand, or discontinuation based on anticipated risk and sexual behaviours. Such adaptive PrEP-taking patterns suggest GBQM's capacity to correctly identify their own seasons of risk. PrEP clinical counselling should include discussions on strategies to discontinue and resume PrEP appropriately for all PrEP users, including alternative risk reduction strategies.

## THPED419

### Acceptability of long-acting injectable (LAI) pre-exposure prophylaxis (PrEP) among key populations in Malaysia

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**Background:** The Malaysian Drug Control Authority, in 2023, approved Apretude (Cabotegravir) a long-acting injectable pre-exposure prophylaxis as an additional option for HIV prevention. Potential LAI-PrEP users' per-

spectives are necessary to inform the roll-out of LAI-PrEP and efforts to support compliance. This study aimed to determine the acceptability of LAI-PrEP, specifically the facilitators and impediments to uptake that may be experienced by vulnerable key populations at high-risk of acquiring HIV.

**Methods:** This qualitative study commenced in August 2023. Purposive sampling was used to recruit participants. Advertisements were placed at HIV-related community-based organisations which directed potential participants to the researchers. Semi-structured interviews were conducted in-person or via online platforms, in English and Malay languages, with men-who-have-sex-with-men (MSM), transgender women and female sex workers. Interviews duration were 45-60 minutes, audio-recorded, and transcribed via a transcription service. Data was analysed using iterative thematic analysis. NVIVO 12 was used for data coding, from which themes were developed.

**Results:** Participants were MSM ( $n=15$ ), transgender women ( $n=10$ ) of which five were sex workers, cisgender female sex workers ( $n=2$ ) aged between 24-52 years. They identified as Malay ( $n=14$ ), Chinese ( $n=6$ ), Indian ( $n=3$ ) and other ( $n=4$ ) ethnicity reflecting the Malaysian ethnic population distribution. Most participants reported high interest in LAI-PrEP specifying no daily pill regimen, likely improved adherence, privacy (injectable viewed as discreet), and bi-monthly doses as conducive for uptake and persistence. Concurrently, they raised concerns related to LAI-PrEP potential side effects, interaction with gender affirming hormones (among transgender women) and fear of needles.

Participants would prefer LAI-PrEP providers that administer non-judgemental services, employ peer workers/navigators, ensure health data confidentiality and privacy, are centrally located, and offer short waiting time. LAI-PrEP dose frequency at two-, three- or four-month intervals were favoured by participants. Many participants prefer self-administration of LAI-PrEP.

LAI-PrEP unaffordability was cited as a main deterrent to uptake. Unless injectables are provided at no-cost through government hospitals/health clinics or priced similarly to oral PrEP, participants will not use LAI-PrEP.

**Conclusions:** The outcomes will contribute evidence to inform planning by government and community stakeholders to develop strategies, build HIV-related workforce capacity and prepare key populations for the provision of LA-PrEP.





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## THPED420

Pre-exposure prophylaxis uptake among Black/African American men who have sex with men in Midwestern, United States: a systematic review

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**Background:** Black/African American men who have sex with other men (BMSM) are disproportionately affected by HIV, experience significant disparities in HIV incidence and prevalence, and face significant barriers to accessing HIV treatment and care services, including pre-exposure prophylaxis (PrEP). This review examined patterns of, and barriers and facilitators to PrEP uptake among BMSM in the Midwest, United States.

**Methods:** Five databases (CINAHL Plus, PUBMED, PsychINFO, SCOPUS, and Web of Science) were searched in March 2023. We included studies that focused on BMSM in the Midwestern states; only empirical studies (either quantitative or qualitative or both) were considered. The barriers and facilitators were thematically analyzed and structured under the Capability, Opportunity, Motivation and Behavior (COM-B) model.

**Results:** We screened 850 articles, and 24 (quantitative: 14; qualitative: 8; mixed methods: 2) met our eligibility criteria. Most (n=16) of the studies were conducted in Chicago. PrEP uptake ranged from 3.0% to 62.8%, and most studies (n=11) reported a prevalence of less than 15%. We identified themes related to physical capability and opportunity, psychological capability, social opportunity, reflective and automatic motivation for PrEP uptake. The barriers include lack of PrEP awareness, inadequate PrEP access, PrEP stigma, side effects, PrEP preference, socioeconomic status, medical insurance and support, partner trust, lack of trust in the health system, and precautions with sexual partners. The identified PrEP facilitators included a positive perception of PrEP as an effective HIV prevention method, friends influence, experience with dating men living with HIV, safety, phobia for HIV, disdain for condoms, and power and personal autonomy.

**Conclusions:** In the Midwest, BMSM PrEP uptake is generally low, and identified barriers increase the risk of acquiring HIV. Multimodal and multilevel strategies are needed to improve PrEP uptake among BMSM especially in the Midwest, including knowledge improvement and adequate funding to provide free PrEP.

## THPED421

"Like a testimony": PrEP promotional messaging preferences to reduce stigma and improve trust among gay, bisexual, and other men who have sex with men in the Southeastern United States

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**Background:** In the Southeastern US, PrEP uptake among gay, bisexual, and other men who have sex with men (GBM) significantly lags behind the national standard with tremendous racial and ethnic disparities. Many GBM feel uncomfortable accessing PrEP due to anticipated stigma or healthcare provider mistrust, and targeted ads to this community may lead to perceived stigma. We explored the PrEP messaging preferences of GBM in the Southeast to inform PrEP promotions for increased uptake.

**Methods:** We interviewed self-reported HIV-negative cisgender GBM, 18 years and older, purposively sampled from community venues, word-of-mouth, and online recruitment. Using an exploratory interview guide, grounded in the Andersen Healthcare Utilization Model, we explored how stigma, medical mistrust, media use, and digital access influences preferences for PrEP promotional content and delivery to affect PrEP access. Two coders (one with similar lived experiences to improve reflexivity) inductively and deductively coded interview transcripts. We assembled subcodes and codes into construct-based categories to operationalize thematic analysis.

**Results:** Forty GBM (68% Black, median age 28 years) completed interviews. Emerging themes primarily mapped to predisposing factors and enabling resources. Highlighted themes include:

1. *The role of diverse and relatable identities in messaging.* Participants suggested that promotions should present many different identities and presentations; most participants felt only one identity represented (e.g., Black, gay men) is stigmatizing and reduces awareness among other identity groups. Relatability improves the promotion trustworthiness;
2. *Preferred content for PrEP promotion.* Content should emphasize personal experiences through a gain-frame perspective as "success stories;"
3. *PrEP promotional platforms.* GBM preferred varied delivery platforms with concise and "eye catching" content.

Themes	Subthemes	Exemplar Quotes	Construct
The role of diverse and relatable identities in messaging.	Diversity reduces stigma from a singular identity presented.	"Oversaturating the type messaging I think only further perpetuates stigma."	Predisposing Factors
		"Most of them are honestly and truly set around Black, gay men, so it just seems like you get this disease from a Black, gay man."	
		"If the commercial is just focused on queer people, it's gonna always have the backlash or the stigmatization of it just being a queer illness instead of being like everybody's illness."	
Preferred content for PrEP promotion	Relatability increases the appeal and response to promotion.	"Start by saying, 'hey, this is not just for men who sleep with men. This is for all people,' right? I think if we use that type of language, it can start to deconstruct and de-stigmatizing everything that's attached to this field...Once you change that, we'll change the whole paradigm of the purpose of PrEP."	Enabling Resources
	PrEP promotions should be for anyone at risk for acquiring HIV.	"I do think that those commercials are more focused on the LGBT community, and it should be more focused on everyone." "I think it could be used or should be used for anyone having unprotected sex, whether that's gay, straight, female, White, Black, Hispanic, all age groups."	Predisposing Factors
	Personal anecdotes and experiences as success stories will increase action through gain-frame perspectives.	"Maybe giving somebody's story in the ad...that might actually get people interested." "Just telling about my personal experience...more so like a testimony." "This is how PrEP works for me."	Enabling Resources
PrEP promotional design and platforms	Content should focus on access, effectiveness, and safety.	"It's like it's secret. Like everything - it's not secret, but it's not advertised for people to actually go get help or go seek it." "I've never seen an ad discuss where to get [PrEP]. It just say, 'call your doctor.'"	Need
	Promotions should be "concise and clear" and "eye catching."	"Just knowing how much the risk is reduced. I don't know anyone that wouldn't wanna take that." "I like short and to-the-point commercials." "One of those flyers that just was made. Like, it's not fun, it's not bold, it's not trying to reach out. It's just there."	Enabling Resources
	Media access is common, and digital promotion is preferred.	"For me, I think that [digital promotion] is the most effective...I am gonna be on my phone pretty much all day."	Enabling Resources

Table 1. Themes, subthemes, and quotes mapped to constructs in the Andersen Healthcare Utilization Model.

**Conclusions:** Current PrEP promotions must evolve to better reach Southern GBM. Diverse representation with lived experiences delivered in concise and attractive PrEP promotions would reduce stigma and foster relatability and trust. These findings highlight the need for nuanced PrEP promotion that reaches communities in greatest need for PrEP uptake.

## THPED422

### Opportunities for an integrated continuum of HIV prevention and care among transgender and gender-diverse people in Puerto Rico

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**Background:** In Puerto Rico (PR), HIV continues to disproportionately affect sexual and gender minorities, and transgender and gender-diverse (GD) people experience the worst outcomes. To end the HIV epidemic in these groups, it is necessary to provide an integrated approach to primary and secondary prevention.

This study aimed to assess HIV prevention and care outcomes among transgender and GD individuals in PR.

**Methods:** Data were analyzed from 126 participants from a transgender and GD community-centered assessment conducted in 2020. Participants provided information about sociodemographic characteristics, sexual risk practices, history of sexually transmitted infections (STIs), and engagement with primary and secondary HIV prevention services.

**Results:** Despite having nearly three-quarters of the participants (65%) reporting having completed a degree beyond high school, low income (88% earning under the poverty level) was common. Most of the sample (90%) were HIV-negative. Over a quarter (26%) have been diagnosed with an STI in their lifetime. Over a quarter of the sample (39%) reported engaging in sex work, and this group also represented 62.7% of those with HIV.

Regarding HIV primary prevention services, trans women exhibited robust HIV and STI testing rates (e.g., 38% of the sample tested for HIV more than once a year), while testing among trans men was less frequent (14% once a year). While PrEP awareness was high (91%), use was low (14%). Interest in PrEP was moderate (21%), and awareness of U=U (73%) and access to gender-affirming care (69%) were high. Among those with HIV (6.8%), all were engaged in ART, and all achieved viral suppression.

**Conclusions:** Findings from this analysis provide insights on current primary and secondary HIV prevention engagement among trans and GD people in PR and can be leveraged to support integrated HIV prevention efforts to meet the specific needs of minoritized gender-diverse individuals.

The success of engaging people with HIV in care can support strategies to improve primary prevention services and practices in these groups.



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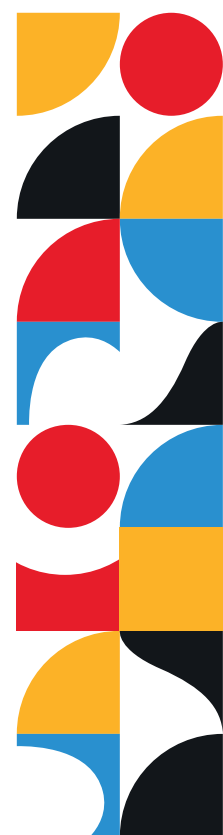
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## THPED423

### Somos Youth Community Center

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**Background:** The project "Somos Youth Community Center" SYCC aims to be the first youth center in Bogota and Soacha, Colombia, focused on human, sexual and reproductive rights oriented to vulnerable LGBTIQ+ population between 14 and 24 years old, with the objective of having a contribution to increase knowledge, HIV diagnosis and prevention services.

**Description:** The SYCC was built under the strategy of combined HIV prevention from an intersectional approach that recognizes the diversity of cultural, sexual, gender and nationality identities of young people. It also proposed to interconnect in one place -with a community-based model- educational, artistic or cultural spaces, cyber-educator type platforms and the use of communicative messages developed by them.

In addition, it prioritizes its attention to men who have sex with men MSM; trans women; Cis women, transgender men and male sex workers; and men who use psychoactive substances.

**Lessons learned:** The creation of the SYCC arises from the findings of the work developed by the community-based organization Red Somos since 2007 in Bogota and Soacha. Throughout its trajectory, it has shown that sexuality is approached from institutional settings where fear of its consequences is inculcated (unwanted pregnancies, STIs and STDs) and its approach is based on the reductionism of sexuality, prejudice and individual moral character. Likewise, the attention provided by district health workers creates barriers to access to contraceptive methods and counseling on sexual and reproductive health.

**Conclusions/Next steps:** In the work carried out in its first year of operation, the SYCC has implemented actions that can contribute to the current Colombian health system, such as the need and importance of working with communities from a model that integrates the participation of peers or community peer agents, since the relationship of communities tends to have greater assertiveness and effectiveness when the community identifies a person with whom they share a certain degree of equality or similarity. This action has allowed the development and integration of adolescents and young people to safe spaces to address their sexuality and self-care.

## THPED424

### What are the enablers and barriers to oral PrEP uptake and continuity among key and vulnerable populations? Results from an assessment in Eswatini

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**Background:** Eswatini introduced daily oral pre-exposure prophylaxis (PrEP) in 2016 and event-driven (ED) PrEP in 2021. Despite concerted efforts, uptake remains low among people at substantial risk. The PEPFAR/US-AID-funded Meeting Targets and Maintaining Epidemic Control (EpiC) project conducted a PrEP assessment to provide insights into enablers and barriers for PrEP uptake among key populations (KP) in Eswatini.

**Methods:** We interviewed 346 KP and priority populations (PP) receiving services in EpiC project. Semi-structured interview guide was used for in-depth interviews (IDI) among 122 clients who started and continued with PrEP for more than three months while interview schedule was used among 224 who refused PrEP or dropped within three months. Interviews (20-30 minutes) were conducted with consenting clients by trained EpiC nurses.

Quantitative data was analyzed in an Excel file while qualitative was grouped into themes. Ethics clearance was received from FHI 360 and Eswatini National Health Research Review Board.

**Results:** Top PrEP uptake barriers included: pill burden; lack of time for refills; stigma associated with PrEP and ART; and dislike of PrEP-branded packages (Table 1).

Notably, pill burden was reported less among MSM. Key enablers for PrEP uptake/continuity included: easy access to PrEP; refill reminders from health providers; and self-reminders from clients (Table 2).

**Conclusions:** The PrEP assessment provided information on enablers and barriers to PrEP uptake and continuity within EpiC program. KP generally had more challenges in PrEP uptake compared to PP. Programs should analyze distinct issues on uptake for different sub-populations, addressing them based on feedback from the recipients of care.



## THPED425

### Stigma reduction and mental health promotion for sexual and gender minorities at risk of/living with HIV in Nigeria: implementation lessons

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**Background:** High levels of stigma are experienced by sexual and gender minorities (SGMs) – including in Nigeria, where same-sex behavior is criminalized – yet there are few if any evidence-based interventions for SGMs that address stigma and related mental health concerns in Nigeria (or across Africa). We derived lessons from the development and implementation of a novel stigma reduction intervention for SGMs in Nigeria.

**Description:** The program took place in Lagos, Nigeria (April–September 2022). It drew upon cognitive behavioral therapy principles, and consisted of four workshops addressing intersectional and internalized stigma, mental health, and HIV in a small group setting ( $n=10$ –12 participants). Sessions were facilitated by community health workers (CHEWs) at an SGM-friendly community-based organization (CBO). 185 sexual minority men (SMM) and 55 transgender women (TGW) participated in the program. Complementing the RCT-based evaluation (reported on elsewhere), focus group discussions with CHEWs ( $n=5$ ), and in-depth interviews with TGW ( $n=12$ ), SMM ( $n=12$ ), and program staff ( $n=3$ ) were conducted.

**Lessons learned:** After consultation with community members and topical experts, an HIV status neutral program was recommended and implemented, with self-identified SMM and TGW included in separate groups. The program was successful in recruiting from the SGM community even in this highly challenging environment, and almost all participants attended all four sessions. Participants reported appreciating the program's identity-affirming messages, and how HIV prevention/treatment was not the only topic addressed but was instead woven into the program as an important aspect of self-care. As reported, program satisfaction was also due to the welcoming and safe CBO environment and positive rapport with the CHEWs.

Program staff and participants indicated that the sessions led to increased resilient coping mechanisms to confront stigma, self-blame, and depression, and provided an environment where participants could give and receive social support.

**Conclusions/Next steps:** The intervention was highly regarded by participants and well attended, suggesting feasibility / acceptability of the novel program. Feedback suggests that the approaches used represent important directions for HIV programming, including: centering mental health and wellbeing in an HIV status neutral

program; group-based stigma reduction programming to facilitate shared resiliency / support; and basing programs out of locally credible, experienced CBOs.

## THPED426

### Elevating HIV case identification in men who have sex with men and transgender people through Peer-Driven Interventions: insights from Cambodia

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**Background:** In Cambodia, despite commendable achievements in HIV treatment adherence and viral load suppression, 9% of people living with HIV remain unaware of their status. To address this gap, the HIV response program requires heightened innovation and a targeted approach, mainly focusing on higher-risk key populations such as men who have sex with men (MSM) and transgender people (TG). Introducing Peer-Driven Intervention Plus (PDI+) has emerged as a strategic initiative to enhance the identification of new cases among MSM and TG in Cambodia.

**Description:** PDI+ employs an incentive-driven, peer-centered, and snowball approach, where individuals (seeds) are equipped with coupons to recruit peers within their networks for risk screening and HIV testing services at designated hotspots. Implemented by the Khmer HIV/AIDS NGO Alliance (KHANA), a prominent non-governmental organization in Cambodia, and its partners, PDI+ was executed in eight provinces from 2021–2023. Eligible participants at high HIV risk were incentivized with USD 2.50 for confidential HIV/Syphilis testing and an additional USD 2.50 for each recruit. Seeds received five coupons, valid for two weeks, to facilitate the recruitment of five participants, with one coupon per recruiter.

**Lessons learned:** Between 2021 and 2023, seeds/recruiters successfully enlisted 4,380 participants (3,408 MSM and 972 TG) for PDI+ program eligibility screening and HIV risk assessment. Of the 4,181 participants (3,258 MSM and 923 TG) who underwent HIV testing, 273 (6.5%) received positive results, with 171 (5.2%) identified as MSM and 102 (11.1%) as TG. All individuals diagnosed with HIV were promptly enrolled in ART clinics for necessary care and management.

**Conclusions/Next steps:** This intervention program substantiates the effectiveness of peer-driven network interventions as a viable method for HIV case detection. The



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PDI+ approach has demonstrated superiority over traditional methods, enabling increased accessibility and recruitment of hard-to-reach populations. Moving forward, we recommend further expanding and integrating PDI+ initiatives into existing HIV response programs, tailoring outreach strategies for sustained engagement, and fostering collaborations to enhance the scalability and impact of peer-driven interventions in HIV detection and prevention efforts.

## THPED427

Developing and implementing a tailored mental health assessment tool for sex workers: insights from SWING clinics in Bangkok and Pattaya

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K. Chalermkrittikorn<sup>1</sup>, A. Thepbinkarn<sup>1</sup>, K. Hiek Thy<sup>1</sup>,  
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**Background:** This research, conducted by the Service Workers In Group Foundation (SWING), aims to develop a mental health self-assessment tool specifically for sex workers. Since 2022, SWING's clinics in Bangkok and Pattaya have utilized the 2Q Depression Screen alongside the PHQ-9 to identify depression among the clients. However, among 7,823 screenings, five cases of depression were flagged, with one identified as moderate. This project emphasizes the need for specialized, stigma-free mental health resources for sex workers, addressing unique challenges and promoting well-being.

**Methods:** The development of SWING's mental health self-assessment tool combined the Stress Test Questionnaire (ST-5) and the PHQ-9, with additional elements addressing specific experiences of sex workers. This included concerns related to mental well-being, sexual health, and the impacts of COVID-19. A survey of 200 sex workers, aged 18 or older, in Bangkok and Pattaya focused on factors such as workplace safety, experiences of violence, alcohol consumption during work, family obligations, and readiness for unexpected events like pandemics, ensuring the tool's relevance to this group.

**Results:** The self-assessment tool indicated that 20% of participants had minimal to moderate depression, a rate higher than what was previously identified in clinic settings. Significant factors impacting depression levels encompassed workplace type, alcohol consumption, self-rated health status, chronic disease, experiences of physical abuse, instances of clients removing condoms, and overall stress levels. This highlights the multifaceted and intricate nature of the mental health challenges encountered by the participants.

Characteristics	Patient Health Questionnaire (PHQ-9)						Pearson Chi-square (p-value < 0.05)
	No to minimal depression (0-4 scores) (n=147)		Mild to Moderate Depression (7 - 27 scores) (n=53)		Total (N=200)		
	n	%	n	%	n	%	
<b>Main workplace</b>							<b>0.62*</b>
Bar/club	84	57.14%	8	15.09%	52	100.0	
Agency bar	9	6.12%	5	9.43%	14	100.0	
Tourist massage	49	33.33%	7	13.21%	56	100.0	
Other bars, clubs	6	4.08%	0	0.00%	6	100.0	
Public area/Street based	28	18.98%	4	7.55%	32	100.0	
Online	24	16.33%	7	13.21%	31	100.0	
Not fixed working area	6	4.08%	6	11.32%	12	100.0	
<b>Alcohol Consumption During Work Hours</b>							<b>0.22*</b>
Never drink at all	43	29.25%	7	13.21%	50	100.0	
1-2 small bottles or glasses (once/day)	22	14.97%	11	20.75%	33	100.0	
3 or more small bottles or glasses (once/day)	38	25.86%	13	24.53%	51	100.0	
Drink occasionally, but not every day	59	40.14%	7	13.21%	66	100.0	
<b>Self-assessment health status</b>							<b>0.02*</b>
Not good	4	2.72%	4	7.55%	8	100.0	
Moderate	43	29.25%	18	33.77%	61	100.0	
Good	84	57.14%	14	26.42%	98	100.0	
Very good	31	20.82%	2	3.77%	33	100.0	
<b>Chronic disease with long term treatment</b>							<b>0.33*</b>
Yes	16	10.89%	9	16.98%	25	100.0	
No	147	100.00%	26	49.06%	173	100.0	
<b>Experienced physical abuse by clients in the past year</b>							<b>0.001*</b>
Yes	24	16.33%	13	24.53%	37	100.0	
No	123	83.67%	40	75.47%	163	100.0	
<b>Clients removed or did not use condom in the past year</b>							<b>0.031*</b>
Yes	136	92.55%	29	54.72%	165	100.0	
No	11	7.45%	7	13.21%	18	100.0	
<b>Stress Test Questionnaire (ST-5)</b>							<b>0.00*</b>
No stress (0 points)	33	22.45%	0	0.00%	33	100.0	
Mild Stress (1-4 points)	121	81.55%	8	15.09%	129	100.0	
Moderate to Very High Stress (5-15 points)	6	4.08%	30	56.60%	36	100.0	

**Conclusions:** This study highlights the necessity of mental health support for sex workers. Incorporating PHQ-9 and ST-5, along with considerations unique to sex workers, the revised self-assessment tool is set to be implemented in SWING clinics. This will enhance the overall well-being and resilience of sex workers, addressing their specific mental health needs and contributing to more effective HIV prevention and treatment strategies.

## THPED428

Putting people (Migrants) first in India to reach the goal of 95:95:95

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**Background:** AIDS Healthcare Foundation - India implements HIV community based rapid HIV testing across nine states. The objective of the program is early detection in the semi urban and rural areas where there is suboptimal or nil HIV services and link them to treatment and to compliment the efforts of National Program in reaching 95-95-95.

**Description:** This operational study considered two source migration states (Uttar Pradesh & Bihar) from where male migrants would travel to destination States for employment. The Community based rapid HIV testing data (gender disaggregated) of two years 2022 & 2023 was analysed. The objective of the study was to compare the HIV sero positivity of two years between men and women and to revisit the risk profile of the newly identified cases.

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**Lessons learned:** A total of 1,36,929 migrants were tested in Uttar Pradesh (4 Districts) and Bihar (3 Districts) from 2022 to 2023 where 1,517 HIV cases were detected. The results showed that the HIV sero positivity in these states among men and women was 1.64% and 1.11% respectively. Based on this evidence a quick profile of the newly identified men and women was analysed, revealing that these women were wives/partners of male migrants who returned from destination States.

Most Men (73%) and women (87%) have children and are between 10 – 22 years old. 93% of women had completed primary education and 78% men had completed high school. They had seemingly low knowledge about HIV during the initial risk assessment and counselling. Women (100%) were housewives and did not have any employment and was solely dependent on their husband (male migrants) for living. 92% of all identified HIV positives were linked to the Government ART centre for treatment and follow-up.

**Conclusions/Next steps:** The study recommends increased access to HIV prevention, testing and treatment services to be made available at source migrant states. The study reiterates that migrant workers are responsible for ruralization of HIV epidemic. It is long overdue where HIV program is strategized putting people first and focus on ensuring HIV services in semi urban and rural locations.

## THPED429

### Epidemiological study on the prevalence of HIV and sexually transmitted diseases among men who have sex with men in five regions of the Russian Federation

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**Background:** Considering the substantial stigma in Russia related to MSM, there is a paucity of relevant data regarding the group's size and prevalence. Legislation criminalizing the LGBT+ group has resulted in a lack of epidemiological control over the community placing MSM in an uncertain circumstance. Significant portions of diseases with atypically localized STIs are caused by the lack of guidelines for the collection of samples from extra genital loci, like the rectum and oropharynx.

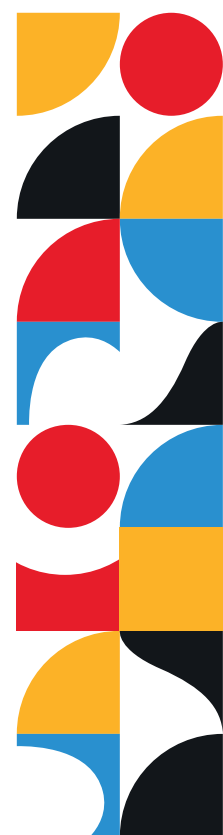
**Methods:** In 2021/2022, the Steps Foundation and the Central Research Institute of Epidemiology carried out a bio behavioral study on a cohort of MSM. The study geographical region was Voronezh, St. Petersburg, Leningrad region, Moscow and Moscow region. In samples taken

from three loci (oropharynx, rectum, urethra), PCR investigations were done for the following STIs: N.gonorrhoeae, C.trachomatis, M.genitalium, T.vaginalis, T.pallidum, HSVI and HSVII. Serum ELISA for HIV, hepatitis B/C, syphilis (rapid testing) was also taken. A questionnaire on behavioral aspects was also obtained from the participants.

**Results:** 644 subjects participated in the research. 15% of all participants had both male and female partners. Only 34% of respondents use condoms on a regular basis times. 20% of respondents reported using chemsex or psychoactive substances. HIV positive status was present in 23.4% of individuals. 215 individuals (33.4%) had STIs detected. 325 STIs were identified with 166(51%) detected in the rectum, 104(32%) in the oral cavity, and 55(17%) in the urethra. Among those with HIV, 80% had experienced a STI in the past. 4% of participants who were HIV-negative and 16% of those who were HIV-positive had three loci that were detected simultaneously. Substance abuse and HIV status are risk factors that more than double the likelihood of contracting a STI.

**Conclusions:** Our study reveals that the three main predictors of STIs among MSM are substance use, HIV status and number of sexual partners per year. It is our assessment that collection of samples from atypical loci be introduced into the diagnostic criteria in Russian Federation. Community-based studies with health institutions participation have shown unique results.

Further research is needed on the prevalence of sexually transmitted diseases and HIV among MSM.





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## THPED430

"Flourishing like the forest and clear like the sky":  
a Photovoice exploration of challenges  
experienced and resilience resources employed by  
key populations and people with HIV in Malaysia

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**Background:** Key populations and people with HIV (PWH) in Malaysia experience adversities, including pathologization, stigmatization of intersectional identities, and resource restriction, resulting in deleterious well-being outcomes. While individuals employ varying strategies in response to stressors, research exploring factors contributing to their resilience is scarce. Using Photovoice, we explored the challenges key populations and PWH in Malaysia experience and the repertoire of resilience resources they employ.

**Methods:** From October to November 2021, individuals across Malaysia aged 18 and above who self-identified as members of key populations, i.e., men who have sex with men (MSM), transgender women (TGW), female sex workers (FSW), people who inject drugs (PWID), and people with HIV (PWH) participated in an online Photovoice project. Participants submitted photographs with captions responding to prompts about their challenges, sources of happiness and sadness, and personal priorities. We employed Rapid Qualitative Inquiry to identify themes across the data.

**Results:** Thirty-four participants took part, including 12 (35.3%) MSM, 7 (20.6%) TGW, 7 (20.6%) FSW, 6 (17.6%) PWID and 8 (23.5%) PWH. We grouped the emerging challenges from the data into three domains:

1. Intrapersonal: management of concealable stigmatized identities; perceived stigma, i.e., assessment of beliefs about prejudice, stereotypes, and discrimination among others; securing subsistence resources (e.g., food, safety, access to transportation, and employment); and death-related cognitions and grief;

2. Interpersonal: enacted stigma, i.e., experiences of stereotypes, prejudice, and discrimination; and navigating complexities of relationships with friends, family, and partners; and lastly,

3. Structural stigma (e.g., absence of legal protection and restriction of resources).

The resilience resources that emerged were creative expression and celebration of self-identities; engaging in prosocial actions (e.g., volunteering, making someone smile, donation); spirituality, religious values, and drawing strength from nature; social support; self-care (e.g., exercise, good food, practicing gratitude); and the role of time as a promotive factor in developing resilience, i.e., quality time dedicated to health promotion and relationships as a buffer against stress and illness.

**Conclusions:** The study identified stressors experienced by key populations and PWH in Malaysia and resilience resources employed, offering insights into the need for strength-based approaches to bolster access to HIV care and cultivate stigma-resistant communities.

## THPED431

The HIV status of peer recruiters and their  
recruits in a social network strategy promoting  
HIV testing among people who inject drugs  
(PWID) in Kazakhstan

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**Background:** Information and support shared through social networks can encourage HIV testing among marginalized populations. The social network strategy (SNS) is a peer-driven recruitment approach that was demonstrated to be effective in increasing HIV testing among people who inject drugs (PWID) in Kazakhstan.

We investigate how a peer recruiters' own HIV status and substance use history is associated with the HIV status of PWID that they recruited through an SNS program.

**Methods:** Between August 2017 and February 2020, we implemented a SNS program as part of a multicomponent HIV testing and linkage-to-care intervention at needle-syringe programs (NSPs) across three Kazakhstani cities. NSP staff trained peer recruiters to refer their network associates (recruits) to the NSP for rapid HIV testing. We collected data from 250 peer recruiters during their training and 6,218 PWID recruits who came for HIV testing at the NSP. Measures included: gender, age (both), self-reported HIV status and substance use history (peer recruiters), rapid HIV test outcome and whether each reactive case was newly-identified (recruits).



We used logistic regression to examine associations between:

1. Recruit's rapid test results and their peer recruiter's HIV status, and
2. Whether a recruit was newly-diagnosed and their peer recruiter's HIV status.

Models were adjusted for recruit's age, gender, and peer recruiter's current substance use.

**Results:** Of 250 peer recruiters, 38 (15.2%) reported living with HIV, and 47.6% reported current substance use. Among 6,218 recruits,  $n=256$  (4.2%) had a positive rapid test for HIV; over half ( $n=135$ , 52.9%) of these were newly-identified. In adjusted logistic regression models, having an HIV-positive peer recruiter was significantly associated with a recruit's increased odds of both a positive HIV test result ( $aOR=1.87$ , 95% CI=1.33-2.62) and of being a newly-identified case of HIV ( $aOR=1.95$ , 95% CI=1.05-3.70). There were no significant associations based on a recruiter's current substance use.

**Conclusions:** Findings affirm the importance of including people living with HIV in outreach efforts and programming for PWID and other marginalized groups. Strategies which leverage the social networks and experiences of peer recruiters living with HIV may be particularly useful in reaching those unaware of their status.

## THPED432

HIV combination prevention approaches that have contributed to reduction of acquiring HIV among the GBMSM enrolled in MPEG amid the insecurity environment for the LGBTQ community in Kiambu County, Kenya

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**Background:** Mambo Leo Peers Empowerment Group is an LGBTI community led organization that works with Men who have Sex with Men /Male Sex Workers (MSM/MSWs) other Bisexual and Gay men in Kiambu county providing comprehensive HIV prevention, care and treatment, structural and behavioral interventions. MPEG partnered with PEPFAR/CDC funded Dhibiti to upscale HIV prevention and care & treatment interventions to MSM/MSW between 2022 and 2023 in Kiambu County. The approach of the interventions were aligned to UNAIDS 95-95-95 targets. This case finding paper attempts to discuss how HIV prevention interventions contributed to reduction in acquiring HIV among the cohort of MSM/MSW under MPEG.

**Methods:** MPEG had a cohort of 1956MSM by the end of the project in September 2022. The Cohort had received HIV prevention interventions for at least two years, including ; Condom and lubricants, health education, PrEP and

PEP services, adherence interventions for the PLHIVs, HTS and STI management. During the period, MPEG deployed the following strategies Targeted HIV testing among those with unknown status, conducted community outreaches and static models of services, Voluntary Partner Referrals (VPR), Social Networks Strategies (SNS), individualized tracking of the non-testers and reaching them with HTS, distribution of HIVST kits and online mobilization and referral for HTS.

**Results:** In the 2021, 1555MSM were reached with services including HTS with a HIV positivity of 4.7% among those tested (1154), compared to 2% from 1956 MSM tested in 2023.



**Conclusions:** Offering friendly comprehensive HIV prevention combination decreases the rates of acquiring HIV among the MSM/MSWs

## THPED433

Impact of GBV on access and utilization of HIV prevention, treatment and care services among transwomen in Greater Kampala Metropolitan Area (GKMA), Uganda

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**Background:** Transwomen, defined as individuals who were born male but identify as female are still disproportionately affected by Gender-based violence (GBV) including physical, sexual, and emotional violence due to their gender identity and they are 13% times at risk of HIV. This study was premised on Levesque's conceptual framework to explore impact of GBV on access and utilization of HIV prevention, treatment and care services among transwomen in greater Kampala metropolitan area (GKMA), Uganda.

**Methods:** This study was conducted in the GKMA. A cross-sectional study design utilizing participatory qualitative approaches was used to obtain data from trans women aged 18 years and above using focus group discussions, in-depth interviews and key informant interviews were used to obtain data from the purposively selected respondents and we used respective guides after



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obtaining informed consent to discuss. 20 IDIs, 6 FGDs and 10 KIs were conducted. Discussions were digitally recorded, transcribed verbatim, codes developed, Nvivo was used for coding transcripts and analysis was done based on the study objectives.

**Results:** 60 trans women participated in the study from the districts of Mukono, Kampala and Wakiso. 56 were aged between 18 and 28 years and 36 depended on sex work as source of income. Results showed that GBV has a great impact access to and utilization of HIV prevention, care and treatment services among trans women. Respondents reported having limited chances of having their HIV/AIDS health care need to be met due to GBV. Inaccessibility at the healthcare facility, unacceptability by patients and some healthcare providers, Social disconnection from family and friends and abuse by sexual partners resulted in delayed health seeking, shunning away from the facilities without accessing services, limited their ability to decide to seek HIV services, poor adherence to ART and inability to express their SRH issues that would require thorough examination to receive meaningful medication. Sexual violence survivor miss HIV prevention services like PEP. These experiences breed fear, stigma among trans women, mistrust in the health care system and inability to engage health care providers.

**Conclusions:** Trans inclusive policies on GBV and HIV control and evidence-based interventions are needed to improve HIV outcome.

**Methods:** A mixed methods study was conducted in May 2023 in Bulawayo and Harare among AGYW aged 15-24 years. We interviewed 230 AGYW in the cross-sectional survey and 48 AGYW across 4 Focus Group Discussions (FGDs). Quantitative data were collected in Kobo and analyzed using STATA 17 and logistic regression modeling and difference between proportions were used for analyses. Qualitative data were collected from four focus group discussions (FGDs), tape-recorded, and thematically analyzed using De-DOSE.

**Results:** DSA prevalence was 34% (95% CI: 28 – 40) among AGYW with over 50% reporting abusing drugs at least once a week. AGYW abusing drugs were 4.9 times (95% CI: 2.3 -10.5 (odds ratios)) more likely to report an unmet need for HIV testing and sexual and reproductive health (family planning, STI, and cancer screening) (SRH) services compared to AGYW not abusing drugs.

Further, AGYW abusing drugs had higher STI prevalence (44.9% (95% CI: 32.9 – 57.4)) compared to just 4.2 % among non-users (95% CI: 0.9 – 11.9%). In the qualitative analyses, occurrences of risky sexual behaviors (condomless sex, orgies, and sex while intoxicated) were reported mostly by drug users compared to non-users.

**Conclusions:** The study showed significantly higher risky behavior among AGYW abusing drugs including a much higher risk of STI acquisition, coupled with high unmet need for HIV and SRH services. It is therefore imperative to strengthen programs that reduce DSA and improve access to health care services in this key sub-population.

## THPED434

Drug and substance abuse threaten gains in HIV and sexual and reproductive health programming among Adolescent Girls and Young Women (AGYW): evidence from Zimbabwe

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**Background:** Drug and substance abuse (DSA) continues to be on the increase in Africa and Zimbabwe is not spared from the scourge. In Zimbabwe, adult HIV prevalence among drug users is reportedly higher at about 20% compared to 13% in the general population. As HIV incidence remains disproportionately high among Adolescent Girls and Young Women (AGYW), UNICEF reported a drug abuse prevalence of 41% in this sub-population in 2023. Population Solutions for Health (PSH) in collaboration with the Swedish International Development Cooperation Agency (SIDA) and the Ministry of Health and Childcare (MoHCC) conducted a study to assess the effect of drug and substance abuse among AGYW on access to HIV and sexual and reproductive health services.

## THPED435

Opportunity for differentiated service delivery to improve PrEP retention among MSM in Kenya

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**Background:** In Kenya, although high PrEP acceptance has been reported among men who have sex with men (MSM), uptake and retention remain low. Improving access to PrEP is critical to ensure targets of reducing HIV transmission are met. Differentiated service delivery (DSD) models offer a client-centered approach, aiming to streamline HIV services without overburdening the healthcare system.

We conducted a cross-sectional study to assess perceptions of PrEP service delivery and explore perspectives on DSD for MSM enrolled in PrEP care in Kenya.

**Methods:** The study was conducted in three counties in Kenya: Kisumu, Nairobi and Mombasa from July 2020 to July 2021. A questionnaire was conducted among 300 MSM accessing HIV services at drop-in centers (130 ART



and 170 PrEP); selected via consecutive sampling. Data was entered into Excel, cleaned, and analyzed descriptively using SPSS.

**Results:** Of the 170 PrEP clients interviewed, 81% identified as MSM and 19% as male sex workers; mean age: 25.4 years (SD 3.7). Almost half (43%) had been on PrEP for <1 year, 49% for 1-3 years, and 6% >3 years with most (82%) receiving quarterly HIV testing. PrEP was mostly collected monthly (72%) with some clients collecting quarterly (16%). Sixty-five (38%) clients reported missing at least one PrEP appointment within the last year; reasons for missing PrEP appointments included travelling (31%), transportation costs (29%), and forgetting (18%). Factors making PrEP refill a good experience included MSM-friendly clinics (64%), quick refill visits (51%), assured client confidentiality (47%), attentive providers (43%), support groups (17%), and short distance to clinic (15%). Respondents were interested in a variety of DSD models and services: spaced-out appointments (69%), set appointments (54%), fast track window (37%), facility-based peer support groups (37%), community drug distribution points (26%), and community-based peer support groups (13%).

**Conclusions:** MSM receiving PrEP services want friendly, confidential, and quick refill visits. MSM PrEP clients are interested in DSD models at both facility and community levels, with appointment spacing being the most acceptable model. HIV prevention programs should modify PrEP service delivery for MSM by implementing DSD to tailor refill to fit individual needs and remove barriers to access and retention.

## THPED436

Exploring the relationship between comprehensive sexual health prevention measures and the intent to use long-acting PrEP among MSM

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**Background:** Men who have sex with men (MSM) have been encouraged to engage in health behaviors to help prevent the spread of a range of sexually transmitted infections (STIs) and adapt to evolving pathogens. Long-Acting Pre-Exposure Prophylaxis (LA-PrEP) is emerging as a promising solution to unmet HIV prevention needs among MSM.

This analysis investigates whether MSM actively engaging in comprehensive sexual health prevention measures (comprehensive protectors) are more inclined to intend to use LA-PrEP use.

**Methods:** Data from the PROTECT survey was utilized to identify and assess comprehensive protectors (CP) among MSM in France, Germany, United Kingdom, Italy and Spain (EU5). To identify comprehensive protectors among MSM, logistic regression was employed, using the intention to take LA-PrEP as the endpoint, with having received various vaccines (Hep A/B, Mpox, COVID, ME, and HPV) as independent variables. Descriptive analyses compared CP with the rest of MSM to reveal distinct characteristics. Subsequently, a regression analysis explored socio-demographic variables associated with being a CP.

**Results:** The results showed that only elective sexual-health-related vaccines played a role in greater intention to take LA-PrEP, including Mpox (aOR 1.62; 1.46-1.79;  $p < .0001$  6.21E-21), HPV (aOR 1.38; 1.23-1.54;  $p < .0001$ ). Thus, in our analysis CP are defined as MSM who vaccinate against Mpox and HPV over and above Hep A/B. CP compared to the rest of our sample were more likely to have a master's degree ( $n=578$ , 40.9) and reported higher sexualized substance use ( $n=463$ , 32.8%).

Notably, CP demonstrated higher rates of frequent STI testing ( $n=1084$ , 76.7%) and current PrEP use ( $n=1146$ , 81.1%). The United Kingdom had the highest number of CP, followed by France, Italy, Germany, and Spain ( $p < 0.0005$ ). Our multivariate model demonstrated that CP were also more inclined to report higher intention to take LA-PrEP (aOR 1.79; 1.01-1.38,  $p=0.04$ ).

**Conclusions:** These findings highlight the proactive stance on preventive health CP can have, evidenced not only by vaccination against other STIs but by higher rates of STI testing and interest in LA-PrEP. Comprehensive protectors could be a target, among a range of population targets, for the uptake of LA-PrEP when it becomes available in Europe.

## THPED437

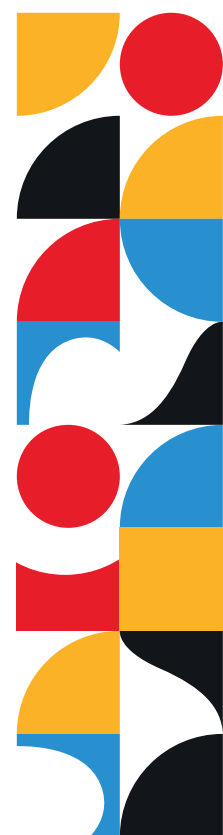
Unveiling lived realities on trans youth inclusion in healthcare and navigating trans youth leadership in the Asia-Pacific

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**Background:** In the Asia-Pacific region, existing research on trans inclusion in healthcare including access to HIV services is limited and focus on the experiences of trans adults. As such, more efforts must be taken to recognise the realities and intersectionalities of young trans people in accessing healthcare, and to enable young trans people to take up leadership roles to address their community's needs.

**Description:** Funded by the Robert Carr Fund, this project, implemented by Youth LEAD, includes conducting a study on trans youth inclusion in healthcare, developing and piloting a trans youth healthcare manual for healthcare providers, and providing small grants for trans-





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and youth-led organizations to increase the capacity of young trans people in the Asia-Pacific region. The project duration is for three years from 2022 to 2024, implemented across the Asia-Pacific specifically in India, Indonesia, Nepal, Mongolia, Philippines, and Thailand. The target population for the project is all young key populations, with specific attention to young trans people.

**Lessons learned:** The study found that mental health and health literacy should be included in trans healthcare and HIV programs and that a primary target for such interventions should be young adults, with peer-to-peer networks as the recommended pathway for information dissemination and service delivery. Both study and pilot training for the Trans Youth Healthcare Module recommends educating the healthcare workforce as a whole, including supporting roles; considering country-specific guidelines for trans youth; and engaging the trans community to improve the quality of care.

Small grants were used to conduct trans rights awareness workshops and trans youth consultations leading to the identification of priorities, needs, and opportunities for the young trans community and the development of organizational documents and guidelines on trans youth engagement.

**Conclusions/Next steps:** The Trans Youth Healthcare Training Module will be integrated into Youth LEAD's Regional Healthcare Worker Sensitisation Training Manual for YKPs that has existing buy-in from health ministries and will be continuously promoted moving forward.

Small grants remain an essential form of financial support for trans- and youth-led organizations, but consistent core funding support is necessary to realize capacity building goals. Without appropriate funding allocation, skills gained have minimum impact.

## THPED438

### Healthcare and service provider perspectives on uptake and use of pre-exposure prophylaxis in young Australians

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**Background:** The Australian Pharmaceutical Benefits Scheme (PBS) expanded in 2021 allowing access to HIV pre-exposure prophylaxis (PrEP) for young people <18 years. Healthcare providers (e.g. general practitioners, HIV specialists, Nurses) and service providers (e.g. HIV support organisations), are important for PrEP awareness, education, access, and provision under the PBS. This study aimed to investigate provider experiences, and perceptions about PrEP uptake and use for young people aged <24 years in Australia.

**Methods:** An online cross-sectional survey of healthcare/service providers across Australia was conducted between February-November 2023. Survey data, including participant demographic, healthcare provider perceptions on sexual health behaviours, HIV prevention and PrEP use in young people (<24 years), were analysed using Stata Statistical Software:Release 17. Descriptive and inferential analyses were conducted to investigate provider experiences and perspectives.

**Results:** The final sample consisted of 122 healthcare/service providers, 40.2% (49/122) were nurses, 18.0% (22/122) general practitioners and 11.5% (14/122) HIV community educators/support officers. Over half reported currently having HIV clients/caseload (59.8%, 73/122) and 45.1% (55/122) were eligible PrEP prescribers in Australia. Providers with a HIV caseload were significantly more likely than non-caseload providers to initiate conversations about PrEP with young people of all ages but how often conversation were initiated decreased with client age for all providers-18-24-year-olds (84.93% vs 79.49%, p<0.001), 16-17-year-olds (57.53% vs 41.03%, p<0.001) and <16-years-olds (17.81% vs 10.26%, p<0.001). Only 38.2% (21) of the 55 prescribers indicated that they were aware of the PBS changes for <18-year-olds, 47.6% (10/21) of these prescribers indicated changed prescribing habits and 42.9% (9/21) reported their PrEP conversations with young people had changed following PBS changes, but only 1 provider (1/21) indicated the uptake of PrEP had increased.



**Conclusions:** Our study highlights low awareness of the 2021 PBS lifting of restrictions, limiting use of PrEP to >18-years. This combined with the reported lack of practice change and low rates of PrEP prescribing may be placing young people at risk. Greater community and provider awareness of PBS changes, increased prescriber and other healthcare/service provider training and universal sexual education in schools were identified as pivotal strategies to promote PrEP uptake and adherence for young people.

## THPED439

### Innovate and engage: Nudgeathons in action for PrEP provision among gay men and other men who have sex with men in South Africa

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**Background:** Improving the performance of HIV programs requires collaboration and innovation to design interventions that align with client needs. Nudgeathons are events in which novel, behaviourally informed solutions to a particular problem can be rapidly crowdsourced. Given their limited use in the HIV response, the Indlela nudge unit hosted its inaugural nudgeathon in March 2023 to identify potential ways to increase uptake and persistence of oral PrEP among gay men and other men who have sex with men (MSM).

**Description:** We conducted a 2-day nudgeathon in Johannesburg and designed activities that followed elements of Indlela's NUDGE framework for identifying behavioural solutions:

1. Narrow the behavioural problem,
2. Understand the context,
3. Discover insights about barriers to the behaviour,
4. Generate solutions and
5. Evaluate the solutions.

A person-centred approach to crafting interventions was adopted, which leveraged several behavioural science tools; including user journey maps to understand the context; the COM-B (Capability, Opportunity, Motivation-Behaviour) model to identify behavioural barriers; and the EAST (Easy, Attractive, Social, Timely) framework to generate behaviourally informed ideas.

**Lessons learned:** The nudgeathon included a diverse group of 25 participants, including behavioural scientists and health service providers. Over 2-days, 600 ideas for promoting sustained PrEP use were identified. Through an iterative process of refinement and selection, participants and an adjudication panel identified three promising ideas:

1. Packaging to improve engagement in event-driven (ED) PrEP;
2. Mobile PrEP delivery; and,
3. Simplifying PrEP access at health clinics.

Subsequently, one participating organisation implemented a variation on the strategy to promote ED PrEP and integrated this into its existing MSM program. PrEP starter packs including an HIV self-test and first dose of ED-PrEP were distributed at nightclubs, multiple pride and community events across 2 provinces with a formal evaluation pending.

#### Conclusions/Next steps:

Nudgeathons are a promising way to apply behavioural insights to challenges in HIV prevention and generate solutions to those challenges that can be rapidly integrated into health programs and evaluated.

## THPED440

### Practicing rights-based approaches - an effective tool for increasing meaningful involvement of PWIDs and spouses of HIV-positive PWIDs to access project-specific harm reduction services

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**Background:** A predominant mode of HIV transmission in Pakistan is injecting drug use. 48.70% HIV prevalence rate among PWIDs was documented in Karachi as reported in the Integrated Biological and Behavioral Surveillance in Pakistan 2016-17. Criminal labeling, severe stigma and discrimination, unfriendly behaviors by healthcare providers, no free-of-cost detox and rehabilitation facilities in government healthcare settings, limited HIV treatment centers and their short timings, violation, and abusive behaviors towards PWIDs by law enforcement agencies are the main constraints to remain PWIDs keeping distance from the limited healthcare services.

**Description:** A team of trained staff applied rights-based approaches to engage people who inject drugs (PWIDs) and their spouses during the implementation of a service delivery project focusing on HIV harm reduction. Through outreach model interventions of needle syringe exchange program, HIV testing and counseling, care and support



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for PLHIVs, and spouse prevention programs were carried on in the three towns of Karachi and the entire district of Sanghar. All the relevant staff members practiced stigma and discrimination-free right-based approaches to engage the target groups not only for the services but linkages with the referral networks.

The data shows the effectiveness of rights-based approaches, during 2021-2023, a total of 260,725 contacts with 2,350 PWIDs and 8,400 contacts with 296 spouses of HIV-positive PWIDs were established for the service delivery. 3,698 HTC services to PWIDs and 968 to the spouses were offered while 200 PWIDs and 14 spouses were identified as HIV positive, the HIV incidence rate was 5.41% among PWIDs and 1.02% among the spouses of HIV-positive PWIDs. 193 (90.19%) HIV-positive clients including all 14 spouses were registered with HIV treatment centers for the treatment.

307 clients were linked with the referral network for advanced medical care, and 207 PWIDs were linked with a 45-day ART adherence program. A total of 3 spouses were linked with the PPTCT center.

**Lessons learned:** Rights-based approaches help clients understand their rights and responsibilities and participate in improving their quality of life, leading to increased trust between staff and clients and improved access to available services.

**Conclusions/Next steps:** Service delivery will be stigma and discrimination-free to enhance client involvement and benefit.

## THPED441

### Addressing HIV/AIDS and chemsex harm reduction challenges: lessons learned from Taiwan's therapeutic communities

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**Background:** Taiwan has made significant progress in combatting AIDS, but the syndemic of HIV/AIDS and chemsex among MSM remains a concern for frontline healthcare providers. Since 2017, the Taiwanese government has allocated over US \$500 million to implement the New Generation Anti-Drug strategies, establishing "therapeutic communities" (TCs). These TCs integrate HIV care systems and harm reduction services, showcasing the integration of chemsex healthcare and HIV services into the daily lives of the community.

**Description:** Within TCs, residential treatment facilities adopt a "living together within a residential community" approach to deliver health services. Since 2017, six TCs have emerged in Taiwan to provide harm reduction services to key populations. While existing literature has examined TCs' capacity to deliver services and enhance residents' mental stability, limited attention has been given to how TCs implement HIV sciences in their daily operations. Based on qualitative fieldwork conducted in three Taiwan TCs, this study reported how bottom-up community living and cultural interventions can shape the knowledge and well-being of key populations in the syndemic context of HIV and chemsex.

**Lessons learned:** Between 2022 and 2023, interviews were conducted with six TC health practitioners (including executives and social workers) and twelve residents across three TCs. Evaluation of programs in these TCs revealed variations in how they engage with HIV sciences, employing biomedical, psychological, and spiritual approaches. TCs crafted narratives aligned with their organizational missions, interpreting "chemsex harm" differently, ranging from withdrawal and harm reduction to recovery. Most programs underscored the importance of self-efficacy while implicitly discouraging group dynamics. TCs employing biomedical and spiritual approaches tended to overlook the influence of sexual identities, resulting in harm reduction discourses that oversimplified the diversity of sexual identities among MSM. Romantic relationships were perceived as potential barriers to group cohesion. Despite benefiting from TCs' services, some MSM residents reported difficulties in achieving full recovery within a cohabiting, controlled community setting.

**Conclusions/Next steps:** Taiwan's TCs hold promise in addressing HIV/AIDS and chemsex, emphasizing the significance of "learning from the community." However, challenges related to navigating sexual identity and relationships persist. Ongoing adaptation is essential to better support key populations and further enhance the effectiveness of TC programs.

## THPED442

Seeking sexual partners through digital platforms, a window of accelerated HIV vulnerability among female sex workers(FSW) in south western Uganda

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**Background:** Digital platforms have become increasingly common avenues for meeting sexual partners. Sex workers of ages between 18 to 30 are turning to online platforms such as WhatsApp, Facebook to seek sexual partners because of the increased availability of smart phones. We set out to assess the risky behaviors associated with digital platforms and how they increase vulnerability among female sex workers.

**Methods:** The DigiTapp study was conducted in Uganda, South Africa and India to understand digitally driven risk networks in Key populations. We conducted 12 in-depth interviews and 6 focus group discussions from March through to May 2023 with sex workers of ages between 24-40 years in Lukaya a town known for high HIV prevalence. The interviews were carefully transcribed and subjected to thorough thematic analysis.

**Results:** Although majority of sex workers appeared to rely on feature phones to connect to their regular clients and to new ones through referrals, our analysis indicated that a growing number of sex workers are aware of and use online platforms such as WhatsApp, Facebook, TikTok for seeking sexual partners. The increasing adoption of digital channels among sex workers was attributed to various advantages that included the ability to connect with a larger pool of potential clients, privacy and increased earning potential as digital partners are recognized for offering higher compensation. Digital channels also facilitated risky behaviors such as coercion into sex, sexual violence, unprotected sex, limited opportunity for HIV testing and meeting relatively more sexual partners which could increase HIV transmission.

**Conclusions:** While digital platforms offer increased accessibility to potential partners, they also exposed women to greater risks that heightened their vulnerability to HIV transmission. There is need for targeted interventions, comprehensive sexual education and technology informed public health strategies to mitigate the evolving challenges faced by at-risk women in the digital era.

## THPED443

Harm reduction comprehensive package implementation in Ukrainian prisons under the martial law

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**Background:** In Ukraine, injection drug use is widespread among prisoners. Limited access to sterile injecting equipment in prisons is one of the main reasons why HIV prevalence in prisons is 10 times higher than in the civilian sector. Although syringe exchange programs have been implemented in the civilian sector for 25 years, no such services were provided in prisons until 2023.

**Description:** During 2021-2023, changes were made to the law, granting every prisoner the right to carry syringes. The survey, conducted with the FREE LIFE digital app confirmed the urgent need for this. Medical and non-medical staff from 2 prisons underwent special training. A training module for outreach workers of the syringe exchange program (SEP) in prisons has been developed.

Following the training, 13 peer consultants are currently involved in SEP. In each block of 2 Ukrainian prisons, an outreach peer worker provides sterile syringes and needles, as well as counseling on harm reduction and overdose prevention, if needed. The medical staff of the correctional facilities is also involved in the SEP, facilitating the collection and disposal of used needles and syringes. Thus every prisoner can get a syringe visiting the medical unit.

**Lessons learned:** In 2023, 13 outreach workers provided more than 10,000 comprehensive service packages consisting of syringe exchange, safe use/harm reduction services/overdose-preventing counseling, and forming adherence to HIV and HCV treatment. More than 500 prisoners who inject drugs received services. The syringe exchange program increased the number of prisoners involved in preventive and treatment programs, namely, HIV and HCV testing and treatment, and participation in harm reduction programs. The syringe exchange program catalyzed more active implementation of harm reduction programs in Ukrainian prisons.

**Conclusions/Next steps:** The next step is the implementation of SEP in one more prison with the further spread of this practice to a larger number of correctional facilities in Ukraine.

Furthermore, a transition from donor to budgetary financing for a comprehensive service package is planned.



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## THPED444

### Promoting inclusivity to the last mile: Reaching the Deaf and Hard of Hearing

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**Background:** In 1992, Peace Corps Kenya (PC-K) initiated the education for the deaf sector in response to the Ministry of Education's focus on education for children with special needs. Peace Corps Volunteers (PCVs) and their counterparts, with technical support from staff, have work in primary schools for the deaf, providing technical assistance to teachers, collaborate with health PCVs to facilitate behavior change communication strategies using Kenya Sign Language (KSL) in HIV/AIDS awareness and prevention efforts. PC-K also collaborates with the Ministries of Health, local administration, community-based organizations, schools and health facilities.

The objective is to identify support for DHH in accessing HIV/AIDS prevention messages through traditional HIV/AIDS prevention communication campaigns, EBI facilitation, social and mainstream media message in KSL, entertainment education through KSL videos, and Internet- and computer-based media technologies.

**Description:** PC-K trains DHH and hearing teachers from schools for the deaf in EBIs and other HIV prevention curriculum facilitation trainings to equip them as TOTs and resources for training the DHH.

Through this program, 26 TOTs in the communities have reached 1450 DHH. PCVs support counterparts to design and create learning resources translated from the curriculums using locally available materials and relevant signs for key HIV prevention messages PC-K has continued to engage with organizations supporting translation of learning resources to seek funds to improve the health literacy for DHH.

**Lessons learned:** Reaching the DHH with HIV/AIDS prevention messages faces many obstacles, lack of translated resources, evidence-based curriculum, educational videos and posters, and advert notices in mainstream media and billboards, inadequate number of signing HIV/AIDS prevention curriculum facilitators posing a significant communication barrier leading to inequality of accessing health information for health literacy thereby denying them the right to make informed health decisions.

**Conclusions/Next steps:** Translated HIV/AIDS prevention educational resources, serve as self-directed powerful learning tools for DHH not privileged to benefit from in-person education. Improving the health literacy of DHH will aid them in making proper informed health decisions enhancing their quality of life. Increased community engagement to create awareness in reducing stigma

and discrimination, continued advocacy for funding programs and innovations in technology that improve information access, will promote inclusivity and equity.

## THPED445

### Chain of Life: emergency IT decisions for displaced PLIVs and other vulnerable groups

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**Background:** Since the beginning of the war CO 100 PERCENT LIFE started emergency actions for displaced people. Chain of Life is a CO "100 PERCENT LIFE" initiative that currently operates several shelters in Rivne, Chernivtsy and Ivano-Frankivsk oblasts, that are designed to provide shelter to people who suffer from domestic violence, discrimination and military aggression by the Russian army, for representatives of the PLHIV community, representatives of communities vulnerable to HIV, and internally displaced persons.

**Description:** Shelter services provided include:

1. Temporary shelter for up to 3-6 months for representatives of key HIV-vulnerable communities affected by military aggression,
2. Social support to ensure round-the-clock social support of clients,
3. Social support to clients of the shelter, regarding obtaining medical and legal assistance, as well as obtaining state social guarantees and services,
4. Psychological support to clients of the shelter and members of their families with whom they are staying in the shelter;
5. Humanitarian aid to residents (food and hygiene kits). There is also a transport service for moving people. For better linkage of these services, a digital customer relationship management tool (CRM) has been deployed for 5 shelters in Lviv, Ivano-Frankivsk, Chernivtsi, Rivne, and Kyiv region, 20 licenses were distributed, and training for users was conducted. Functionalities of accounting, shelter accounting, and statements for exchanging client needs are fully working.

**Lessons learned:** In the conditions of war, implemented activities require urgent actions and changes. Our general conclusion is that in the current conditions in which Ukraine and its citizens, NGOs and government institutions are, it is necessary to react quickly, to be ready for unforeseen risks that arise, and to be flexible in these conditions, unpredictable issues arise out of control and long-term planning is not possible

**Conclusions/Next steps:** More shelters need to be connected to the chain, more training should be done for specialists involved in CRM data circulation, it is easier to use the IT system instead of calling and directly interfering with other parties. Extremely important to input correct data in time.

## THPED446

### Mechanism of economic and relationship stressors in mental health and substance use problems and suggestions for targeted interventions: qualitative feedback from adults living with HIV in Lesotho

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**Background:** About a fifth of adults in Lesotho live with HIV. People with HIV (PWH) are vulnerable to mental health and substances use (MH/SU) problems. Recent population-level data in Lesotho reveal that only a small proportion of individuals with MH/SU problems recognize the need to access MH/SU services. We examined local perceptions, needs, and drivers of MH/SU problems to understand this treatment gap.

**Methods:** We recruited adult PWH with past year history of mild depressive symptoms or risky alcohol consumption from November to December 2022 in the Butha-Buthe and Mokhotlong districts of Lesotho. Semi-structured individual interviews were conducted with 28 individuals in Sesotho (local language) and translated and transcribed to English. Thematic analysis was conducted by two coders, with 30% of transcripts double coded.

**Results:** Participants were mostly female (83%), had a median age of 44 (IQR 38-55), and living in Butha Buthe (77%).



As presented in the figure, participants' perceived drivers of MH/SU issues in their community were a result of economic hardship and difficulties with close relationships. Trying to solve these complex issues without agency and/or tangible resources as lead community members to

feeling helpless. Persistent helplessness then escalates to MH/SU problems, which go untreated and further reduce the likelihood that individuals can improve their economic state or interpersonal relationships.

Participants suggested strategies that could ameliorate the cycle of MH/SU problems and address the unmet need of MH/SU in their community, which fell into three main categories: economic empowerment, MH/ SU counseling and public education to raise awareness about harmful behaviors and their consequences, and social/ recreational activities as a source of community support and healthy activities.

**Conclusions:** To target the drivers of MH/SU issues among PWH in Lesotho, economic empowerment and addressing interpersonal relationships should be integrated into differentiated service delivery models to address the MH/ SU needs.

## THPED447

### Empowering key populations through community-led intervention: lessons and future directions of HIV self-testing integration for enhanced access and sustainability in Ghana

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**Background:** HIV testing is the first step within the cascade for comprehensive service provision encouraging all persons to test and know their HIV status, and access treatment and care to ensure that HIV is no more a public health threat by 2030. However, Key Populations (KPs) in Ghana such as Female Sex Workers (FSWs) and Men who have Sex with Men (MSM) continue to face challenges accessing HIV testing. These barriers include stigma and discrimination, criminalization, fear of confidentiality breach, violence, harassment, mental health, and limited access to healthcare.

The inclusion of HIV self-testing is an alternative HIV testing program that affords KPs intervention in improving access to testing.

**Description:** The Care Continuum Project collaboration with Ghana Health Service and Civil Society Organizations (CSOs) led by KPs trained staff across the three PEPFAR regions in October 2022 on HIV self-testing. The training focused on guidelines and integration of HIV self-testing. KP community volunteers incorporated self-testing messaging in HIV prevention, treatment, and care support to peers. We leveraged the existing healthy living platform providing confidential online services through phone counseling. This enhances KP's access to information and follow-up care and support, especially for those opting for unassisted testing.



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The platform facilitates reports of reactive cases, connecting them to healthcare professionals for confirmatory tests based on the national testing algorithm.

**Lessons learned:** The community-centered approach not only disseminated crucial information but also provided a supportive network, thereby breaking down barriers related to stigma and discrimination. The proportion of FSWs accessing HIV self-testing almost quadrupled from 7% (314/3481) in 2022 to 26% (1666/6342) in 2023. Similarly, uptake of HIV self-testing among MSM also increased from 4% (122/2943) in 2022 to 20% (952/4673) in 2023. The distribution of HIV self-test kits also improved testing of contacts elicited from KPs index clients whose sexual contacts preferred HIV self-test.

**Conclusions/Next steps:** The integration of HIV self-testing into the Project's strategy effectively addressed the multifaceted barriers faced by FSWs and MSM in accessing traditional HIV testing services. Tailored interventions for KPs highlight the value of community engagement through planning, implementation, evaluation, and integration HIV self-testing into the healthcare system.

## THPED448

Exploring risky sexual behavior and associated outcomes amongst 15–19-year-old learners in beyond zero supported schools through the Global Fund grant: a multi-sub-district analysis

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**Background:** Despite global efforts to curb the spread of HIV/AIDS and promote sexual health, learners aged 15–19 continue to engage in risky sexual behaviours, posing significant challenges to public health. This study focuses on Beyond Zero Supported Schools in five diverse sub-districts i.e. Nelson Mandela Bay-C, Nyandeni, Dhlabeng, Setsoto and Fetakgomo-Tubatse Sub-Districts.

The study aims to analyse relevant information on risky sexual behaviour and associated outcomes among the target group.

**Methods:** This study employs an analysis of programmatic data from Global Fund Supported initiatives to explore the risky sexual behavior and associated outcomes among learners aged 15–19 in Beyond Zero Supported Schools across five distinct sub-districts during the period of 01 April 2022 – 31 March 2023.

**Results:** Between April 1, 2022, and March 31, 2023, 51,082 girls and 22,333 boys aged 15–19 were enrolled in the program. A significant portion of both genders reported being sexually active, with disparities in condom use and a notable incidence of transactional sex. Disturbingly, 544 girls reported receiving money or goods in exchange for sex, highlighting vulnerability to exploitation. Moreover,

2,664 girls and 10 boys reported having a sexual partner five or more years older, emphasizing the need to address power imbalances. In addition, 38% of girls and 43% of boys who are sexually active reported inconsistent use of condoms during sexual activities.

Demographic Information		Sample Size	Risky Sexual Behavior among learners aged 15–19 years reported during risk assessment conducted at enrolment						Outcomes		
Age group	Gender	Learners Enrolled in the Programme	Sexually active	Age Disparate Relationships	Transactional Sex	Multiple Sexual Partners	Inconsistent Condom Use	Teenage Pregnancy	HIV Prevalence	STI Prevalence	
15–19	Female	51082	24170 (47%)	2664 (5.2%)	544 (1.06%)	1460 (2.85%)	9142 (38%)	3212 (6.3%)	203 (0.4%)	2554 (5%)	
15–19	Male	22333	11742 (53%)	10 (0.04%)	0 (0%)	1081 (4.84%)	5022 (43%)	0 (0%)	60 (0.3%)	893 (4%)	

**Conclusions:** This abstract highlight the importance of tailoring sexual health interventions to the specific needs and challenges within each sub-district, promoting a targeted and effective approach to address risky sexual behavior among 15–19-year-old learners in Beyond Zero Supported Schools. The research contributes valuable insights to the ongoing efforts to enhance comprehensive sexuality education and learner support in schools, ultimately aiming to reduce the incidence of risky sexual behaviors and improve overall well-being among the youth. The collaborative efforts of educators, policymakers, and community stakeholders are essential in creating an environment that fosters responsible sexual behavior and ensures the well-being of learners in this critical phase of their lives.

## THPED449

Strategic approach in reaching "hard-to-reach" female sex workers (FSW) virtually

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**Background:** India poses challenges in reaching out to female sex workers (FSWs) despite increase in clients accessing sex workers virtually. Many sex workers do not prefer to be labeled and hence are not reached out through traditional ways of outreach. The network operators/ gatekeepers/ pimps are main access points to the sex work negotiation and deal-making as this provides safety to the FSWs

During the negotiations and dealing, the brokers make deals on the money, time, and venue with no discussion of safe sex practice. Hence FSWs are often left out of the ambit of existing HIV intervention programs and are vulnerable to HIV/ STIs.

**Description:** NETREACH is a pan-India virtual intervention program implemented by The Humsafar Trust, using platforms such as dating apps, private chatrooms, web-



site and social media profiles such as whatsapp, Instagram and Facebook- it was found that these profiles are operated by the gatekeepers/ brokers. This increased the challenge in directly understanding situations faced by of the FSWs through virtual modes.

Developing rapport, sensitising gatekeepers/operators, building trust by arranging condoms and offering health services leads to discreetly meeting the FSWs in gatekeepers presence.

FSWs discuss cervical cancer, HIV- STI, medicines and other health-based services. Arranging mobile health van increases possibility of testing immediately.

**Lessons learned:** Operators and FSWs showed limited knowledge of safe sex, HIV- STI and need for medicines in crises making FSWs vulnerable to infections. Additionally, fear of disclosing sexual encounters lowered the chances of FSWs seeking healthcare.

Many FSWs in semi-urban and rural areas shared no knowledge of testing centres.

FSWs shared that the timeslots and locations were inconvenient to get tested at Government based centres.

**Conclusions/Next steps:** New strategies need to be designed to reach and address concerns of FSW and their gatekeepers. The new program needs to have options for community-based testing, HIV self-test or mobile van availability to enable the FSWs to get tested at their convenience. The testing centre needs to include confidential and sensitised counseling for sex worker community alongwith convenient timeslots.

Additionally, a bouquet of health services to be offered such as breast cancer, cervical cancer while discussing HIV and STI.

## THPED450

Impact of close relationship between site's community team and community-based peers on retention of women at high- risk for HIV in clinical trial studies at Baylor-Uganda Clinical Research Site

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**Background:** Baylor Uganda CRS conducts HIV prevention studies to evaluate the safety and efficacy of PrEP products in reducing HIV transmission among high-risk women. Various strategies were employed to ensure safe par-

ticipation throughout the trial. We share our experience in ensuring participant retention throughout the study life cycle, including the COVID lockdown period.

**Description:** The Baylor Uganda CRS community team closely collaborated with community-based peers from the early phase of the study's implementation. The site's community team engaged with stakeholders and community-based organizations that serve high-risk women. These organizations connected them with their community-based peers, who trained the sites' community team on how to respectfully engage potential participants. Meanwhile, the site's community team trained them on informed and voluntary participation. The peers also conducted group sensitization and mobilization activities within their hotspots.

Once participants were recruited, the team carefully documented their location and phone contacts for reminder calls and regularly reviewed this information for accuracy. Each participant was also connected with a peer who helped locate them when needed. Home visits were conducted upon permission granted by the participant and the peers helped establish trust during these visits. These visits were ideal for mapping, sick visits pickups, follow-up, and health education.

The site also employed the peer support model in their clinic. Selected peers supported check-in/checkout procedures and provided guidance on creating comfortable environments with a cozy waiting area for participants, including Meet-the-Peer Corner and Children's Corner to offer opportunities for connection and community building. During lockdowns, staff and participants were transported following a schedule, participants contacted a day before and visits were expedited. Field peers contacted participants to address any issues.

**Lessons learned:** Up to 90% of participants (pregnant and non-pregnant women) were retained. Some of the challenges encountered by participants were economic mobility, exodus, change of phone numbers, lack of disclosure, and locating limitations by the recruitment peers. However, peers bridged the gap and provided valuable feedback to the team.

**Conclusions/Next steps:** A multifaceted approach to participant retention encompassing enhanced communication with enrolled participants and bridging the gap between the study team and participants, results in better retention rates in HIV prevention research studies.



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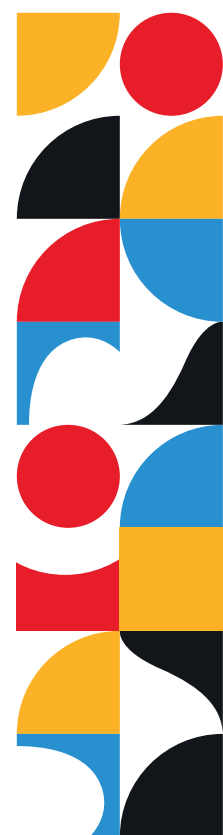
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## THPED451

"Seducing" fishermen to test for HIV: a qualitative study of social network-central promoter experiences with encouraging social network members to test for HIV

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**Background:** Fishermen, a priority population in Kenya's HIV response, experience low HIV awareness and limited engagement in prevention and treatment. To address sub-optimal HIV testing among them, we conducted a cluster randomized control Owete trial (NCT04772469) engaging highly central fishermen in their social networks as HIV testing promoters.

This abstract reports on a qualitative study of promoter experiences with HIV self-test (HIVST) kit distribution at 3-month follow-up.

**Methods:** Network-central promoters from both control and intervention arms from three beach communities in Siaya County, Kenya were trained on HIV literacy and testing. Intervention arm promoters received extra training on distributing HIVST kits and transportation vouchers for confirmatory testing at local public clinics. Control arm promoters received HIV test vouchers for redemption at local public clinics. Thirty in-depth interviews (IDIs) were conducted at three months, purposively sampling promoters based on age (<35 and ≥35 years) and beach community. The in-depth interviews were audio-recorded, transcribed/ translated into English. Through an iterative process, a codebook was developed, transcripts were inductively coded, and a framework analysis was conducted to identify themes.

**Results:** Promoters reported positive experiences with HIVST and voucher distribution. Most experienced no challenges with HIVST distribution, educating cluster members, providing HIVST instructions, interpreting results, or encouraging linkage to treatment. Using a one-on-one approach at homes, promoters explained HIVST kits patiently. Some described the importance of introducing the topic slowly to "seduce" cluster members to test. Instruction on HIVST or voucher use was considered "easy." Promoters facilitated the normalization of HIV testing and engagement in treatment by encouraging

testing and dispelling fears of positive results. Control promoters faced challenges, including appearing empty-handed with only testing vouchers, men preferring HIVST kits over facility testing, and some questioning the efficacy of HIVST.

**Conclusions:** Network central promoters consistently reported positive experiences with HIVST distribution and promoting linkage to prevention and care services in their social networks. Social network approaches are a promising method for increasing HIVST uptake and normalizing testing among hard-to-reach fishermen.

## THPED452

Factors associated with condom use among men who engage in online transactional sex in Canada

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**Background:** Men who engage in online transactional sex (OTS; i.e. exchanging sexual services for money, goods or services via the Internet) remain underrepresented in studies and interventions targeting key populations.

This study aims to identify the factors associated with condom use among this population to assess the prevention of HIV and other STBBIs for this population.

**Methods:** ANRS-SEXTRA is a cross-sectional community-based research study conducted in eight countries on men (cis and trans) and trans women offering OTS. In Canada, data on men were collected via an online questionnaire (August 2021-May 2022). Although trans women were included in the study population, no respondents identified as such.

In addition to sociodemographic questions and questions about their experience in OTS, the participants were asked about how often they used condoms during anal or vaginal intercourse with their clients, with response options including never, sometimes, or always. Multivariate ordinal regression was employed to identify the factors associated with condom use frequency.

**Results:** The analysis included 89 participants, 19 of whom were living with HIV (18/19 undetectable). Of the participants, 33.7% reported never using condoms, 33.7% reported sometimes using them, and 32.6% reported always using them. 61.8% reported that their clients requested



not to use condoms or paid them more not to use them. 12.4% responded that OTS was seen as an obligation rather than a chosen activity. Multivariate analysis indicated that condom use was less frequent among individuals whose clients requested no condom use (OR[95%-CI]: 0.14[0.05-0.37]) and among people living with HIV (OR[95%CI]: 0.15[0.04-0.54]). Conversely, condom use was more frequent among those who perceived OTS as an obligation (OR[95%CI]: 6.28[1.29-30.6]).

**Conclusions:** This study contributes to the limited research on the needs, practices and access to prevention and care of men involved in OTS. The frequency of condom use was affected by external constraints, such as client demands, and feeling that OTS was an obligation. People living with HIV tend to use condoms less frequently, which may suggest less concern about other STBBIs and a good appropriation of the U=U message. The results will be used to adapt prevention campaigns for men engaging in OTS.

## THPED453

Expanded strategy to reach out to key populations in virtual spaces: connecting through a virtual network under community system strengthening (CSS) in India

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**Background:** Evolving patterns of interaction, such as virtual informal groups and dating apps (Grindr, Tinder, etc), among at-risk populations (FSW, MSM, TG/H, and PWID), have created an ideal environment for the acquisition of HIV, and STIs. The Community Championship (CC) initiative under CSS has established a robust network of community representatives within localities. Through their social networking efforts (Expanded community outreach), which involves engaging with members in virtual groups, dating apps, etc., these representatives share crucial information, assess risks, and facilitate access to HIV-related services provided by the national program.

As per the India HIV Estimates 2022, the HIV prevalence among the general population is 0.20% whereas among the high-risk groups, it is 1.85% (FSW), 3.26% (MSM), 3.78% (TG) and 9.03% (IDUs).

**Description:** The Community Champions (CCs) serve as a vital link between the community and the National Programme to facilitate enhanced outreach to the unreached or hidden population. Under the CSS, key populations were involved and nominations for CCs were received. These individuals were capacitated on 6 capacity building modules on strengthening community partici-

pation. These CCs have established connections with fellow community members in virtual spaces disseminated essential information on the prevention and control of HIV and STIs and facilitated their access to service provisions.

**Lessons learned:** In the initial phase, 43 Community Champions were engaged as 'NETREACH Peers' for virtual outreach. Through this outreach, they screened 2509 KPs for HIV and identified 11 positive cases. Of them, 7 were linked with ART services within 6 months. Proactive engagement by CCs in disseminating information, assessing risks, and facilitating connections to essential services proved to be a successful strategy highlighting the importance of expanded outreach in virtual space.

**Conclusions/Next steps:** The engagement of community representatives through the Community Championship initiative under CSS effectively addresses evolving patterns of interaction within at-risk populations on virtual spaces. The approach's ongoing success depends on sustaining and expanding the Community Resource Pool. Leveraging a network of 4250 trained CCs from key populations, PLHIV, and Youth from KP is crucial to reach out to the unreached virtual population.

## THPED454

Culture as healing: addressing gaps in the 95/95/95 targets among Indigenous people living with HIV in British Columbia, Canada

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**Background:** In Canada, Indigenous people are 2.7 times more likely to be diagnosed with HIV. Additionally, Indigenous people face significantly worse outcomes at every level of the province of British Columbia's 95-95-95 targets on HIV diagnosis, treatment, and viral suppression. As a result, increasing engagement in HIV/AIDS prevention and treatment among Indigenous people through improving the cultural safety of health care services, is key in Canada's HIV response, and a key gap to be addressed in the progress made toward provincial and national HIV/AIDS targets.

**Description:** The Dr. Peter Centre (DPC) launched services in 2022 to address these unique challenges faced by Indigenous people living with HIV. Approximately 30-40% of the Centre's 350+ Day Health participants self-identify as Indigenous. The program, led by Indigenous staff consisting of a Facilitator, Elders, Cultural Workers, and Knowledge Keepers, integrates ceremony, cultural and artistic activities, traditional medicines, and practices into health care services.

The program hosts cultural gatherings, art and music activities, culture-inspired food programs, storytelling sessions, and counselling services.



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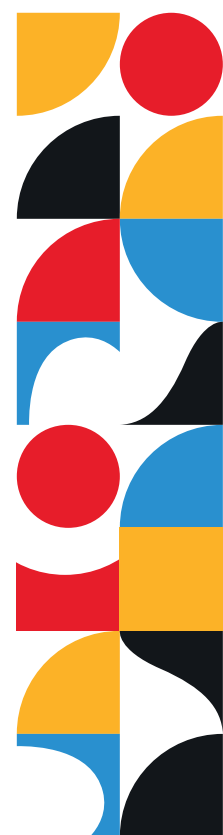
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**Lessons learned:** The program has yielded encouraging outcomes. Program evaluation indicates participants appreciate reconnecting with their culture, fostering a sense of welcomeness and engagement within the DPC and the broader community. Success is attributed to incorporating the voices of Indigenous participants into program design, ensuring Indigenous-led and run programming while educating non-Indigenous staff and leadership. Through a lens of reconciliation, staff are learning to see the value and beauty of Indigenous culture and ceremony. The DPC aims to create a more inclusive healthcare environment nationally by elevating Indigenous voices and fostering collaboration.

Efforts also involve decolonizing spaces and services and enhancing Indigenous representation at all levels within the organization.

**Conclusions/Next steps:** The DPC's healing and reconciliation work, centered around this program, aims to provide essential services while addressing systemic issues contributing to health disparities among Indigenous populations.

The program seeks to scale up best practices for other non-Indigenous frontline organizations, offering culturally relevant initiatives to meet the population's specific needs. This includes guidance on reducing barriers to health care services, increasing access to culturally relevant spaces, and supporting health care organizations to effectively assist their Indigenous clients.

## THPED455

HIV information dissemination for HIV service uptake: a case of PrEP up take among adolescent girls and young women in sex work in hard to reach areas of Uganda

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**Background:** In Uganda, HIV Prevalence among Female sex workers (FSW) is 37% and FSW account for 18% of the new infections in the country. Pre-exposure prophylaxis (PrEP) is the only female controlled strategy that can be used to reduce infections and transmissions. Studies indicate high acceptability of PrEP by sex workers but their willingness to take it is low. Lack of appropriate information is one of the reasons for low uptake of PrEP. WONETHA received funding from Viiv to reduce the incidence of HIV infection and HIV/AIDS related morbidity and mortality among adolescent girls and young women selling sex in Uganda in line with the UNAIDS 95-95-95 targets for epidemic control.

**Description:** From the base line assessment carried out, 20% of the AGYW were taking PrEP, 40% knew about PrEP but were not taking PrEP while the 60% were ignorant about the PrEP. WONETHA embarked on deliberate sensitization of the AGYW on the benefits of using PrEP.

WONETHA, in collaboration with health workers from public health facilities mobilize, sensitize and test AGYW in sex work in their hotspots. Those with HIV negative results are given more information and encouraged to enroll for PrEP and followed up for timely refill of PrEP to ensure adherence.

### Lessons learned:

- During the Programme intervention of one year, PrEP uptake among AGYW in sex work increased from 20% to 50% due to the information given during the outreaches.
- Fears and myths around PrEP that hindered PrEP uptake among AGYW are addressed through giving correct information.
- New science in Prevention and Treatment need to be communicated to the grass root population who are the targeted beneficiaries.
- Stigma around PrEP due to its resemblance to ART affected the uptake of PrEP.
- Continuous sensitization is critical to keep AGYW on treatment and while motivating others to enroll on PrEP.

### Conclusions/Next steps:

- Appropriate information and addressing myths around PrEP lead to increased uptake of PrEP among AGYW selling sex.
- Peer encouragement and support improves adherence to PrEP and yield positive outcomes of PrEP.
- Information about the new science of injectable PrEP and its availability should be scaled up to address the stigma related to the PrEP Tab.

## THPED456

The hidden epidemic: the impact of discrimination and internalized homonegativity on depression in Brazilian young men and non-binary individuals who have sex with men

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**Background:** HIV rates are rising among Latin American youth. Discrimination against the LGBT community poses a risk for sexual and gender minority youth, potentially leading to internalized homonegativity, depression and risky sexual behavior. We assessed the prevalence of HIV, discrimination, depression and internalized homonegativity. We also examined the association between discrim-

ination and internalized homonegativity with depression among young men and non-binary individuals who have sex with men (YMSM) (18-24 years) in Brazil.

**Methods:** We used baseline data from the Conectad@ study, which employed respondent-driven sampling to recruit YMSM between November 2021-October 2022 in Rio de Janeiro, Brazil. Depression was measured by the Patient Health Questionnaire (PHQ-9; scores range:0-27); scores equal to or higher than 10 were indicative of depression. We used Portuguese-validated scales to measure discrimination (18-item Explicit Discrimination Scale [EDS], scores range:0-54) and internalized homonegativity (7-item Internalized Homonegativity Scale [IHS], scores range:0-42); higher scores represented higher measures. Logistic regression models were used to examine associations with depression.

**Results:** Of 409 participants (90.5% cis-MSM, 7.3% NB, 2.2% trans-MSM), 70.6% were Black/Pardo, 60.4% had secondary education or lower, and 71.0% a monthly per capita income equal to USD230 or less. Median age was 21 years (IQR:20-23). Forty participants (9.8%) tested positive for HIV (20 were newly diagnosed with HIV).

Overall, 97.1% of participants reported discrimination, 27.6% reported physical violence due to their sexual orientation, and 35.0% reported healthcare avoidance due to fear of discrimination. Depression occurred in 210 (51.3%) participants. Those with depression had higher scores of discrimination (10.8 [SD8.0] vs. 7.3 [SD5.8]) and internalized homonegativity (8.1 [SD5.8] vs. 6.5 [SD4.6]) compared to those without. In adjusted models, YMSM with depression had increased odds of discrimination (aOR1.07 [95%CI:1.04-1.12];  $p<0.001$ ) and internalized homonegativity (aOR1.06 [95%CI:1.01-1.10];  $p=0.01$ ).

**Conclusions:** Our sample had high HIV prevalence, with most YMSM reporting discrimination. Nearly one third faced violence related to sexual orientation, and depression was linked to discrimination and internalized homonegativity.

Our data emphasizes the need for an HIV response for YMSM addressing both physical and mental health, aligning with anti-discrimination and anti-homophobia efforts.

## THPED457

### Sociodemographics and psychosocial characteristics of female sex workers enrolled in "MAS por nosotras" cohort in Buenos Aires, Argentina

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Argentina, <sup>5</sup>Coordination of Sexual Health, HIV and Sexually Transmitted Infections of the Ministry of Health of Buenos Aires, Buenos Aires, Argentina

**Background:** "MAS por Nosotras" is an ongoing prospective cohort study aiming to evaluate the sexual and reproductive health of cisgender (CGW) and transgender (TGW) female sex workers (FSW) and the feasibility of implementing a comprehensive healthcare package in Argentina. This work describes baseline psychosocial characteristics of the participants.

**Methods:** Consenting FSW attended an NGO healthcare service and completed questionnaires at baseline to assess: Food Security (Module of the Canadian Community Health Survey), Sex Work-related Stigma (adapted version of Grosso's Scale, 4 dimensions: Experienced and Perceived Stigma in a Healthcare Setting, Stigma from Family and Friends, and Stigma from Police); Posttraumatic Stress Disorder (PCL-5), Depression (CES-D), alcohol use (AUDIT), and Substance Use (DAST-10), Condom Use (while using substances and in the last sexual intercourse). Repeated measures X<sup>2</sup> and ANOVA were used to analyze differences between TGW and CGW.

**Results:** Between June-December 2023, 116 FSW were enrolled, 61 (52.6%) TGW and 55 (47.6%) CGW. The median age was 33.5 years (IQR= 26.8-44.3). Regarding education, 42.2% attained secondary school or higher (TGW:40.7%; CGW:44%). For most of them (91%) sex work was the main source of income (TGW:94.9%, CGW:86.5%). Only 28.9% perceived they had enough food and the kind they wanted (TGW:30.8%, CGW:27%). Most FSW (71.7%) reported using protection in the last sexual intercourse (TGW:75.9%; CGW: 66.7%). Overall, TGW showed higher alcohol use than CGW ( $p<0.001$ ), and higher frequency of substances and alcohol use before and during sexual intercourse ( $p=0.002$ ). No significant differences were found between TGW and CGW in the Food Security scale, Sex Work related Stigma and its dimensions, CES-D, PCL-5 and DAST-10.

**Conclusions:** Psychosocial health determinants were similar for CGW and TGW and are likely related to the conditions of sex work. TGW reported higher alcohol use. This highlights the need for a common approach to improve



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the living and health conditions of FWS, complemented by targeted interventions on the differential risks faced by TGW. These results highlight the need of considering other moderating variables beyond gender identity and will be used to design the comprehensive healthcare package for this population.

## THPED458

Examining experiences of African American men who have sex with men (MSM) with medical providers and the healthcare system

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**Background:** African American MSM comprise the largest portion of new HIV diagnoses in the U.S. (39%). Trends show that HIV incidence is different across age groups among African American MSM; decreasing among younger groups while older groups are experiencing higher rates. Barriers such as homophobia, stigma, provider bias and discrimination, and medical mistrust affect their use of healthcare services and prevention tools including as PrEP; placing this population at greater risk for exposure to HIV. However, there is a dearth of research that examines differences in experiences with healthcare providers within African American MSM when considering age. The purpose of this study was to understand how experiences with medical providers and the U.S. healthcare system differ across age groups of African American MSM.

**Methods:** This was a qualitative study consisting of one-on-one, semi-structured interviews with 28 African American MSM, ages 21 to 57, from 01.01.2018 to 31.12.2020. Interviews assessed knowledge and perceptions of PrEP and experiences seeking healthcare. Through an interpretive (postmodern) approach, guided by the socio-ecological model, we performed inductive content analysis of transcribed interviews using Dedoose. Participant interviews were divided into three age groups: 20-29 years, 30-39 years, and ages 40 and older. Participants were recruited from often-understudied areas in Southwestern, Midwestern, and Southern U.S.

**Results:** Findings among African American MSM, 20-29 years, revealed themes of fear and anxiety around receiving HIV test results, stigma from medical providers, and holding a sense of shame, especially living in conservative states. Among those aged 30-39 years, men sought health care for specific issues rather than general preventative care. In addition, these men held race and gender preferences for their provider. Among those aged 40 and older, men were content and did not seek care unless there was a personal experience of a significant health scare. Across age groups, participants held similar PrEP perceptions.

**Conclusions:** In this study, the sexual health care needs of African American MSM differed by age group. Recognizing and incorporating these differences in tailored HIV prevention approaches could contribute to an uptake in PrEP use and a significant reduction in the disparity in HIV diagnosis and risk among African American MSM.

## THPED459

Out in health: sexual orientation disclosure to healthcare providers among gay, bisexual and other men who have sex with men in New Zealand

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**Background:** Gay, bisexual, and other men who have sex with men (GBMSM) in New Zealand (NZ) are disproportionately impacted by HIV and other STIs. Biomedical innovations such as PrEP offer new prevention tools, but these are only accessible through clinical interactions. Consequently, opportunities to prevent HIV transmission hinge on GBMSM disclosing their sexuality (disclosure) and feeling comfortable discussing sexuality (comfort) with healthcare providers (HCPs).

Prior international scholarship has investigated the role of sexuality disclosure with HIV prevention/testing, but the role of comfort is less clear. We examined these associations for the first time.

**Methods:** Data were analysed from HIV-negative GBMSM participating in the 2022 Sex and Prevention of Transmission Study, NZ's national, cross-sectional HIV bio-behavioural surveillance programme. Four 'healthcare outness' profiles were constructed based on GBMSM's sexuality disclosure and comfort discussing sexuality with HCPs: comfortable disclosers, uncomfortable disclosers, comfortable non-disclosers, and uncomfortable non-disclosers.

Frequency cross-tabulation was used to describe the profiles by sociodemographic and sexual behaviour characteristics, and logistic regression to explore associations with HIV testing/prevention outcomes.

**Results:** Overall, 2115 participants were eligible. Healthcare outness profiles varied by age, ethnicity, sexual identity, and sexual behaviours. Any degree of discomfort or non-disclosure was associated with significantly lower odds of recent HIV testing in adjusted analyses. Uncomfortable disclosers were 0.51 times (95% CI 0.28, 0.95), comfortable non-disclosers 0.25 times (0.13, 0.49), and uncomfortable non-disclosers 0.22 times (0.13, 0.36) less likely, respectively, to have tested recently for HIV compared with comfortable disclosers. Recent PrEP use showed a gradient: 35% of comfortable disclosers had



recently used PrEP, compared with 30% of uncomfortable disclosers, 10% of comfortable non-disclosers, and 7% of uncomfortable non-disclosers. Any degree of non-disclosure was associated with significantly lower odds of recent PrEP use.

**Conclusions:** In the biomedical prevention era, many GBMSM still face barriers to HIV prevention/testing, even in progressive high-income countries. Differentiated service delivery that centralises GBMSM's identities and sexual health needs can be achieved by improving HCPs' cultural competence and cultural safety, and providing alternative HIV prevention/testing access points, including at-home self-testing. GBMSM's ability to communicate about sexuality and sexual health is key to eliminating HIV transmission by 2030.

## THPED460

Substance use discrimination in healthcare and HIV status disclosure among people with HIV who inject drugs in St. Petersburg, Russia

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**Background:** HIV status disclosure is an important HIV preventive strategy but, historically, has been less prevalent in Russia. People with HIV and substance use disclosure experience intersectional stigma and discrimination related to both substance use and HIV, but the link between discrimination experiences for substance use and HIV disclosure has not yet been explored.

This analysis investigated the intersectional relation of substance use-related discrimination in healthcare, stigma and current HIV status disclosure rates in an HIV key population.

**Methods:** This cross-sectional analysis involved 225 people with HIV who injected drugs and are in substance use treatment in St. Petersburg, Russia. We assessed perceived

discrimination in healthcare for substance use (frequency, total score from 7 - 35), HIV stigma score, substance use stigma score, intersectional stigma (both scores high) and HIV disclosure to either some or all friends, family, or people they live with. Logistic regression analyses examined the relationship between the independent variables—high perceived discrimination, HIV and substance use stigma—and the outcome HIV disclosure.

**Results:** Most participants (74%) disclosed their HIV status to all or some in their social network (family, friend, or person they live with). Complete nondisclosure was uncommon. Perceived discrimination in healthcare occurred commonly (score 17/35) and was not associated with HIV disclosure (AOR 1.44, 95%CI 0.69-3.00, n=223). About 1/3 (31.7%) had high intersectional stigma, and neither high HIV nor substance use stigma or intersectional stigma were associated with HIV disclosure (AOR .71, 95% CI 0.33-1.55, n=208; AOR .98, 95% CI 0.44-2.20, n=198; AOR 0.66, 95% 0.27-1.59, n=189).

**Conclusions:** Among people with HIV and substance use in Russia, HIV disclosure, specifically selective disclosure, seems to have become a widely used strategy but seemed unrelated to high HIV stigma. Discrimination for substance use is still a common experience in this HIV key population, but seemed unrelated with HIV disclosure. Discrimination's harmful effects call for interventions in Russia's healthcare environment.

## THPED461

Empowering Appalachia: a comprehensive community-driven initiative addressing syndemic challenges through vaccination advocacy and HIV/HCV testing

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**Background:** The Community Education Group (CEG) initiated a comprehensive program, funded by the Centers for Disease Control and Prevention, to address declining vaccination rates and combat syndemic challenges in the Appalachian region, particularly in West Virginia.

The program aimed to promote COVID and influenza vaccine uptake while advocating for HIV and HCV testing among rural Appalachians.

**Description:** CEG, in collaboration with strategic partners and supported by the Appalachian Partnership Fund (APF), implemented initiatives across 13 states, focusing on New York, North Carolina, Maryland, Pennsylvania, Tennessee, Virginia, and West Virginia. The program involved 18 grantees, serving over 16,870 clients over a one year period. The activities included administering more than 476 COVID-19 vaccinations, conducting 811 COVID-19 tests (with 37 self-reported positives), performing 2024 HIV tests (resulting in 13 positives), conducting 884 HCV tests



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(with 107 positives), administering 1046 influenza vaccinations, and providing 62 MPOX vaccinations. Both in-person and virtual outreach events exceeding 200 occurred during the reporting period.

**Lessons learned:** The outcomes highlighted the effectiveness of collaborative efforts in addressing health disparities. The initiative successfully facilitated widespread testing, vaccination, and outreach, contributing to the identification of positive cases.

"The support of CEG helped us get the tests needed for HCV and HIV testing among educational materials. We were able to leverage the dollars with other agencies to bring as much as possible to the communities we serve..." The testimonial reflects the program's impact, emphasizing the leverage of funds and the importance of community engagement in enhancing healthcare access.

**Conclusions/Next steps:** The findings underscore the significance of community-driven interventions in improving vaccination rates and addressing health crises. Lessons learned emphasize the need for continued collaboration, resource leveraging, and community involvement. The success of the program provides insights into addressing not only vaccination challenges but broader health issues, such as HIV and HCV, in underserved regions. The implications to extend to future initiatives, emphasizing the importance of tailored, community-focused approaches in public health responses.

## THPED462

### Reasons for Pre exposure prophylaxis discontinuation among Female Sex Workers in Gaborone, Botswana

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**Background:** Female Sex Workers (FSW) have a relatively high prevalence of HIV at 42.8% as compared to female general population at 26.2% in Botswana. Oral pre exposure prophylaxis (PrEP) has been found to be effective in reducing the chance of acquiring HIV when taken as prescribed. PrEP continuation is a challenge globally yet little is known about the reasons for discontinuation among FSW. To improve PrEP continuation, Nkaikela Youth group (NYG) followed up FSW enrolled on PrEP and documented the reasons for discontinuation.

**Description:** Overall, (NYG), a non-governmental organization mobilised and enrolled 610 FSW from October 2022 to September 2023 in Gaborone. FSW were given information on PrEP including benefits and side effects by the peer outreach workers (POWs) and the nurses. All FSW were followed up through telephone and reminded of subsequent appointments by NYG care officer 5 to 2 days prior

to the appointment. FSW who missed the appointment were documented on excel. Three attempts of follow up were made to understand the reasons.

**Lessons learned:** NYG enrolled FSW of the following age groups: 18-19 (8%), 20-24 (34%), 25-29 (25%), 30-35 (16%), 35-39 (10%), 40-44 (5%) and 45-49(1%). Of the 610, 366 (60%) discontinued PrEP. Reasons for discontinuation varied with majority 236 FSW reporting side effects (feeling nauseas, vomiting and diarrhoea), no longer at risk, FSW were told they can just stop PrEP by POWs, pill fatigue, no reason to take PrEP while not sick, just stop without a reason, not having transport money, no one to look after the children, influence from the family to stop. Other reasons were service provision related like closed drop in centre and unsuitable appointment dates. Twenty eight FSW were untraceable.

**Conclusions/Next steps:** The reasons cited by FSW offers an opportunity to strengthen PrEP programming. The components which needs strengthening include, PrEP education and empowerment, training for POWs on the importance of PrEP, integrated social services to cater for children, adherence support, advocacy for provision of other PrEP methods, including PrEP injectable and PrEP ring.

## Sexuality, gender, relationships and sexual cultures

## THPED463

### Knowledge, attitudes, and perceptions of gender-based violence health services: improving support for sexual and reproductive health rights among adolescents and young persons affected by HIV in Nigeria during COVID-19 pandemic

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**Background:** The World Health Organization (WHO) underscores the significance of addressing gender-based violence (GBV) as a public health concern, emphasizing the essential role of quality healthcare services for survivors, particularly during crises such as disease outbreaks. Healthcare providers are crucial in delivering life-saving care, especially for adolescents, young individuals, and other vulnerable groups. In Nigeria, statistics reveal that 48% of individuals aged 15-29 have encountered gender-based violence, with a mere 3% seeking GBV health services in the aftermath of such violence.

The study aimed:

1. To determine the knowledge of gender-based violence among adolescents and young persons affected by HIV,



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2. To determine their Attitudes, and perceptions of GBV health service quality, and;
3. To assess the comprehensive access to GBV services.

**Methods:** The study was a descriptive cross-sectional study design that involved 422 participants selected using the simple random sampling method in Nigeria. Data were collected using interviewer-administered paper-based questionnaires to determine the knowledge of GBV, attitude, and perception of GBV health services and assess comprehensive access to GBV services.

Analyses were performed using IBM SPSS version 27. The bivariate analysis identified factors correlated with knowledge and attitude of GBV health services.

**Results:** Out of 422 study participants, more than three quarters (90.3%) had good knowledge of how GBV is defined and what constitutes gender-based violence, 55.7% strongly agree that there are GBV health services offered, while 18.5% have access to GBV services. Additionally, 129 participants (30.6% of total participants) reported that covid-19 pandemic is linked with gender-based violence cases. The study indicated that despite High knowledge of GBV, there is limited knowledge of GBV health services and utilization of GBV health services remained low. Age, gender, population group, sexual identity, place of residence, and educational level, Marital status, Ethnicity, religious belief, Employment status are significantly associated with knowledge, Attitude, and access to GBV services.

**Conclusions:** Coordinated actions need to be strengthened to reach Adolescents and Young Persons who remain unaware of GBV. Improving GBV service quality, bettering interventions aimed at reducing GBV among Adolescents and Young persons in Nigeria, and scaling up integrated service models, such as GBV one-stop centers.

## THPED464

Revolutionizing sexual health education for Indonesian adolescent Girls through insights into knowledge and behaviors

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**Background:** Adolescent girls in Indonesia face a three-fold higher risk of HIV transmission compared to their male counterparts. Various obstacles hinder their access to comprehensive sexual health education, including societal, economic disparities, limited educational and healthcare access, discrimination, and violence.

This qualitative study delves into the sexual health behaviors and literacy of Indonesian adolescent girls, exploring the potential of technology to enhance sexual and reproductive health outcomes in this demographic.

**Methods:** Twenty-four adolescent girls aged 15-17, enrolled in the EKSTRIM mHealth program, participated in four focus group discussions (FGDs). The participants

were randomly selected from four secondary schools involved in the EKSTRIM randomized clinical trial (N = 480). FGDs, conducted in the local language, were audio-recorded, transcribed verbatim, and translated. Translated transcripts were managed and coded using NVivo. Key themes that emerged included Influences for Sex/Relationships, HIV Knowledge, and Sources of Sexual Health Information.

**Results:** Participants identified common influences for engaging in sexual activity, including the pursuit of resource security, limited communication with parents, and peer influences. Knowledge gaps were evident, with participants seeking information on preventing unplanned pregnancies and HIV, endorsing sexual health myths, and highlighting barriers to accessing sexual health information.

**Conclusions:** The study revealed noticeable inconsistencies and limited access to basic sexual health knowledge, heightening the risks of adverse sexual and reproductive health outcomes among adolescent girls.

Culturally appropriate interventions are essential to address these challenges and advance the sexual and reproductive health needs of Indonesian adolescent girls.

## THPED465

From intimacy to uncertainty: a qualitative study of women living with HIV/AIDS in Indian Kashmir concerning the impact of HIV on their sexual well-being and partner relationships

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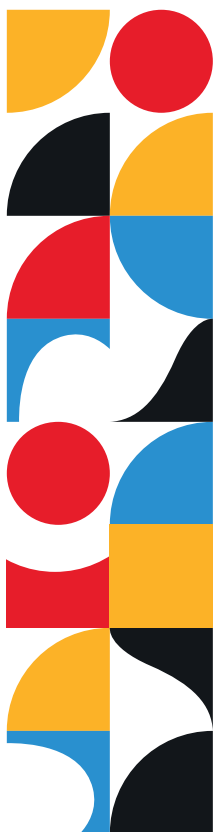
<sup>1</sup>University of Kashmir, Srinagar, India

**Background:** This paper studies the intricate dynamics of intimate relationships among women living with HIV/AIDS, focusing on the profound impact of stigma and discrimination. Despite a wealth of data on the influence of marital quality on individual health and well-being, there is a notable gap in the literature regarding the effects of HIV/AIDS on intimate partner bonds, especially in diverse cultural contexts like Indian Kashmir.

**Methods:** This study, conducted in Indian Kashmir in 2020-21, investigates the experiences of 21 women living with HIV. Using Interpretative Phenomenological Analysis (IPA), the research treats participants' self-accounts as context-specific stories rather than universal truths. The goal is to uncover the meanings within these narratives, recognizing their contextual nature. IPA allows for a thorough exploration of individual experiences, presenting results through thematic and sub-thematic structures with qualitative illustrations.

This approach provides a nuanced understanding of how HIV, intimate relationships, and stigma interact within the cultural and social context of Indian Kashmir.

**Results:** The findings reveal that the stigma associated with HIV/AIDS significantly influences personal and sexual relationships, creating a web of challenges for WLHA. Par-





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ticipants share narratives of betrayal, fear, and emotional turmoil, highlighting the impact of HIV on decision-making processes within relationships.

Stigma-driven distancing, emotional, sexual physical, is evident among those affected, with some participants experiencing rejection and subtle forms of discrimination from their close ties.

**Conclusions:** In patriarchal societies like Indian Kashmir, societal expectations of women to remain submissive and compliant compound the challenges faced by those living with HIV/AIDS.

The study underscores the intricate web of relationships affected by the diagnosis, particularly within personal intimate partnerships. Emotional and physical distancing from partners perceived as the source of infection becomes a coping mechanism, manifested in decisions such as separating beds and reevaluating sexual intimacy. The narratives reveal the complex interplay between fear, economic dependence, and societal expectations, which often lead participants to navigate their relationships delicately. Instances of abuse from in-laws and the cold treatment from siblings underscore the social repercussions of an HIV diagnosis. The sense of belongingness drives some participants to keep their HIV-positive status a secret, fearing rejection and isolation.

## THPED466

**Tailoring individual HIV testing and counseling for emerging adult (aged 18 to 24) men in relationships with other men: enhancing sexual risk reduction through increased relationship skills**

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**Background:** Sexual minority men (SMM) account for most new HIV cases in the US, with older adolescent and emerging adults at the highest risk. Those in relationships face unique HIV prevention challenges. Existing dyadic sexual HIV transmission risk interventions for male couples often encounter implementation challenges and engaging younger SMM early in relationships may be particularly difficult.

The purpose of the current study was to evaluate the feasibility and estimate the potential effect size associated with the use of *We Test* – a behavioral health intervention tailored for younger SMM in relationships. The intervention comprises two adjunct modules – video-based communication skills training as well as communication

goal setting and planning – delivered in conjunction with routine HIV testing and counseling in individual or dyadic formats.

**Methods:** A sample of 69 SMM aged 17 to 24 were recruited online. Following baseline assessment, youth were randomized to receive either the experimental, *We Test*, intervention or routine HIV testing (the control condition). At all assessments, youth reported sexual behavior as well as communication skills, communal coping, and relationship power.

**Results:** While differences were not statistically significant, the odds of CAS with casual partners were approximately 61.5% lower in the *We Test* condition compared to control ( $OR=0.385$ ,  $p=.203$ ) at 3 month follow-up. Results further suggested the intervention was associated with improvements of moderate size (Cohen's  $d = .50$  to  $.80$ ) in communication skills, communal coping, and relationship power.

**Conclusions:** Findings suggest *We Test* can be feasibly delivered in an online, remote format to participants in the US. An intervention such as *We Test* provides an opportunity for youth to practice communication skills specifically relevant to navigating sexual interactions with a partner. Findings suggest these interpersonal skills may be plausible mediators leading to sexual HIV risk reduction. Skill building is done in the context of a current relationship, such skills might generalize to interactions with future relationship partners and to sexual partners outside the context of a relationship. Such an intervention may be particularly relevant for SMM during late adolescence and emerging adulthood -- periods where peer and dating relationships are increasingly salient.

## THPED467

**Experiences of daily discrimination among sexual minority men of color in Raleigh-Durham, North Carolina**

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**Background:** In the United States, it has been shown that sexually minority men (SMM), especially people of color (PoC), may have an increased vulnerability to HIV due to discrimination. Better understanding how discrimination may impact PoC SMM engagement in HIV prevention services is a critical public health concern. The linkages between HIV vulnerability, psychosocial factors and discrimination among PoC SMM are not well described in the literature. We assessed the associations between perceived discrimination, psychosocial factors, and HIV status among PoC SMM.



**Methods:** Data are from an observational study of adult persons of color assigned male at birth having sex with other persons assigned male at birth recruited from clinics, social media, dating apps, and social venues in the Raleigh-Durham area. Discrimination was measured with the Everyday Discrimination Scale (short version), summed by situation. A multivariable logistic regression was used to assess the association between perceived discrimination, psychosocial factors, and HIV status.

**Results:** Of 94 SMM participants, 58.5% were living with HIV (PLWH), 86.5% experienced at least one type discrimination in the past year, 7.5% were non-gay/bisexual/queer identified, 9.7% were gender diverse, 71% were Black/African-American, 22% were Latinx, mean age 33. In the multivariable logistic regression, PLWH and Latinx participants had lower odds of experiencing discrimination compared with HIV-negative and non-Latinx counterparts (OR 0.67; 95% CI 0.49-0.91) and (OR 0.30; 95% CI 0.23-9.26), respectively. Sexual orientation was marginally significant, with those not identifying as gay/bisexual/queer having higher odds of experiencing discrimination (OR 1.68; 95% CI 0.09-3.05) than gay/bisexual/queer identified.

**Conclusions:** In our sample of predominately Black/African-American SMM, PLWH and Latinx persons experienced less discrimination than people living without HIV and non-Latinx persons. Interestingly, those who did not outwardly identify as gay/bisexual/queer experienced slightly more discrimination. These results highlight the importance of elucidating how discrimination may impact HIV vulnerability and prevention as well as HIV-associated psychosocial factors among PoC SMM.

Future studies should investigate the role of race, ethnicity, self-reported sexual orientation, and other psychosocial factors in SMM's experience of discrimination. These next steps may help inform health policy strategies to mitigate discrimination and increase HIV prevention efforts.

## THPED468

### No Means No: lessons learned implementing the sexual violence prevention curriculum for girls aged 10-14 years in Matabeleland North Province, Zimbabwe

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**Background:** Adolescent girls (AG) aged 10-14 years are disproportionately affected by sexual violence compared to their male counterparts, a risk factor for acquiring HIV. As part of the determined resilient empowered AIDS-free mentored safe (DREAMS) program in Matabeleland North Province, Zim-TTECH delivers a sexual violence prevention curriculum for AG.

**Description:** The "No Means No" (NMN) curriculum equips AG with mental, verbal, and physical skills to prevent sexual assault and escape potential perpetrators. The curriculum employs participatory methods that include demonstrations and practice of self-defense skills. From October 2020 to October 2023 NMN was implemented in school and community settings in the four DREAMS districts in Matabeleland North.

The program certified 60 Instructors selected from the communities where NMN was implemented, these were supported and supervised by 12 lead trainers. During this program, 17,360 enrolled AGs were trained in the NMN curriculum by certified instructors.

**Lessons learned:** 17,360 AG (69% of DREAMS enrolled AG) completed NMN sessions, and AGs readily accepted NMN sessions as part of ongoing DREAMS activities. The adaptation of the curriculum to the Zimbabwean context included revising language to reflect local terms and language. School-based delivery supported attendance in after-class sessions while continuous monitoring and support were key to ensure standardization and fidelity in implementation. Stakeholders noted the relevance of NMN to older girls while caregivers and boys outcried for



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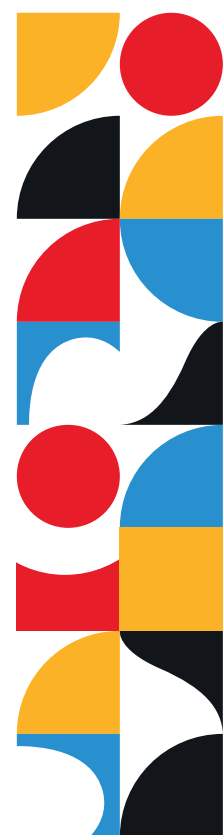
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a similar program for boys who felt left out. NMN sessions created a safe and acceptable platform for AG to disclose experiencing violence; 17 AG reported experiences of being sexually violated. Instructors immediately linked survivors to clinical and social protection services.

**Conclusions/Next steps:** There is a need to expand the delivery of sexual prevention sessions to older AGYW as well as boys for a broader impact. Further research is needed to understand how to customize NMN sessions for Zimbabwe. Instructors need thorough training in first-line GBV response and close collaboration with government line ministries to ensure timely response to GBV cases.

## THPED469

### Redefining HIV prevention efforts for AGYW through the engagement of their male sexual partners

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**Background:** While increased access to HIV prevention and treatment services have contributed to substantial reductions in HIV prevalence among adolescent girls and young women (AGYW) in sub-Saharan Africa, new infections continue to persist at a high rate especially in the context of sexual relationships between AGYW and their male partners, often characterized by power disparities and gender imbalances.

We explored factors which increase the risk of HIV acquisition among male sexual partners of AGYW as well as their engagement and utilisation of HIV-related services.

**Methods:** We followed an integrated review design which included a scoping review of qualitative and quantitative data, and secondary analysis of existing quantitative datasets, focused on five countries with particularly high rates of HIV: Kenya, Eswatini, Lesotho, Mozambique and Cameroon. Datasets were drawn from LePHIA, UNAIDS NAOMI spectrum and the Demographic and Health Survey.

For the scoping review, literature searches were conducted on Ebscohost, ScienceDirect and Google Scholar and titles, abstracts, full texts and reference lists were screened, generating 39 relevant articles for inclusion.

**Results:** Patterns of sexual behaviour among male partners of AGYW include early sexual debut, multiple and concurrent relationships, substantial age differences in relationships and low voluntary medical male circumcision rates, all of which increase the risk of acquiring HIV

among this population. Greater male engagement in HIV care and prevention efforts is therefore an important measure that could address this issue. However, barriers to engagement in HIV interventions faced by male partners of AGYW include financial constraints, disruption of work commitments, and the potential impact an HIV positive status may have on community social status.

**Conclusions:** Interventions to improve the engagement of male partners of AGYW in HIV interventions may include the integration of HIV couples testing and counselling into reproductive health and other related services, increasing the availability and accessibility of testing, and through awareness campaigns using a multi-pronged approach including through healthcare providers, traditional healers, chemists, at workplaces, and using social media.

However, further research among male partners of AGYW is required to fully understand what the most effective approach to improving their engagement might be in different contexts in this region.

## THPED470

### Addressing gender dynamics in HIV prevention, treatment and care services uptake among men in our community: the case of North West

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**Background:** The study investigates the complexities of gender dynamics influencing men's engagement with HIV services and information in our community. Masculine norms and behaviors intersect with lifestyle factors, creating barriers such as self-sufficiency, emotional control, and rigid gender roles that contribute to hesitations and delays in seeking HIV prevention, treatment and care services.

The study aims to understand the multifaceted challenges men face, incorporating individual, social, economic, and cultural factors that impact HIV service utilization.

**Description:** Employing a qualitative approach, this research delves into the nuanced reasons behind men's hesitation to seek HIV prevention, treatment and care services. The study utilizes in-depth interviews and focus group discussions to capture the voices and experiences of men in our community. Key thematic areas explored include self-sufficiency, risk-taking behaviors, gender roles, stigma, cultural pressures, economic considerations, and environmental factors contributing to delays in seeking HIV services. Brings an understanding of the sociocultural and economic contexts influencing men's health-seeking behaviors.

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**Lessons learned:** The study reveals a complex interplay of masculine norms, lifestyle choices, and societal expectations shaping men's reluctance to engage with HIV services. Specific findings highlight the influence of toxic masculinity, cultural pressures, and economic considerations as significant factors impacting men's health behaviors.

Additionally, occupational exposures, social and community stigma, and perceptions of healthcare services contribute to the hesitancy among men to access HIV services promptly. It underscores the need for targeted interventions that challenge toxic masculinity, address cultural pressures, and create supportive healthcare environments conducive to men seeking HIV services. Lessons also highlight the importance of community awareness campaigns to counter stigma and challenge gender norms hindering health-seeking behaviors.

**Conclusions/Next steps:** There is need for development of tailored health promotion initiatives aimed at reshaping masculine norms. Interventions should target both individual and societal levels, fostering environments where men feel empowered to prioritize their health. Culturally sensitive HIV services and awareness campaigns, coupled with workplace interventions, are crucial to overcoming economic barriers and occupational exposures.

Collaborative efforts between healthcare providers, community leaders, and policymakers are recommended to implement effective strategies that address the multifaceted challenges hindering men's prompt engagement with HIV services.

sexual agreements, and main partner gender identity were measured. Bivariate comparisons were conducted by relationship status and sexual agreement. The odds of condomless anal sex (CAS) with casual cis male partners was predicted from relationship characteristics and substance use.

**Results:** A total of 2240 TM respondents completed the survey. Most indicated their sexual identity as queer (46.4%), followed by bisexual (28.7%) and gay (23.1%). Fifteen percent were currently on PrEP. A majority of the sample was single (58.6%). Among those in a relationship, 85.7% reported having a non-monogamous sexual agreement. A majority reported heavy drinking (57.4%) and cannabis use (65.4%). Overall illicit drug use was 14.6%. Engaging in CAS with casual cis male partners (35.4%) was associated with heavy drinking and illicit drug use, but not cannabis. Having a monogamous sexual agreement was associated with not currently on PrEP, lower cannabis use, and having a cis male or trans male main partner. There were no differences in the occurrence of CAS with casual cis male partners regardless of whether you were single or had a monogamous (presumably breaking your agreement) or a non-monogamous sexual agreement.

**Conclusions:** TM with a monogamous sexual agreement are just as likely to have CAS with casual cis male partners but were less likely to currently be on PrEP. Sexual agreements may impact PrEP uptake and sustainment and should be considered in HIV prevention interventions for partnered TM.

## THPED471

Sexual agreements, substance use, and HIV sexual transmission behaviors among transgender men in the United States

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**Background:** Transgender men (TM), especially those who have sex with cis men, are at elevated risk for acquiring HIV. Little attention has been given to understanding how relationship factors impact HIV transmission risk behaviors (TRB) among TM. The goal of this study was to examine substance use and relationship correlates of HIV TRB among a sample of TM in the United States.

**Methods:** Secondary data analysis was conducted on data obtained from a large screening survey (November 2017- March 2020) intended to determine eligibility for various research studies. Recruitment occurred through social media and geosocial sexual networking apps mostly used by sexual minority men. Socio-demographics, substance use, sexual behavior, PrEP use, relationship status,

## Sexualities and sexual cultures: Meanings, identities, norms and communities

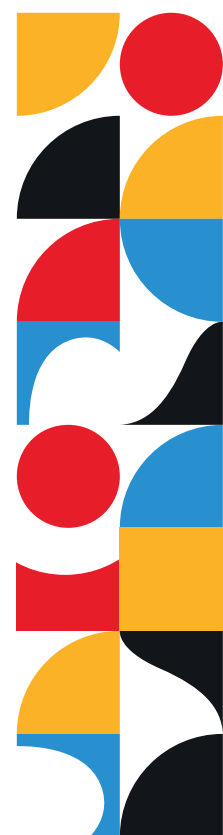
### THPED472

Addressing sexualized drug use in Sri Lanka: designing and developing a targeted Chemsex intervention package for men who have sex with men and transgender people

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**Background:** The prevalence of Chemsex, (sexualized drug use), is increasing in Asia, particularly among men who have sex with men and transgender communities. Studies show an increase in drug use within sexualized





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settings, with a clear connection to unsafe sex and increased risk of HIV transmission. Most Chemsex intervention packages and models have targeted high-income/Western countries. The Sustainability of HIV Services for Key Populations in Asia (SKPA-2) program is developing a tailored program to address Chemsex among men who have sex with men and transgender people.

**Description:** Through assessments and field visits, a training program has been crafted for key-population community members, outreach workers, and healthcare providers. This program is adapted from Mainline's Harm Reduction School initiative. Using this customized training, an intervention strategy covering prevention, treatment, sexual health, and PrEP was developed. Crucially, individuals engaged in Chemsex actively contributed to the strategy, ensuring its relevance and effectiveness.

#### Lessons learned:

- Transgender persons have distinct experiences and needs for Chemsex harm reduction compared with men who have sex with men, including the need for specialized topics covering gender reassignment surgery, and Chemsex risks among transgender sex workers post-surgery.
- The Chemsex intervention package requires specific content to address misinformation among community members and healthcare providers related to PrEP use and drug interactions.
- Chemsex intervention programs must be contextualized to the external environment in a country and understand the issues driving sexualized drug use among certain communities, (such as criminalization of homosexuality), and the impacts of the current economic crisis in Sri Lanka.
- Virtual interventions can be tailored based on the available platforms used by the communities, (e.g., Grindr).
- Intervention packages should include activities to increase access to PrEP, including reducing PrEP provider bias, eliminating misinformation, and strengthening linkages to other community-led HIV programmatic strategies and initiatives.

**Conclusions/Next steps:** The SKPA-2 program Chemsex intervention package provides a unique example from Asia that can be adapted for other countries facing high levels of stigma. This program helps to build on the emerging literature on how to utilize harm reduction approaches to respond to sexualized drug use in a contextually appropriate way.

## THPED473

### Sex work and digital technologies in CEECA

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**Background:** As internet and technology use throughout the CEECA region increases, how have sex-workers been impacted? Whilst the internet, mobile apps, and online payment platforms reshape the industry, offering opportunities for broader clientele, efficient management, financial security, and improved safety, the digital shift also exposes sex-workers to surveillance, harassment, and bias. This briefing paper explores the complex relationship between sex-work and digital technology in CEECA, aiming to unveil digital inequalities, safety concerns, and security issues.

**Methods:** A total of 47 Members of SWAN were invited to respond to a survey of 49 questions in English or Russian. Additionally, in-depth interviews were conducted with representatives of five SWAN member organisations: Ameliya (Kazakhstan), Legalife (Ukraine), Sex Work Polska (Poland), STAR-STAR (North Macedonia), and Tais Plus (Kyrgyzstan). The research findings were supplemented by desk-based research using available resources on sex-work, feminism, digital technologies, cybersecurity, and data protection.

**Results:** Sex-workers as a highly stigmatised group, face increased threats to their anonymity as digital technologies including social media, online sex-work platforms and AI, are adopted, with drastic and sometimes violent real-world consequences. A significant digital divide results from disparities in internet access and digital literacy. Repressive laws, like anti-pornography and anti-LGBTQ laws, further impact sex-workers' internet use: Anti-LGBTQ measures in Russia and Poland worsen the situation, legal restrictions in Ukraine create a hostile environment, and targeted attacks from abolitionist radical feminists contribute to further challenges. Legalized sex-work in some countries, while restricted, pushes some toward online services, yet digital inequalities pose risks for sex workers with limited internet access.

**Conclusions:** Online platforms must minimize data collection, avoiding the need for sex-workers' passports and IDs, and their design should consider marginalized communities, prioritize user experience, and simplify interfaces. Governments should decriminalize sex-work, repeal harmful laws, protect marginalized communities in data laws, and avoid jeopardizing encryption. A human rights-based approach and engagement with sex-workers in policy processes are vital. Funders should support sex-worker-led digital projects and relax documentation requirements. Service providers should refrain from identity verification, prioritize anonymity, secure data, consider the digital divide, and collaborate with sex-worker organizations in digital service planning.

## THPED474

### Queering Africa: a feminist approach to analysing the socioeconomic and health vulnerabilities

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**Background:** In Africa, queer women face compounded inequality and discrimination due to their gender and their sexual identities. These inequalities and discrimination increase their vulnerability to HIV infection through gender-based violence and 'corrective' rape.

We compare the socioeconomic and health vulnerabilities of queer women and transgender individuals to that of straight ciswomen in Nigeria and South Africa during the COVID-19 pandemic, focusing on the risk for HIV infection.

**Methods:** We used data from individual surveys among 7497 women and girls in Nigeria and South Africa. We analysed the macrosocial vulnerability status, physical and mental health, and the socioeconomic situation within and between the two countries. We also considered emotional, economic, physical, and sexual violence.

We applied a socioecological approach to study the differences in vulnerability status at the individual, interpersonal, and geospatial levels and analysed these vulnerabilities using the recent feminist lens for social change regarding gender inequality, such as sexual harassment and rape culture.

**Limitations:** The sample in this survey was purposefully selected to represent vulnerable groups using non-probability sampling methods. and there are socio-demographic and economic differences between Nigeria and South Africa. Comparisons to the general population should be done cautiously.

**Results:** Most respondents were straight ciswomen (74%), 17% queer women, and 9% transgender people. We found that queer women and transgender individuals experienced greater disruptions in accessing HIV ( $\chi^2(2, n=7051)=176.8, p\text{-value}<0.000$ ) and sexual and reproductive health services ( $\chi^2(2, n=6966)=56.8, p\text{-value}<0.000$ ) compared to straight ciswomen. Queer wom-

en also reported higher rates of depression and anxiety ( $\chi^2(6, n=6596)=84.9, p\text{-value}<0.000$ ), suicidal ideation ( $\chi^2(2, n=7164)=22.4, p\text{-value}<0.000$ ), gender-based violence ( $\chi^2(6, n=6722)=188.9, p\text{-value}<0.000$ ), and unplanned pregnancies following a rape than their straight cis-women counterparts ( $\chi^2(6, n=518)=22.3, p\text{-value}=0.001$ ).

The majority (74%) did not report this violence due to embarrassment, lack of knowledge or distrust in the system ( $\chi^2(12, n=1890)=29.5, p\text{-value}=0.0031$ ).

**Conclusions:** We showed that women and girls, in all their diversity, face socioeconomic and health vulnerabilities. Moreover, queer women and transgender individuals in Nigeria and South Africa experienced increased vulnerabilities during the COVID-19 pandemic and are victims of more sexual and gender-based violence, which may increase their risk of HIV infection.

Policymakers and advocates need a bold feminist approach to achieve more inclusive, equitable, and responsive systems of support and care.

## THPED475

### Role of Adolescent Boys, Young Men (ABYM) and Male Sexual Partners (MSP) in prevention of Gender Based Violence (GBV) amongst Adolescent Girls and Young Women (AGYW) in Homa Bay County

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**Background:** Gender based violence increase risk of acquiring HIV and unplanned pregnancies among AGYW. NOPE/USAID Nuru Ya Mtoto Project implements the DREAMS project in Homa Bay County. This project aims to empower AGYW to violence prevention with the involvement of male sexual partners and the community.

The integrated approach aims to motivate participation resulting to policy generation and adoption of interventions that favor reduction of new HIV infections among the AGYW. The Project considers ABYM and MSP a critical resource instrumental in reducing gender based related violence among AGYW.

**Description:** The ABYM and the MSP are involved in the DREAMS Project implementation from planning, execution, feedback stages. The MSPs are mobilized through the partner AGYW enrolled in the program for the Start Awareness Support Action (SASA) sessions.

This community mobilization approach is dictated by the MSP characterization outlined as per the program policy. During the MSP sessions, discussions around physical and sexual violence dominate, toxic masculinity attributes associated with men as well as negotiation skills attached to sexuality are disseminated, all these are anticipated to eliminate physical violence. HIV testing services (HTS) are offered during MSP sessions.



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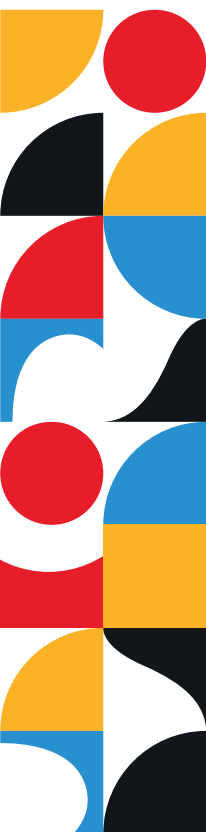
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**Lessons learned:** This approach has enhanced interventions that culminate in reduction of intimate partner violence (IPV) thus creating a safer environment for the ABYM, MSP and the AGYW. SASA interventions conducted in partnership with key community stakeholders contributed to the changing of community norms and adapting a culture that promotes healthy behaviors. Community gate keepers as change agents for SASA sessions helps fast track norms change. Consent to sex and knowing partner status is key in dealing with sexual violence, HIV testing services (HTS) are offered during MSP sessions.

**Conclusions/Next steps:** The proactive involvement ABYM and the MSP served as a strategic approach to prevent GBV among AGYW. Engaging ABYM and MSP in discussions, sensitization, and advocacy, the project aimed to reduce toxic masculinity, promote healthy relationships, and create a safer environment for AGYW. This comprehensive strategy, including SASA interventions, community engagement, and youth center initiatives contributed to fostering a cultural shift and ultimately reducing instances of GBV in the community.



## Implementation science and scale up of HIV testing

### THPEE476

Tracking outcomes of indeterminate HIV rapid  
test results and impact on HIV case identification  
in five SPHLS-supported regions of Cameroon  
(NWR, SWR, Littoral, South and West regions)

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**Background:** Individuals with HIV infection who are not  
aware of their HIV status are responsible for a dispro-  
portionate number of new HIV infections. HIV diagnosis  
in Cameroon is done using a series and combination of  
rapid test kits applied in a serial algorithm. This diagnos-  
tic strategy gives room for a category of results known as  
"indeterminates"; which require further investigations for  
a final HIV testing outcome.

This study aimed to determine the rate of occurrence and  
impact of the tracking outcomes of these indeterminate  
cases on HIV case identification in Cameroon. This will  
inform national decision-makers and HIV/AIDS program  
implementers on key priority intervention areas to speed  
up progress towards HIV epidemic control.

**Description:** A hospital-based study involving the ex-  
ploitation of HIV testing and counselling (HTC) records of  
clients with indeterminate HIV rapid test results from Oc-  
tober 1<sup>st</sup>, 2022 to September 30<sup>th</sup>, 2023.

Data for this study were extracted from national HIV test-  
ing registers and/or electronic medical records in use on-  
site. Data collected was entered into Excel, cleaned and  
analyzed using IBM SPSS, Version 25.

**Lessons learned:** A total of 564,777 HIV rapid tests were  
done in the 208 SPHLS-supported sites, including military  
facilities for 1 year (October 1<sup>st</sup>, 2022 to September 30<sup>th</sup>  
2023. Out of this number, 1912 indeterminate HIV rapid  
test results were registered giving an Indeterminate Rate  
of 0.34%. Of the 1912 participants with indeterminate test  
results reviewed, 294(15.4%) did a follow-up test (either re-  
peated RDT in 3 to 4 weeks or did ELISA according to the  
national guidelines) and over 1618 (84.6%) did not do any  
follow-up test (were lost to follow-up). Of those who did a  
follow-up test, 271 (92.2%) turned out HIV negative while 17  
(5.8%) were confirmed HIV positive and 6 (2.0%) remained  
indeterminate after the follow-up investigations.

**Conclusions/Next steps:** There is a need for the Camer-  
oon national guidelines and HIV surveillance programs to  
develop a protocol for reporting and tracking individuals  
with indeterminate HIV rapid test results to ascertain  
their final HIV testing outcome. This category of clients  
may constitute niches for further HIV propagation in our  
communities hence slowing progress towards HIV epi-  
demic control in Cameroon.

### THPEE477

Enhancing accessibility of HIV testing in Uganda:  
statistical analysis of an app-based, personalized,  
unsupervised HIV self-testing program

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**Background:** In Uganda, where access to HIV testing  
remains a crucial challenge, we implemented and as-  
sessed the impact of an app-based, personalized, oral  
HIV self-testing (HIVST) program facilitated by healthcare  
workers. The study aimed to address the scarcity of data  
on digital unsupervised HIVST initiatives in the region.

**Description:** Conducting a quasirandomized study  
(n=3095), we targeted consenting adults with undiag-  
nosed HIV infections in diverse settings, including town-  
ship clinics. Participants in the HIVST arm (n=1535) were  
given the option of an offsite, unsupervised digital HIVST  
program (n=962) or an onsite, clinic-based, supervised  
digital HIVST program (n=573) with 24/7 linkage services.  
Propensity score analyses were employed to compare  
outcomes with conventional HIV testing (ConvHT) arm  
participants (n=1560) randomly recruited from geograph-  
ically separated clinics. The participants in both arms  
were predominantly young, female, and with a month-  
ly income below 3000 Ugandan shillings. The majority  
chose unsupervised HIVST, reporting behaviors indicative  
of higher HIV risk.

**Lessons learned:** Our flexible and personalized app-  
based HIVST program, administered by healthcare work-  
ers, demonstrated high linkage rates unsupervised HIVST  
(99.7%) and supervised HIVST (99.8%) compared to Con-  
vHT (98.5%). The overall new HIV infection rate was 9%,



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with supervised HIVST at 10.9%, unsupervised HIVST at 7.6%, and ConvHT at 6.79%. Notably, test referrals significantly increased in the HIVST group (16.7%) compared to ConvHT (3.1%).

**Conclusions/Next steps:** The findings underscore the success of our approach in linking nearly all HIV self-testers, detecting new infections, and augmenting referrals for self-testing. Our program holds promise for expanding HIV testing accessibility and addressing unique behavioral factors influencing testing choices. The results have broader relevance for digital HIVST initiatives globally, emphasizing the need for personalized and healthcare worker-supported strategies to enhance testing outcomes. Future steps should focus on scaling up such programs to contribute significantly to HIV prevention, treatment, and care in resource-constrained settings like Uganda.

## THPEE478

### Implementing a national HIV self-testing delivery service: lessons from Australia

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**Background:** In Australia there remain significant barriers to regular HIV testing which were significantly exacerbated by COVID-19, reducing access to both primary health care and specialist sexual health.

HIV self-testing has remained under-utilised in Australia since regulatory approval in 2021. HIVTest.au was developed to raise awareness and increase uptake of HIV self-testing throughout Australia.

**Description:** HIVTest.au is Australia's first national HIV self-testing kit delivery service. It offers a year's worth of HIV self-testing kits delivered, at no cost, to anyone in Australia. The pilot allocated 12,000 tests over a 12-month period.

Although the project was open to all Australian residents, targeted platforms were created to specifically target priority populations such as gay, bi+ and queer men, Asian communities, Latinx Communities, Women, and Aboriginal and Torres Strait Islander communities. Ordering platforms and materials were also provided in languages other than English, including Thai, Vietnamese, Spanish, Chinese and Portuguese.

In developing the project, special focus was given to consultation to people with HIV from priority populations to inform project design to reduce access barriers. We made ordering kits low friction, prioritised photographs of community members, and allow community members to assess their own need for HIV testing.

**Lessons learned:** HIVtest.au demonstrated a high level of demand for HIV self-testing throughout Australia, exhausting the initial allocation of kits within the first 6

months of the project launch. This exceeded expectations. Despite being open to all Australian residents, there was consistent demand from priority populations. Of those who completed the post order survey, a vast majority of project clients identified as either gay or bisexual men, and over 40% being born in a country other than Australia.

Over 30% had not tested for HIV in the last 2 years, with over 17% having never tested for HIV.

**Conclusions/Next steps:** The high demand for HIV self-testing within the project has highlighted the need for the ongoing availability for HIV self-testing within the testing landscape in Australia. Funding has been sought to expand the project over the next four years.

## THPEE479

### Qualitative evaluation of implementation outcomes from a pilot study of integrating Point-of-Care Rapid Testing for recent Infection into HIV index testing in Lusaka, Zambia

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**Background:** HIV rapid tests for recent infection (RTRI) can differentiate recent from long-term infection, and help HIV programs deliver prevention services more efficiently. To improve HIV index testing (IT) efficiency, we piloted integration of point-of-care (POC) RTRI testing into routine IT services. Here, we qualitatively examine pilot acceptability and feasibility.

**Methods:** We conducted 24 in-depth interviews with adults ≥18 years who: were newly diagnosed people living with HIV (PLWH) identified between 20 May 2021–10 March 2022 at two health facilities in Lusaka, Zambia; consented for routine IT; and either accepted (n=20) or declined (n=4) pilot participation. Additionally, four focus group discussions (FGD) were conducted with healthcare workers (HCWs). Thematic analysis was conducted using Proctor's Implementation Outcomes Framework.

**Results: Acceptability:** Participants felt that recency testing helped them build a timeline of the circumstances surrounding their HIV infection, identify potential contacts and facilitate disclosure to contacts for index services: "...that (recency status) will help me to say 'maybe it is from what happened that day'" (Recently HIV infected, Male, Age 22). Providers perceived the pilot as helpful in

identifying recent infections within communities and informing programmatic action through IT and offering of antiretroviral therapy and combination prevention: "So if it's a recent infection, you even know that there are contacts for that person at high risk. So index has to be intensified" (HCW, FGD4, Female).

**Feasibility:** POC RTRI was thought to add to HCW workload due to longer processes and additional blood sample collection. PLWH refusing a POC RTRI felt that it would have no bearing on the services they would subsequently receive. Integrating POC RTRI into IT was impacted by limited logistical support for contact tracing, provider competency on IT delivery and RTRI result interpretation, and inadequate facility space for private service delivery.

**Conclusions:** Integrating POC RTRI into IT was generally perceived as acceptable and feasible though there were negative responses towards delivery within existing implementation structures. POC RTRI has the potential to improve the quality of client counselling and public health surveillance. Feasibility was contingent on a well-functioning IT program and continued investments in safe and ethical IT.

## THPEE480

### Adapting HIV testing in wartime Ukraine: continuous evolution of differentiated service delivery models for key and priority populations

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**Background:** The war in Ukraine is characterized by ongoing shelling, infrastructure and commodity destruction, injury and death, security concerns, internal displacement, and migration. To sustain case finding among key and priority populations (KP/PP), innovative and adaptive approaches tailored to the context and changing client needs, are crucial.

**Description:** From October 2022 to December 2023, the PEPFAR funded Community Action for HIV Control project, implemented by Pact, FHI360 and AFEW, supported 22 local NGOs in 15 regions, including frontline areas, to design and implement HIV-case finding initiatives tailored to the specific needs of KP/PP through approximately 60 differentiated service delivery (DSD) models.

Each DSD model is comprised of a detailed description of activities and services, specifying the frequency, hotspots, service providers necessary to identify new HIV cases within specific KP/PP. These models undergo quarterly revisions based on results and experiences gained during implementation, ensuring continuous improvement to better reach KP/PP representatives.

**Lessons learned:** From October 2022 to December 2023, 64,993 KP/PP individuals were engaged in HIV testing delivered through the DSD models. Among them, 1,492 were

diagnosed with HIV, with 1,393 linked to ARV treatment.

We conducted a qualitative assessment of the DSD model implementation, through 43 independent interviews with lay providers and project coordinators involved in DSD models implementation. Those interviewed identified several advantages of the DSD approach including a systematic and clear algorithm for working with KP/PP, flexibility to incorporate features specific to these groups, comprehensive consideration of their needs, and the provision of enhanced services.

Furthermore, the quarterly review and revision process allowed for adjustments and adaptations to factors including contextual factors like war and migration, thereby reducing interruption of services.

**Conclusions/Next steps:** In navigating the challenging wartime environment, the implementation of DSD models has proven to be an effective and adaptable strategy for sustaining HIV case finding. The project recommends dissemination of best practices and lessons learned, scaling up adaptable approaches to other regions, ongoing monitoring and evaluation to further refine and optimize DSD models, and integration of additional services such as humanitarian aid screenings on non-communicable diseases, gender-based violence, and mental health services to enhance the reach and impact of DSD models.

## THPEE481

### Advancing maternal and child health: the impact of the new HIV/syphilis program in Liberia

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**Background:** Liberia, like many other sub-Saharan African countries, has faced the dual challenge of maternal HIV and syphilis, posing significant threats to maternal and child health. In 2022, Liberia expanded the existing HIV program for pregnant women to comprehensively screen and manage both HIV and syphilis. We present the results of this initiative implemented across the country.

**Methods:** A training curriculum based on WHO recommendations for HIV and syphilis testing was developed and employed for the Training of Trainers (TOT) session



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and subsequent national rollout. The TOT covered 124 county staff nationwide and extended to 563 healthcare facilities. Demand-creation meetings were held in the catchment areas of most healthcare facilities to raise awareness and encourage participation. Data were collected from healthcare facilities and analyzed to assess the program's impact on screening rates and positive case identification.

**Results:** Between January and December 2021, a total of 182,775 pregnant women were tested for HIV, with 1,846 positive identified before the launch of the HIV/Syphilis program. Routine syphilis testing was not included as part of the standard prenatal testing for pregnant women before the launch of the HIV/ Syphilis program. At the end of 2022 (January-December), a total of 1,652 pregnant women tested positive for syphilis, while 1,878 tested positive for HIV and received treatment.

Age Group	ANC First Visit	Tested for Syphilis	Tested Positive for Syphilis	Tested for HIV	Tested Positive for HIV
10 - 14 yrs.	1,666	914	21	1,286	23
15 - 19 yrs.	52,397	27,529	362	47,893	214
20 - 24 yrs.	58,449	32,702	460	54,490	569
25+ yrs.	86,052	50,654	809	83,998	1,072
Total	198,564	111,799	1,652	187,667	1,878
Total treated for Syphilis with Benzathine Penicillin					
Total on ART	1901				

Table. Pregnant women tested for Syphilis and HIV (January 1-December 30, 2022).

Discrepancies in the HIV and syphilis tests can be attributed to stock out of commodities and untimely requests.

**Conclusions:** The introduction of the Maternal HIV/Syphilis Program in 2022 marked a significant stride in fortifying maternal and child health outcomes. The program has yielded increased testing rates and positive case identification for both HIV and Syphilis for pregnant women across all age groups. Efforts are needed for further scale-up and to address issues related to stock out of commodities.

## THPEE482

### Sexual and reproductive health knowledge and attitudes: a comparative study of eight open-source large language models

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**Background:** With the growing integration of Large Language Models (LLMs) in various domains, their application in sexual and reproductive health (SRH) services necessitates an understanding of their knowledge and attitudes in this area. This study evaluates the proficiency of LLMs in SRH knowledge and their perspectives on human sexuality.

**Methods:** We assessed over 200 SRH-related questions sourced from the WHO, Gender Role Beliefs Scale, and the Sexuality Attitudes and Beliefs Survey. These included knowledge-based questions (e.g., relating to HIV) and belief statements (e.g., regarding one-night stands), categorized into three domains. Eight open-source LLMs were evaluated, focusing on their ability to handle questions not readily available online, enhancing the test's rigor.

The prompt used was: "Answer the following questions to the best of your ability. ONLY give one of the answer options provided."

**Results:** Response accuracy for all models on knowledge-based questions was 70.1% (s.d. 15.2%). The best-performing model was openai/gpt-4-1106-preview (88.2%), and the poorest meta-llama/llama-2-70b-chat (46.1%). Models differed in their willingness to discuss topics about sex, abortion, and gender identity (e.g. "It is possible to become infected with HIV/AIDS by engaging in unprotected sexual intercourse with someone just once?"). The Kruskal-Wallis H test indicated a notable difference in the accuracy of the models ( $H = 79.28$ ,  $p < 0.001$ ). Subsequent post-hoc analysis identified several pairs of LLMs with statistically significant differences in performance.

Notable contrasts were observed between 'mixtral-8x7b-instruct' and 'claude-2' ( $p < 0.01$ ) and 'gpt-4-1106-preview' and 'llama-2-70b-chat' ( $p < 0.01$ ).

Conversely, some pairs, such as 'mixtral-8x7b-instruct' and 'gpt-4-1106-preview', showed no significant performance difference ( $p = 0.83$ ). Many models, prioritizing caution, chose not to respond to belief questions (43.1%). Among responders, 46.6% held overall liberal views on transgender people, sexual norms, and HIV stigma.

Responses were most conservative on sexual norms (20.6%) and most liberal regarding transgender people (53.8%), with only 5.4% conservative towards this group.

**Conclusions:** These results underscore the diverse capabilities of current LLMs in their knowledge of SRH and their unwillingness to talk about sensitive topics.

Careful consideration and evaluation should be given to model choice when preparing to integrate LLMs into SRH services.

**THPEE483****Geospatial clustering for recent HIV transmissions: an underutilized approach to optimizing targeted case identification in Chipata district of Eastern Province, Zambia**

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**Background:** In 2019, Zambia piloted a phased rollout of recency testing surveillance for new HIV transmissions. After three years, Eastern province began implementing recency testing in 35 health facilities in November 2022. Through recency, the Ministry of Health aimed to characterize incidence, identify demographic and geographic hot spots to facilitate targeted index testing, and effectively break the cycle of HIV transmission. To optimize targeted case finding and implement tailored interventions, integration of geographic information system (GIS) and spatial analysis techniques becomes crucial.

We analyzed program data for distribution of recent HIV transmissions and geographic clusters for a one-year period in Chipata district of Eastern province.

**Description:** We extracted one-year routine program data on recent HIV transmissions from the electronic laboratory information management system (LIMS) from November 2022 to November 2023. Shape files, layered maps, and analysis of spatial distribution of recent HIV transmissions were conducted using ArcGIS v10.15 and Satscan v9.4 software. To identify statistically significant spatial clusters of recent transmissions (acquired within past 12 months), spatial scan statistic was applied within a discrete Poisson model. Clusters were defined as geographical areas with a disproportionate excess in recent HIV transmission compared to the surrounding areas. Additionally, computation of associated relative risks with respective level of significance was done.

**Lessons learned:** Out of 1,143 new HIV-positive samples analyzed, 17% (199) were recent HIV transmissions. Spatial scan analysis showed a notable excess of recent HIV prevalence by geography of service coverage in four of the 16 facilities that recorded at least one recent transmission. With an observed-to-expected ratio of 2.6, the total of 77 observed cases within the cluster significantly exceeded

the expected 30 cases. Consequently, individuals living within this cluster were 5.5 times more likely to acquire new HIV transmission compared to those living outside of the cluster (RR = 5.5,  $p < 0.001$ ).

**Conclusions/Next steps:** The integration of geographic information system (GIS) and spatial analysis techniques is important for enhancing understanding of localized HIV transmission dynamics. To be effective in breaking the cycle of transmission and attaining epidemic control, we recommend implementing these techniques at household level to enhance targeted index testing efforts.

**THPEE484****Identifying patient-level characteristics impacting routine, opt-out, HIV screening at the Jackson Memorial Hospital Emergency Department in Miami, USA**

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**Background:** As the first step in an initiative to implement improvements in Jackson Memorial Hospital Emergency Department's (ED's) routine, opt-out, HIV screening program, we sought to identify patient-level characteristics affecting screening and linkage to care processes.

**Methods:** We examined electronic health records (EHRs) for 392,861 Jackson Memorial Hospital ED visits (2017-2021) and linkage-to-care records for 2,263 ED patients during this same time-period with an HIV positive test (previously or newly diagnosed HIV infection). We determined the proportion of patients:

1. Designated at ED triage as HIV screening eligible (also did not "opt-out") and
2. Linked-to-care if HIV-positive.

We constructed multivariable logistic regression models to identify patient-level factors that suggest discrepancies in HIV screening and linkage to care processes. Adjusted odds ratios (aORs) and corresponding 95% confidence intervals were estimated.

**Results:** Out of 392,861 patient ED visits, 209,257 (53.3%) were designated as HIV screening eligible. Out of 2,263 persons with an HIV positive test, 228 patients (10.1%) were newly diagnosed, including 28 cases of acute HIV infection. Of these 228 patients newly diagnosed, 177 (77.6%) were linked to care through a public-private partnership with the Miami-Dade Department of Health. Patients more likely to be designated as HIV screening eligible were women (aOR=1.15; 1.14-1.17), Hispanics (aOR=1.17; 1.16-



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1.20) and those presenting with pregnancy ( $\alpha\text{OR}=2.17$ ; 2.04-2.31), and pelvic pain ( $\alpha\text{OR}=2.42$ , 2.26-2.60). Asian/Pacific Islanders ( $\alpha\text{OR}=0.86$ , 0.78-0.96) and those presenting with Covid-19 ( $\alpha\text{OR}=0.34$ , 0.32-0.36) trauma ( $\alpha\text{OR}=0.03$ ; 0.02-0.04) and assault ( $\alpha\text{OR}=0.58$ , 0.53-0.63) were less likely to be designated as HIV screening eligible. Hispanics were more likely to be linked to care ( $\alpha\text{OR}=3.33$ ; 1.20-9.29). We did not find evidence that sex or race were correlated to linkage-to-care status.

**Conclusions:** Although HIV screening at this ED in the highest HIV incidence community in the United States was meant to be universal, there were patient-level factors that appear to have influenced designation of HIV screening eligibility. Linkage-to-care, however, did not appear to be influenced by these same factors, with the exception of Hispanics, who were more likely to be linked-to-care.

These findings indicate processes that require interventions to ensure that all ED patients have opportunities for HIV screening.

## THPEE485

### Initiating self-care pathway for accessing HIV services in Cambodia through online reservation app

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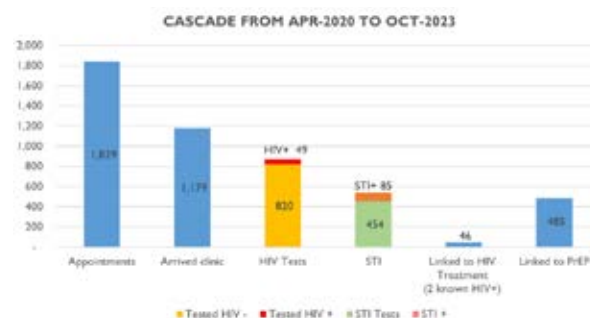
**Background:** HIV control among key populations (KPs) requires that all know their HIV status, start antiretroviral therapy (ART), and reach viral suppression if acquired or start and effectively use pre-exposure prophylaxis (PrEP) if at risk. This requires incorporating modalities that reach key populations who are not being reached face-to-face. In Cambodia, 67.5% of the population is online, offering another opportunity to engage target audiences. The online reservation app (ORA), developed by FHI 360, allows users to assess their own risk, needs and book services across a range of partner providers via smartphone or computer.

Digital Report 2023: <https://datareportal.com/reports/digital-2023-cambodia>

**Description:** To reach key populations online, the National Center for HIV/AIDS, Dermatology and STD (NCHADS) adapted ORA, renamed "TohTest", offering a self-care pathway online, that is particularly good for hidden KPs to conduct a self-risk assessment and engage with HIV

services. The app links target audiences to nearby HIV services, making an appointment without filling forms or getting a referral, often a barrier with young KPs.

**Lessons learned:** 1,839 appointments were made from April 2020 to October 2023 at 18 clinics and CBO sites in seven provinces; 1,179 arrived; 869 tested for HIV; 49(6%) confirmed HIV positive; 46(94%) initiated ART. 454 were tested for sexually transmitted infections (STIs) and 85(19%) were screened positive and treated; 485(59%) HIV-negative KPs initiated PrEP (see testing cascade below). Case detection via TohTest was three times the rate of face-to-face outreach testing by community-based organizations (CBOs) and PrEP initiation five times higher than among those reached face-to-face.



**Conclusions/Next steps:** TohTest contributed to HIV case finding among hard-to-reach KPs and linked high-risk HIV-negative KPs to PrEP. NCHADS will upgrade the app making it friendly for mobile users and linked to more KP-friendly clinics, and CBO PrEP sites. NCHADS will work closely with CBO partners promoting to target audiences.

## THPEE486

### Experiences and reporting of physical and sexual violence among key populations in Unguja, Zanzibar, 2023

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**Background:** Key populations (KPs) are at heightened vulnerability to physical and sexual violence due to their engagement in illicit and criminalized behaviors. Data on violence prevalence and reporting among KP in Unguja remains scarce, inhibiting development of targeted services. We report experiences of physical and sexual violence among female sex workers (18+ years, FSW)/sexually



exploited children (SEC) (girls <18 years old who are given money or goods for sex), men who have sex with men (MSM), and people who inject drugs (PWID) in a bio-behavioral survey conducted in Unguja, Zanzibar, in 2023.

**Methods:** We used respondent-driven sampling (RDS) to recruit individuals aged  $\geq 15$  years who lived in Unguja for  $\geq 3$  months and were FSW/SEC (exchanged sexual intercourse for money in the prior month), PWID (injected drugs in the past 3 months), or MSM (had sex with men in the past 3 months). Physical and sexual violence in the prior 12 months and subsequent reporting to authorities were assessed through interviewer-administered questionnaires. We produced weighted estimates reported as percentages with 95% confidence intervals (95%CI).

**Results:** We recruited 598 FSW/SEC, 485 MSM, and 455 PWID. High levels of physical violence in the past 12 months were reported among FSW/SEC (30.7% (95%CI: 26.4-34.9)), MSM (22.7% (95%CI: 18.6-26.8)), and PWID (52.2% (95%CI: 47.6-56.7)). Of those physically abused, few reported to an authority: 17.9% (95%CI: 11.2-24.4) of FSW/SEC, 13.5% (95%CI: 5.3-21.0) of MSM, and 16.3% (95%CI: 12.1-20.3) of PWID. Past-year sexual violence was also common though higher among FSW/SEC 22.9% (95%CI: 19.0-26.9) versus MSM (12.2% (95%CI: 8.9-15.5)) and PWID (4.9% (95%CI: 3.0-6.7)). Very few sexually-abused participants reported to an authority: 14.9% (95%CI: 7.3-22.4) of FSW/SEC, 1.1% (95%CI: 0.6-1.3) of MSM, and none of PWID. The most common reason for not reporting to an authority was feeling ashamed or embarrassed among FSW/SEC (12.5% (95%CI: 7.9-16.9)), MSM (55.5% (95%CI: 41.2-70.4)), and PWID (47.0% (95%CI: 30.5-64.5)).

**Conclusions:** Physical and sexual violence are common among KPs in Unguja. Interventions to remove barriers that prevent KPs from safely reporting violence and to facilitate linkage to existing health, legal, and social services could increase uptake of important services following experiences of violence among KPs.

## THPEE487

### Role of social media outreach program in engaging key populations for HIV services: findings from a mixed-method study in Myanmar

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**Background:** Taking advantage of a digital technology leapfrog experience in Myanmar, Population Services International Myanmar and its local partner Lan Pya Kyel (LPK) invested in a dedicated social media team to respond to private messages on social media platforms (on Facebook, Line, Bee-talk, GRINDR, and Viber), hotline

calls, and offer online referral to LPK clinics. LPK also managed content towards key populations (KP) through Facebook pages, private Facebook groups, and Instagram accounts. Two online channels, Social Network Outreach and Social Profile Outreach, are being used to engage KPs to refer HIV testing services since February 2022.

The study aimed to evaluate the performance of the two online channels compared to that of traditional physical outreach channel after one year implementation.

**Methods:** A mixed-method approach was applied. LPK clinics data were extracted, and individual qualitative interviews were conducted with 15 online channel clients and 8 staff who were involved in online channel management. HIV testing, positive yield, confirmation and linkage to ART treatment were compared against traditional physical outreach and two online channels through descriptive analysis and chi-square tests. Thematic analysis was done to generate key findings from qualitative data.

**Results:** A total of 5,165 clients enrolled into the program through online channels and 16,458 through physical channel for HIV testing. Positive yields were 13.9% for on-line and 6.6% for physical channels respectively. Confirmation of HIV were 97.9% and 93.4% among HIV positive patients. Among them, linkage to ART treatment were 63.9% and 76.8%. The results were statistically significant with  $p < 0.001$ .

Qualitative data revealed that there were benefits of using online channels such as less time consuming, higher confidentiality, faster response from providers, easier access to providers, able to reach more hidden populations, greater number of clients and those from wider geographic areas.

However, operational challenges were reported such as under-staffing, needing detail explanation when sharing information by providers, requiring training and internet connectivity problems.

**Conclusions:** The study highlighted that engagement of KPs through online channels proved to be a potential avenue for reaching hidden populations, linking them to HIV care and services but it was important to ensure that operational challenges are addressed properly.



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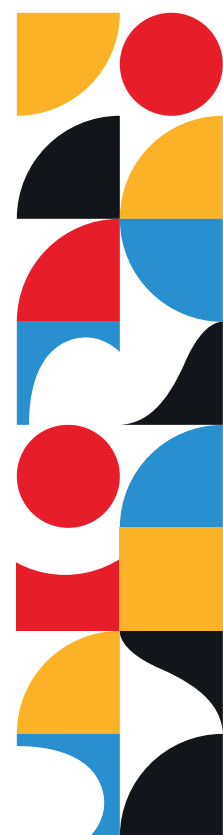
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## THPEE488

### National Community Link Program: using a community-based model for low-barrier access to HIV self-testing to reach first-time testers and key populations in Canada

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**Background:** In November 2022, the Public Health Agency of Canada funded a national HIV self-testing program to reach those who are undiagnosed and help them "know their status" to get access to appropriate prevention and treatment. The program distributed 200,000 free HIV self-tests across the past year through frontline, community-based and harm reduction organizations, including community health centers, mobile distribution units, shelters, pharmacies, and public health units to reach first-time testers and key populations most impacted by HIV.

**Methods:** The Community Link Program (responsible for 55% of the overall kit distribution) partnered with 347 agencies, with support workers providing individuals with access to up to 5 kits. Participants completed an anonymous demographic survey to evaluate the effectiveness of the program in reaching first-time testers and underserved populations. Chi-squared tests (significance with  $p < 0.01$ ) were conducted to examine the demographic characteristics of first-time testers compared to people with previous testing experiences.

**Results:** Over the past year, 26,281 HIV self-tests were distributed to 9,292 people. Overall, 46% were first-time testers, and 43% of those who received multiple kits agreed to share with personal and social networks.

First-time testers were significantly younger with 77% <20 years, compared with 51% >20 years, and from diverse gender groups and sexual identities, including 47% of cisgender men, 52% of cisgender women, 46% of transgender and non-binary participants, 57% of heterosexual, and 59-63% of lesbian, asexual and questioning participants, compared with 30% of gay and 44% of bisexual participants.

Among key populations, 68% of African, Caribbean and Black participants, 57% of women, 50% of Indigenous people and 53% of people who inject drugs were first-time testers, compared with 34% of participants who identify as gay, bisexual, and men who have sex with men. The

Prairies (55%) and Quebec (80%) had higher first-time testers compared with Ontario (40%) and British Columbia (42%).

**Conclusions:** Community-based distribution of HIV self-testing kits is effective in meeting people where they are, and reaching first-time testers, particularly those who are younger, women, identify as heterosexual or with a sexual minority group, from key populations, and in previously underserved geographic regions in Canada.

## THPEE489

### The role of artificial intelligence (AI) in improving confidence and trust in private-sector telemedicine models for HIV pre-exposure prophylaxis (PrEP) and post-exposure prophylaxis (PEP) delivery

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**Background:** To address challenges in accessing PrEP in Kenya, an online model for PrEP and PEP delivery was created. This model utilized MYDAWA, a private online pharmacy, to establish a virtual care pathway. The pathway incorporated computer vision-based AI as a decision support tool for remote clinicians providing PrEP/PEP services. The AI facilitated efficient audits of clinical outcomes and commodities within the private sector channel, ensuring trusted, timely, stigma-free care at reduced costs.

**Description:** The ePrEP Kenya Pilot, an 18-month prospective study in Nairobi and Mombasa, evaluated online PrEP and PEP services. Clients purchased HIV self-testing kits and uploaded test result images through the MYDAWA app or website to determine eligibility for PrEP/PEP. HealthPulse AI, integrated with MYDAWA apps and the website, assesses image quality in real-time, providing a high-quality image and AI interpretation to clinicians for decision-making. Clinicians consider AI interpretation, client results, and self-tester interpretation before counseling, prescribing PrEP/PEP, or care referral.

**Lessons learned:** From October 2023 to January 2024, HealthPulse AI supported 1929 clinical encounters for PrEP and PEP access with uploaded HIV self-test photos, successfully identifying all 11 positive cases, including 6 faint positives (0.5% of total encounters).

Clinicians missed three faint positives, interpreting them as negative, and three others were not interpreted. AI disagreement analysis (average of 5 disagreements per month) prompted corrective actions in all 6 cases during regular audits, impacting follow up with clients incorrectly prescribed PrEP for confirmatory testing.

The analysis informed supervisor monitoring, leading to additional training. Clinicians increasingly relied on the

AI, especially for true positives, providing confidence in interpreting faint lines on presumptive negative results for PrEP/PEP prescription or referral to care.

**Conclusions/Next steps:** In low HIV incidence settings like Kenya, accurate identification of new cases of people living with HIV is crucial for achieving the 95/95/95 targets. Integrating HealthPulse AI into telehealth enhances care quality, reduces errors, and improves the identification of positive cases. It also provides fail-safe measures, including regulatory audits. In private sector telemedicine models, incorporating AI for PrEP/PEP delivery allows for diversified healthcare by ensuring increased reliability, reduced stigma, and improved accessibility to expanded public health services.

## Implementation science and scale up of prevention

### THPEE490

**Sustaining impact: a comprehensive assessment of the National Medical Male Circumcision Programme in South Africa**

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**Background:** The South African Government has made significant progress in HIV prevention through the implementation of the MMC programme. To ensure the programme's sustainability, the government implemented the MMC Strategy and Implementation Plan 2020-2024, focused on strengthening programme areas of leadership and advocacy, governance and coordination, service delivery, communication and demand generation, M&E and operational research and domestic resourcing. The sustainability assessment aimed to evaluate the programme's strengths, weaknesses, opportunities, and threats, while also piloting the Sustainability Assessment tool for future improvements.

**Methods:** The sustainability assessment is an Excel-based tool with 36 indicators across six programme domains and was undertaken in 11 selected districts located in Kwa-Zulu Natal, Gauteng and Mpumalanga. The tool informs the National MMC Sustainability Scorecard, which allows for evaluating programmatic alignment within a sustainability framework.

Scoring is indicated in the table below and informed by literature review and a portfolio of evidence provided by key informants responsible for delivering the VMMC programme.

Score	Definition
3	Document review and in-person engagement reveal that all requirements are in place to fully meet the definition of sustainability. There are no risks related to sustainability.
2	Document review and in-person engagement reveal several vulnerabilities that pose moderate risks to the sustainability of the programme.
1	Document review and in-person engagement reveals many major vulnerabilities that pose substantial risks to the sustainability of the programme.

**Results:** The assessment revealed an average score of 2 out of 3 across all programme areas at the national, provincial, and district levels, indicating several vulnerabilities posing moderate risks to sustainability. The provincial level score for service delivery indicated major vulnerabilities that posed substantial sustainability risks.

Programme areas	National	Provincial	District
I. Leadership and Advocacy	2	2	2
II. Governance and Coordination	2	2	2
III. Service Delivery	2	1	2
IV. Communication and Demand Generation	2	2	2
V. M&E and Operational Research	2	2	2
VI. Domestic Resourcing	2	2	2

**Conclusions:** While policies, strategies, and operational plans are in place, filtering down implementation of these plans to provincial and district levels is required. The sustainability assessment has assisted in identifying areas for improvement embedded in the programmatic areas and informing targeted action plans to enhance sustainability of the MMC programme. By leveraging strengths and addressing service delivery challenges, the impact of the programme on HIV prevention and men's health can be enhanced.

The assessment tool and Sustainability Scorecard will undergo further iterations to adapt to emerging needs and ensure the programme's long-term sustainability.

### THPEE491

**Perspectives on integrating HIV Pre-Exposure Prophylaxis and psychiatric care: a qualitative study of psychiatrists in the U.S. ending the HIV epidemic priority jurisdictions**

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**Background:** People living with mental illness (PLWMI) experience disproportionate incidence of HIV while simultaneously facing systemic barriers to accessing a frag-



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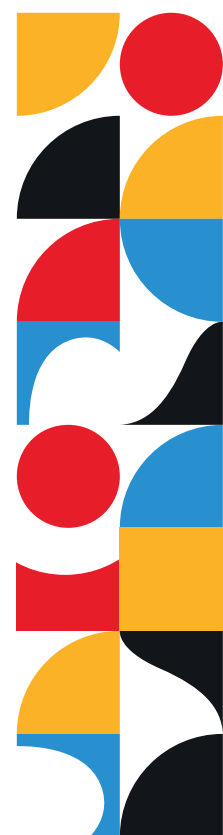
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mented healthcare system. Psychiatrists serve as primary physicians for many PLWMI and may be their only point of contact with the healthcare system.

Thus, engaging psychiatrists as prescribers of pre-exposure prophylaxis (PrEP) for HIV prevention may be an important intervention to scale-up PrEP prescription for PLWMI, a key population in domestic and international HIV prevention policy agendas.

**Methods:** Within a larger study, 30 psychiatrists completed a 60-minute interview following a survey about PrEP prescription within psychiatric practice. Mean years in practice was 13.9 and 20.0% practiced primarily in inpatient psychiatry (63.3% in outpatient), and all in the U.S. *Ending the HIV Epidemic* priority jurisdictions. Interviews were transcribed verbatim, checked for accuracy, and thematically analyzed by a team of three researchers.

**Results:** Of the interviewed psychiatrists, 56.5% indicated interest in future PrEP prescription, and 20.0% indicated they had already done so. Psychiatrists identified several benefits to prescribing PrEP including increasing accessibility for patients and having a unique therapeutic relationship that could promote comfort discussing sexual health.

Concurrently, psychiatrists noted several barriers to PrEP implementation in their practice including limited knowledge, concerns about liability for practicing outside the 'normal' scope-of-practice, the information burden of staying up-to-date with PrEP developments, and appointment time constraints. Interviewees also highlighted the centrality of multi-level medical education interventions (eg. medical school, graduate medical education, continuing medical education) to increase PrEP knowledge among psychiatrists. Interviewees cited the need for clinical support resources, either through consultation with experts at their institution or via a national physician network (eg. hotline).

Finally, psychiatrists were overall supportive of prescribing long-acting injectable (LAI) PrEP citing the benefit of an existing clinical workflow to administer LAI antipsychotics and improved adherence.

**Conclusions:** In this qualitative study, psychiatrists were generally interested in prescribing PrEP for PLWMI. Psychiatrists indicated both facilitating and prohibiting factors regarding PrEP prescription and specific PrEP training needs to facilitate prescription in psychiatric practice. Considering the well-documented vulnerability to HIV among PLWMI, integration of PrEP prescription into existing psychiatric care should be pursued.

## THPEE492

### Integrating strengths from various sources through a digital health platform: an online-to-offline service model for HIV pre-exposure prophylaxis (PrEP)

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**Background:** Over the last decade, global evidence has shown PrEP's high efficacy, reducing HIV acquisition risk by over 90% in MSM. China approved TDF/FTC for PrEP in 2020. However, PrEP services, primarily in HIV ART hospitals, face low utilization due to complex clinic procedures and limited LGBT friendliness.

In Guangzhou, a prominent city in China, the proportion of MSM seeking PrEP services in 2022 was merely 4.9% compared to PEP cases in these HIV ART hospitals, emphasizing the need for convenient, LGBT-friendly, and complementary services.

**Description:** The HIV digital health platform ("Chabei"), developed by our team, serves as a central hub connecting organizations to create an online-offline PrEP service model. Initially, LGBT community-based organizations (CBOs) provide online/offline MSM-friendly consultation and assessments. Guangzhou center for disease control and prevention, in collaboration with third-party testing facilities, conducts offline testing for HIV, HBV/HCV/STIs, and creatinine. Physicians familiar with ART medicines review, prescribe, and facilitate the delivery of PrEP medications to MSM through online medical platforms. Subsequent follow-up is managed by CBOs. The HIV digital health platform acts as a unified portal for online/offline services, integrating processes and data from different organizations to enhance efficiency, user experience, and data flow.

Consultation, assessment, testing, and follow-up services are provided free of charge, with MSM responsible only for medication costs.

**Lessons learned:** Launched in Guangzhou in December 2021, our model provided PrEP consultations for 920 MSM by June 2023. Of them, 223 underwent pre-medication testing. 4 with positive HIV antibodies were unsuitable, and 6 with positive HBV antigen were referred. 27 had abnormal creatinine levels, but none precluded PrEP. Ultimately, 207 MSM initiated PrEP, 3.6 times more than all HIV ART hospitals in Guangzhou. 99.5% percent opted for event-driven PrEP, with 50.7% in follow-up. No HIV seroconversions occurred.

**Conclusions/Next steps:** Our model integrates strengths from various sources through the HIV digital health platform, combining online convenience with standardized, safe, and MSM-friendly procedures. It serves as a distinctive complement to HIV ART hospitals. The model enhances the applicability of PrEP and holds potential for

adaptation in other Chinese cities. Subsequent stages will explore streamlined processes and adaptable follow-ups in line with WHO guidelines.

## THPEE493

### A mixed methods evaluation of pharmacists' preparedness to provide long-acting injectable HIV pre-exposure prophylaxis in California

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**Background:** Pre-exposure prophylaxis (PrEP) uptake remains low among people who could benefit, and recently developed alternatives to daily oral PrEP, such as long-acting injectable PrEP (LAI-PrEP), may facilitate uptake. In 2019, California passed Senate Bill 159, which enabled pharmacists to furnish or prescribe up to 60 days of oral PrEP without an outside provider's prescription. Using a mixed methods approach, we evaluated the potential for pharmacist provision of LAI-PrEP in California pharmacies.

**Methods:** In 2022–2023, we conducted an online cross-sectional survey of California pharmacists and pharmacy students (n=919) and in-depth interviews with pharmacists (n=30), both of which included modules assessing attitudes about PrEP provision. Log-binomial regression was used to estimate prevalence ratios (PRs) comparing survey participants' willingness to provide LAI-PrEP by pharmacy- and individual-level characteristics. Qualitative interview data were analyzed via Rapid Qualitative Analysis to identify factors that may affect pharmacists' provision of LAI-PrEP.

**Results:** Many survey participants reported that their pharmacy provides vaccinations or other injections (68%) and/or has private spaces available for consultation (48%). Half of survey participants (53%) indicated that they would be willing to administer LAI-PrEP via gluteal injection in their pharmacy (if provided with training, compensation, and a private room).

Willingness was higher among participants who worked in pharmacies that already provided vaccinations or other injections (56% vs. 46%; PR: 1.2; 95% confidence interval [CI]: 1.0–1.4) and/or oral PrEP under Senate Bill 159 (65% vs. 51%; PR: 1.3; 95% CI: 1.1–1.5) than among participants whose pharmacies did not. Interviewed participants reported individual, organizational, and structural barriers

to LAI-PrEP provision including the need for increased training, staffing, and time to implement LAI-PrEP within current pharmacy workflows; a private room for gluteal injections; better medication access; and a more streamlined regulatory process that would allow for equitable payment for LAI-PrEP services.

Still, many interviewed participants considered LAI-PrEP provision to be within their scope of practice and feasible with existing or improved pharmacy infrastructure.

**Conclusions:** Pharmacies offer a promising setting for increased LAI-PrEP access, particularly among persons at risk for HIV. However, pharmacists may require additional training and favorable policy changes to make implementation feasible.

## THPEE494

### Potential effects of community-based mentor mothers on HIV viral load suppression and vertical HIV transmission rates in Southern Karamoja, Uganda

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**Background:** Uganda has made notable progress in reducing mother-to-child HIV transmission (MTCT) from over 20% in 2000 to 2.8% in 2021. However, pregnant and breastfeeding women (PBFW) living with HIV still face barriers in accessing HIV-related services. In the remote Southern Karamoja sub-region, long distances to health facilities, insecurity, food scarcity, and HIV stigma limit access to HIV care and treatment services contributing to high infant positivity.

We describe the effect of community-based mentor mothers (MMs) on viral load (VL) suppression among PBFW living with HIV and infant positivity during the intervention period as compared to the preintervention period in Napak, Amudat, Nakapiripiti, and Nabilatuk districts of Southern Karamoja, North-Eastern Uganda.

**Description:** In April 2021, with support from the U.S. President's Emergency Plan for AIDS Relief (PEPFAR) through the U.S. Centers for Disease Control and Prevention (CDC), 21 MMs were trained at 21 HIV clinics in Southern Karamoja. We assigned 5–10 PBFW living with HIV from the study clinics to receive support from one community-based MM. The MMs role included educating PBFW on timely antenatal care attendance, providing antiretroviral therapy (ART) adherence counseling, linking mother-baby pairs to care, supporting community VL collection, delivering ART to homes, and connecting mothers to community sup-



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port groups. MMs submitted monthly reports and routine program data were collected to estimate HIV infant positivity and VL suppression over time.

**Lessons learned:** Between; April 2021-December 2022 (intervention period), community-based MMs supported 250 HIV-exposed infants (HEIs) to receive their first PCR test, resulting in 0.8% (2/250) infant positivity. From January-March 2021 (pre-intervention period), 34 HEIs were tested resulting in 8.8% (3/34) infant positivity; from April-December 2021, 115 HEIs were tested resulting in 1.7% (2/115) infant positivity, and from January-December 2022, 135 HEIs were tested resulting in 0% (0/135) infant positivity. Among PBFW living with HIV, VL suppression (<1,000 copies/ml) improved from 89% to 100%, and 12-month retention improved from 80% to 100% during the intervention period.

**Conclusions/Next steps:** Support from MMs improved VL suppression, retention, and infant positivity decreased among PBFW living with HIV, and further engagement of MMs could prove beneficial in achieving the elimination of MTCT.

## THPEE495

### Acceptability of a peer PrEP referral model among Kenyan adolescent girls and young women

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**Background:** While the uptake of daily oral HIV pre-exposure prophylaxis (PrEP) remains low among African adolescent girls and young women (AGYW), those who do initiate PrEP in this region often do so through informal (i.e., word-of-mouth) referral. Thus, we sought to understand the acceptability of a formalized peer PrEP referral pathway for AGYW supported with the distribution of HIV self-test (HIVST) kits.

**Methods:** We conducted a pilot study in central Kenya testing a peer-based PrEP referral model supported with HIVST (CT.gov: NCT04982250). AGYW (≥16-24 years) who had been using PrEP for ≥3 months (i.e., "peer providers") were trained to facilitate conversations with peers ("peer clients") about HIV prevention, deliver HIVST kits to peers, and support peers' linkage to clinic-based PrEP services (if desired). One month following training, we followed-up

with peer providers and peer clients to assess their perceived acceptability delivering or receiving the intervention. To assess acceptability, we developed 10 statements (with 5-point Likert scales) that measured different component constructs (e.g., affective attitude, burden) of the Theoretical Framework of Acceptability (TFA) and analyzed these descriptively.

**Results:** From March to October 2022, 16 peer providers were trained and delivered the intervention to 55 peer clients of whom all peer providers and 30 clients completed surveys one month later. Peer providers' and clients' median ages were 23 years (IQR 21-24) and 21 years (IQR 19-22), respectively. Half (8/16) of peer providers and 73% (22/30) of clients reported casual sexual partners.

At study completion, >80% or more of peer providers and clients "agreed" or "completely agreed" with 9 of 10 TFA statements. However, the statements assessing intervention burden (*It was hard to deliver the intervention*) was found acceptable to only 75% (12/16) of peer providers and the statement assessing intervention opportunity costs (*The intervention interfered with my other priorities*) was found acceptable to 50% (15/30) peer clients.

**Conclusions:** In this pilot, AGYW found that delivering or receiving peer referrals to PrEP services with the support of HIVST was highly acceptable post-intervention.

Future peer-delivered HIV prevention interventions should be designed around perceived burden and opportunity costs to maximize HIVST uptake and PrEP initiation.

## THPEE496

### Utilizing HIV clinic infrastructure for the delivery of chronic disease and adolescent and youth friendly services: lessons from western Kenya

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**Background:** With the advent of ART, children living with HIV are growing into adolescence, a period associated with complex care needs, ranging from preventive services to chronic disease management. For adolescents in HIV care, there is an opportunity to deliver comprehensive adolescent and youth friendly services (AYFS) in a familiar setting with trusted providers. Adapting existing HIV infrastructure to provide chronic disease and AYFS globally should be prioritized.

**Description:** The Moi Teaching and Referral Hospital's Rafiki Centre for Excellence in Adolescent Health provides HIV care to adolescents living with HIV (ALWH) in western



Kenya. As adolescents mature, they have increasingly broader needs related to sexual and reproductive health (SRH), mental health, chronic diseases, substance use, and psychosocial stressors like violence, food insecurity, and street-connectedness.

Through discussions with the Ministries of Health and Education, youth, clinicians, researchers and public health experts - key programmatic priorities were established. The Rafiki Centre aims to become a "one-stop shop" providing SRH, mental health, chronic disease management, HIV prevention/treatment services, and life skills training for all adolescents, regardless of HIV status, at no cost by leveraging existing HIV infrastructure for the provision of chronic disease and AYFS.

**Lessons learned:** It is critical to prepare the next generation of health care workers—from peer navigators to fellowship-trained clinicians - to address adolescent-specific health needs. Adolescent Medicine is not currently a clinical specialty in Kenya; challenges remain in building multi-disciplinary teams that provide adolescent-specific care and creating health systems for adolescents to access comprehensive health services. HIV-related stigma continues to pose a threat to care delivery for adolescents, as Rafiki is known as an HIV clinic.

Additionally, intersectional stigma related to sexuality and street-connectedness increases vulnerability and reduces support for services. We identified needs for expanding services, re-branding the clinic, and improving community outreach and sensitization.

**Conclusions/Next steps:** In the global push to integrate chronic disease care delivery with HIV infrastructure, integrating AYFS should be strongly considered. Interventions to train health care workers are needed to strengthen workforce capacity to deliver AYFS and HIV stigma reduction strategies, particularly around community perception of the facility, may be needed to attract HIV-uninfected youth to services.

## THPEE497

### The role of private sector engagement in scaling up and sustaining access to pre-exposure prophylaxis (PrEP) in Vietnam

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**Background:** To achieve UNAIDS prevention targets by 2030, accelerating PrEP scale-up is crucial. PrEP was introduced in Vietnam in 2017 and is now available in 210 clinics across 29 provinces. The private sector accounts for one-fifth of these clinics, serving approximately 50%

of clients. We assessed the impact of private sector engagement in scaling up PrEP in Vietnam through the USAID/PATH Healthy Markets (HM) and STEPS projects, supported by the U.S. President's Emergency Plan for AIDS Relief (PEPFAR).

**Description:** We engaged 23 public outpatient clinics and 17 private KP-led clinics offering free or commercial oral PrEP. Using data from the national HMed PrEP system, we assessed PrEP initiation, retention, return, and dropout rates in Hanoi, Ho Chi Minh City, and Dong Nai. We also identified factors associated with PrEP continuation.

**Lessons learned:** Between October 2017 and September 2023, we enrolled 32,064 individuals in PrEP, of which private clinics accounted for 80.1%, while public clinics made up 19.9%. The majority of PrEP initiations were at private clinics, ranging from 71.2% to 95.9% annually. Private clinic clients represented a longer median duration of PrEP use (268 days) compared to public clinics (148 days). The HIV sero-conversion rate among PrEP users was lower in private clinics (0.03%) compared to public clinics (0.13%). Multiple linear regression analysis indicated that longer PrEP continuation was associated with being enrolled in private sector services (Coef = 116; 95%CI: 108-123; P<0.001), enrollment in tele PrEP (Coef = 92; 95%CI: 60-125; P<0.001), paying for PrEP/commercial PrEP (Coef = 84; 95%CI: 75-93; P<0.001), and among transgender women (Coef = 49; 95%CI: 32-65; P<0.001).

**Conclusions/Next steps:** Engaging the private sector in PrEP delivery is critical for accelerating PrEP scale-up and sustainability in Vietnam. Private clinics have played a pivotal role in initiating and retaining individuals on PrEP, ensuring its effective utilization. These findings highlight the importance of continued private sector engagement in achieving the Vietnam's 2030 goal of ending AIDS.

## THPEE498

### Scale up of pre-exposure prophylaxis (PrEP) in facility-based HIV prevention services in El Salvador

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**Background:** Key populations carry the highest HIV burden in El Salvador. The Ministry of Health (MoH) provides a tailored HIV prevention package for key populations through the STI Sentinel Surveillance strategy, known as



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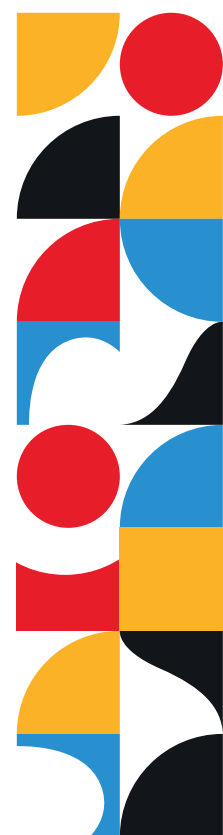
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VICITS by its Spanish acronym. In 2015, the World Health Organization recommended the integration of PrEP into existing prevention services as an additional HIV prevention alternative.

**Description:** Following the launch of PrEP guidelines in December 2021, El Salvador received a donation of PrEP medication from the U.S. President's Emergency Plan for AIDS Relief (PEPFAR) to jumpstart service delivery. In collaboration with PEPFAR, the MoH developed a plan to ensure an enabling environment for PrEP introduction and scale up at VICITS facilities. The plan included a site-specific needs assessment, health care worker training plans, integration of a PrEP module into the country's SIS health information system, community outreach and engagement, demand creation, and considerations for the sustainability of PrEP services through domestic funding. Health care worker trainings included both clinical as well as lay workers, including peer promoters and educators. PrEP dispensation began in one VICITS facility in San Salvador in September 2022. In 2023, the MoH expanded PrEP to 11 additional VICITS sites. By September 2023, 1,135 people had started PrEP, reaching 129% of the target of PrEP initiations for that year. Out of these, 94% were men who have sex with men and 6% transgender women. In the same period, 303 people discontinued PrEP, including 3 seroconversions, all of them in the window period.

**Lessons learned:** The integration of PrEP into existing HIV prevention packages allowed El Salvador to quickly expand PrEP while assuring sustainability based on domestic funding for staff, medication, and supplies.

**Conclusions/Next steps:** The El Salvador MoH will expand PrEP to 12 additional facilities in 2024 and introduce a status neutral testing service approach to assure people who test negative and could benefit from PrEP are provided pathways to this service. El Salvador's fostering of an enabling environment for PrEP within its public health and clinical infrastructure is a model for other countries intending to rapidly scale-up this service.

## THPEE499

Geospatial location-allocation analysis reveals three distribution locations to maximize HIV prevention service reach for persons who inject drugs in Ciudad Juárez, Mexico

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**Background:** Ciudad Juárez (Juárez), Mexico sits along a major binational, drug-trafficking route, with limited HIV prevention services for the >10,000 persons who inject

drugs (PWID), of whom 11% are living with HIV and >80% are living with hepatitis C. Programa Compañeros, the region's sole harm reduction organization, delivers safe injection equipment directly to PWID via mobile vans. Using location-allocation analysis (LAA), we aimed to identify three locations to maximize their mobile HIV prevention service delivery.

**Methods:** From June to September 2023, we recruited PWID who injected in the previous month, ≥18 years old, living in Juárez and Spanish-speaking to complete an HIV environmental, cross-sectional survey with questions on: a. Shared injection equipment (previous year) and; b. Up to four locations where they last shared using Google Maps to capture latitude and longitude coordinates. Data were analyzed in ArcGIS Pro 3.1.

We pre-specified three locations and a travel radius of 2.5 km (approx. 30- 40-minute walk) to maximize service reach. Results include descriptive statistics, a heat map indicating high-density sharing, and the LAA.

**Results:** Of the 149 participants, 103 (69.1%) shared injection equipment within the last year and provided a total of 142 coordinates. Participants were mostly male (86.4%), with a median age of 45 years and <9<sup>th</sup> grade education (71.8%). All participants injected heroin, averaging 5.2 injections per day.

Figure 1 indicates high-density equipment-sharing locations, with the majority of coordinates (82%) in Northern Juárez. LAA yielded two locations in North Juárez and one in South Juárez that maximize outreach to PWID communities with the greatest need for HIV prevention services.

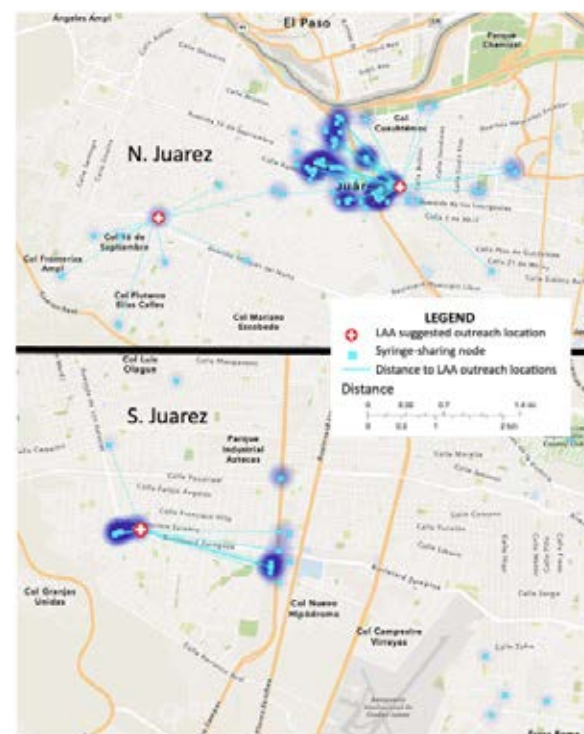


Figure 1. Location-allocation analysis identifies two locations in Metro Ciudad Juárez and one location in South Juárez to maximize HIV prevention services for PWID.



**Conclusions:** LAA was useful in suggesting three locations that maximize HIV prevention services to PWID within Juárez, Mexico, revealing one location in South Juárez that was previously unknown. Geospatial data analysis was useful in maximizing HIV prevention outreach services.

## THPEE500

### Developing an implementation plan for pharmacy-based PrEP service delivery model in Malaysia: findings from a collaborative stakeholder consultation

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**Background:** In Malaysia, despite the availability of HIV pre-exposure prophylaxis (PrEP) in primary and tertiary health centres, uptake remains low, with only 18% of men who have sex with men ever having taken PrEP. To address this issue, we explored the feasibility of leveraging the existing accessible community pharmacies to provide demedicalised service delivery and increase PrEP uptake through a collaborative stakeholder consultation.

**Description:** In April 2023, a one-day meeting was conducted in Kuala Lumpur with 31 stakeholders from community pharmacies, professional medical and pharmacy societies, telemedicine provider, non-governmental organizations (NGOs) and scientists working in the field of HIV and implementation research. Through a comprehensive review of formative qualitative study findings on barriers and concerns with key populations, PrEP prescribers, and community pharmacists, the stakeholders identified solutions to overcome barriers and concerns related to com-

ponents of pharmacy-based PrEP service delivery. These included promotional activities, HIV testing, pharmacist assessment and counselling, physician prescribing, dispensing and follow up. Key discussion points were summarized.

**Lessons learned:** Key recommendations encompassed the provision of private consultation room, affordable PrEP price points, availability of protocol for pharmacy-based PrEP service, digitalised checklist-based assessment, use of HIV self-testing, collaboration with NGOs, PrEP prescribers, and laboratory providers, and ensuring strict confidentiality of client information.

Identified training needs for community pharmacists included PrEP education, eligibility criteria for PrEP initiation and continuation, referral protocols and scenario-based learning. Necessary competencies included knowledge on HIV and sexually transmitted infections (STIs), risk behaviour assessment, professional behaviour, and using person-centred language.

Six implementation sites were selected, each with specific preparation needs including availability of HIV self-test kits, PrEP medication, PrEP leaflets, trained pharmacists, subscription to telemedicine service, and partnering PrEP clinic within 10km for referrals. Implementation plan for pharmacy-based PrEP service was finalised.

**Conclusions/Next steps:** Stakeholders were supportive and enthusiastic about the pharmacy-based PrEP service delivery model as an alternative access to PrEP in the Klang Valley, Malaysia. Future research is essential to evaluate the sustainability of this novel implementation strategy to increase PrEP uptake in Malaysia and other similar settings. Streamlining the approach to be simplified, person-centered, and demedicalised will be pivotal for successful implementation.

## THPEE501

### Preferences for the provision of oral and injectable PrEP among MSM and transgender persons who discontinued oral PrEP in Europe

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**Background:** Oral PrEP can substantially reduce HIV infections, but provider barriers can lead to discontinuation. Long-acting injectable PrEP (LA-PrEP) may address unmet needs. We identify characteristics of discontinued users and explore their past oral PrEP-provider and preferred provider of oral and LA-PrEP, and whether mismatch between past and preferred oral PrEP-provider is associated with intention and preference for LA-PrEP.



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**Methods:** We conducted the online cross-sectional PROTECT survey among men who-have-sex-with-men, trans\* and non-binary individuals in 20 European countries from October-December 2023.

We used logistic regression for high intention to use LA-PrEP and multinomial regression for preference for oral PrEP, LA-PrEP or mixed use among discontinued users, adjusted for PrEP-reimbursement (i.e., countries where PrEP is fully, partly or not reimbursed).

**Results:** We included 13,317 participants; 6,413 were PrEP-naïve, 5,998 current and 906 discontinued oral PrEP-users. Median age was 40 years (IQR=32-49) and most participants resided in countries where PrEP was fully or partly reimbursed (79.4%). Discontinued users were more often younger, a migrant or financially struggling than PrEP-naïve or current users ( $p<0.001$ ).

Furthermore, discontinued users (18.5%) resided more often than current users (12.4%), but less often than PrEP-naïve participants (28.6%), in countries without PrEP-reimbursement ( $p<0.001$ ).

Both discontinued and current users most often accessed oral PrEP from sexual health clinics (32.0%; 34.6%) and medical specialists (23.5%; 28.8%), but discontinued users accessed PrEP more often informally (11.6%; 0.7%) but less often from general practitioners (18.2%; 27.5%;  $p<0.001$ ).

Among discontinued users, preferred oral and LA-PrEP providers were most often GPs (32.3%; 31.0%), sexual health clinics (27.6%; 38.2%) and medical specialists (11.7%; 16.3%), but almost half (49.8%) preferred a different provider for oral than for LA-PrEP. 57.6% also reported a mismatch between past and preferred oral PrEP-provider, which was more common if PrEP is not fully reimbursed in their country ( $p<0.001$ ). This mismatch was not associated with LA-PrEP intention ( $aOR=1.05$ ; 95%CI=0.76-1.46), but was associated with preferring oral over LA-PrEP ( $aOR=0.57$ ; 95%CI=0.41-0.79).

**Conclusions:** The infrastructure for provision of PrEP is highly relevant and needs to be considered, given new modalities. A mismatch of preferred access pathways may result in discontinuation, inhibit re-uptake and may also inhibit uptake of new modalities.

## THPEE502

Creating the time and space for meaningful discussions on HIV prevention and Sexual and Reproductive Health and Rights (SRHR) among adolescent girls and young women in Angola

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**Background:** Angola has a relatively low HIV prevalence (2%) for the region. Adolescent girls and young women (AGYW) comprise an estimated 25% of the people who have recently acquired HIV, with a three-fold higher risk than that of young men. With 65% of the Angolan popu-

lation under 24 and limited access to Sexual and Reproductive Health and Rights (SRHR) targeted prevention for AGYW is critical.

**Description:** ADPP Angola, a local NGO, has implemented "Bancadas" (UNDP, GF/UNFPA) for in- and out-of-school AGYW aged 10-24 since 2018. *Bancadas* is a community-based, AGYW-led movement focused on HIV prevention and SRHR. Concentrated in urban and suburban areas where prevalence is highest, weekly activist-led *Bancadas* sessions— which take place in informal, accessible settings and include lessons, storytelling, music and role models— provide comprehensive sexuality education, including HIV prevention, and offer safe spaces for SRHR discussions.

**Lessons learned:** In 2023, Bancadas reached 47,343 AGYW, approximately one third per age group: 10-14, 15-19, and 20-24 years old. 12% were young mothers. In 2023, 21,915 girls successfully completed the program, participating in over 70% of sessions and demonstrating correct knowledge of HIV/SRHR messages, outperforming the national average of 32.5% message awareness.

All participants were risk screened and 22,662 (82%) tested for HIV; 81 (0.4%) tested positive and 81 (100%) initiated Antiretroviral Therapy. Program data from 2018-2021 identified a 2.3% positivity rate (309/13,331) in a group comprising a 3-2 ratio of in-school to out-of-school AGYW highlighting the need to target both groups. Key lessons learned is that it takes time to build the confidence of AGYW: a full-year of Bancadas allows AGYW to acquire knowledge on HIV prevention, explore their own doubts, support each other, and become peer educators in their communities.

**Conclusions/Next steps:** Employing a "people-to-people" approach involving young activists, peer educators, and *Bancadas* participants is a relatively low-cost option to engage the broader community in discussions addressing HIV prevention, SRHR, stigma and discrimination. As more AGYW graduate and carry their messages to the community, ADPP will also monitor changes in message awareness within the broader community. Further study on the experience of male-only and mixed Bancadas is required to spearhead an inclusive, transformative movement.





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Conversations with providers explaining CAB LA ease of use and their right to choose enabled decision-making. PSPs outlined convenience of injections, not having to remember to take PrEP every day, decreased adherence stress, and not worrying about HIV as key reasons for choosing/switching to CAB LA (Table 1). Most PSPs (74%) reported having no CAB LA concerns; 17% with concerns cited side effects and injection pain/soreness.

**Conclusions:** Provider conversations coupled with lifestyle benefits influenced decisions of MSM and TGM to adopt CAB LA. Equipping providers with effective PrEP discussion strategies is crucial for supporting PrEP uptake.

## THPEE505

Interim results from an online pre-exposure prophylaxis (PrEP) pilot for men and women in Gauteng province, South Africa

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**Background:** The World Health Organisation recommends differentiated service delivery to increase PrEP coverage. The growth of online health and wellness retailers and increasing acceptance of online health services in South Africa such as virtual doctor consultations and e-scripting presents an opportunity to provide PrEP services online.

This project aims to pilot an online PrEP model for adult men and women.

**Methods:** In July 2023, King Online, an online vending company with a history of providing sexual wellness products launched an end to end PrEP platform to customers for 13 months. Men and women ≥18 years residing in Gauteng province accessing their website are provided information on the "PrEP page." Those that sign up for PrEP, receive an HIV self-test and complete an online form to report their HIV results, schedule a once-off nurse visit (for baseline laboratory investigations) and doctor virtual consult for PrEP scripting- all performed after client's consent. PrEP refills are supported by HIV self-testing, self-collection of dry blood spot samples (for confirmation of HIV status), doctor telephonic consultations and courier delivery of PrEP. Project data was analysed using STATA/SE 18.0

**Results:** To date, a total of 53 customers have initiated PrEP, with 22 (42%) returning at month one and 5 (9%) at month 4. A total of 79% (42) are new PrEP initiations, 64% (34) are male, 74% (39) are black and the mean age is 32 years. Most (40/53, 75%) participants do not have a steady sexual partner and 79% (42) have tertiary education with 85% (45) earning more than the national minimum wage. At screening, 34 participants (64%) reported condomless sex.

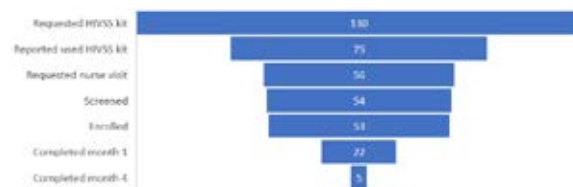


Figure 1. Chart depicting the online PrEP initiation cascade.

**Conclusions:** Preliminary results suggest that online PrEP is feasible, acceptable and that HIV self-testing can support maintenance on PrEP. Next steps are streamlining the model based on user experiences for larger scale implementation.

## THPEE506

High reach and adoption of secondary DREAMS services among AGYW in Zambia: a country-wide RE-AIM assessment of DREAMS implementation 2016-2022

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**Background:** In Zambia, the DREAMS initiative was implemented primarily as an HIV prevention intervention among adolescent girls and young women (AGYW). DREAMS has also contributed to the holistic development and wellbeing of AGYW through secondary services, such as socioeconomic support and family planning. These additional DREAMS services extend beyond primary services to provide sustained support and address the multifaceted challenges faced by AGYW. We assessed the reach and adoption of secondary services among AGYW in 14 districts in Zambia.

**Methods:** We conducted a multi-year, country-wide assessment of DREAMS program implementation from 2016 to 2022 in 14 Zambian districts using the Reach, Effectiveness, Adoption, Implementation, and Maintenance (RE-AIM) implementation science framework. Data were collated from all DREAMS implementing partners since DREAMS inception in Zambia in 2016. We used aggregate and line-listed client-level data to quantitatively analyze the reach and adoption of secondary DREAMS services among AGYW across all the programs. Data were analyzed using R-Studio.

**Results:** Of 1,091,641 AGYW who were enrolled in DREAMS, 565,378 (51.8%, 95% CI:51.7-51.9%) were documented as having received at least one secondary service. Second-



ary services engagement was lowest in the earliest years of DREAMS implementation and reached 72.1% by FY2021. By district, uptake of any secondary service ranged from 36.1% in Lusaka to 84.3% in Mongu.

Without considering eligibility due to age differences, engagement in secondary services was highest in the 20-24 age group with 79.8% (95% CI:79.7-79.9%) of AGYW engaging in a secondary service, 57.6% (95% CI:57.5-57.8%) of AGYW aged 15-19 engaging, and 21.3% (95% CI:21.2-21.4%) of AGYW aged 10-14 engaging. Socioeconomic support services were the most commonly accessed with 29.6% participation, while biomedical services, including condom distribution, family planning, and HIV testing, followed with 27.2%, 11.2%, and 9.6% participation, respectively.

Overall, 2,328 (2.2%) of 104,859 AGYW accessing HIV testing services tested positive for HIV.

**Conclusions:** The DREAMS programs across Zambia successfully reached over one million AGYW over the years, and 52% of AGYW enrolled in DREAMS received secondary services, especially older AGYW aged 15-24. DREAMS appears to be highly effective at reaching at-risk AGYW with multifaceted services in sub-Saharan African countries such as Zambia.

## THPEE507

**Integrating PrEP delivery in public family planning clinics increases PrEP screening and uptake: results from a large stepped-wedge, cluster-randomized trial in Kenya**

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**Background:** Young African women account for a disproportionate number of new HIV infections and are a priority population for pre-exposure prophylaxis (PrEP).

**Methods:** Between March 2021 and December 2023 in collaboration with Kisumu County Department of Health (KDOH), we conducted a stepped-wedge, cluster-randomized trial to integrate systematic screening for HIV risk and oral PrEP provision at 12 family planning (FP) clinics in Kisumu, Kenya (ClinicalTrials.gov: NCT04666792).

The intervention included facility-based health provider training, technical assistance (TA) to coach and mentor providers, and joint supervision with KDOH to audit and provide feedback. PrEP provision and follow-up was conducted by existing FP staff. Women could be screened both before and during intervention but were counted only once towards PrEP initiation. We compared out-

comes during pre-intervention vs intervention periods using modified Poisson generalized estimating equations models, adjusted for time effects and clustering by clinic.

**Results:** Overall, 25,456 women without HIV were seen, with 7,058 encounters pre-intervention and 19,240 during the intervention. Median age was 27 (IQR 23-31) years. Women were using injectable (42%), implant (23%), and oral pills (25%) for contraception. The number and proportion of women screened for PrEP substantially increased from 212 (3%) in 7,386 women-encounters pre-intervention to 19,561 (92%) from 21,343 women-encounters during the intervention period (RR: 20.5, 95%CI 3.5-120; p<0.001). PrEP initiation among women eligible for PrEP substantially improved from 3% (4/119) pre-intervention to 41% (983/2,426) during intervention (RR: 52.8, 95%CI 2.9-967; p=0.008). PrEP initiations continued in the maintenance period (12 months after intensive TA stopped), resulting in 1,415 total PrEP initiations. Overall, 43% refilled at least once and the mean proportion of days covered by PrEP was 53% through 3 months and 36% through 6 months post-initiation.

Thematic analysis of TA reports identified provider attitude, workload, frequent staff transfers, and requirement to complete multiple data registers as important facility barriers to integration. Health talks and using HIV testing counselors to conduct risk assessment emerged as facilitators.

**Conclusions:** We observed high PrEP screening and uptake and reasonable coverage. Integration of PrEP services within African FP clinics is feasible and has tremendous potential to improve PrEP access for African women.

## THPEE508

**Innovative syringe-needle distribution in Dhaka: integrating secondary channels for enhanced accessibility and cost-efficiency**

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**Background:** Bangladesh has pioneered harm reduction program in South Asia, yet gaps remain in syringe-needle (SN) distribution, particularly in Dhaka. Traditional outreach by Peer Outreach Workers (POWs) is limited by their availability and mobility, resulting in People Who Inject Drugs (PWID) facing difficulties in accessing necessary services. Peer Outreach Workers (POWs) are not on field 24 hours. Besides, POW roams around the spots approximately two-square Kilometers area, so PWID can't find POW sometimes when necessary. This highlighted the need for a revised approach in SN distribution to bridge these service gaps.

**Description:** Under the Global Fund NFM3-grant in 2023, an innovative model was introduced in Dhaka, incorporating thirty-five depot holders (26 pharmacies, 9 rag-



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pickers) and five syringe vending machines at strategic locations. This dual approach operates alongside conventional outreach. Depot holders distribute syringes during POWs' off-hours, receiving a nominal incentive for their participation.

Additionally, vending machines provide 24/7 access to syringes. Efforts to ensure safe disposal, including drop-boxes and training for both depot holders and PWID, were implemented, with the PWID network playing a crucial role in monitoring and supporting this initiative.

#### Lessons learned:

- Syringe distribution per PWID increased from 265 to 315 units annually.
- Monthly reach to mother-listed PWID increased significantly from 67% to 93%.
- Approximately 75% of syringes distributed through depots were safely collected in drop-boxes.
- Local leaders and elites became active advocate of harm reduction program since they were engaged in the whole process (planning, implementation and monitoring).
- The cost of syringe distribution through secondary channels is significantly lower (USD 0.02 per syringe) compared to traditional methods (USD 0.10 per syringe).

**Conclusions/Next steps:** The secondary distribution channels, encompassing both depots and vending machines, have proven to be a highly effective and cost-efficient method to bridge the service gap in hard-to-reach PWID populations. This model not only enhances accessibility but also demonstrates potential for global replication. While drop-out of POW remains a challenge, ongoing training and capacity building of new POWs can mitigate this issue, ensuring the sustainability and effectiveness of the program.

## THPEE509

Results and cost of baseline serum creatinine testing among key and vulnerable populations: analysis of routine oral PrEP program data in Tanzania

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**Background:** WHO recommended Pre-exposure Prophylaxis (PrEP) as a preventive measure against HIV for individuals who are at substantial risk of acquiring HIV. The PEPFAR/USAID-funded Meeting Targets and Maintaining Epidemic Control (EpiC) project collaborates with the Ministry of Health to scale-up HIV prevention services, including oral PrEP among key and vulnerable populations (KVP). Tanzanian National guidelines mandate serum cre-

atinine clearance (CC) before PrEP initiation. We present results of baseline CC among KVP initiated on PrEP and associated cost implications.

**Description:** Prior to PrEP initiation a healthcare provider takes blood sample for serum creatinine testing and offers one month of PrEP. Samples are taken to health facilities with result turnaround time of 2 weeks. Individual client data, including estimated CC were recorded in national PrEP client card and entered in DHIS2 database. We analyzed CC results from routine program data between October 2022 and September 2023, disaggregated by age and sex. We calculate average unit cost for creatinine testing, excluding costs for sample collection, human resources, and transportation.

**Lessons learned:** 22,572 individuals initiated oral PrEP, of whom 95% were 15-39 years. Among those initiated, 93.3% (21067/22572) were tested for serum creatinine, 99.3% (20,911/21067) had CC of above 60ml/min and 156 (0.7%) had CC below 60ml/min. There is no statistical significant difference by age for those with CC below 60ml/min; 0.8% (111/13452) among <30-year-olds, 0.6% (41/6349) among 30-39 year-olds and 0.4% (4/996) among 40+ years (p=0.217). The proportion of women with CC <60ml/min was higher than men (0.8 vs 0.3, p= 0.004). 10% of those with CC <60ml/min had history of medical conditions, including diabetes, hypertension, and kidney disease and none of those with CC above 60ml/min reported any medical condition. The estimated total cost was USD 77,706 with an actual serum creatinine test averaged USD 5.8 (interquartile range ~3.9 – 7.5 USD) per individual.

**Conclusions/Next steps:** Majority of client-initiated PrEP had normal baseline CC. To improve access, Tanzania should consider adapting WHO recommendation that removes requirement for mandatory baseline CC for PrEP initiation. Given few individuals with abnormal results, there is an opportunity to save costs, facilitate efficient resource allocation, and promote efforts to improve PrEP continuation and monitoring.

## THPEE510

The use of incentives: a demand creation strategy in COVID-19 vaccine-hesitant communities

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**Background:** The success of demand creation strategies for health services is dependent on the communities where they are being implemented. We use different strategies to promote demand, educate communities on health programs and services and correcting myths and misinformation. The COVID-19 vaccine program experienced vaccine-hesitancy at various points in its implementation, and it was important we implement new strategies such as the use of nominal incentives which has been proven to be an effective tool to drive demand.

**Description:** We used Geographical Information System (GIS) report to identify areas that have low vaccine-up-take. In the identified areas we conducted community mapping and screening and developed mass vaccination campaigns and introduced the use of incentives, social media, and radio as part of the demand creation strategies. Community mapping exercise enabled us to customize incentives according to the community needs and we created incentive packages as informed by the communities.

**Lessons learned:** Targeted mapping allowed us to identify areas with low vaccine uptake, the contribution made towards overall vaccinations went from 522 doses in Jul 2023 to 18 598 in Sep 2023 in the Tshwane region. The introduction of incentives improved the daily vaccination rate from vaccinating under 100 to over 700 in the Tshwane district. With the strategies implemented were able to map the area according to the needs of the area, package incentives according to the district preference and managed to give over 120k vaccination doses.

Our incentive was below \$5 and included store vouchers, food vouchers, airtime vouchers and food packages and marketing material (t-shirts and lanyards). Food vouchers were the most preferred of the incentives. We embedded a customer satisfaction survey within the project, and customer feedback was used to improve service delivery.

**Conclusions/Next steps:** Tailoring demand creation strategies to community needs is vital. For COVID-19 vaccine uptake, GIS-driven targeting and nominal incentives, especially food vouchers, significantly increased vaccinations, emphasizing the importance of community-driven approaches. This is especially important for community-driven programs with high hesitancy and these strategies have the potential to improve community engagement in similar programs such as HIV prevention, influenza and .

## THPEE511

### Condom use after PrEP initiation among adolescents: findings from the PrEP1519 cohort

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**Background:** Daily oral PrEP proves highly effective for HIV prevention. However, there are concerns about potential decreases or interruptions in condom use among adolescents upon initiating PrEP. We aimed to analyze anticipation of condom use following PrEP initiation among adolescent men who have sex with men (AMSM) and transgender women (ATGW).

**Methods:** PrEP1519 constituted a demonstration cohort study of daily oral PrEP among AMSM/ATGW aged 15-19 years, in three Brazilian cities. A cross-sectional analysis was conducted including adolescents who initiated PrEP between April-2019-March-2023.

The study assessed three outcomes after PrEP initiation:

1. The anticipation of reduced condom use during receptive anal intercourse (RAI),
2. The anticipation of reduced condom use during insertive anal intercourse (IAI), and;
3. The anticipation of condomless sex.

Logistic regression was employed to estimate adjusted odds ratios (aOR) and 95% confidence intervals (95%CI) of the association between condom use in the 3 months before PrEP initiation and the outcomes.

**Results:** 1,219 adolescents initiated PrEP. 74.2% were 18-19 years old, 71.8% identified as black/brown, 91.0% were MSM, 82.0% lived with parents/family members and 60.1% reported condomless anal sex in the 3 months before PrEP use.

After PrEP initiation 31.8% anticipated reducing condom use during RAI, 32.9% during IAI and 11.0% anticipated condomless sex. Adolescents reporting inconsistent condom use during RAI and IAI before had 2.92 and 2.98 times higher odds of anticipating reduced condom use after PrEP initiation, respectively.

Those reporting inconsistent condom use during anal sex before had 3.01 times greater odds of anticipating condomless sex after PrEP initiation (Table 1).

Study Variables	aOR	95%CI
<b>Outcome 1: The anticipation of reduced condom use during RAI* after PrEP initiation</b>		
Condom use during RAI in the 3 months before PrEP initiation		
Consistent condom use	Reference	
No sexual partner	1.44	0.90 - 2.27
Inconsistent condom use	2.92	2.16 - 3.96
<b>Outcome 2: The anticipation of reduced condom use during IAI** after PrEP initiation</b>		
Condom use during IAI in the 3 months before PrEP initiation		
Consistent condom use	Reference	
No sexual partner	1.06	0.60 - 1.86
Inconsistent condom use	2.98	2.03 - 4.43
<b>Outcome 3: The anticipation of condomless sex after PrEP initiation***</b>		
Condom use during anal sex in the 3 months before PrEP initiation		
Consistent condom use	Reference	
No sexual partner	1.60	0.71 - 3.63
Inconsistent condom use	3.01	1.76 - 5.14

RAI = Receptive Anal Intercourse; IAI = Insertive Anal Intercourse; aOR = adjusted Odds Ratio; 95%CI = 95% Confidence Interval  
 \*Adjusted for study population and housing situation. AIC: 11.82; BIC: 1.306; Hosmer-Lemeshow test (0.918); LR test (p-value) 1.000  
 \*\*Adjusted for condom use in the first sex and fear of HIV. AIC: 929; BIC: 965; Hosmer-Lemeshow test (0.965); LR test (p-value) 0.136  
 \*\*\*Adjusted for age. AIC: 758; BIC: 778; Hosmer-Lemeshow test 0.920

Table 1. Association between condom use in the 3 months before PrEP initiation and the outcomes. PrEP1519 cohort.

**Conclusions:** The anticipation of reducing or interrupting condom use after PrEP initiation was more prevalent among adolescents with a history of inconsistent condom use.

These findings underscore the importance of timely PrEP initiation, serving as a crucial element in the comprehensive prevention of HIV risk.



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## THPEE512

Strategies to achieve the elimination of HIV horizontal transmission in the Municipality of São Paulo (MSP)

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**Background:** Over the past six years, the MSP has steadily reduced new HIV acquisition by employing strategies to enhance vulnerable populations access to diagnosis, treatment, and prevention methods for HIV and sexually transmitted acquisition (STIs). However, to eliminate horizontal HIV transmission, given the epidemiological scenario, it is crucial for the Unified Health System (SUS) to implement public policies that reach various population groups, especially those are not accessing the available health services.

**Description:** An innovative strategy was establishing a health unit "Estação Prevenção Jorge Beloqui", within a busy metro station. It operates from Tuesday to Saturday, from 5pm to 11pm, a time when conventional units conclude their services. This allows access for individuals who cannot take time off from their daytime responsibilities or who engage in nighttime work/study, attend parties, etc. The unit features a compact structure with three consultation rooms, a reception area, and a sample collection room. It provides HIV pre or post-exposure prophylaxis (PrEP/PEP), rapid testing, and preventive insumes. Individuals with a reagent HIV test collect exams, a teleconsultation, and are referred to Specialized Services-IST/AIDS for follow-up.

**Lessons learned:** From June to December/2023, a total of 3905 appointments were conducted, dispensed 2451 PrEP, 713 PEP, 39 new cases of HIV diagnosed, and 702 HIV tests. The increase in appointments was gradual, starting with 291 and reaching 750 people/month. Black people age 19-34 make up more than half of the cases, 90% self-identifying as males who have had sex with men. These numbers underscore the importance of eliminating barriers to access the SUS.

**Conclusions/Next steps:** This service is strategically located and offers extended hours, which makes HIV prevention, diagnosis and treatment more accessible to the population, a critical factor in preventing new acquisition. At the same time, remote access to PrEP/PEP was initiated through the e-SAUDE application, allowing teleconsultations and digital PrEP/PEP prescriptions, which can be obtained at the "Prevention Station" or at a 24-hour health unit. As a result, the municipality recorded a reduction in new HIV cases for six consecutive years, with a drop of 46% in this period. Thus, we hope to soon eliminate horizontal transmission of HIV in MSP.

## THPEE513

Structured group-based community model facilitates oral PrEP continuation among key and vulnerable populations in Dar es Salaam, Tanzania

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**Background:** Globally, oral pre-exposure prophylaxis (PrEP) programs show challenges with continuation. In Dar es Salaam, EpiC, community-based program funded by the PEPFAR/USAID, in collaboration with the government of Tanzania supports PrEP use among key and vulnerable populations (KVP), including adolescent girls and young women (AGYW), female sex workers (FSW), and men who have sex with men (MSM).

A structured group-based community model (SGBCM) was introduced to support PrEP refill among KVP. We compared SGBCM outcomes to a non-structured group-based community model (NSGBCM).

**Description:** In SGBCM, support groups of 5-7 clients are formed for mutual assistance in PrEP adherence. Monthly group refills are scheduled by the group lead and health-care worker based on differentiated person-centered care, with reminders and close follow-ups. Partners implementing NSGBCM lacked comprehensive follow-ups and reminders for refills/rescheduling.

We conducted a retrospective analysis of refills within SGBCM and NSGBCM for clients initiated from October 2022 - June 2023 to understand patterns of PrEP continuation in the first, second-, and third-months post-PrEP initiation. The chi-square test determined the statistical significance of the observed difference in PrEP refills.

**Lessons learned:** 4,790 clients-initiated PrEP (3,933 under SGBCM, 857 under NSGBCM). Within SGBCM, 62.4% were FSWs, 23.7% MSM, and 13.4% AGYW. For NSGBCM, 54.0% FSWs, 21.5% MSM, and 24.5% AGYW ( $p < 0.001$ ). Within SGBCM, 83% (3,255/3,933) refilled one-month post-initiation, 75% (2,937/3,933) second month, and 65% (2,553/3,933) third month. In the NSGBCM, 28% (243/857) refilled one-month post-initiation, 13% (111/857) second month, and 9% (73/857) third month.

Compared to NSGBCM, the odds of SGBCM returning for at least one refill were 12.1 times greater, 19.8 for both second and third refills ( $p < 0.001$ ). This demonstrates strong evidence that refill rates are better within SGBCM compared to NSGBCM ( $p < 0.001$  for each visit).

Service sites	First refill			Second refill			Third refill		
	FSW	MSM	AGYW	FSW	MSM	AGYW	FSW	MSM	AGYW
NSGBCM	ref	ref	ref	ref	ref	ref	ref	ref	ref
SGBCM	13.7	8.6	11.1	12.0	29.8	22.9	14.9	18.8	15.9
OR (95% CI)	10.0 (7.0-14.1)*	7.5 (5.6-10.1)*	12.3 (8.4-18.1)*	10.5 (7.5-14.6)*	18.3 (13.2-25.4)*	18.3 (13.2-25.4)*	11.3 (8.2-15.4)*	11.3 (8.2-15.4)*	11.3 (8.2-15.4)*



**Conclusions/Next steps:** Differentiated service delivery involving SGBCM improves PrEP continuation and could be included as an effective strategy in community programs.

## THPEE514

### Uptake of HIV pre-exposure prophylaxis at private pharmacies in Kenya: early findings from a cluster randomized controlled trial

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**Background:** Recent pilot studies of pharmacy-based PrEP delivery in Kenya observed high rates of uptake and continuation, including among populations not commonly reached by public clinics.

To understand the potential value-add of allowing private pharmacies to initiate and manage clients on PrEP (the intervention) compared to the current standard of care (screening and referral to clinic-based PrEP services, the control), we are conducting a randomized controlled trial (cRCT).

We report early findings on PrEP uptake at intervention arm pharmacies.

**Methods:** As part of the Pharm PrEP cRCT, trained pharmacy providers at 45 private pharmacies in Central and Western Kenya are offering PrEP initiation and refill services. Eligible clients are age 16+ and self-report: unknown or negative HIV status, 1+ recent (past 6 months) behavior associated with risk of HIV acquisition, and no contraindicated medical conditions. Enrollees undergo HIV testing and, if eligible, are dispensed a 30-day PrEP supply.

The details of each PrEP visit (e.g., dispensing) and client demographics are documented by pharmacy providers in an electronic medical record. We analyzed these data using descriptive statistics.

**Results:** From July 2023 to mid-January 2024, 447 clients were enrolled and initiated PrEP at 45 intervention pharmacies. PrEP uptake was higher in Western Kenya, which accounted for 78% (347/447) of enrollments.

About half (56%, 252/447) of enrollees were female, median age was 27 (IQR 23-33), and 56% (251/447) were unmarried. Similar to prior pilot studies, most (93%, 415/447) did not self-identify as belonging to a key population. The most commonly reported HIV risk behaviors were incon-

sistent condom use (79%, 356/447), multiple sex partners (62%, 277/447), and having 1+ sex partner(s) of unknown HIV status (59%, 264/447).

**Conclusions:** Data from the first 6 months of this cRCT provides further evidence that private pharmacies in Kenya, especially those in high HIV burden areas, reach individuals who could benefit from PrEP and that pharmacy clients are willing to initiate PrEP at these locations.

Estimates of the effect different models of pharmacy-delivered PrEP services have on clinical outcomes, and how these models compare with pharmacy referral to PrEP services at public clinics in Kenya, are forthcoming.

## THPEE515

### PrEP and more! Comprehensive HIV pre-exposure prophylaxis (PrEP) care to improve uptake and effective use among adolescent girls and young women (AGYW) in western Kenya

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**Background:** 15% and 36% of new HIV diagnoses in Kenya were among adolescents aged 10-19 years and young people aged 15-24 years, respectively (2022). In 2020, PrEP uptake rate among adolescent girls and young women aged 15-24 in Kenya was estimated to be around 16%. This indicates that a relatively small proportion of eligible adolescents are currently accessing PrEP necessitating strategies to enhance PrEP uptake and use among this group. PATH implemented a comprehensive PrEP care package and assessed its impact on PrEP uptake and effective use among AGYW in western Kenya.

**Description:** Following a risk assessment-based PrEP eligibility screening, eligible AGYW were counseled by a healthcare provider and initiated on PrEP following clinical evaluation. Enrolled AGYW received a comprehensive suite of services for effective PrEP use, including pairing with a PrEP Ambassador, support group enrollment, SMS appointment reminders, community/home-based PrEP distribution, adherence counseling, and socioeconomic support (for AGYW with financial need). PrEP services were integrated into multiple facility-based entry points, enabling provision of one-stop shop services for other healthcare needs, including antenatal (ANC), family planning, and screening and treatment of sexually transmitted infections (STI). 140 healthcare providers and 42 PrEP Ambassadors were trained on the approach, including referrals for additional care needs. This comprehensive PrEP care package was introduced in 2020 across three counties in western Kenya.

**Lessons learned:** Among 1,002 AGYW screened and eligible for PrEP, 915 were initiated and 595 continued PrEP between October 2022–June 2023 with no reported seroconversions, indicating strong adherence. AGYW active-



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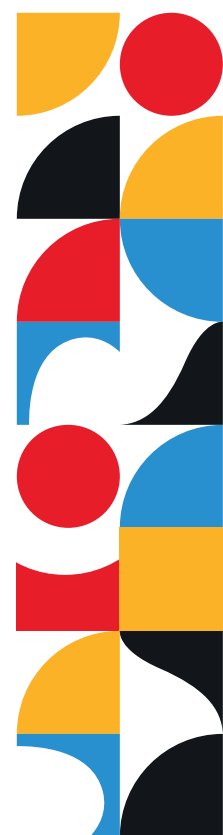
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ly using PrEP increased from 438 (December 2022) to 595 (September 2023). Month-1 and Month-3 PrEP continuation also increased from 58% (858/1,426) to 92% (761/821) and 51% (735/1,426) to 89% (731/821), respectively, between October 2021–June 2022 and October 2022–September 2023.

Clients accessed other health services, including 389 initiating FP services, 147 receiving post-violence care, 27 accessing ANC services, and 12 receiving STI treatment from October 2022–September 2023.

**Conclusions/Next steps:** This comprehensive PrEP care package led to improved PrEP uptake and continued effective use among AGYW and should be scaled up as an effective strategy for enhancing HIV and other health outcomes among AGYW in Kenya.

## THPEE516

**FastPrEP: evaluating factors associated with PrEP initiation from community-based mobile clinics compared to fixed-site primary health facilities in adolescents and young people in Cape Town, South Africa**

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**Background:** Effective HIV prevention will require implementing and evaluating pre-exposure prophylaxis (PrEP) service delivery options that can engage large populations of adolescents and young people (AYP) with diverse characteristics.

**Methods:** FastPrEP is an ongoing implementation science project in Cape Town, South Africa, evaluating uptake and effectiveness of a youth-focused, decentralized district-wide PrEP program. Oral PrEP is offered to AYP, aged 15 to 29 years, as part of an integrated sexual and reproductive health (SRH) service from four community-based mobile clinics and 12 primary health facilities.

Descriptive statistics and logistic regression models (adjusted for age and gender) explored the factors associated with AYP's PrEP initiation from mobile clinics and fixed-site primary health facilities.

**Results:** Between August 2022 and December 2023, 9940 AYP (mean age 24 years) initiated oral PrEP. Majority were adolescent and young women (63%, n=6247) of which 3% (n=182) were pregnant. Of the 3693 men starting PrEP, 5% (n=177) identified as men who have sex with men. Most AYP were unmarried (95%) with 22% reporting multiple concurrent sex partners. Most AYP (81%) initiated PrEP from mobile clinics compared to primary health facilities. Factors significantly associated with initiating PrEP at mobile

clinics included being male (OR 1.7; 95%CI:1.53-1.9), having casual sex partners (aOR 1.7; 95%CI:1.34-2.12), presence of STI symptoms (aOR 1.5; 95%CI:1.14-2.03), and displaying hazardous alcohol consumption (AUDIT-C score; aOR 1.5; 95%CI:1.25-1.85). PrEP initiation at mobile clinics was associated with mild depression/anxiety (PHQ4 scores; aOR 1.5; 95%CI:1.18-1.8), however people with moderate depression/anxiety were less likely to access mobiles compared to primary health facilities (aOR 0.7; 95%CI:0.53-0.84). Pregnant women were less likely to initiate PrEP at mobile clinics compared to primary health facilities. No significant difference in age, relationship status, or number of sex partners was observed between people starting PrEP at mobile compared to health facilities.

**Conclusions:** Tailored, integrated mobile SRH services, including PrEP, attracted men and young people who had factors associated with higher risk for HIV acquisition. Pregnant women however chose to access PrEP from traditional healthcare facilities, possibly primarily accessing antenatal care.

Further integration of mental health (depression and anxiety) and substance misuse support for AYP in mobile services are also indicated by these data.

## THPEE517

**The impact of demedicalizing PrEP in Mozambique, 2023**

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**Background:** Mozambique has the third highest number of new HIV acquisitions globally. To maximize HIV combination prevention efforts, Mozambique piloted pre-exposure prophylaxis (PrEP) in 2017; national expansion began in 2021. In 2022, new WHO guidelines recommended the demedicalizing PrEP, which no longer restricted PrEP to the clinical setting. Subsequently, in 2023 Mozambique wrote an addendum to National Guidelines aimed to increase PrEP uptake.

**Description:** The revised National PrEP guidelines expanded the eligibility criteria of specific key and vulnerable populations (key populations, high-risk men, pregnant and lactating women, and adolescents and young women) to also include anyone who desires PrEP; these were classified as "other population." In addition, multi-month dispensing was introduced offering 1-, 3- or 6-months PrEP dispensing during the first clinical visit depending on client's needs. Community PrEP provision was facilitated through mobile clinics.

**Lessons learned:** Demedicalizing PrEP demonstrated increasing PrEP uptake. In 2022, 99,961 people had initiated PrEP compared to 2023's 178,239, general PrEP uptake in-



creased 78%. This increase was verified in all subpopulations, majorly in adolescent and young population (51%) and KP (29%).

Additionally, unrestricting PrEP to all populations allowed for a rapid PrEP uptake by 'other population' increasing from 247 in April to 7,709 in December 2023. The effort to differentiate, simplify, and demedicalize PrEP delivery including reducing frequency of clinical visits and the burden on the health facility empower health providers with more opportunities to offer PrEP.

**Conclusions/Next steps:** A people-centered approach for PrEP provision must be adopted which embraces the diversity of client populations and empowers them to make informed decisions about their prevention methods. An evaluation of acceptability of new PrEP options will be rolled out in 2024 to better inform further updates of PrEP guidelines.

Finally, a national PrEP campaign will be rolled out to promote PrEP services and increase client literacy and demand creation. Focusing Client diverse needs is key to maximize its uptake and consequently impact in the reduction of HIV acquisitions.

## THPEE518

So you want to offer injectable PrEP: findings from four sexual health clinics in the US

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**Background:** Injectable cabotegravir (cab-LA) is an evidenced based biomedical intervention clinically proven to reduce the risk of HIV transmission; however, little is known about how early adopting clinics are integrating injectable PrEP into their programs.

**Methods:** Between 1/2023 and 1/2024 we conducted Rapid Assessment Procedure-Informed Clinical Ethnography with four US-based sexual health clinics. Through synthesis of data collected by organizational assessments, site visits, interviews, and document review, we identified three key factors clinics may consider when planning for cab-LA introduction into existing oral PrEP services.

**Results:** First, while all four clinics follow national guidance to discuss oral PrEP with all sexually-active individuals, the high cost and complexity of coverage investigation of cab-LA precludes widespread discussion and same-day starts. Providers report feeling disappointed to return to restrictive rather than permissive stances on injectable PrEP eligibility.

Second, all clinics described the intensity and complexity of (1) education and counseling for cab-LA and (2) follow up protocols, as significantly higher than for oral PrEP.

Education and counseling messages include the need to maintain timely injections and importance of remaining engaged in care after discontinuation.

All clinics report that this results in: (1) longer visits and, in many cases, multiple visits, before initiation; (2) more time spent reaching out to clients to ensure they return for timely injections; and (3) in two out of four clinics, higher program costs due to transportation subsidies to support timely injections.

Third, three out of four clinics integrated clinical pharmacists into their PrEP teams to facilitate investigation of coverage and tracking clients for follow up. The fourth developed partnerships with external pharmacies. Medical directors reported that pharmacy support was essential for growth and sustainment of cab-LA services.

**Conclusions:** Initiating and sustaining individuals safely on cab-LA requires increased time per visit, extensive human resources, and funding. The high cost of cab-LA, complexity of navigating coverage in the US healthcare system, and the critical importance of keeping individuals who discontinue injections engaged in care, suggests that cab-LA is unlikely to result in increased population coverage of PrEP unless navigating access is simplified and cost of the medication reduced.

## THPEE519

Developing an instrument to assess the fidelity of a PrEP shared decision-making intervention for pregnant women in Malawi

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**Background:** Pre-exposure prophylaxis (PrEP) presents an opportunity to significantly lower HIV risk during the perinatal period, but strategies to support informed decision-making among differing PrEP options are needed. The MyChoice intervention aims to promote user fit and PrEP adherence through shared decision-making (SDM). For counselor-delivered interventions like SDM, evaluating and promoting fidelity is critical to ensure construct validity of the intervention tested. Yet, limited guidance exists for the development of fidelity assessments—particularly in the SDM context.

**Description:** We developed a 29-item fidelity assessment instrument for the MyChoice intervention which measures both quality and completion of key intervention goals.



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The tool incorporates OPTION-5, a validated scale for evaluating client involvement in health decision-making, and qualitative memoing. It is supplemented by a scoring codebook and training manual to enhance inter-rater reliability. The development process began with a literature review, followed by identifying feasible assessment strategies and defining core intervention components. These elements were iteratively drafted into observable checklist items. Content experts were consulted to better understand OPTION-5 scoring, which was adopted for the instrument. The tool was piloted using transcripts of practice counseling sessions, and further revisions were made to clarify language, differentially scale items, and refine scoring guidelines.

**Lessons learned:** In ongoing piloting, we have found the instrument to be user-friendly and appropriate to capture the intended intervention content and quality of delivery. Creating fidelity assessment measures specific to the intervention context requires an iterative and adaptable approach. Translating abstract goals into observable instrument measures often involves a loss of nuance—which can be balanced by incorporating qualitative components, carefully training scorers, and fostering a collaborative review process. Beta testing highlighted the importance of considering data format when establishing clear rubrics.

**Conclusions/Next steps:** Detailed documentation and transparent reporting of fidelity are essential for improving the quality and rigor of public health interventions. The fidelity assessment instrument will be used to assess pilot interviews with MyChoice, help train new counselors as a job aid, and iteratively improve the intervention for use in diverse settings. Continued checklist modifications will enhance fidelity and may be used to help prepare future interventions.

## THPEE520

### Achieving optimized delivery of voluntary medical male circumcision (VMMC) services using a locally-led approach for engaging communities in Tanzania

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**Background:** The lack of local male circumcision prevalence (MCP) data in Tanzania hinders the rational allocation of project investments to optimize VMMC service delivery. The Reaching Impact, Saturation and Epidemic Control (RISE) Project funded by the President's Emergency Plan for AIDS Relief (PEPFAR) and the U.S. Agency for International Development (USAID) piloted a tool to estimate local MCP through social mapping using local intelligence (SOMALI).

**Description:** The SOMALI tool aims to:

- Identify areas of unmet need for VMMC,
- Quantify the size of need in selected localities, and;
- Customize services to match contextual factors.

SOMALI leverages intimate knowledge of localities that local leaders have in Tanzania given the centrality of villages in devolved government. The SOMALI tool uses Kobo Toolbox to consolidate self-reported MCP estimates from multiple local leaders from one village to produce reliable findings (on a scale of 1-10 how many adult men in your locality are probably circumcised?).

The primary output is a village dashboard showing unmet need for VMMC based on averaging local MCP estimates. RISE piloted the tool in Iringa Region from April to May 2023 involving 51 local leaders.

**Lessons learned:** Outreach services accompanying SOMALI pilot aimed to perform 358 circumcisions during 14 days of dedicated services covering 11 villages. This plan was modelled on preceding outreaches in Iringa Region. Data collected in pilot sites estimated unmet need to be 40% among men aged 15 years and older (8,155). The pilot performed 382 circumcisions (107% of target) in 10 days (71% of duration) covering 5 villages, 60% coverage.



Six villages were inaccessible because of ongoing rains. The SOMALI tool supported timely and efficient target achievement. Local MCP feedback was effective for microplanning and targeted service delivery.

**Conclusions/Next steps:** SOMALI can be a game-changer in locally-led needs assessment and microplanning. RISE used data from the pilot to plan later outreaches in the same villages. This approach can be useful for other interventions that integrate community health promotion and service delivery. RISE will test the predictive value of the SOMALI tool in localities assumed to have saturated and compare uptake of VMMC services in test and non-test sites.

## THPEE521

Providing a complete digital experience to the user: HIV prevention interventions in Central America

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**Background:** Under the HIV Prevention, Care, and Treatment project implemented by the Pan American Social Marketing Organization (PASMO) with funds from the United States Agency for International Development (USAID), PASMO works to reach hidden and difficult access key populations (KP), especially men who have sex with men (MSM), to know their HIV status and link them to care; therefore, online outreach has been key. From October 2022 to September 2023, 58% of all at-risk KPs reached by the project were reached through PASMO's 20+ online outreach team of "cyber-educators". Stigma remains relevant with 72% of MSM surveyed in 2021 indicating the "fear of confidentiality loss / someone finding out they were taking an HIV test" as the main barrier to getting tested.

**Description:** PASMO's user centered digital approach provides confidential, anonymous, and quality prevention and care services, ensuring follow-up to user's journey until they are linked to treatment. Cyber-educators use audience segmentation profiles, analysis of behavioral studies and social media use to reach at-risk users more effectively while leveraging social media tools to generate demand for HIV prevention services. PASMO also implements highly segmented online demand generation campaigns and uses chatbot technology for 24/7 access to prevention information and referrals to prevention services with a virtual voucher that can be redeemed at private sector partner labs and clinics or Telemedicine options. Finally, both cyber-educators and health providers continuously update their knowledge through an e-learning training platform.

**Lessons learned:** In 2023, half of all new HIV cases identified by PASMO originated from online outreach efforts under the digital user experience approach and young KPs

have been highly receptive to digital technologies such as the chatbot and proven to be frequent user of social media tools where cyber-educators and creative online demand generation efforts can reach them.

**Conclusions/Next steps:** PASMO is expanding its digital user experience to include STI testing and treatment, and PrEP services with follow-up and tracking along the HIV cascade, including linkage to care and treatment services. In-depth audience understanding is key to effectively reach target populations; the digital world changes fast and we need to adapt prevention and treatment interventions accordingly.

## THPEE522

Fostering adaptive leadership in PrEP engagement: advancing implementation science for ending the HIV epidemic among people who identify as Black MSM

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**Background:** In the realm of Implementation Science, understanding the dynamics between individuals and healthcare providers in Pre-Exposure Prophylaxis (PrEP) engagement among People who Identify as Black and Men who have Sex with Men (MSM) is crucial. Leveraging a secondary analysis of HPTN-073 qualitative research data, this study investigates the adaptive leadership framework within these interactions, emphasizing the social and cultural factors influencing PrEP uptake.

The objective is to contribute insights to advance Implementation Science strategies for effectively ending the HIV epidemic, particularly within the community of People who Identify as Black and MSM.

**Methods:** Employing an interpretive phenomenological approach, the study utilizes qualitative data from the HPTN-073 study, which recruited 226 HIV-uninfected individuals who Identify as Black and MSM across three U.S. cities. Qualitative interviews and focus groups (involving a subset of participants, n = 30) facilitate exploration of experiences with PrEP and services received. Coordinated Management of Meaning (CMM) within an interpretive framework aligns with the objective of understanding adaptive behaviors within culturally competent spaces, contributing to the implementation of effective strategies.

**Results:** The secondary analysis reveals that individuals who Identify as Black and MSM, despite reported barriers, exhibit adaptive behaviors in embracing PrEP. Culturally competent spaces and comprehensive care coordination emerge as crucial facilitators, underscoring the importance of these factors in shaping the narrative



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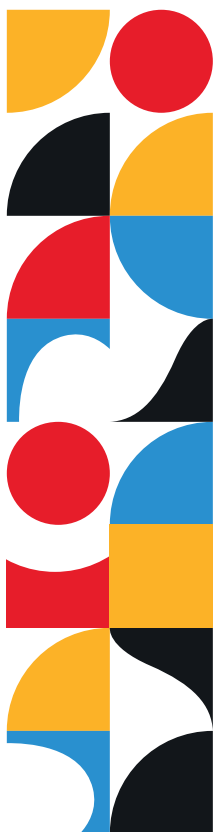
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of PrEP engagement. Results are presented with clarity, highlighting the significance of social and cultural nuances in interactions within the context of Implementation Science.

**Conclusions:** The study's conclusions, supported by the results, underscore the potential of culturally informed care and comprehensive coordination in shaping adaptive behaviors for PrEP uptake. Positioned within the framework of Implementation Science, this research contributes significantly by providing insights into adaptive behaviors among People who Identify as Black and MSM, offering a nuanced understanding of dynamics.

The integration of cultural competence and care coordination as key components adds a unique dimension to the discourse on ending the HIV epidemic.

These findings offer actionable insights for the implementation of targeted interventions and improved prevention strategies.

## THPEE523

Sex workers' leadership in overcoming PrEP continuation barriers in Kilifi county – a case study of ICRH-Kenya's Hotspot Community Group

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**Background:** Despite the proven efficacy of pre-exposure prophylaxis (PrEP) in reducing HIV transmission among high-risk individuals, low continuation rates remain a significant challenge. While PrEP holds immense potential in ending the HIV epidemic, its effectiveness hinges on successful integration with community-centered approaches. In Kilifi County, Kenya, PrEP continuation at the ICRHK Mtwapa Drop-In Centre (DICE) between October 2022 and June 2023 was alarmingly low, with only 17% of clients continuing at month 3 and a mere 4% at month 6.

This highlighted the need for innovative, community-driven interventions to overcome these barriers and ensure equitable access to PrEP for all sex workers.

**Methods:** Recognizing low PrEP continuation among sex workers at Mtwapa DICE, FSWs took charge by forming voluntary, hotspot-based community PrEP groups. Capped at 20 members, these groups met on shared refill dates, offering peer support, health education (focused on PrEP), comprehensive clinical services (STI treatment, TB screening, etc.), and tailored counseling. Absent members were encouraged to rejoin, and all received consistent advice and the next meeting venue, fostering peer-driven learning and sustained PrEP use. This proactive approach aimed to scale up and retain FSWs on PrEP, empowering them to lead the fight against HIV.

**Results:** Between July and December 2023, six hotspot-based FSW community PrEP groups blossomed, empowering 131 sex workers to overcome barriers and achieve

remarkable PrEP continuation rates. With 89% and 76% continuation at months one and three, respectively, these groups showcase the power of peer support. Sex workers have become champions, raising awareness, reminding each other about refills, and demystifying myths surrounding PrEP and HIV. This community-driven initiative proves that empowering sex workers can lead to a sustainable fight against HIV.

**Conclusions:** Community taking central role in HIV prevention and response is critical in ending HIV pandemic. They have solutions to address barriers in HIV prevention through the invaluable innovation, passion and insight which have proven pivotal in getting the world to the point where there is a clear path to end AIDS as a public health threat.

## Implementation science and scale up of treatment

## THPEE524

What tools do we have for Ending the HIV/AIDS Epidemic (EHE) in the USA? A review of the potential population impact of structural, biomedical and implementation interventions across EHE pillars

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**Background:** The United States (US) Ending the HIV Epidemic (EHE) initiative is challenged by structural and implementation barriers to care delivery and access (e.g. policies, financial, geographic). Though interventions to address these barriers are well-studied, their potential impact – their effectiveness and scalability within their given target population – have not been estimated systematically. This review identified structural, biomedical and implementation interventions to support each of the EHE pillars and estimated their potential population-level impact.

**Methods:** We conducted a targeted literature review of articles with established effectiveness data from studies conducted in the US focused on HIV prevention, diagnosis, treatment and response (EHE pillars) published as of September 2023. We searched interventions included in the US Centers for Disease Control and Prevention HIV Compendium and Response Evidence Brief, publicly available EHE jurisdictional plans and the peer-reviewed literature. An intervention's potential population impact was determined as the product of its trial-based effectiveness and reach and estimates of its scalability, accounting for structural barriers in access.



**Results:** A total of 73 interventions of 395 identified had evidence on effectiveness and met inclusion criteria. Pre-exposure prophylaxis (PrEP) interventions ranged in population-level impact from a 1.2% (95% Confidence Interval: 0.6%, 2.5%) increase in PrEP uptake through low-threshold mobile clinics with syringe services, to a 191% (106%, 270%) increase in PrEP uptake through county-wide expansion of PrEP across settings for outbreak response (implementation intervention). HIV testing interventions ranged in impact from a 10% (9%, 13%) increase in testing through personalized testing recommendations, to a 206% (94%, 374%) increase in testing through state-wide expansion of partner services and syringe service authorization (structural intervention).

Antiretroviral treatment interventions ranged in impact from a 1.2% (1.0%, 1.4%) increase in viral suppression through HIV specialist telehealth services in Veterans Affairs primary care clinics, to a 164% (142%, 194%) increase through app-based care linkage with tailored education and virtual support (implementation intervention).

**Conclusions:** Maximizing the impact of evidence-based interventions to end the US HIV epidemic will require tailored efforts to overcome structural barriers (financial, geographic and legal) and implementation barriers (awareness among providers, stigma, medical mistrust and health literacy in individuals) in each of the EHE's target jurisdictions.

## THPEE525

### Acceptability of point-of-care viral load monitoring among children and young people living with HIV in East Africa: a qualitative study

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**Background:** Point-of-Care (POC) Viral Load (VL) monitoring is currently being implemented in several countries to overcome bottlenecks of centralized monitoring of VL, such as long turn-around times, loss of samples and results and filing backlogs. Though POC-VL monitoring may overcome those bottlenecks, the acceptability of POC-VL monitoring may be hindered by challenges experienced by end-users. Our study aims to investigate the acceptability of point-of-care viral load monitoring among children with their caretakers and young people living with HIV in East Africa (EA).

**Methods:** We conducted a qualitative study among participants in the intervention arm of the EAPOC-VL cluster randomized trial that investigates the effectiveness of POC-VL monitoring on viral load suppression (The EAPOC-VL Project) in East Africa. Children and young people living with HIV who recently had a VL test using POC and their caretakers and treatment supporters were interviewed using in-depth interviews and focus group discussions. Data was analyzed deductively using the Sekhon Framework comprising seven constructs of acceptability of an intervention: affective attitude, perceived effectiveness, perceived burden, ethicality, self-efficacy, intervention coherence and opportunity costs.

**Results:** Preliminary analyses show that POC-VL monitoring, in general, is acceptable. The affective attitude was mostly positive as most liked to get results quickly, though



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some said this rapidity rather caused anxiety. Perceived effectiveness was positive as the majority reported adhering better to medication after being given the results. Intervention coherence was high as participants understood that POC-VL monitoring gives quick results. On the other hand, there was a perceived burden due to waiting for results at the health facility on the day of testing. Further, there were opportunity costs such as missing school (and school lunch), homework, or other important functions like birthdays.

**Conclusions:** POC-VL monitoring was considered acceptable. Quantification of these results through a cross-sectional survey would provide a more precise understanding of the magnitude of the mentioned factors. Though perceived burden and opportunity costs could be lowered by implementing strategies to overcome the long wait at the health facility, such as by giving back results and counselling by phone.

## THPEE526

Lessons learned during cohort monitoring of HIV-exposed infants: improving documentation of final outcome at 24 months of age

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**Background:** Systematic retention and follow-up of HIV-exposed infants (HEI) is critical to enable documenting their final outcome (FO) at 24 months. This was conducted in the PEPFAR-supported program: Leveraging Health Service Equity through supporting the health care needs of mothers and their HEI.

The aim was to contribute to elimination of Mother-To-Child Transmission of HIV through a person-centered approach using their "One-Stop" Differentiated Service Delivery model.

**Description:** This initiative has been conducted in the Maternal and Child Health Units (MCH) of four high volume, Level-one Hospitals in Lusaka from October 2022 to date. A person-centered team including medical, pharmacy, data, support personnel and mentor mothers are embedded in MCH and provide care and treatment for pregnant and breast-feeding women living with HIV and their children under 2-years-old. HEI receive prophylaxis, growth monitoring, testing and treatment. Pairing of mother-baby appointments is done prioritizing the baby's testing schedule.

Phone call reminders for appointments are made. Mentor mothers provide psychosocial support for newly diagnosed mothers and conduct physical tracking in the com-

munity for clients with missed appointments. Infants who transfer out are tracked to ensure that they are connected to care. Data for birth cohorts of HEI born between October 2020 and September 2021 were reviewed using MCH paper registers and the electronic health record system SmartCare.

**Lessons learned:** Data for 2,386 HEI were reviewed (51% females). Having a dedicated team with proactive follow-up led to increased documentation of FO at 24 months with 2,287 (96%) having a documented FO. This is inclusive of 170 (7.1%) who transferred out but whose final status was documented due to follow up. 42 (1.8%) infants died (all had a previous negative result) and 45 (1.9%) infants seroconverted.

Having a proactive team, pairing of mother and baby appointments, psychosocial support and community tracking led to increased retention. EID cohort monitoring data for fiscal year 2021 is presented below.

Birth Cohort	Cohort size [D]	HIV Infected	HIV Uninfected	Died	Unknown FO (IIT)	Cohort with FO [N]	PMTCT_FO (N/D) x100
FY2021	2386	45	2200	42	99	2287	96%

Table 1. EID Cohort Monitoring for Four Hospitals in Lusaka District, Zambia

**Conclusions/Next steps:** Deliberate and coordinated HEI cohort monitoring increases care, retention and documentation of final outcome at 24 months.

## THPEE527

Facilitating safe disclosure of key population identities to optimize HIV differentiated service delivery in Harare, Zimbabwe in Harare, 2022-2023

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**Background:** In Zimbabwe, criminalization of key populations (KPs) (female sex workers, men who have sex with men, people who inject drugs, and transgender persons) results in non-disclosure of KP status in health service settings. Pangaea Zimbabwe (PZ) under the Zimbabwe Partnership to Accelerate AIDS Control (ZimPAAC) consortium supported a KP Program in 21 public health facilities in Harare and conducted a KP reclassification exercise to identify hidden KPs among persons seeking health services. The objective of the program was to facilitate safe disclosure of KP status and optimize Differentiated Service Delivery (DSD) Models for HIV care and treatment.



**Description:** Clients on antiretroviral therapy, self-administered KP Classification tool between October 1, 2022, and September 30, 2023, at their scheduled clinical visits. Trained KP-peer community facilitators (CFs) distributed the paper-based tool and offered in-person assistance to clients during health talks and while in service waiting queues. Where clients could neither read nor write, the CFs helped administer the tool.

**Lessons learned:** Over the 12-month period, 33,284 clients (47% of all clients on ART) were screened, of whom 3,335 (9.2%) self-identified as KP and were then classified in the clinic records as KP, offered KP friendly services, linked to CFs in their area and to other support services. 48 (1.44%) clients with unsuppressed viral load (VL) were identified and linked to enhanced adherence counselling, and 518 (15.53%) with missing VL results were linked VL monitoring programmes. The KP screening questions were also useful for identifying and tailoring services for KPs newly enrolled onto ART.

**Conclusions/Next steps:** The process showed that most KPs were already engaged in care but had not been identified as KPs and were therefore receiving non-tailored services. A similar gap may exist amongst clients seeking HIV prevention services. Differentiated, client centered KP services within public sector health settings requires person specific tools administered in a confidential, non-judgmental manner to elicit sensitive information that is crucial for care. We recommend further exploration of the experiences leading to non-disclosure of KP status and establish linkages to other services.

## THPEE528

### Using technology for HIV prevention and treatment adherence in West Nile, Uganda

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**Background:** In Uganda, HIV/AIDS remains a public health challenge with approximately 1.4million people living with it. This has sparked prevention and treatment adherence being critical components of the national response. Our abstract presents the **Strengthening Covid-19 Response (SCR)** project that utilized technology to enhance prevention efforts and improve treatment adherence among Young People in 3 districts of west Nile: Arua, Terego and Adjumani.

**Description:** This project happened between January and November 2022 in the three districts. It employed a multi-faceted approach leveraging various technological

tools such as **Airtel SMS** reminders, **Sauti Plus** mobile application embedded with telemedicine services such as **Refill myART** to reach individuals at risk of HIV and those already living with the virus. Partnerships were established between local health authorities, health centres, community-based organizations, and telecom companies to implement and evaluate the interventions.

**Lessons learned:** Using technology for HIV prevention and treatment adherence in Uganda has shown promising results. The project's success can be attributed to the convenience offered by technology, particularly in reaching marginalized populations who face barriers to accessing traditional healthcare services.

The use of **Sauti plus** application and Airtel SMS reminders provided continuous support and information, empowering individuals to take control of their health and make informed decisions.

**Refill myART** telemedicine service bridged the geographical gap ensuring that individuals in remote areas had access to healthcare professionals for counselling and treatment support.

SMS reminders increased condom use by 30% among young people and facilitated a 25% increase in regular HIV testing.

**Sauti plus** application was downloaded by over 10,000 individuals, with 79.8% reporting increased knowledge on HIV prevention methods. Treatment adherence rates among individuals using **Refill myART** improved by 12.4% compared to those who received standard care.

**Conclusions/Next steps:** This project demonstrates the effectiveness of using technology for HIV prevention and treatment adherence in Uganda. The integration of technology into the national HIV response can significantly enhance efforts to reduce new HIV infections and improve the 95-95-95 HIV clinical cascade health outcomes. Scaling up these interventions and ensuring equitable access to technology will also be crucial for achieving the U=U goal and an AIDS-free Uganda by 2030.



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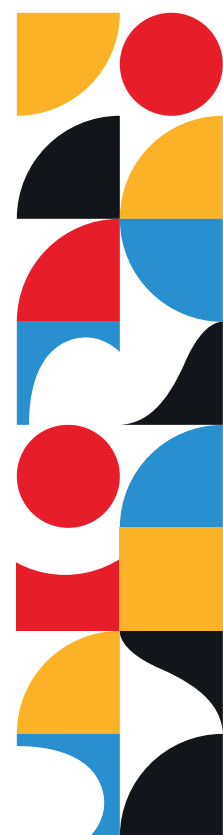
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## THPEE529

Favorable retention in care outcomes among persons receiving ART via a decentralized pharmacy dispensation differentiated service delivery model in Mozambique: a retrospective cohort study in Mozambique

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**Background:** As one of the differentiated service delivery models in Mozambique, clinically stable persons with HIV (PWH) can receive antiretroviral therapy (ART) at Ministry of Health-approved public or private pharmacies outside of health facilities (HF). This decentralized ART distribution model (DADM) initiated in Zambézia Province in July 2021.

The objective of this evaluation was to assess the model's effect on retention in care, compared to HF-based ART dispensation.

**Methods:** A retrospective cohort study with a 3:1 (propensity score) matched population ( $\geq 15$  years of age; matched on time on ART, sex and HF) eligible for the DADM (i.e., adherent to ART) and receiving 3-month dispensation was done at three urban HF linked to seven public/private pharmacies in the capital Quelimane.

Individual-level data were extracted from the electronic medical record database from July 2021-March 2023. PWH were considered retained in care at 12 months if they had at least one ART pick-up within 121-180 days after eligibility to the DADM.

Conditional logistic regression analysis estimated the effect on retention in care (adjusted for age and sex), and Cox regression analysis estimated hazard ratio (HR) of loss to follow-up.

**Results:** Matched data included 2968 adults, 41.6% female, median age 30 years (IQR 25-39). Overall, 12-month retention in care rate was 81.9% (88.4% at public/private pharmacies, versus 79.7% at HF).

Adjusted analysis showed that PWH receiving ART at private/public pharmacies were about twice as likely to be retained at 12 months (adjusted Odds Ratio [aOR]: 1.95 [95%CI:1.51-2.52]; p-value<0.001) and have approximately 70% reduced risk of being lost to follow-up (HR: 0.27 [95%CI:0.19-0.39]; p-value<0.001), compared to those obtaining ART at HF (Figure).

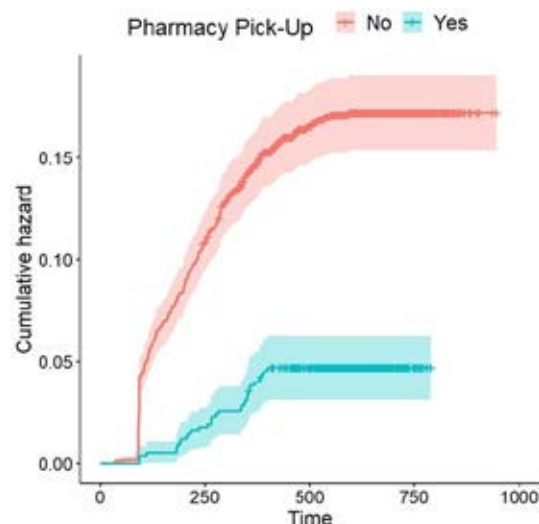


Figure 1. Cumulative hazard of being lost to follow-up, comparing those with pharmacy pick-up (green) versus not (pink).

**Conclusions:** PWH receiving ART via a DADM had improved retention in care rates compared to the standard HF-based dispensation approach, highlighting the importance of public-private partnerships in contributing to improvement of HIV outcomes.

## THPEE530

Thailand's first comprehensive integrated prevention and treatment for HIV, TB, and STI in Bangkok Metropolitan Administration's Primary Health Clinic

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**Background:** In 2017, the Bangkok Metropolitan Administration Health Department's Public Health Center 28 (PHC28) implemented an integrated primary care model for people living with HIV (PLHIV). This patient-centered approach integrates comprehensive and coordinated care for sexually transmitted infections (STI), tuberculosis (TB), and HIV services.

**Description:** A "status-neutral" approach ensures care regardless of HIV status and enables tailored counseling, treatment, and support based on individual results. HIV-positive individuals receive immediate opportunistic infections (OI) screening, including point of care se-

rum cryptococcus antigen screening, chest X-ray and antiretroviral therapy (ART) initiation, bypassing lengthy laboratory turnaround times, potential ART delays and minimizing patient disengagement. Those who test HIV negative benefit from preventive education and regular HIV/STI screenings. Services also include pre-/post-exposure prophylaxis (PrEP/PEP), STI treatment, OI treatment, and referral for complex cases.

**Lessons learned:** Bangkok Smart Monitoring System and HIV-Info Hub data shows that between 2021 and 2022:

**1. Client Growth:** Increased in PLHIV under care (3,880 to 4,763), PrEP clients (2,314 to 2,868), PEP clients (289 to 377), and STI treatments (189 to 217).

**2. Exceeding National Average:** Achieved ART coverage of 94.2% and 96.8% (vs. national coverage of 91.0% and 90.2%), respectively; 100% and 100% same-day/rapid ART initiation for eligible PLHIV (vs. 36.2% and 39.7%), lower all-cause mortality of 1.0% and 0.5% (vs. 3.0% and 2.6%), and higher proportion of undetectable viral load of 97.1% and 95.5% (vs. 92.9% and 93.2%).

**3. High Engagement and TB Cure Rates:** Minimal patient loss one year after ART initiation (3.5% and 0.3%) and 100% TB cure rates in PLHIV for both years.



Figure. Public health center 28's HIV prevention and treatment flow.

**Conclusions/Next steps:** Enhancing Thailand's public health, PHC28's integrated care for PLHIV provides a model for primary health clinics, streamlining diagnosis and treatment and demonstrating the impact of patient-centered care on PLHIV, aligning with HIV epidemic control goals.

## THPEE531

Innovating interactive SMS for training health workers in provision of all-inclusive HIV services for most at risk groups. This is after the signing of the anti- gay law in Uganda

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**Background:** In May 2023, Uganda signed the anti- homosexuality law, The law criminalizes MSM with life imprisonment and death penalty for those convicted, it also prohibits health care practitioners from providing HIV prevention, treatment, and care services for MSM. As a result, the health workers are living in fear and have refrained from providing these services to the suspected MSM.

Youth Space Uganda is a Community AIDS Organization that innovates approaches to mass trainings for low resource constrained communities responded to this need. YS believes in the provision of equitable services for all without discrimination so the organization piloted an interactive SMS training for health workers. SMS training was a viable option because it has a massive reach, uses any basic phone and is user- friendly.

**Description:** YS piloted a 3-week course, Enhancing Access to Safe and Equitable HIV Services for Key Populations. The modules included; HIV prevention approaches, HIV stigma and discrimination and Creating Friendly Environments. It was piloted among 180 health workers in Wakiso District. The participants received Module content thrice a week and SMS quizzes at the end of every module. The quizzes were in the form of multiple-choice questions. Health workers responded to the questions through a toll-free platform that instantly provided feedback on whether the response was right or wrong.

**Lessons learned:** 78% ( 81M, 59F ) of the health workers enrolled to the course and responded to the SMS quiz questions, 81% submitted the correct response. This was above the 60% pass mark for the award of certificates. Challenges that hindered responses included busy work schedules, poor network coverage, and lack of battery power. The high percentage of responses in general, and specifically the high percentage of correct responses, shows that SMS is effective as a mass training approach for health workers in low resource settings. The teaching method was also very effective as an emergency / immediate intervention after signing of the anti gay bill. It didn't require mass gathering of health workers who were already living in fear.

**Conclusions/Next steps:** YS has scaled up the SMS training to 3 more districts and plans for a wider coverage.



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## THPEE532

Focused site support to improve viral load coverage among people living with HIV on treatment: lessons learned from Zimbabwe during program implementation in 2022 through to 2023

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**Background:** Of Zimbabwe's 1.28 million people living with HIV (PLHIV), 94% receive antiretroviral therapy (ART) and of these, 95% are virally suppressed according to UNAIDS' 2022 HIV estimates. Despite this high viral load suppression, viral load coverage (VLC) is suboptimal nationally at 73% (against a national target of 85%) and is variable across geographies and populations. Using Manicaland province as a case study, this abstract demonstrates how focused site support improved VLC.

**Description:** To improve VLC, USAID Zimbabwe supported clinic laboratory interface quality improvement (QI) initiatives at sites from October 2021 to March 2022. The QI teams focused on clinical and laboratory processes and systems: client flow, viral load sample transportation and results flow, and use of data to improve VLC and to ensure quality services.

Teams documented their QI plans, activities, and outputs in "QI corner" with annotated run charts and held multidisciplinary monthly team meetings to review progress and learning for continuous adaptation.

**Lessons learned:** PEPFAR/Zimbabwe program data showed that the five districts supported by USAID in Manicaland province achieved an increase from 66% VLC in June 2022 to 82% in September 2023. The program's efforts were associated with a notable increase by more than 20% of VLC in two districts; the other three districts registered increases in VLC of more than 9% during the same period (Figure 1).

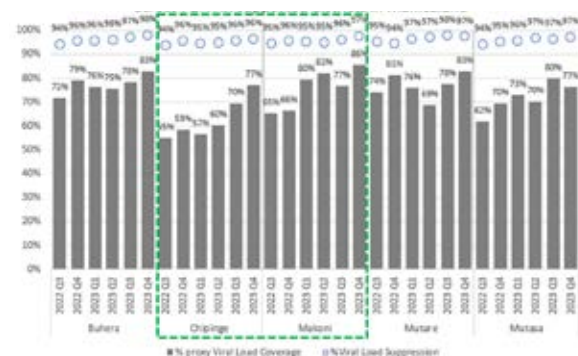


Figure 1. Improved viral load coverage and suppression trends across PEPFAR supported districts in Manicaland.

**Conclusions/Next steps:** Viral load monitoring is key to ending HIV/AIDS as a public health threat by 2030. Zimbabwe, through the Manicaland case study, has demon-

strated the feasibility and importance of clinical laboratory interface QI initiatives to increase VLC. Additional efforts should be tailored to support these initiatives across all sites offering ART for continuous VLC improvement.

## THPEE533

Care in motion: supporting antiretroviral treatment continuation for Nepalese seasonal migrants in India

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**Background:** Nepalese workers are relocating as seasonal migrants to India for unskilled labor, leveraging open cross-border mobility. However, those Nepalese people living with HIV (PLHIV) face challenges in obtaining antiretroviral (ARVs) medications; often rely on family and friends to send the ARVs to India from Nepal. Practical solutions are needed to minimize treatment interruption in these populations.

**Description:** AIDS Healthcare Foundation (AHF) Nepal supports facilities that encompass 31% of the total 23,293 PLHIV on antiretroviral treatment (ART) in Nepal; of those, 7% are seasonal migrants in different States of India. Most (80%) are males, 68% are 31-50 years old, 55% receive antiretrovirals as multi-month dispensing in Nepal, and 80% rely on family members to get their medications and send them to India.

Leadership from Nepal's Bheri Hospital ART center and AHF Nepal visited the Uttar Pradesh State AIDS Control Society (UPSAC) in India to establish collaborations with local ART services and support Nepalese PLHIV in seasonal migration. The consensus was to provide workplace ID documents; toll-free telephone numbers; outreach workers for their health needs; and establish cross-reference between ART centers in Nepal and those operating under UPSAC.

Annual meetings including representatives from both countries and other stakeholders were recommended to further improve the system. Nepalese PLHIV who are seasonal migrants in Uttar Pradesh are now easily getting their antiretrovirals, and 98% of this population achieved viral suppression. Similar collaborations are underway in Maharashtra and Himanchal State in India.

**Lessons learned:** PLHIV need treatment and support regardless of where they might be. State-level and non-governmental stakeholders can collaborate in the provision of continued care to displaced populations; moreover, their model of care can be expanded to other States.



**Conclusions/Next steps:** The integrated action combining multilateral governmental and non-governmental institutions can support the implementation of creative solutions to mitigate the barriers for HIV care across State borders.

## THPEE534

### Evaluation of ECHO program: bridging gaps in HIV/AIDS healthcare knowledge and collaboration

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**Background:** Extension for Community Healthcare Outcomes (ECHO) model has gained prominence for its innovative approach to knowledge dissemination and collaborative learning within healthcare settings. In August 2021, the Ugandan military health services established the ECHO program to strengthen the capacity of health workers in HIV care. The ECHO program entails biweekly virtual sessions that include a short didactic and case presentations.

Sessions focus on areas of HIV care such as treatment optimization for complex cases and death audits and include discussion. This evaluation aimed to assess the Uganda military ECHO program's impact.

**Methods:** A survey was conducted with a random sample of ECHO participants. Data were also collated from feedback after sessions. The survey encompassed demographics, equipment issues, moderation, changes in knowledge and practice after sessions, and challenges. Data were analyzed to determine participation and learner reactions to these sessions, challenges and learning outcomes.

The analysis used the Kirkpatrick Model of evaluating training and learning programs. Only the first three levels of Reaction, Learning, and Behavior were assessed.

**Results:** Overall, 38 participants (30 from ECHO sites and 8 who joined remotely) provided responses. Of these, 79% were male with most being counsellors (32%), clinicians (24%) and nurses (13%).

Attendance by personal devices (mobile phones) was 50% and 45% attended using site level conferencing facilities. Learners' indicated universal agreement that session objectives were clear, sessions were relevant, and that content experts were knowledgeable.

Several respondents indicated that the content was at times too complex. 63% of participants reported sessions changed their medical practice and empowered them to make better decisions on complex cases. While 87% reported having consistent functionality of ECHO equipment, challenges were reported by 15% regarding connectivity and 15% regarding difficulties in equipment operation. Currently 521 military health workers are registered with ECHO; average attendance is 90 persons per session.

**Conclusions:** This assessment shows the ECHO program is acceptable, feasible and improves self-reported knowledge and practices among health workers in Ugandan military health facilities. Increasing ECHO program gains will require targeted interventions to improve participation and address internet connectivity. Research is needed to identify barriers to regular participation among registered health workers.

## THPEE535

### "Decongesting health facilities, reducing stigma, transport costs and client waiting time": stakeholder experiences of using medical drones to deliver anti-retroviral therapy in fisherfolk communities of Kalangala Islands

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**Background:** To achieve the UNAIDS 95:95:95 target, People Living with HIV (PLHIV) need to be engaged throughout the HIV care continuum and have life-long retention in care. Differentiated Service Delivery (DSD) models can address barriers related to accessibility of care, however there are unanticipated challenges of Anti-retroviral (ART) delivery in remote and hard to reach areas. In the islands of Kalangala district with the highest HIV prevalence (18%) in Uganda, ART delivery involves risky boat journeys. To achieve the UNAIDS targets, we must adopt technologies and strategies that strengthen health systems to improve transport in hard to reach areas. We piloted and evaluated the use of medical drones to deliver ART refills to clients in Kalangala.

**Methods:** In October 2022, we conducted five focus group discussions (FGDs) (n=33) following a semi structured interview guide including Female living with HIV (7), Male living with HIV (7), mixed male and female living with HIV (6), Health Care Workers (6) and People not living with HIV (7) on 4 landing sites (Kusu, Buwunge, Kaazi and Bufumira). The FGDs were audio recorded, transcribed verbatim and translated into English. Data was categorized using Nvivo into themes and sub-themes by 2 social scientists and analyzed using a content-thematic approach.



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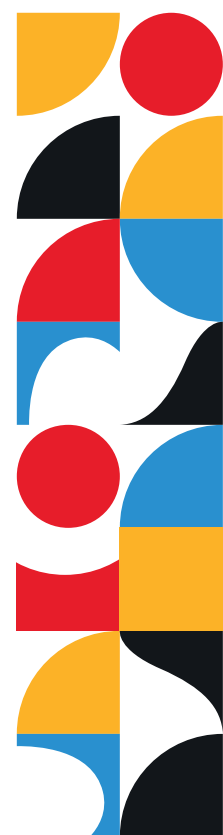
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**Results:** The average participant age was 34 years and 19 out of 33 were female. All healthcare workers reported improved client adherence and retention in care. They agreed that the health facilities have become decongested with reduced work load. Majority of participants mentioned experiencing reduced stigma, transport costs and waiting time. Both healthcare workers and clients were happy about the medical drones delivering other medical supplies like blood especially in emergencies. They agree that it's use is convenient, promotes privacy, is timely and has enabled capacity building for peer support workers. All reported reduced water transport risks and cost saving. However, a few showed concern regarding client- healthcare worker interaction, poor network and limited drone capacity.

**Conclusions:** Medical drones can decongest health facilities and ensure consistency of refills at landing sites with resultant increase in client adherence and retention in care.

### THPEE536

Results of the SAIA-Scale trial: scaling up the systems analysis and improvement approach for PMTCT in Mozambique (NCT0342513)

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**Background:** Since the introduction of Option B+ in Mozambique, HIV testing and ART initiation in antenatal care have drastically improved and currently exceed 90%. However, later steps of the PMTCT cascade have lagged behind, with early infant diagnosis (EID) estimated at 75% in 2022 and maternal loss to follow-up, particularly postpartum, remaining high. Low-cost interventions to improve cascade outcomes are urgently needed. The Systems Analysis and Improvement Approach (SAIA) is a multi-component implementation strategy made up of three systems engineering tools: cascade analysis, process mapping and continuous quality improvement, that engages frontline healthcare providers in data-driven quality improvement of multistep care cascades. SAIA enables providers to identify service bottlenecks or cascade drop-offs within their facilities and tailor micro-interventions to improve them.

**Methods:** SAIA-Scale was a stepped-wedge trial scaling up SAIA through the Mozambican public healthcare system. SAIA-Scale was implemented at 36 PMTCT facilities

across all 12 districts of Manica Province from 2018-2021. Districts were randomized to three waves, 12 months apart, and received a 12-month intensive phase during which District Nurse Supervisors (DNS) were trained and supported by study nurses to implement SAIA, followed by a maintenance phase implemented solely by the DNS. Each health facility conducted monthly SAIA meetings to review PMTCT data and propose and test micro-interventions to improve service delivery.

Individual-level cascade outcomes were abstracted from PMTCT service registries, and effectiveness was assessed using generalized estimating equations with Poisson family and clustering by facility. Exposure was the facility's study phase at the client's first visit (pre-intervention, intensive, maintenance), and analyses were adjusted for calendar year.

**Results:** Early infant diagnosis (EID) increased 15% during the intensive phase of SAIA (95% confidence interval 1.08-1.22,  $p < 0.001$ ), and 9% during the maintenance phase (1.00-1.19,  $p = 0.03$ ) compared to pre-intervention. PCR testing at any age increased 5.5% during the intensive phase (1.00-1.11,  $p = 0.05$ ). There was no association between study phase and mother-to-child transmission, either early or overall.

**Conclusions:** Use of SAIA was associated with a substantial increase in EID, which was maintained during the less-supported phase of the trial. These results demonstrate that SAIA can be successfully scaled up and implemented using existing management structures and personnel.

### THPEE537

Can financial incentives enhance the effectiveness of community-based tracing to re-engage people who have disengaged from HIV care? A randomized study in Tanzania

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**Background:** In 2022, Tanzania was one of five sub-Saharan African countries to achieve UNAIDS '95-95-95' targets. Nevertheless, the 'missing 5%' of the 2<sup>nd</sup> and 3<sup>rd</sup> targets - people living with HIV (PLHIV) who are out-of-care and/or unsuppressed - may be difficult to reach yet play an outsized role in ongoing HIV transmission.

**Methods:** We conducted a cluster randomized trial in Lake Zone, Tanzania to assess the effectiveness of *Rudi Kundi*, a program which adds a modest financial incentive (~\$10USD) to standard counseling/referral by home-based care providers (HBC) to encourage out-of-care PLHIV to return to care. From July 2022–October 2023, 32 health facility catchment areas were randomized 1:1 to usual HBC tracing/counseling, or the same model plus the offer of a financial incentive (half provided at enrollment, half upon return). Outcomes were return to care within 90 days, time to return, reasons for return, and 6-month care status.

**Results:** Among 567 PLHIV (61% female, average age 36.9 years, out-of-care mean 121 days), 239/250 (95.6%) in the comparison and 314/317 (99.1%) in the intervention group returned within 90 days (risk difference=3.5 percentage points, 95% CI: 0.9-6.0); return time did not differ between groups ( $p=0.45$ ; combined=3.3 days). At baseline, 34% ( $n=190$ ) indicated transportation costs as their main barrier. The most common return reason was the decision that "returning to HIV care was the best choice for me" ( $n=198/310$ , 64%), with no evidence of coercion. Only 3% of intervention participants indicated the cash was their main motivation for return. 6 month in-care status did not differ between arms and included 343/406 PLHIV (84.5%).

**Conclusions:** Reengagement in HIV care was surprisingly high in both arms after HBC intervention. The offer of the incentive demonstrated modest additional benefit over usual services. Among both groups, personal motivation and HBC encouragement were primary motivators for return. Additional data are needed to explain unusually high return rates in the comparison group. 6-month viral load suppression (primary outcome) will reveal whether high return rates translate to improved clinical outcomes.

	Intervention (n=186)	Comparison (n=124)	Overall (n=310)
I decided that returning to HIV care was the best decision for me	126 (67.7%)	72 (58.1%)	198 (63.9%)
I was encouraged by the HBC home visit and counseling to return to HIV care/I learned how to return to care (I got the information and resources needed to return)	32 (17.2%)	33 (26.6%)	65 (21.0%)
Felt that I was in poor health/other health related reasons	22 (11.8%)	14 (11.3%)	36 (11.6%)
Other reason (including "Receipt of cash from this study", intervention participants only: n=6/186, 3.2%)	6 (3.2%)	4 (3.2%)	10 (3.2%)

*Table. Self-reported most important reason for return to HIV care among a sample of study participants who completed their endline survey (n=310).*

## THPEE539

# Effect of differentiated models of service delivery for HIV treatment on healthcare worker time spent with ART clients: retrospective cohort and time and motion analysis

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**Background:** Differentiated service delivery (DSD) models for HIV treatment can reduce the frequency of interactions between clients and the healthcare system without harming health outcomes. This reduction in healthcare interactions is hypothesized to reduce the overall amount of time providers spend with ART clients enrolled in DSD models.

We measured the average number of interactions per ART client and the average time providers spend with ART clients per year in the context of DSD scale-up in South Africa.

**Methods:** From 09/2022-11/2023, we conducted a time and motion study with providers and a retrospective record review of ART clients at primary healthcare clinics (n=18) in South Africa. The number of healthcare interactions and average time spent by provider by type of healthcare interaction were recorded per client per year, stratified by the client's ART delivery model (remaining in conventional care but eligible for DSD compared to 2 DSD models: facility pickup points, external pickup points).

**Results:** 635 ART clients' (75.3% female, median age 41) were enrolled. Nurses (n=72) and pharmacy assistants (n=3) were observed for 143 working days. Clients had an average of 1.2 full clinic visits/year in both DSD models, compared to 1.9 for those eligible for DSD but enrolled in conventional care.

Compared to those eligible for DSD but enrolled in conventional care, clients using facility pickup points and external pickup points had 1.4 and 2.2 fewer average healthcare interactions per year, respectively, and both used 71% less provider time per client per year.

	Initial pilot phase (2016)		Extended pilot phase (2017)		Conventional, possible for 2018		Conventional, possible for 2018	
	Interactions per client	Positive client impact per client (€)	Interactions per client	Positive client impact per client (€)	Interactions per client	Positive client impact per client (€)	Interactions per client	Positive client impact per client (€)
First client visits	1.07		1.07		1.73		1.92	
Second client visits (involvement in decision making)	0.2	32.2 (20.0)	0.2	35.5 (20.0)	0.2	33.0 (20.0)	0.2	36.0 (20.0)
Education (all visits)	0.2	26.25	0.2	26.75	0.2	26.1	0.2	26.1
Information (all visits)	0.1	25.75	0.1	26.0	0.1	25.8	0.1	25.8
Information + education (all visits)	0.1	25.75	0.1	26.0	0.1	25.8	0.1	25.8
Information + education (all visits) (2017 only)	0.2	32.00	0.2	32.50	0.2	32.00	0.2	32.00
Access to care/management only	0.1	31.24	0.1	31.99	0.1	31.6	0.1	31.6
Total	2.58	104.75	2.58	105.75	3.45	109.51	3.76	110.21

Table. Distribution of direct time spent by provider per year by visit type (mean, standard deviation).

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**Conclusions:** ART clients enrolled in DSD models had fewer healthcare interactions and required less provider time compared to those in conventional care. The shift of ART clients who are eligible for DSD models from conventional care into DSD models can reduce annual provider time by more than 70% per client, reducing pressure on the healthcare workforce.

## THPEE540

Facilities with quality improvement projects in Côte d'Ivoire show better outcomes for pediatric viral load suppression in children and adolescents with HIV

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**Background:** Since 2021, I-TECH and the Ivorian Ministry of Health (MoH) have collaborated on the Quality Improvement Solutions for Sustained Epidemic Control (QISSEC) project, funded by HRSA, to strengthen provider capacity in quality improvement (QI) for HIV service delivery. I-TECH QI coaches support facility QI teams to implement QI projects, including those that improve pediatric viral load suppression (VLS).

**Description:** Among all 2022 QI projects in 80 facilities, 7 focused on pediatric VLS. Over 9 cumulative months of data collection, pediatric VLS rates in those 7 QI sites were compared to the average across PEPFAR sites using linear regression models. The QI interventions used and key lessons learned for improving pediatric VLS were explored qualitatively to determine shared themes.

**Lessons learned:** The 7 sites followed 350 HIV-infected children and adolescents and the QI projects involved 69 with unsuppressed VL. During the QI intervention period, the monthly number of children with VLS increased from 0 to 36 children after the 6th month (36/69, 52%); 48 children (48/69, 70%) were suppressed at 9 months. VLS rate in the 7 sites increased from 81% to 89%, higher than pediatric VLS at PEPFAR-sites (86%), p-value < 0.0001. The qualitative analysis showed that reminder phone calls to caregivers every week (often daily or multiple times per week), treatment adherence education with parents using ART educational image 'boxes' and scheduling home

visits to children's homes when needed were influential. Additional interventions included directly observed therapy, 'motivations' provided to children who achieved viral suppression, support groups, providing after-hours laboratory services for viral load blood draws, disclosure counseling, and revisions to the clinic flow process for child and adolescent clients.

**Conclusions/Next steps:** Implementing focused, facility-based QI interventions can improve VLS in children and adolescents. Multiple touchpoints with parents/caregivers created an atmosphere of trust and good will while external monitoring of child ARV drug taking (such as home visits, working with social services for complex cases and utilizing community counselors) showed promise. Client and caregiver education using visual tools helped improve pill-taking autonomy, especially for adolescents. A similar mixed methods approach to analysis of other QI interventions could help determine QI collective impact.

## THPEE541

Enhancing re-engagement management in South Africa's HIV Treatment Program through a differentiated approach with algorithmic guidance

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**Background:** With the maturation of South Africa's HIV treatment programme, individuals returning to antiretroviral treatment (ART) care now exceed new initiations. In 2023, the South African National Department of Health (NDoH) updated its national ART guidance. As part of this update, a combined clinical and service delivery re-engagement management algorithm was developed. We describe the process, factors considered, and the resulting approved algorithm that was included in the national ART and Service Delivery guidelines.

**Description:** National technical working groups (TWGs) for HIV focusing on clinical and service delivery, considered clinical factors and the time since a missed scheduled appointment to differentiate management of ROC re-engaging in HIV care. Clinical factors considered were clinical presentation at re-engagement, an elevated viral load before disengagement, current tuberculosis diagnosis, identification of advanced HIV disease, and treatment regimen. Service delivery factors focused on alleviating ROC burden at re-engagement. The final approved algorithm is presented as Figure 1.


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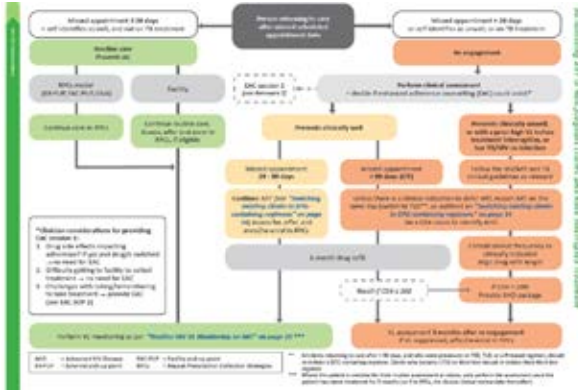
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Figure 1: South Africa 2023 ART guidelines re-engagement management algorithm

**Lessons learned:** Effective management at re-engagement necessitates a differentiated, client-centered approach that considers both clinical and service delivery needs. Previous initiatives, such as the national welcome-back campaign and the standard operating procedure from 2020, did not change healthcare providers approaches to supporting ROC returning to care. The joint consideration of clinical and service delivery aspects, coupled with the prominent placement of the algorithm in the revised short-form version of the ART clinical guidelines, may improve healthcare worker uptake and implementation.

**Conclusions/Next steps:** Provincial training of the revised guidelines, has been completed, including a specific section on re-engagement. An online training module is available through the Knowledge Hub.

Future steps involve integrating the updated re-engagement algorithm into the national welcome-back package, offering support to provinces for incorporation into their context specific re-engagement models (e.g. 'Kwa-Zulu Natal's "Operation Vuyo"), along with providing supporting job aides.

## THPEE542

Long-term health outcomes of people living with HIV who were enrolled in decentralized distribution of antiretrovirals through private pharmacies in three provinces of Mozambique

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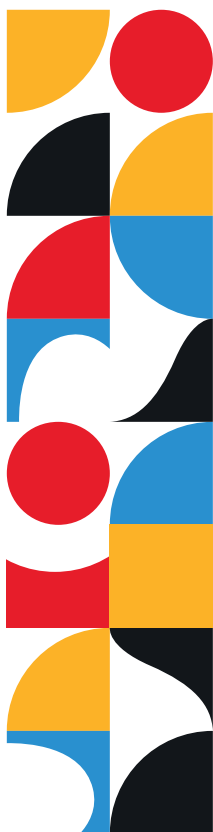
**Background:** The increasing number of people living with HIV (PLHIV) receiving antiretroviral treatment (ART) requires innovative approaches to make services more convenient for clients while reducing the workload on health systems. In June 2020, Mozambique rolled out its national model for decentralized delivery of ART through private

pharmacies (DD), consisting of networks of public health facilities linked to private pharmacies, which clients can select based on convenience or preference and receive three-months drug refills. USAID-funded Efficiencies for Clinical HIV Outcomes (ECHO) project analyzed the long-term health outcomes of PLHIV who were enrolled in DD in three provinces of Mozambique.

**Methods:** This is a quantitative cross-sectional study of PLHIV enrolled in DD from January to March 2022. Eligibility criteria included: age  $\geq 10$  years old, on ART for  $\geq 6$  months, with a viral load (VL)  $< 1,000$  copies/ml, have no current illness, and not be on cotrimoxazole and/or tuberculosis prophylaxis (excluding pregnant/breastfeeding women). Data was collected from electronic medical records and the ART dispensation electronic system from 9 health facilities and 20 private pharmacies in three provinces. All individuals were followed until October 2023 to assess their VL coverage, VL suppression (defined as VL  $< 1,000$  copies/ml) and retention in care after  $\geq 18$  months of enrollment in DD. Descriptive statistics were used to characterize the study sample and determine long-term health outcomes.

**Results:** 1,773 PLHIV enrolled in DD were included, of whom 61% (1,089/1,773) were female. The median age was 41 years [interquartile range (IQR): 35–48 years], and median time on ART was 95 months (IQR: 71–135 months). By the end of October 2023, only 48% (845/1,773) of individuals were still enrolled in DD, of whom 96% (808/845) had a VL test result, and 98% (795/808) were found to be virally suppressed. Among the individuals who dropped DD, 94% (867/919) were enrolled in other differentiated service delivery models, of whom 66% (582/867) were enrolled in six-month dispensing (6MMD).

**Conclusions:** PLHIV enrolled in DD can achieve successful long-term health outcomes as evidenced by high rates of VL suppression. However, once more convenient frequency dispensing models were available, clients dropped DD.







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## THPEE543

### Key-population-led health providers increased access to same-day antiretroviral therapy (SD-ART): results from seven provinces in Thailand

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**Background:** Same-day antiretroviral therapy (Initiating ART on the same day of HIV diagnosis) ensures immediate access to lifesaving drugs and reduces loss to follow-up following HIV diagnosis.

We report here how SD-ART was initiated and scaled among community-based key-population-led health service (KPLHS) providers in seven provinces in Thailand serving predominantly men who have sex with men (MSM) and transgender (trans) women.

**Description:** KPLHS providers Rainbow Sky Association of Thailand, SWING, MPLUS, and Caremat operate 11 clinics in seven provinces of Thailand and have collaborative relationships with provincial government hospitals. In 2022, these KPLHS providers decided to pilot SD-ART per the national guidelines. Obstacles included legal challenges to keeping antiretrovirals (ARVs) at the community clinic, lack of consensus among provincial stakeholders on the need for SD-ART, and treatment delays caused by time needed to determine the appropriate insurance scheme for clients.

**Lessons learned:** The figure shows the number of days from diagnosis to ART initiation from October 2022 through September 2023.

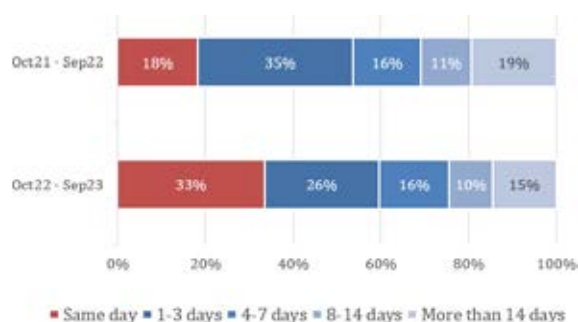


Figure. ART initiation duration at KPLHS clinics.

During October 2022 – September 2023, 33.4% (n= 543 / 1,625) of clients diagnosed with HIV at KPLHS providers-initiated ART on the day of diagnosis, increasing from 18.3% (n=262 / 1,435) from October 2021 – September 2022. Since providers in each province managed SD-ART in unique

environments with different challenges, results varied in terms of the percentage of HIV-positive clients initiated on SD-ART, ranging from 6.45% to 52.02%. KPLHS partners worked with government stakeholders and provincial hospitals to address these obstacles, enabling the 11 KPLHS clinics to initiate and scale up SD-ART.

**Conclusions/Next steps:** Our results show that community-based KPLHS providers can be capacitated to successfully offer SD-ART to newly diagnosed people with HIV from MSM and trans communities, giving them immediate access to ARVs from partner hospitals.

## THPEE544

### Free health insurance scheme for PLHIV in Nepal

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**Background:** Introduced in 2016, Nepal's Health Insurance scheme is a social protection initiative designed to provide citizens with quality healthcare services without imposing financial burdens, ultimately aiming to reduce the predominant out-of-pocket expenditures for health services.

**Description:** In 2019, the Nepalese government implemented a free registration scheme for Health insurance targeted at People Living with HIV (PLHIV) and their families. However, due to concerns about stigma and discrimination associated with the requirement to register at local ward offices and mandatory disclosure of HIV status, only 21% of PLHIVs were registered by 2021 at the 16 ART centers in collaboration with the AIDS Healthcare Foundation (AHF) Nepal.

Currently, AHF Nepal collaborative centers encompass currently 58% of the total 23,293 PLHIVs receiving antiretroviral treatment (ART) in Nepal.

Recognizing this challenge, AHF Nepal coordinated with the Health Insurance Board to streamline the registration process within ART centers, assisted by Peer Educators. This collaborative effort resulted in a significant increase in enrollment, reaching 53% in 2022 and further rising to 85% in 2023.

**Lessons learned:** Merely offering a free health insurance scheme has proven insufficient to effectively cover the PLHIV community within the program. The importance of considering the prevailing social context is evident. ART



centers, where all PLHIVs have already disclosed their HIV status, provide a more comfortable environment for registration of health insurance. Therefore, integrating this intervention into a comprehensive package for PLHIVs at ART centers has proven more successful.

**Conclusions/Next steps:** The implementation of a free health insurance scheme achieves maximum enrollment among PLHIVs when seamlessly integrated into a comprehensive package at ART centers.

## THPEE545

Outcomes of interventions to support documented retention for clients on antiretroviral treatment at select sites in four South African provinces, 21 August 2023–1 October 2023

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**Background:** In South Africa, the President's Emergency Plan for AIDS Relief (PEPFAR)-Centers for Disease Control and Prevention (CDC) supports HIV services at approximately 1,300 antiretroviral treatment (ART) sites in 12 districts within four provinces, through four District Support Partners (DSPs). Over FY23, challenges were observed in achieving the desired quarterly programmatic growth in the number of people on ART needed to make progress toward epidemic control. Data capturing of rendered HIV services was found to be a common, ongoing site-level barrier to improving program growth. To address this gap, a standard operating procedure (SOP) was developed and implemented at select sites to improve the quality of data on missed appointments and interruptions in treatment.

**Description:** The SOP was implemented at 363 non-hospital ART sites during 21 August, 2023 –1 October, 2023. Sites were selected based on having: the greatest number of people on ART and lowest absolute growth of people on ART, and/or, the greatest number of missed appointments and smallest number returned to treatment. The SOP called for weekly triangulation of data on clinic encounter, medication pick-up, and laboratory services to ensure completeness of clinical records and to facilitate confirmation of lost-to-follow-up (LTFU) (>90 days since last ART pick-up). DSPs systematically corrected and monitored, weekly, the number of records that were misclassified as missed appointments and confirmed LTFU.

**Lessons learned:** Across 363 sites, the weekly average of missed appointments was 108,458 (102,734 –117,458) (Table 1); across the 6-weeks, 35,858 (33%) files were found to be

clients active in care who were misclassified as having missed appointments. Timely corrections of these coincided with a weekly decline of misclassifications, from 7% to 4% of missed appointments. On average, 0.64% of total missed appointment were confirmed to be lost-to-follow-up (LTFU). At the end of 7 weeks, 4,191 clients were confirmed as LTFU.

**Conclusions/Next steps:** Implementation of the SOP at selected sites improved the quality of data on missed appointments and LTFU, allowing for more efficient use of resources to support clients with true missed appointments and provided a more accurate picture of program growth. These findings support the investment in improving data quality to support HIV programming.

## THPEE546

Experiences of health care workers in providing HIV and STI testing and linkage to care to MSM in a digital HIV prevention trial

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**Background:** On account of perceived stigma about sexuality and behaviour, men having sex with men (MSM) in India continue facing challenges in accessing care pertaining to HIV testing and treatment which requires peer support. We present lessons learned from linking MSM testing positive for HIV/Syphilis to care as part of a digital HIV prevention randomised control trial.

**Description:** The study was conducted in Mumbai and Thane, 1005 MSM received health messages through WhatsApp.

All participants were provided three free testing options for HIV and syphilis:

1. Private lab,
2. LGBTQ+ community-based organization, and;
3. Home-delivered/self-pick-up HIV self-test kit.

The study had three health-care-workers (HCWs) accessible via WhatsApp, audio/video calls. HCWs maintained weekly-logs of participant interactions and followed up with those who tested positive, providing referrals to care and support services. 30 participants opting for testing at private lab and 7 opted for home-based HIV self-screening kits, were followed up within 24-and 48-hours. Incentives (~USD \$1.50) were provided for sharing test kit result picture.

Results showed that among the 30 testing at private labs, one was reactive for HIV, six for syphilis, and two for both HIV and syphilis. Among the seven participants using home-based testing, six screened negative, and one screened positive.



Oral abstracts



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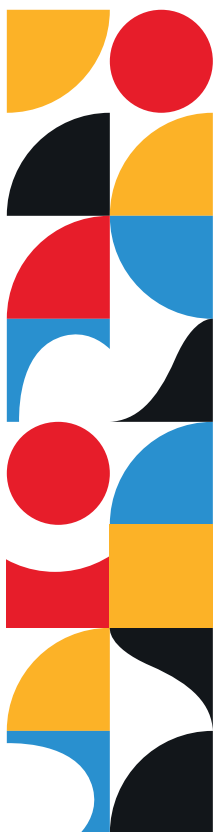
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Challenges encountered included denial of positive results, avoidance of calls/messages, and the mental struggle of coping with a positive diagnosis.

**Lessons learned:** Multiple follow-ups were required for individuals with positive test result. However, a gap of a day between each follow-up provided space for the individuals to process their test result. imperative to have a mental health counsellor on board if participants feel anxious after testing positive. Sensitization of the private labs regarding disseminating the test report and providing an enabling environment to test can ease the process and make it less stigmatizing. HCWs need to have knowledge about HIV, HIV programmes and treatment. A pre-recorded HIV counselling video can be shared with participants on a webpage or message providing information on positive living and U=U.

**Conclusions/Next steps:** Participants in digital/online HIV prevention implementation programs require multiple follow-ups and support with linkage-to-care by HCWs. Additionally, mental-health support/counselling accessible in-person and virtually are required.

## THPEE547

Client satisfaction with HIV treatment services in Bunyoro region in Uganda: a cross-sectional study

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**Background:** Clients attend health facilities with a certain level of expectations of the quality of care provided which influence their satisfaction. Client satisfaction influences retention and adherence to antiretroviral treatment (ART) and viral suppression. We used facility client satisfaction surveys to understand the level of satisfaction of people living with HIV (PLHIV) in care.

**Methods:** Cross-sectional exit interviews were conducted on PLHIV at 39 ART clinics in October 2023 as part of routine quality improvement. Data were collected on clients' level of satisfaction with facility staff attitudes, communication with clients, privacy and confidentiality, client involvement in their care, waiting time, cleanliness of environment and if they would refer a relative to the same facility for care. Data were collected using OpenData Kit (ODK) and analyzed using STATA 14.0. Client satisfaction was measured using frequencies and percentages.

**Results:** Of the 718 clients who participated, 71% were women; only 15% were employed; average duration on ART was 73.5 months; the average distance from home to facility was 8.5 km; and 89% (641) travelled less than 11 km to reach the facility. Eighty-one percent reported involvement in decisions about their own care; 91% were served in a respectful manner; 89% and 83% were pro-

vided adequate information about their condition and medication respectively; and 82% reported adequate privacy. Additionally, 82% felt their medical information had never been shared with unauthorized persons; only 28% felt they spent longer at facility than they should have; and 71% reported spending only one hour or less at the facility. Forty-three percent, 28%, 16% and 11% reported long waiting time at triage, prior to seeing a clinician, sample collection for investigations and ART dispensing respectively. Eighty-seven percent of clients would refer a close relative to receive care at their ART clinic. Respectful treatment of clients scored the highest (96%) while waiting time scored lowest (71%).

**Conclusions:** Dissatisfaction with waiting time underscores the importance of enrolling PLHIV into differentiated service delivery models and streamlining client flow in ART clinics. Quality improvement methods should be used to improve client waiting time while decongesting clinics through multi-month dispensing for ART and community drug distribution models.

## THPEE548

Achieving 95-95-95 targets in prison and other closed settings: a comprehensive approach to HIV prevention, testing and treatment in India

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**Background:** To address the high HIV prevalence (2.1%) in prisoners, the National AIDS Control Organization (NACO) in collaboration with Ministries of Home Affairs (MHA) and Women and Child Development (WCD) and SAATHII scaled-up HIV prevention and treatment services across India. Lack of well-trained HCP, onsite confirmatory testing and treatment, and post-release follow-up hampered 95-95-95 targets.

The objective is to describe interventions that helped overcome barriers to HIV testing and treatment initiation, continuation and adherence among prisoners.

**Description:** SAATHII, with funding from GFATM, implemented the program in 23 states and UTs covering 952 prisons and 474 OCS. The interventions included training prison officials and healthcare providers, identifying and



training Prison Peer Volunteers (PPV), facilitating inter-departmental coordination and linkages to community-led care and support services, and designing recording and reporting systems. Between April 2021 and September 2023, the program screened 19,41,837 inmates and diagnosed 9,165 HIV-positive individuals, 96% of whom were initiated on ART. The majority were men (98%) and pre-trial detainees (97%), 82% were 18–35 years old, and 51% were PWID. HIV screening increased from 25% in March 2021 to 67% by September 2023, and ART initiation from 79% to 96% and the average time between confirmation and ART initiation reduced from 22 to 10 days.

**Lessons learned:** NACO, MHA, and WCD shared ownership, strong national policies, operational and technical guidelines, and seamless inter-departmental collaboration enabled HIV screening to be integrated into prison health services. Fortnightly screening camps reached the unreached. Sample transportation, escorting prisoners to treatment facilities, ART doctor visits to high-load prisons, and drug dispensing inside prisons accelerated timely diagnosis and treatment initiation. Trained PPVs and HCPs motivated prisoners to test, comply with treatment, and adopt prevention measures, while parole officers assisted in obtaining correct addresses for post-release follow-up. Community health workers helped with post-release psychosocial support, facility visit and medication compliance, and linkage to harm reduction services.

**Conclusions/Next steps:** Universal access to HIV services for prisoners requires strengthening prison health services, developing comprehensive national policies and guidelines, strong interdepartmental coordination, and partnership with community-based services. HIV prevention, post-release follow-up, and spouse/partner testing remain challenging.

## THPEE549

### Preferences for service delivery among adult clients in the first six months on antiretroviral therapy in Zambia

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**Background:** To improve engagement in HIV care, antiretroviral therapy (ART) service delivery should be responsive to recipients of care (clients). Clients in the first six months of treatment (the early treatment period) are at increased risk of disengagement from care. Initial differentiated service delivery frameworks deliberately excluded

these clients and other high-risk populations, and they were offered little choice in service delivery. We assessed preferences for service delivery among clients in the early treatment period.

**Methods:** We surveyed adult ( $\geq 18$ ) clients who were starting, restarting, or on ART for  $\leq 6$  months at 12 facilities in Zambia from 9/2022–6/2023. We collected and analyzed quantitative survey data on preferences for HIV care. A subset of these clients participated in 15 focus group discussions (FGD) between 8/2023 and 9/2023.

**Results:** We enrolled 771 adults (67% female, median age 32). At enrollment, 29% were initiating for the first time, 5% were re-initiating after previous disengagement, and 65% had been on ART for 0–6 months. 53% of clients on treatment for 0–6 months preferred 6-month visit scheduling, compared to 41% of new initiates and 33% of re-engagers: re-engagers more often preferred 3-monthly visits (40%). FGD participants reported varying preferences for visit scheduling. 6-month dispensing was favored by female respondents (57%) more than male respondents (48%). 30% of participants indicated a preference for external (community) medication pick-up points. FGD participants expressed their desire to receive HIV services at the health facility: community-based services made many fearful of involuntary disclosure and stigma. Most participants (87%) had not been offered any choices of service delivery locations or dispensing durations. Work obligations and lack of transport and food posed barriers to clinic visits. Long waiting times, confusing client flow, and other facility attributes were cited as barriers to remaining in care. FGD participants expressed the importance of strong, empathetic, personal counseling to navigate and overcome barriers.

**Conclusions:** To improve service delivery during the early treatment period, it is critical to understand clients' preferences. We found that some preferences differ among clients and that choice is rarely offered. Models of care for the early treatment period should account for varying contexts and preferences.



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## THPEE550

### Improved clinical outcomes among children living with HIV initiated on pediatric dolutegravir in Nigeria

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**Background:** Prior to 2020, access to DTG was limited among children due to the unavailability of a suitable pediatric formulation despite evidence of safety and efficacy among adult population. A generic formulation of DTG10mg (pDTG) was approved in 2020, and Nigeria was an early adopter country. The country commenced a phased transition of eligible children from LPV/r-based to the pDTG-based regimen in 2021.

This study reports the clinical outcomes of children initiated on pDTG in the first phase of implementation and lessons to inform the national scale-up.

**Methods:** The study was conducted in 7 selected ART sites among children living with HIV (CLHIV) weighing > 3kg to <20kg initiated/transitioned to pDTG and their caregivers. Enrolment period was September 2021 to January 2022, with a 12 month follow-up period for participants. The experience of CLHIV/caregiver was assessed using a structured questionnaire at months 1, 6, and 12 post-initiation, and clinical outcomes (anthropometric measurements, side effects, viral load, random blood sugar (RBS), and lipid profile) were measured at initiation and months 6 and 12 post-initiation. The anthropometric data was analyzed using STATA Zanthro package, and other data were analyzed using SAS 9.4.

**Results:** A total of 180 CLHIV were enrolled in the study. The mean age was 4.7 years (SD 2.2), 53% were female, and 98% were treatment-experienced. Among study participants with baseline BMI for age results, 13% were wasted/severely wasted, and this percentage reduced to 5% at month 12. Also, 26% were either overweight or obese at baseline, and this increased to 33% at month 12. The commonest side effects reported at month 12 were increased appetite (23%) and hyperactivity (10%).

The percentage of participants who had viral load results <50 copies/ml increased from 66% at baseline to 90% at month 12, and the mean RBS result decreased from 4.9mmol/l to 4.6mmol/l. There were no documented cases of hyperglycemia.

**Conclusions:** We conclude that pDTG is safe and efficacious and has the potential to reduce morbidity and mortality among children living with HIV in Nigeria. The drug can be scaled up with minimal concerns around safety, however, ongoing pharmacovigilance is advised in line with national recommendations.

## THPEE551

### Exploring the effect of differentiated service delivery on missed clinic visits for HIV treatment in South Africa: a cross sectional survey

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**Background:** Missed clinic visits for antiretroviral therapy (ART) clients are linked to interruptions in treatment, virologic failure, and undiagnosed and unmanaged comorbid conditions. Differentiated service delivery (DSD) models aim to address barriers to regular clinic attendance by providing flexibility in the duration and location of medication collection.

**Methods:** From 9/2022-4/2023 we surveyed adult (≥18) ART clients attending routine visits at 18 primary clinics in three districts in South Africa, stratified by model of service delivery: conventional care, eligible for DSD (conventional-eligible); conventional care, not eligible for DSD (conventional-not eligible); facility-based models (fac-pup); and external pick-up points (ex-pup). We estimated proportions of participants with self-reported missed visits ≥7 days in the past 12 months by model of care, the reasons for missed visits, and whether they also missed medication doses, noting that each model required different numbers and timing of routine visits to maintain full engagement.

**Results:** 724 clients were interviewed (76% female; median age 39 years; DSD status: 26% conventional-eligible, 27% conventional-not eligible, 22% fac-pup, 28% ex-pup).

Overall, 14% (102/724) reported missing a scheduled visit ≤12 months (50% (51/102) conventional-not eligible; 14% (14/102) conventional-eligible, 18% (18/102) fac-pup, and 19% (19/102) ex-pup). 86% of those who missed visits still had ART medication on hand and indicated that they experienced no actual dosing interruptions. Reasons for missed visits varied (Figure).

In conventional care, primary reasons for missing a visit were mobility, scheduling issues, and lack of support/assistance. In DSD models, primary reasons were work-related constraints and mobility, particularly for clients in external PuPs.



**Conclusions:** ART clients continue to face challenges that impact clinic visit attendance, specifically SOC client who have more frequent scheduled appointments, but late visits do not necessarily indicate missed medication doses. Earlier enrolment in lower intensity DSD to alleviate the burden of frequent appointments may improve continuous engagement.

## THPEE552

Access to advanced HIV disease interventions and testing outcomes among new and failing clients living with HIV: observational lessons from Uganda

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**Background:** The Ugandan HIV treatment guidelines recommend the Advanced HIV Disease (AHD) package of care (PoC) for all new clients diagnosed with HIV and those failing on their antiretroviral treatment (ART).

This study compares access to some components of the AHD PoC and the testing outcomes between newly diagnosed people living with HIV (PLHIV) and existing clients who are failing their ART.

**Description:** The Uganda Ministry of Health (MOH) with support from partners rolled out the AHD PoC in 2021 after completing healthcare worker training and delivery of commodities to health facilities. Interventions included CD4 testing to identify AHD clients; screening for opportunistic infections (OIs); prophylaxis and treatment for OIs; and rapid ART initiation. After two years of implementation, we abstracted and compared data from DHIS2 on AHD service uptake among new clients and those failing their ART from January to December 2023 to identify and address any gaps along the AHD cascade in these two client populations.

**Lessons learned:** Access to CD4+ testing was higher (84%) among the new clients compared to the failing clients (57.3%). While access to TB-LAM testing was also better among the new clients with AHD compared to the failing clients, a greater proportion of the failing clients received CrAg testing. On testing outcomes, AHD prevalence and TB-LAM positivity among new clients is marginally higher than the failing clients. However, blood CrAg positivity was slightly higher among failing clients than new clients. The prevalence of OIs is comparable between new clients and failing clients, hence optimizing AHD interventions among failing clients presents a huge opportunity to save more lives from AHD-associated OIs.



**Conclusions/Next steps:** Deprioritizing AHD services among failing clients results in missed opportunities to identify and manage life-threatening OIs. Country programs need to ensure equitable access to AHD interventions among failing clients to further reduce AIDS morbidity and mortality.

## THPEE553

Progress beyond projects – building a sustainable HIV response while improving continuity of treatment for people living with HIV in Maharashtra and Telangana in India

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**Background:** The USAID PEPFAR provides direct service delivery for the HIV continuum of care in seven districts within two high burden states of India - Maharashtra and Telangana, through an Implementation partner. Through human resource support, treatment interven-



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tions support sustainable solutions for ensuring people living with HIV, retain in care and are tracked through last mile indicators. The emphasis is also on quality aspects of treatment in addition to implementing site-specific innovations based on a differentiated care model that is client-centered. To progress towards a sustainable model, a human resource optimization exercise was conducted from 2020 – 2023 while monitoring the impact on the continuum of care for PLHIV.

**Methods:** A three-pronged approach to quantify and measure direct and indirect sustainable treatment activities were conducted under the project which included:

1. Cohort analysis,
2. Effort index to see down-sizing and withdrawal of HR at facilities, based on the ART Preparedness phase, intensive and long term retention phases, without compromising on maximum continuity of treatment results, and;
3. Validating the success of the health facility through community lead monitoring.

**Results:** From year 1 to year 3 of the project implementation, human resource intense sites optimized and reduced their staff by one-third. With this optimization, a continuous cohort analysis showed the number of clients on treatment increased from 97, 905 to 1,20,276, interruptions in treatment decreased (6% to 2%), and retention on treatment increased (approx. 80% to 94%) and a significant improvement in RTT. Community lead monitoring data was also correlated and validated improve treatment outcomes

**Conclusions:** This analysis underlines the project's enhanced efficiency, demonstrating that a more streamlined human resource approach does not compromise the quality or impact of care.

The success is attributed to client-centred interventions that address both clinical and programmatic needs creating progress towards sustainability beyond project timelines.

World AIDS day (1 December) in 2019, Right To Care has supported its scale up across USAID supported Districts in South Africa.

**Methods:** Viral suppression (defined as <50 copies/ml) analysis was made in a cross-section of clients on ART as of 23<sup>rd</sup> January 2024, in Ehlanzeni District, a rural district in South Africa. Included were ART clients who had been on treatment for ≥ 6months, have formal viral load result available and have been receiving treatment at same facility since initiation, as a proxy for high chance of adherence and clients' socio-economic stability.

Descriptive analyses were done and multivariate logistic regression models explored associations with promptness in medicine parcels collection.

**Results:** Of the 197,626 eligible clients, 91% and 9% were on TLD and non-TLD regimens respectively and 78% attained viral suppression at <50 copies/ml. Clients on TLD regimen were almost twice more likely to attain viral suppression compared to clients on non-TLD regimens (aOR 1.75; CI 1.69- 1.81). Females were 1.5 times more likely to attain viral suppression compared to males (aOR 1.49; CI 1.45- 1.52). Clients 10 to 14 years, 20 to 24 years, and 25+ years were more likely to attain viral suppression compared to children 0 to 9 years (aOR 1.25; CI 1.09- 1.43); (aOR 1.53; CI 1.37- 1.71); and (aOR 2.38; CI 2.15- 2.64) respectively. There was no statistically significant difference observed among clients 15 to 19 year (p-value=0.943).

Similarly, specifically among the 180143 eligible clients on TLD regimen, female gender (P value = 0.000) and older age groups > 9 years (P value = 0.000) were associated with viral suppression on TLD.

**Conclusions:** TLD regimen appears more effective for virologic suppression attainment compared to non-TLD regimen. There is need for more research to understand the drivers of sub-optimal virologic suppression among males and children and appropriate interventions instituted.

## THPEE554

Are clients on TLD faring better? A comparison of virologic suppression of a cross-section of clients on TLD regimen in Rural South Africa versus those on non-TLD regimens

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**Background:** TLD is a fixed-dose combination of Tenofovir, Lamivudine and Dolutegravir. The WHO recommends it as a highly effective first and 2<sup>nd</sup> line anti-retroviral therapy (ART), with minimal adverse effects and high barrier to viral resistance. Since its roll out in South Africa on

## THPEE555

### Improving PMTCT uptake and retention services through novel approaches through the use of peer-based support in the Community in Tanzania

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**Background:** Tanzania has attained HIV testing coverage in ANC, with 97% of pregnant women knowing their HIV status in 2022, and 98% in 2023. Despite the remarkable progress made in terms of ART provision to pregnant women living with HIV there are still significant number of new HIV infections occurring in children. Important concerns have surfaced about suboptimal uptake and retention into ART. For example UNAIDS estimated that the MTCT was at 6.7% in 2022 against the national target of reaching less than 5% in 2023. Peer-based strategies using mentor mothers have been effective for improving maternal and infant uptake and retention. To attain the goal of elimination of new HIV infection, Amref used a strategy of peer model (mentor mothers) with aims at reducing HIV transmission from mother to child through improved retention and follow up to ART.

**Description:** The intervention is implemented in a total of 10 regions in 330 Facilities which are non PEPFAR supported. Mentor mothers were trained to encourage follow up and provide peer support and counselling to pregnant and breastfeeding women on ART to continue with the service and reduce stigma and discrimination as they are afraid of being judged or they fail to disclose their HIV status to their male partners.

**Lessons learned:** From January-September 2023, total of 127,189 (109%) pregnant women tested and know their HIV status. Additionally, 125,451 pregnant women were newly tested for HIV at their 1<sup>st</sup> ANC visit and 1,060 were tested HIV positive which is equal to 0.8% of positivity rate, 99% were linked to care, treatment, and support services. There were 1,738 pregnant women who were known HIV-positive and were on ART. To ensure retention a total of 1,839 women from 88 groups are continuously supported and linked to psychosocial support groups and income-generating activities (PSAG) through support from mentor mothers.

**Conclusions/Next steps:** Peer mothers model is a feasible strategy for increasing uptake and retention for HIV services. It is a community-based strategy which have the

potential to fill a critical gap in the quality and continuum of care for mothers living with HIV and can be scaled to all ANC/PMTCT sites.

## THPEE556

### Peer navigation intervention to link out-of-care older people with HIV to care during the war in Ukraine

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**Background:** In Ukraine, <30% of older people with HIV (OPWH) over 50 years are linked to ART within 6 months of diagnosis, with substantial proportions dropping out-of-care (OOC). During the ongoing war, HIV services linkage is especially threatened by economic, emotional, and social hardship as OPWH mostly stay in place but (younger) caregivers who had supported their HIV care may flee abroad or become internally displaced. Peer Navigation (PN) feasibility and effectiveness has never been explored in humanitarian settings with this population.

**Methods:** From Feb-Dec 2023, we conducted a pilot 2-arm trial with 94 OOC OPWH (37 newly diagnosed OPWH and 57 previously dropped out-of-care), with 63 participants randomized to 12-week PROST (Peer-Run Optimal Support for Treatment) PN intervention and 31 to Control group. Currently, the 3-month follow-up is ongoing.

The primary outcome is ART linkage within 30 days, and the secondary outcome is ART retention at 6 months. Participants were surveyed at baseline and data analyses used R Statistical Software (v4.3.1; R Core Team 2023).

**Results:** 55.3% of participants were women. At baseline, 41.5% lived alone, 43% had monthly income below \$150 USD, 40% had mild to severe depressive symptoms, 32% had mild to severe anxiety, and 10% had addiction history. Female gender and living alone were not significant predictors of mental health symptoms, but addiction history was significantly ( $p=0.001$ ) associated with higher anxiety symptoms and lower purpose in life scores. To date, 59 PROST participants initiated ART compared to 15 Control participants (but 3-month follow-ups continue).

**Conclusions:** Preliminary findings indicate that PN PROST may be more effective than usual care in linking OOC OPWH to ART in Ukraine despite the war and humanitarian crisis creating further barriers to care besides OPWH poor mental health and low resources.

Yet, OPWH with addiction history appear to be the most at-risk for poor mental health and need more effort for HIV care linkage. Qualitative interviews with OPWH and



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peer navigators will examine PROST implementation lessons in preparation for a full-scale RCT to examine the full PROST effects on linking OOC OPWH with and without addiction history to care during the crisis.

## THPEE557

Treatment outcomes of community versus facility managed ART patients in 17 Nigerian States - Comparative analysis of clients commenced on ART in the 1<sup>st</sup> year of surge implementation

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**Background:** According to the Nigeria HIV/AIDS Indicator and Impact Survey (NAIIS 2018), the national HIV prevalence among adults is 1.3%, translating to about 1.8 million people living with HIV.

In a bid to address the high unmet need, the USAID supported the Nigerian government to conduct surge activities including the formation of Community ART Management (CAM) teams.

This study aimed to compare the treatment outcomes of patients managed in community-based settings versus those in healthcare facilities across 17 USAID supported states in Nigeria.

**Methods:** A Retrospective Cohort analysis of data for clients initiated on HIV/AIDS treatment in USAID supported facilities within the 1<sup>st</sup> year of the surge implementation (April 2019 – March 2020). The clients were categorized into two groups based on their treatment management setting: community-managed and facility-managed. Treatment outcomes at the end of December 2023, including retention in care and viral suppression (less than 1000 copies per ml) were assessed and compared between the two groups.

**Results:** 133,920 clients (F: 64%; M: 36%) started ART in the cohort months with 45% receiving community-managed ART and 55% receiving facility-managed ART. Findings show that viral load suppression rates were comparable between the two groups, with 98% in the community-managed group and 97% in the facility. There was also no significant difference in the viral suppression between males and females, as well as across the age-groups among both cohort groups.

About 88% of those managed in the community were retained in care, with no significant difference in the retention rates between males and females. Among the facility-managed group, the retention rate was 40%, with

females having a significantly higher retention rate. The lowest retention rate in both groups was found among those 0-4 years of age (73% & 13% respectively). The result of the Paired sample T-test was for retention was 3.13 (P-value = 0.016), while for viral suppression it was found to be 17.66 (P-value of 0.04).

**Conclusions:** The findings suggest that community-managed ART can yield comparable and even better treatment outcomes to facility-managed ART. However, further studies are required to understand the contextual factors influencing these outcomes and to inform program design.

## Global and national financing, economic evaluation and sustainability

## THPEE558

Provision of free STI treatment critical for increasing HIV testing rates in men who have sex with men in Ghana

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**Background:** In Ghana, screening of sexually transmitted diseases (STD) among men who have sex with men (MSM) often ends with the provision of prescription without the actual attainment of treatment due to lack of funds by KP Implementers to support them coupled with the high cost of STI drugs. Financial concerns are often the significant barrier for MSM, leading to delayed or neglected STD treatment, subsequently increasing the risk of HIV transmission.

This abstract reports on the uptake of STD services as well as HIV testing service uptake (HTS) as a result of providing MSM with free STD treatment.

**Description:** Upon seeing the high STI treatment completion rates, CEPEHRG realigned its project budget to cater for free STD treatment for MSM. The free medication was made available at Community Drop-in-Centers (DIC) and sensitized facilities to easy access. Peer educators informed MSM about the availability of free STI drugs at the DIC and health facilities and referred them for STI screening and treatment services.

**Lessons learned:** Trends from the programmatic data show that uptake of STD screening and HIV testing increased after the provision of free STD treatment. Between December 2022 and January 2023, 235 MSM were



referred for STD services and 148 received STD services (62% completion rate). After the implementation of free STD treatment, between Feb and March 2023, a total of 231 MSMs were referred and all of them received STD services (100% completion rate).

Consequently, the number of MSM receiving HTS also increased from 405 (December 2022 –January 2023) to 583 (February–March 2023) – an increase of 43.9% over the period.

**Conclusions/Next steps:** The provision of free STD treatment for MSM is feasible hence the government of Ghana should consider that as a strategy to increase HIV testing rates among this population. By addressing the financial barriers associated with STD treatment, health systems can also foster a more proactive approach to HIV prevention, ultimately contributing to the reduction of HIV incidence within the MSM community.

We therefore advocate for policy changes and public health initiatives aimed at integrating free STD medication into comprehensive HIV prevention programs, acknowledging the interconnectedness of these health issues.

## THPEE559

Looking to the future: do we have the funding and pipeline to meet the needs of people living with HIV in low- and middle-income countries?

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**Background:** Two-thirds of the 39 million people living with HIV (PLWH) are in Africa. To put people first, products to prevent, treat and diagnose HIV must meet the needs of those most affected. To determine whether the products in development address low- and middle-income country (LMIC) needs and if there is sustainable funding for such research and development (R&D), we examined the R&D investment landscape and assessed pipeline candidates against available R&D priorities.

**Methods:** Restricted to LMIC-focused R&D (excluding commercially-driven R&D), funding data from public, private and philanthropic sectors was collected through the G-FINDER survey (2007–2022). Candidates were identified from public data-sources including clinical trial databases (2015–2023). The Portfolio-to-Impact (P2I) tool predicted product launches. Analysis was performed in Microsoft Excel.

**Results:** Sixteen years of investment totalled \$24b, contrastingly, COVID-19 R&D totalled \$17b in three years. LMIC-based organisations received \$4.5b but only disbursed \$0.2b (noting low LMIC survey participation) – both funding flows decreasing over time. LMIC-led R&D is reliant on high-income country (HIC) public funding (who provided

\$19b), making it vulnerable to HIC priorities, compromising LMIC-focused R&D. R&D is concentrated on vaccines – \$13b and 56 candidates. Novel technologies generating broadly neutralising antibodies show promising results but require two doses, impacting delivery and LMIC-suitability. With no launches expected before 2040, other prevention alternatives are needed.

Biologics comprise 21% of the pipeline yet received 1.6% of funding (\$0.4b). Most biologics are monoclonal antibodies (17) (eight meet WHO prevention priorities) with 13 combinations undergoing trials – five are subcutaneous injections, enabling access.

Modelling predicts two launches by 2040 so PLWH could benefit from these sooner than vaccines, but these will likely require frequent and trained administration.

Modelling predicts six diagnostics this year: cheap oral and urine-based point-of-care tests for at-home testing, and battery-powered viral load and early infant diagnostics. Three meet WHO R&D priorities, closing product gaps for PLWH.

**Conclusions:** With an expanding pipeline, increased and sustained investment from a stronger LMIC funder base is needed to prioritise and progress LMIC-suitable candidates that address current product gaps.

This will decrease reliance on HICs, creating a robust LMIC R&D ecosystem that provides more options for PLWH in LMICs.

## THPEE560

Trends in HIV prevention investments at The Global Fund: a comprehensive analysis

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**Background:** Increased availability of life-saving treatment and declines in new infections have transformed the HIV epidemic in many countries from an emergency to a chronic care paradigm. However, key and priority populations continue to face persistently high risk of HIV acquisition, especially in sub-Saharan Africa. Primary HIV prevention efforts remain insufficient, hindered by social, economic and gender inequalities, legal barriers, and widespread stigma.

Further, HIV prevention progress has continued to lag because of financial constraints and the financial pressure of sustaining HIV treatment programmes.

In 2017, The Global Fund to Fight AIDS, Tuberculosis and Malaria (The Global Fund) joined the Global HIV Prevention Coalition (GPC) to support global efforts in accelerating HIV prevention, to respond to the prevention financial crisis and to promote the prioritization of HIV prevention investments. Consequently, the Global Fund Strategy 2023–2028 identified HIV prevention and equitable access to innovation among its top priorities.



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**Methods:** This study presents a novel comprehensive analysis of Global Fund HIV prevention investments over the past three Grant Cycles (GC4 to GC6), covering nine years from 2015 to 2023. Drawing on data available as of December 2023, the study investigates the trends in HIV prevention investments both as absolute values and as proportion of the total HIV/AIDS allocation, disaggregating HIV prevention budgets across prevention interventions.

The study identifies and addresses challenges in the definition of HIV prevention and thus the categorization of investments to ensure comparability across Global Fund funding cycles.

**Results:** The analysis finds an overall increase in HIV prevention investments of 19%, from 737 million USD to 874 million USD (GC5 vs GC6). The analysis also finds increases in funding for high-impact interventions, such as a 38% increase in funding for condom and lubricant programs (GC5 vs GC6) and a 98% increase in funding for Pre-Exposure Prophylaxis (PrEP) programs (GC5 vs GC6).

**Conclusions:** The increase in HIV prevention funding at the Global Fund, coupled with a strategic emphasis on high-impact interventions, signals a collective commitment to address global HIV prevention targets. This increase has created opportunities for the financing of HIV prevention in a context of reducing donor resources and increasing HIV prevention need.

## THPEE561

Costing HIV services provided by community-based organizations and social enterprises (CBOs/SEs) via social contracting (SC) in Vietnam

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**Background:** Vietnam's Ministry of Health (MOH) is implementing a SC pilot with CBOs/SEs to deliver HIV services (January 2022–December 2024). As CBOs/SEs are currently not authorized to provide health services using the government budget, the pilot is financed by donors. USAID's Local Health Systems Sustainability Project (LHSS) supported the MOH to cost the HIV service packages delivered by CBOs/SEs as part of the pilot. The costing follows national budget rules and cost norms to inform future up-scaling of SC with government budget.

**Description:** A time-driven activity-based approach was used to cost four service packages providing: harm reduction commodities, community testing and referral for confirmation testing, linkage to ART and linkage to PrEP.

LHSS conducted the costing from November 2021 to January 2022. The costing process includes five steps from:

1. Reviewing the technical procedures for selected HIV service packages,
2. Applying the government cost norms, regulations and unit prices to determine line-item costs,
3. Developing costing framework with detailed cost components to estimate unit costs,
4. Calculating total cost based on the selection of service packages and targets and, finally;
5. Validating and vetting results with key stakeholders (MOH, Ministry of Finance, provincial authorities, and CBOs/SEs).

Cost components include human resources, travel, supplies and equipment, maintenance, capacity strengthening, management fees, margin profit and value-added tax.

Cost ranges were calculated for the four packages across urban and rural/remote areas, following government regulations on regional minimum salaries applying for enterprises and travel allowance differences across regions.

**Lessons learned:** Applying government cost norms and regulations in conducting the costing increases the likelihood that SC scale-up can be achieved and sustained with government funding. Grounding the SC costing within the government's framework also ensured that the costing approach received buy-in from stakeholders, which is essential to successful implementation and expansion of the pilot.

**Conclusions/Next steps:** The costing results are currently being used in eight provinces participating in the pilot and costing of packages is an important step for implementation. At the end of the pilot, the government will evaluate and review the results to inform the development of the legal framework for expanding SC nation-wide.

## THPEE562

A model of social contracting advocacy for sustainable financing for community-led HIV response in Indonesia

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**Background:** Community involvement in HIV response is key to program success. However, relying solely on donor funding could jeopardize the HIV community-led responses' sustainability. Therefore, it is imperative to seek out local funding for HIV-related community-led programs. The current Indonesian government procurement policy allows social contracting to fund community-led initiatives. Nevertheless, the 2021 mapping of 10 cities showed that

civil society organizations (CSOs) and government entities are still unprepared for social contracting. This program's overarching goal is to strengthen HIV CSOs' capacity to lobby their local government to include social contracting in its HIV response.

**Description:** In 2023, UNAIDS Indonesia and a technical partner supported the pilot social contracting initiative in six cities in Indonesia: Jakarta, Semarang, Bandung, Yogyakarta, Medan, and Denpasar.

TA efforts include:

1. Identifying HIV CSO champions and building the city's HIV CSO alliance as an advocacy platform; and,
2. Creating CSO advocacy documents. This includes assistance in developing program proposals and CSO profiles;
3. Mapping the potential government entities that are targeted for partnership.
4. Socializing social contracting by sharing learning from prior partnerships;
5. Assisting CSOs in lobbying and hearings with local government.

**Lessons learned:** By the end of 2023, four cities (Denpasar, Semarang, Bandung, and Medan) out of the six pilot cities had successfully established partnerships with social contracting between HIV CSOs and local governments for funding in 2024.

Lessons learned include:

1. CSOs must comprehend HIV community-led program gaps and offer partnerships to local governments based on their expertise.
2. CSOs must build an organizational profile that accurately demonstrates their competency and track record as accountable and transparent agencies.
3. Establishing trust between the government and CSOs is crucial.

Hence, the process that promotes the establishment of trust plays a crucial role in advocating for social contracting.

**Conclusions/Next steps:** Our pilot demonstrates that social contracting partnerships between local governments and CSOs for community-led HIV response in Indonesia are feasible. Adopting good practices gained from this project to broaden the scope of social contracting advocacy is the next step of action.

Additionally, advocacy for national policies that encourage the accelerated adoption of social contracting on a nationwide scale is needed.

## Costing, cost effectiveness and affordability

### THPEE564

#### Budget impact analysis of including Dolutegravir in the social health insurance benefit package in Viet Nam

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**Background:** In Vietnam, Tenofovir, Lamivudine, Dolutegravir (TLD) fixed-dose combination (FDC), has been used since 2021 as the first line of treatment for adults and children aged ten and over. Certain PLHIV groups - including vulnerable populations - cannot use this regimen due to age and health complications, requiring instead a single-use Dolutegravir (DTG) tablet. Procurement of this product is currently entirely financed by donors. Including it on the social health insurance (SHI) drug list would expand access to domestically financed ARVs in Vietnam. USAID's Local Health System Sustainability Project (LHSS) conducted a budget impact analysis in late 2023 to assess the financial impact of adding single-dose DTG to SHI.

**Methods:** The analysis estimated the annual cost of procuring single dose DTG over five years using population-based models focused on two target populations:

1. Those ten and older who cannot use FDC, and;
2. Those under ten weighing at least three kilograms.

LHSS used parameters like target population disaggregated by those with and without Tuberculosis (TB), dosing based on weight and age, and unit cost of a DTG bottle. These concluded the cost per patient, per year in each sub-group.

**Results:** For PLHIV under 10 with and without TB, annual DTG costs average \$53.80 and \$34.40 respectively, less than the average annual costs of \$30.60 and \$19.60 for PLHIV aged 10 and older, with and without TB. Assuming DTG procurement is fully covered by the SHI fund, the annual estimated cost to procure the product ranges from \$512,961 to \$558,564 over five years (2024-2028). Based on the estimated costs for SHI-funded health examinations and treatment in 2023, the budget impact of including single-dose DTG on the SHI drug list accounts for less than 0.015% of total SHI expenditure.

**Conclusions:** Single-dose DTG is crucial for treating HIV in pediatric and vulnerable patients and would have limited financial impact on the SHI fund. Since Vietnam has already included TLD in the SHI benefit package, single-dose DTG should also be included to enable full transition to optimal DTG-based regimens - especially for pediatric and marginalized patients.



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## THPEE565

### Cost-effectiveness of using conditional economic incentives to improve adherence to pre-exposure prophylaxis among male sex workers

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**Background:** Conditional economic incentives can improve medication-taking behaviors among populations living with or at risk for HIV. However, no studies have estimated the cost-effectiveness of incentive-based programs that aim to improve pre-exposure prophylaxis (PrEP) adherence among male sex workers (MSWs), a population with one of the highest HIV acquisition risks.

**Methods:** We conducted an economic evaluation of the PrEP Seguro pilot trial in Mexico City. The trial randomized n=110 MSWs to the incentive intervention or standard care. Intervention participants received tiered incentives based on a biomarker of PrEP adherence measured via scalp hair analysis at three study visits over 6 months. The incentive intervention led to an overall 28.7% increase in scalp hair PrEP concentration levels consistent with increased adherence (p=0.05).

The present evaluation used a micro-costing approach from the health system perspective to calculate the cost and quality-adjusted life years (QALYs) per patient in each trial arm. QALYs were based on the number of HIV infections averted through sufficiently high PrEP adherence (Tenofovir concentration >0.011 ng/mg corresponding to  $\geq 5$  doses per week). Incremental cost-effectiveness ratios (ICERs) were in the form cost per QALY gained due to the intervention. Probabilistic sensitivity analysis explored uncertainty in ICER estimates.

**Results:** The mean total cost per patient was \$166.68 in the control group and \$175.3 in the incentive group. The percent of patients adherent to PrEP was 62% for the control group and 78% for the incentive group over the follow up period. After 6 months, the average QALYs gained were 10.26 (min, max: 8.39, 12.12) and 8.13 (min, max: 6.65, 9.61) among incentive and control patients, respectively. The 6-month ICER was \$5.93/QALY gained by the intervention, which was highly cost-effective at a willingness-to-pay threshold of <1 Mexico's 2020 GDP per capita (US\$8,655).

**Conclusions:** Administering incentives conditional on objective PrEP adherence was highly cost-effective for increasing adherence among MSWs in this pilot trial. Combining behavioral economics approaches with antiretroviral-based HIV prevention may offer health and fiscal benefits to the health systems because of reductions in HIV incidence.

Future fully-powered implementation trials can determine the potential cost-savings of scaling up incentives for PrEP adherence.

## Health systems, health systems strengthening and partnerships

## THPEE566

### Implementation and evaluation of a pilot training to Improve clinical competency and delivery of HIV and sexual health services to transgender persons in the Caribbean

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**Background:** The Caribbean ranks as the second-most affected region globally in terms of HIV prevalence. Significant disparities exist among transgender individuals, with HIV prevalence exceeding 25% among transgender women. Transgender people in the region face numerous obstacles to accessing HIV prevention, treatment, and care services, including healthcare-related stigma, a shortage of informed healthcare providers, limited availability of gender-affirming care, and legislative and cultural barriers hindering equitable healthcare access.

**Description:** The Eastern Caribbean Alliance for Diversity and Equality (ECADE), comprising 31 organizations across twenty-two territories in the Eastern Caribbean, is dedicated to advocating for human rights, equality, justice, and respect for LGBTQ+ individuals. In July 2023, ECADE initiated a pilot training program aimed at enhancing the knowledge, skills, and attitudes of healthcare workers and improving delivery of healthcare services to transgender persons.

A comprehensive two-day training was held in Jamaica, attended by twenty-eight participants from nine countries, and encompassed ten modules and four interactive activities. Topics included cultural competency, legal and ethical considerations, gender-affirming care, sexual and

reproductive health, and best practices for HIV prevention, care and treatment. Pre and Post-training surveys indicated a significant increase (35.9%,  $p=0.013$ ) in mean medical knowledge scores among participants, including physicians, nurses, and program coordinators.

**Lessons learned:** While the Caribbean shares commonalities, the region exhibits significant sociocultural, economic, religious, and linguistic diversity. As such, the training had to be tailored to accommodate the unique experiences of participants and the transgender communities they serve. Most providers had not received any training in transgender health and additional time was required for foundational work, including terminology, communication skills, and understanding intersectionality. Incorporating interactive learning methods such as real-life scenarios, interactive exercises, tabletop activities, role plays, and case-based vignettes were preferred by participants over didactic content. The active involvement of transgender community members in organizing the pilot, providing feedback and participating in teaching proved integral to the training's success.

**Conclusions/Next steps:** The pilot training successfully enhanced the knowledge and skills of participants. Looking ahead, further adaptations will be made to facilitate expansion of this training initiative to additional countries and territories in the Caribbean, fostering a more inclusive and responsive healthcare environment for transgender individuals.

## THPEE567

### Acceptability of task shifting and sharing interventions to improve the mental health of people living with HIV with exposure to violence-related trauma

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**Background:** People living with HIV (PLWH) are vulnerable to violence-related exposures (i.e., intimate partner violence, adverse childhood experiences, and community-based violence) and experience disproportionately high rates of trauma compared to the general population. Comorbidity of HIV and mental disorders, often stemming from violence/trauma, necessitates prioritization and provision of mental health and psychosocial support (MHPSS) services. Task shifting and sharing can increase the capacity of health care organizations to address client needs while reducing burden on mental health care providers.

**Methods:** As part of a multi-phase, mixed methods study to investigate the acceptability and feasibility of implementing violence screenings and violence-related support services at Ryan White-funded HIV clinics (RWCs) in the southeastern U.S., we conducted six mixed-gender focus group discussions with PLWH who had experienced violence to assess acceptability of MHPSS interventions (i.e., professionally-delivered cognitive behavior therapy [CBT], Psychological First Aid [PFA]/Mental Health First Aid [MHFA], peer mentorship/navigation, and peer support groups).

We also explored the acceptability of non-specialist health care workers (HCWs) and lay health workers (LHWs; i.e., community health workers and peers) as MHPSS service providers. Two facilitators co-led discussions that were audio-recorded, transcribed, and coded for in-depth analysis using MAXQDA 2022 (VERBI GmbH).

**Results:** Non-specialist HCWs and LHWs were considered acceptable as MHPSS service providers, even for CBT, so long as they were adequately trained, knowledgeable of available resources, and conscientious of client concerns (e.g., maintaining privacy and confidentiality, behaving in a professional and compassionate manner, and respecting personal boundaries). Participants highly valued lived experience/relatability in service delivery/providers, sometimes over educational degrees. Peer support groups and peer mentorship/navigation were the most preferred of all MHPSS interventions, followed by CBT and PFA/MHFA. Peers were considered important sources of social support by participants, who emphasized the need to increase general awareness of peer support services at RWCs and availability of on-site and virtual options.

**Conclusions:** Our findings indicate that task shifting/sharing of MHPSS services is considered acceptable to PLWH who have been exposed to violence-related trauma and that peer support interventions are preferred. RWCs should consider implementing or expanding this approach to MHPSS service delivery and promote on-site/virtual availability to better support clientele.



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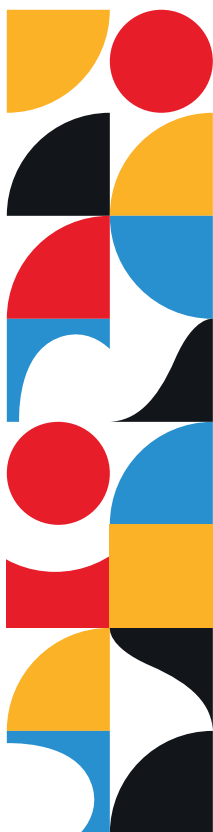
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## THPEE568

### Midpoint reflections on USAID's HIV/AIDS local partner transition efforts

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**Background:** In 2018 and 2021, respectively, leadership among the President's Emergency Plan for AIDS Relief (PEPFAR) and the United States Agency for International Development (USAID) announced ambitious goals to increase funding of its programs directly through local organizations.

USAID reflects on the efforts to localize its PEPFAR-funded HIV portfolio and how that aided efforts for localization across the Agency.

**Description:** Between 2018 and 2021, USAID's HIV program increased its annual funding to local partners from \$452 to \$797 million, a 76% increase. This represents 55% of USAID's HIV program going directly to local organizations. USAID's investments in local capacity building have improved partner capacity to manage funding, and simultaneously strengthened local health networks, increasing opportunities for sustainable HIV responses.

These lessons on transitioning programs reflect what worked well in the initial stages for HIV programs, largely addressing internal agency barriers.

**Lessons learned:** Five key factors facilitated localization of the USAID HIV portfolio:

1. Intentional planning, as USAID Missions developed strategic approaches grounded in local reality, and created localization plans and risk analyses to understand risks, vulnerabilities, and approaches to risk management;
2. Systems for tracking, to help the program monitor progress, performance, and course-correct as needed;
3. Investment in capacity, to prepare the most capable subrecipients for direct funding, and increase USAID staff positions to manage more local awards;

4. Change in standard business processes, through internal processes and increased direct engagement with local partners; and,

5. Strong consistent leadership, across all levels within the Agency, to establish ambitious targets and ensure teams were equipped with tools and support.

**Conclusions/Next steps:** Four years into the efforts to localize USAID/PEPFAR programs, USAID identifies five factors that supported a substantial shift in funding and programming to local organizations, while still allowing for delivery of quality programs at scale.

These efforts helped USAID's HIV programs increase the number and diversity of local partners, which could provide a model for similar transition efforts. While the first phase of the transition focused on improving how USAID made awards to local organizations, the next phase will focus on how USAID works with and implements through local partners.

## THPEE569

### Assessing the Impact of Climate Change on Life expectancy in high HIV burden countries in Africa

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**Background:** Without a dramatic change in multilateral strategies, climate change will be the greatest transboundary threat to health in sub-Saharan Africa (SSA). There is a pressing need to estimate the potential scale of climate-related deaths in high HIV-burden countries in SSA so as to inform climate adaptation and mitigation strategies. Consideration of these strategies is critical to HIV sustainability planning.

**Methods:** We sought to determine the excess mortality from climate-related health effects between now and 2050 in 20 PEPFAR-supported countries in sub-Saharan Africa (SSA), assuming a business-as-usual (BAU) climate trajectory of > 2.5 C degrees rise in global temperature by 2100. We used the excess mortality risk due to a 1°C increase in regional temperatures estimated by others to calculate the excess deaths due to global warming at ten-year increments between now and 2050 in these 20 countries.

We converted the excess deaths to corresponding life expectancy losses by eliminating regional temperature increases as a cause. We assumed that the excess mortality risks remain constant between 2022 and 2050 and are age invariant.

**Results:** A BAU climate trajectory will result in 31005 excess annual deaths in 2030, 45030 excess annual deaths in 2040, and 64152 excess annual deaths in 2050 across the 20 PEPFAR-supported countries in SSA. This excess mortality will account for 0.48% of the projected 29.12 million pos-

sible deaths in these countries during between now and 2050. By 2050, the greatest absolute increase in excess annual deaths will occur in Nigeria (21205 excess deaths), followed by South Africa (4546 excess deaths).

Across all 20 countries, estimated life expectancy will decline by 1.8 years in 2050, relative to 2023 levels, in the BAU scenario.

**Conclusions:** Climate-related health impacts will increase substantially in the coming twenty years with a deleterious impact on life expectancy in PEPFAR-supported countries in SSA.

Our findings highlight the urgent need for health-specific adaptation strategies and bold mitigation policies, to ensure that hard-won HIV gains are not undermined by climate-related health threats. Moreover, as countries embark on developing 'HIV sustainability roadmaps' it is critical that they address the increasing threat posed by adverse climate-related health outcomes.

## THPEE570

Predicting the Global Health Security Index (GHSI) in 80 Low-and-Middle Income Countries, Implementing and not Implementing U.S. President's Emergency Plan for AIDS Relief (PEPFAR) Programs

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**Background:** Since 2003, PEPFAR has invested over \$100 billion in the global HIV response in over 50 countries, preventing 25 million deaths. While PEPFAR-supported systems are leveraged for outbreak response (e.g., COVID-19, Ebola, mpox), there is limited research examining PEPFAR's impact on global health security.

We investigated the relationship between PEPFAR investments and other development factors on the Global Health Security Index (GHSI). We also evaluated the association between these factors and GHSI categories in 80 low- and middle-income countries using 2021 data.

**Methods:** We analyzed national economic and health data from the World Bank, World Health Organization, PEPFAR, and the GHSI. A multiple-linear regression model was selected among seven models trained and evaluated using a cross-validation technique with K-folds=10. A stepwise regression and regularization were employed for variable selection. We fit the final model with the selected variables and GHSI category response variables.

**Results:** Our analysis showed significant positive associations with high overall GHSI scores and gross domestic product per capita ( $\beta = 0.0268$ , p-value=0.002), government effectiveness (4.6570, p-value=<0.001), net official

development assistance received (NODAR) (0.0099, p-value=0.016) and being a PEPFAR-supported host country (4.4549, p-value=<0.001). These factors showed varied levels of association with specific subcategories of the GHSI. Government effectiveness (4.9929, p-value=0.017), NODAR (0.0341, p-value=<0.001), and PEPFAR support (8.4534, p-value=<0.001) were significantly associated with the GHSI-Detection and Reporting sub-category. Government effectiveness (4.3740, p-value=0.023), NODAR (0.0168, p-value=0.049), and PEPFAR support (5.3370, p-value=0.018) were significantly associated with the GHSI-health sector robustness sub-category.

**Conclusions:** Global health security preparedness measured by a country's GHSI score can be predicted by government effectiveness, PEPFAR support, and other development assistance received.

These significant findings suggest that PEPFAR's investments extend beyond the HIV/AIDS sector and support strengthening public health services and systems, which lay the foundation for global health security.

Further research is needed to better understand the impacts of PEPFAR investments on global health security.

## THPEE571

Public-private partnerships for the delivery of oral HIV pre- and post-exposure prophylaxis: lessons learned from an implementation study in Kenya

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**Background:** Countries in sub-Saharan Africa are exploring ways to leverage the private sector as part of broader efforts to increase long-term sustainability of their HIV response in the midst of decreasing external support. One possibility is to allow a portion of publicly procured HIV commodities to be delivered to private sector entities.

As part of a cluster-randomized controlled trial (cRCT) of private pharmacy-based pre-exposure prophylaxis (PrEP) and post-exposure prophylaxis (PEP) delivery, we developed a novel system for pharmacies to access and account for PrEP/PEP drugs and HIV test kits procured by National AIDS & STIs Control Program (NASCO); an entity responsible for HIV programming in Kenya's Ministry of Health (MOH).

**Description:** Launched in July 2023, the Pharm PrEP cRCT is delivering PrEP/PEP services via 60 private pharmacies in central and western Kenya. To enable study pharmacies access commodities from Kenya's Medical Supplies



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Authority, each is linked to a public health clinic for commodity requests and submit monthly reports on PrEP, PEP, and HIV test consumption; information needed for Kenya's health information system. To facilitate compliance with required MOH reporting, study pharmacies use an electronic point-of-sales system that tracks the use and dispensation of HIV test kits and PrEP/PEP drugs respectively.

**Lessons learned:** Support from NASCOP and counties was instrumental to the implementation of this model over the past 6 months. County and sub-county pharmacists and medical laboratory coordinators helped to establish good working relationships with study pharmacies; ensuring linked clinics fulfill commodity requests and eliciting support from other counties during periods of intermittent commodity stockouts. Continuous on-job training has helped pharmacy providers gain proficiency in the electronic point-of-sales system and to prepare, proofread, and submit required MOH reports in a timely manner.

On a few occasions, technical issues with the point-of-sales system and/or staff turn-over has led to late submission of consumption reports and thus resulted in delays in receipt of commodities at the private pharmacies, signaling areas for improvement.

**Conclusions/Next steps:** This public-private partnership model has a potential to enable private pharmacies to access quality-assured HIV commodities from government stock. Future research should explore long-term sustainability of using this model at scale.

## THPEE573

[A preliminary analysis of the feasibility, appropriateness, efficacy and adoption of a trauma-informed PrEP intervention for clinical staff in Baltimore, Maryland](#)

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**Background:** Intimate partner violence (IPV) and HIV are mutually-reinforcing epidemics affecting U.S. Black cisgender women, yet few studies have implemented and evaluated trauma-informed interventions in healthcare settings to reduce the impact of these epidemics. This

study assesses the preliminary feasibility, appropriateness, efficacy, and adoption of a trauma-informed HIV pre-exposure prophylaxis (PrEP) Implementation Toolkit for clinical staff in Baltimore, Maryland.

**Methods:** A multiphase, hybrid effectiveness-implementation type 2 study was conducted between January 2022 and October 2023 with Black cisgender women and clinical staff involved in HIV services in Baltimore, Maryland, United States.

Phase 1 included semi-structured interviews with 20 Black cisgender women and 18 clinical staff. Qualitative data was thematically analyzed and guided by the Consolidated Framework for Implementation Research.

Phase 2 included executing a trauma-informed PrEP implementation Toolkit in a randomized stepped-wedge design across four centers in two-month intervals.

The Toolkit comprised four trainings and a clinic protocol. Preliminary effectiveness of the Toolkit was tested among 60 staff using pre-post surveys and GEE assessed staff changes in feasibility, appropriateness, and efficacy from pre- to post-Toolkit.

**Results:** In Phase 1, qualitative themes described several barriers and recommendations for the Toolkit's implementation: obtaining staff buy-in; building capacity to address IPV; and ensuring compatibility of Toolkit within clinics.

In Phase 2, significant changes were observed in staff outcomes: increases in self-efficacy to discuss PrEP with Black women clients experiencing IPV (OR=4.31 (2.10, 8.93)); and increases in screening Black women clients' sexual history, especially women experiencing IPV (OR=5.22 (2.80, 9.87)).

There were also significant increases in implementation outcomes: feasibility (OR=1.95 (1.07, 3.78) and appropriateness (OR=1.35 (1.02, 3.07) to screen for IPV and refer Black women clients to community resources.

**Conclusions:** Trauma-informed PrEP implementation programs addressing IPV and safety planning are useful, feasible, and appropriate resources for clinical staff serving Black women. This study has implications for the implementation of this program in other U.S. priority jurisdictions with high incidence of HIV among Black cisgender women.

## THPEE574

Using Geographic Information Systems (GIS) to manage disparate datasets and support decision-making for the Central Chronic Medicines Dispensing and Distribution programme (CCMDD) in South Africa

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**Background:** The Central Chronic Medicines Dispensing and Distribution (CCMDD) programme is a South African initiative that aims to improve access to chronic medication by allowing PLHIV to pick up medicines, including ART, at convenient retail locations as an alternative to their public health clinic. Since 2016, Project Last Mile (PLM) has partnered with South Africa's National Department of Health (NDoH) to support the expansion of CCMDD, utilizing data from multiple sources and in different structures and formats, which need to be merged and analysed to inform the evolution of the programme. PLM has deployed GIS as a key approach to data management and strategic decision making.

**Description:** A Geographic Information System (GIS) is a system that creates, consolidates, manages, analyses, and visualizes multiple data types and allows for individual data points to be assigned to a geography. PLM has geo-classified programme-related datasets, including data from public health facilities, medication pick-up points, private healthcare facilities, and national and local datasets containing demographic, administrative and HIV-burden information, using a GIS system. The consolidated GIS dataset has been continually updated and analysed to inform the development of the CCMDD programme.

**Lessons learned:** GIS has enabled PLM to generate insights such as identifying areas of high burden and gaps in health coverage. Presenting the GIS analysis visually offers spatial context that has made it easier to analyse, interpret, and communicate results to a wide audience. The use of GIS has helped to focus planning efforts by identifying where interventions are required. For example, it was found that some high burden public health facilities in rural provinces had no pick-up-points within a 5km radius of a health facility and required innovative solutions, such as containers or smart lockers, for medicine collection.

**Conclusions/Next steps:** GIS as a mechanism for consolidating data from multiple sources has been successfully implemented for CCMDD and has provided many benefits for the programme. For NDoH and PLM in South Africa, GIS has enabled the analysis of multiple datasets and used GIS's spatial insights and data visualization capabilities to support programme decision making. This has contributed to the rapid strengthening and expansion of the programme.

## THPEE575

Comprehensive and structured capacity assessment is crucial for community-based organization capacity building and nuclear for community system strengthening

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**Background:** Communities play an important role in Vietnam's response to HIV/AIDS, especially towards the first and second 95 targets. Strengthening the capacity of community-based organizations (CBOs) and key population-led social enterprises (SEs) in a structured and strategic manner ensures they can continue to serve the community effectively and sustainably.

**Description:** Community Organizational Sustainability Assessment (COSA) is an organizational capacity assessment tool developed by LIFE Centre under a USAID-supported project. COSA has 5-point scale assessing 6 domains: HIV-related services; other health related services; governance, administration and operations; financial management and sustainability; monitoring, evaluation and learning; and communications.

The second domain particularly set benchmarks for growing the organization's knowledge and skills beyond HIV to better meet key populations' health care needs, and lay foundations for their fee-based service delivery towards financial sustainability.

During March and April 2022, 25 CBOs/SEs completed the initial COSA (20 supported by LIFE and 5 by FHI 360 Vietnam). LIFE Centre then facilitated a planning process to develop specific recommendations for technical assistance, and empowered the organizations to prioritize those recommended interventions based on need.

A follow-up assessment was conducted with 20 CBOs/SEs by LIFE during October-December 2023 to assess areas of improvement and identify areas not yet supported according to plan.

The recommendations were grouped and customized for clusters of organizations of similar capacity building needs and plan of growth. COSA aggregated results were also shared with USAID partners and health service providers for strengthening coordination and linkages among services and program implementing partners.

**Lessons learned:** COSA enables the CBOs/SEs, who are the key drivers of the community system, to realize their gaps and needs across the board. It helps establish benchmarks before initiating capacity-building efforts. The capacity-building initiatives can then be customized to address the identified weaknesses and enhance organizational strengths.

The follow-up assessments (6 and 12 months) allow LIFE and the organizations to track improvements and adjust strategies as needed.



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**Conclusions/Next steps:** COSA helps objectively assess impact of capacity building over time. Once CBOs/SEs are trained on COSA, they can conduct periodical assessment on their own to update needs and developing skills to generate resources to ensure sustained growth.

## THPEE576

### Impact of Incident Command System on HIV/AIDs epidemic control: lessons from ACE-2 Project in Northern Nigeria

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**Background:** Over the past two decades, Nigeria has benefited from substantial U.S. Government investments in health systems, aiming to achieve HIV/AIDS epidemic control by 2030. Vital to this objective is the elimination of acquisition of HIV and the sustenance of gains in prevention, treatment, and viral load (VL) suppression initiatives. The Accelerating Control of the HIV Epidemic in Nigeria (ACE-2) project implemented in Jigawa and Kano states faced suboptimal VL suppression.

To address this, Incident Command System (ICS) was adopted, leveraging the cohort for index case testing (ICT) to enhance clinical outcomes and elevate treatment saturation in the states.

**Description:** The ICS led by the health facility's antiretroviral therapy (ART) coordinator, serving as the incident commander for various case management teams (CMTs). ACE2 activated 64 CMTs in Kano and 20 in Jigawa from October 2022 to September 2023, each composed of a data entry clerk, treatment supporter, phlebotomist, counselor tester, and ART nurse.

Emphasizing individualized client-centered designs, the teams closely follow cohorts of clients, with increased service interactions through phone calls and WhatsApp chats aligned with national HIV treatment guidelines. Treatment supporters manage an average of 100 clients employing reminders and support especially for poorly suppressed clients. The counselor tester employs an index case testing (ICT) approach for people living with HIV, while the phlebotomist collects samples as needed.

Data entry is electronic handled by the DEC and the ART Nurse provides essential clinical services during physical visits.

**Lessons learned:** The ICS approach contributed to client case finding through ICT in the year with a yield of 9.3% despite a prevalence of <0.6% in the ACE-2 supported states. The VL suppression rate improved from 91%, to 96% in Kano and 90% to 97% in Jigawa.

**Conclusions/Next steps:** Tailoring individualized strategies for clients, irrespective of VL suppression management, demands a hybrid of physical and virtual support. The Incident Command System (ICS) facilitated monitoring, enhanced adherence, and boosts VL suppression rates, contributing to improved treatment outcomes and HIV case identification.

## THPEE577

### Utilizing continuous quality improvement to enhance the quality of recent HIV-1 infection surveillance: insights and lessons from Uganda

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**Background:** In efforts to control the HIV epidemic by 2025, the Uganda Ministry of Health and partners launched Recent HIV-1 Infection Surveillance (RIS) to identify potential signals of HIV acquisition to inform targeted prevention interventions. RIS integrates the Rapid Test for Recent Infection (RTRI) into routine HIV testing for those newly diagnosed and above 15 years old, identifying potential recent HIV acquisition.

To ensure the availability of high-quality data, a continuous quality improvement (CQI) approach was implemented across 15 regions of Uganda.

**Description:** We reviewed CQI data from 15 regions between the years 2020 and 2022. Health facility staff were trained on the RIS protocol, procedures, and CQI methods. One month post-training, baseline assessments were conducted to identify gaps for components scoring below 80%. Using a Plan Do Study Act (PDSA) model, we analyzed gaps, developed interventions, measured improvement and effectiveness in follow-up assessments. Both assessments used a standard checklist with six quality components. including staff, procedures, source data, physical facility, recruitment, and site supplies. A real-time performance scorecard, checklist, and action plan matrix were captured electronically using Open Data Kit on tablets. This data was then transmitted on the RIS dashboard for immediate access and descriptive analysis.

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**Lessons learned:** Our CQI approach led to improvements in all six assessed components. Five coded interventions accounted for more than 80% of all interventions and these included: improvement of staff mentorship in procedures (31.9%), provision of staff refresher training (16.5%), provision of training certificates (13.4%), procurement of recency supplies (8.2%) and enrolling staff in recency training (8.2%). Participant recruitment and physical facility components performed lowest at baseline with median scores of 79.7% and 80.0% yet, their scores improved to 86% and 100% respectively at follow-up. This highlights the efficacy of targeting underperforming health facilities for enhancement through data-driven CQI strategies.

**Conclusions/Next steps:** Using context-specific interventions generated by health facility staff, CQI effectively bridged disparities between current performance and expected standards. Despite an already overburdened public health system, our CQI activities facilitated the availability of quality data for use by RIS stakeholders in Uganda.

## THPEE578

Lessons in resilience: the role of a quality improvement collaborative focused on improving HIV care retention in New Orleans, Louisiana (NOLA) during and following Hurricane Ida

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**Background:** In the United States, climate-related events, including hurricanes, are becoming more intense and frequent, presenting challenges to the HIV-related health care system affecting facilities, staff, and people living with HIV (PLWH). Fostering professional connections and leveraging quality improvement collaboratives (QIC) s may enable the system to adapt to climate events by promoting retention and re-engagement in care despite intense climate-related disruptions. We present a case study of a QIC that was in place when Hurricane Ida hit New Orleans in August 2021.

**Methods:** This case study included key informant interviews with providers, health department staff, and capacity building specialists involved in the QIC (n=9) as well as extensive fieldnotes documented during four 2-day learning sessions in 2021-2022, each attended by 20-25 QIC participants. Learning sessions focused on improving emergency preparedness and responding to Hurricane Ida. Transcripts and fieldnotes were coded and analyzed thematically.

**Results:** Immediate disruptions during the storm included loss of physical buildings, relocating clients to other states and parts of the state, loss of power, and

homelessness. Providers faced difficulties helping clients gain access to antiretroviral therapy and other essential medications, especially at pharmacies across state lines following evacuation or relocation. Enablers of provider success in re-engagement included QIC participation, using existing networks and messaging apps that facilitated reconnecting with clients and medication access, while mitigating feelings of isolation and anxiety as they assisted clients with navigating the hurricane disruptions.

Following the hurricane, QIC learning sessions involved sharing of emergency preparedness plans, developing client-oriented materials tailored for those living with HIV, and integrating hurricane planning into routine clinical care, strategies which informants felt could improve engagement in care following future climate-related disruptions.

**Conclusions:** The HIV health care system is particularly vulnerable to the impact of climate change. Creating emergency preparedness plans, particularly tailored for PLWH, and proactive strategies to maintain treatment access for displaced people constitute important steps in creating resilient and responsive systems. QICs offer an important vehicle for health care providers and staff to share resources, link healthcare providers with the public health system, and communicate during and following climate events, supporting the achievement of better HIV-related health outcomes.

## THPEE579

Enhancing private sector's role in providing comprehensive person-centered care and HIV treatment services to people in need

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**Background:** With strong understanding of their clients, private clinics play a vital role in delivering HIV services to key populations (KPs) by offering a wide range of HIV-related services in accommodative ways, including confidentiality, flexible working hours, and continuously improving to meet the needs of targeted clients. To strengthen private sector engagement in providing comprehensive person-centered care and HIV treatment services, the USAID/PATH Support for Technical Excellence and Private Sector Sustainability in Vietnam (STEPS) project delivered a complete package of technical training and continuous quality improvement (CQI) to two private clinics, named Glink and Galant in Ho Chi Minh City, Vietnam.







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**Description:** Since 2022, STEPS has been providing technical assistance to private clinics in delivering comprehensive healthcare for ART clients including same day antiretroviral therapy (ART), HIV viral load testing, prophylaxis and treatment for opportunistic infections; as well as providing other client centered services such as screening and linkage to mental health, non-communicable diseases such as dyslipidemia, diabetes, hypertension etc.

In addition, STEPS provides training and tools for CQI to clinics by regularly collecting client feedback on service delivery, and offering solutions to address areas that need improvement.

**Lessons learned:** From October 2022 to September 2023, 1,518 clients received ART at Glink and Galant clinics (commercial clients: 731; clients with Social Health Insurance (SHI): 787) out of which 509 were new clients. Most clients were men who have sex with me (MSM) (94.5%) with an average age of 27 years.

In terms of socio-economic status, the majority of clients had a college or higher education level (57%), were currently employed (82.2%) and were office workers (44.2%). As of 2023, treatment effectiveness was very high with viral suppression of 99.8%, much higher than the national rate of 96%, and the treatment retention rate of ARV clients is at 85.3%.

**Conclusions/Next steps:** Private clinic participation in providing comprehensive ART services contributes an important role to diversify choices to meet the needs of clients. Besides ensuring treatment according to standard care, holistic health care needs are comprehensively being taken care of as an integral part for such populations.

## THPEE580

Integrating quality improvement methodologies in improving index testing positivity yield in 19 selected sites in Southern province Zambia

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**Background:** As the proportions of people living with HIV(PLHIV) who do not know their HIV status decrease, reaching the remaining few who are asymptomatic and not in contact with the health care system becomes a critical challenge. Therefore, reaching the first 90 of the UNAIDS 90-90-90 targets will require effective and efficient HIV testing approaches. Index testing model has demonstrated an increase in identification of HIV positive cases among children and adults and linkage into care and treatment services.

**Methods:** A baseline assessment was conducted and found the index positivity yield of 14% in September 2020. Following a baseline assessment, a root cause analysis was conducted to establish the magnitude of the problem.

The root causes were found to be:

1. Non appointment of an Index Champion,
2. Incomplete locator information for the elicited contacts for easy follow-ups,
3. Inadequate knowledge and counselling skills on safety and ethical index testing,
4. Inconsistent departmental data review meetings.

To address the route cases facilities enrolled into QI project with following intervention:

1. Provided integrated ART outreach service and engaged community partner (DAPP) in making follow ups,
2. Provided TORs and oriented facility index champion on the Job Aids,
3. Involved Facility/ART in charges in index testing services to enhance supervision,
4. Built capacity in counsellors and other providers in Ethical & Safe Index Testing through trainings and onsite mentorship,
5. Holding data review meetings, daily, weekly and monthly.

**Results:** The index positivity yield improved from 14% in September 2020 to 25% by end of the first quarter and increased to 36% by end of second quarter with a further increase to 48% by the end of the third quarter and further improved to 57% by the end of FY21.

Furthermore, it was observed the average (12 months) index positivity yield and contribution was 29% and 55% respectively. It was also observed that Index reduced untargeted testing by 1.1% by the end of quarter one and by 4.8% by the end of the second quarter.

**Conclusions:** Application of quality improvement methodologies remains pivotal in index positivity yield improvement and achieving the first 95%.

## THPEE581

Self-reflection and peer learning are key to improving HIV prevention capacity and prioritization in the West and Central African region

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**Background:** The South-to-South HIV Prevention Learning Network (SSLN) was established in response to the request from the Global NAC Directors Forum for a learning platform on HIV prevention. The learning network oper-

ates in 15 sub-Saharan African countries, covering the five HIV prevention pillars. Country champions, nominated through the National AIDS council, assess their prevention programs using a HIV Prevention Self-Assessment Tool (PSAT). Analysis of this tool informs a customized learning agenda. With the support of the SSLN, country champions participate in different learning activities.

This study explores the effectiveness of SSLN activities, country-specific experiences, successes, and key lessons learned from West and Central African (WCA) country champions in Côte d'Ivoire, Ghana, Nigeria and the Republic of Congo during the programme's mid-term evaluation.

**Methods:** Data was collected by external evaluators from May-September 2023 using a mixed method approach: an online survey for all champions and key informant interviews (KII) in Ghana and Nigeria. From the WCA region, a total of 86 champions participated in the survey and 18 champions in the KII.

Survey data was exported to Stata for cleaning and analysis, and then presented in frequencies and percentages. KII data was transcribed and analysed using NVivo software for thematic content analysis. Common themes, trends, and challenges were identified, integrating sub-themes into broader themes.

**Results:** Respondents from WCA reported improved capacity in HIV prevention since joining the network, and that the SSLN refocused their attention to prevention. The PSAT was regarded as helpful in identifying programme gaps in a structured and systematic way. Participation in the network provided opportunities to connect with colleagues in similar roles across different countries. Respondents expressed motivation to excel upon witnessing progress in countries with similar contexts. The network's collaboration with governments was regarded as influential and supportive for sustainability. Learning visits were preferred over virtual activities. Respondents believed documenting best practices and frequent meetings for action plan review would benefit their countries.

**Conclusions:** These findings demonstrate the significance of networking, social capital, and leveraging competencies to improve HIV prevention programmes in the West and Central African Region. Feedback from the respondents will be considered for improved programme implementation.

## THPEE582

### Growth of Glink Academy: first key-population (KP) led peer-to-peer capacity building program in Vietnam for HIV awareness and service uptake

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**Background:** Business start-up and growth, especially in the field of HIV, is a challenge for early-stage LGBTQI+ led organizations in Vietnam. Glink Academy, initiated by Glink key population (KP)-led social enterprise (SE), with 12 years of operating experience in the HIV KP-led clinic chain and community, and USAID/PATH STEPS project, provides a comprehensive peer-to-peer capacity building program to support the establishment and sustainable growth of KP-led SEs and clinics.

**Description:** Since its inception in 2022, Glink Academy, with support from USAID/PATH STEPS, has grown as an incubator for social enterprises by providing a comprehensive and need-based peer-to-peer capacity-building program. The program offers diverse activities which includes: thematic training; individual mentoring and coaching; resources and tools for start-up development; an e-learning platform; Business Innovation Talks (BITs); Digital Marketing Forums (DMF); and an innovation grant for KP-led SEs and clinics. Glink Academy's capacity building program takes a human-centered approach, through selection of innovative, useful, and practical topics requested by the community, unique case studies, and lessons learned from the HIV field.

**Lessons learned:** Glink Academy continues to drive the growth of a sustainable network of KP-led businesses that provide high-quality HIV services, and have successfully delivered series of activities that expand impact and innovation within the KP community including but not limited to: 3 trainings on business development, demand generation, and marketing and communications; 10 BITs connecting social impact businesses with speakers and experts; 8 DMFs on digital campaigns to effectively reach target populations; incubated 3 SEs with innovative business models in HIV, of which, one is TG-led clinic and working towards its mission of healthcare promotion for TG communities; and developed an e-learning platform with learning material on social entrepreneurship, legal matters, health service delivery, organizational management, sustainable growth; and a mentoring and coaching program.

**Conclusions/Next steps:** Glink Academy exemplifies a transformative LGBTQI+ led model for peer learning and incubation. Further advancement of its peer-to-peer ca-



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capacity building efforts will help diversify and expand a network of community-friendly health social enterprises in Vietnam that are positioned to deliver high-quality, inclusive health services for the LGBTQI+ community creating greater HIV awareness and service uptake.

## THPEE583

Finishing HIV: a social network program to encourage HIV service use by Latinos who self-identify as gay, straight, or bisexual

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**Background:** Latino MSM (LMSM) have the highest HIV incidence in Miami-Dade (Miami); a county that ranks amongst the highest HIV incidence in the US. Non-gay identified (NGI) LMSM have lower HIV prevention knowledge than gay-identified LMSM. Latino cultural values (e.g., *Machismo*) may contribute to Latinos' reluctance to identify as gay and increase HIV-risk behaviors. Most HIV prevention programs focus on gay-identified LMSM, *FINISHING HIV (FHIV)* fills this gap.

**Description:** *FHIV* uses implementation science to promote services from Latinos Salud, our community partner, through 4 networks:

Social Networks for gay-identified LMSM. Outreach Specialists, HIV Testing Counselors, and Peer Educators provide HIV education.

Park Network for non-gay identified LMSM. Peer Educators conduct outreach to increase HIV prevention awareness.

Pharmacy Network for all Latino men. HIV prevention information was disseminated by CVS Health (a national pharmacy corporation).

Community Radio Network for all Latino men. Radio soap operas promote HIV prevention programs. *FHIV's* logic model explicates the determinants, strategies, mechanisms, and outcome measures (Figure 1).

**Lessons learned:** We learned how to effectively reach all LMSM. Approaches included sport bags containing HIV prevention information (800 bags distributed at 132 community events; i.e., movie nights and yoga).

It is important to partner with pharmacy companies to select venues with appropriate infrastructure, client demographics, and provided services. Seven CVS locations delivered PrEP information using innovative in-store strategies; 14,000+ PrEP flyers were distributed.

With a community radio station, we developed radio soap operas, formatted to mimic soccer commentary, a popular Latino sport. Five PrEP soap operas were broadcast

twice daily. Radio *ADICTIVA* has 270,000+ monthly listeners furthering *FHIV's* reach. Geographic analyses confirmed reach throughout Miami. 12-month EHE Outcomes: Diagnose. Testing N=9,612, Diagnosed N=191. Treat. 100% linked to care. Prevent. PrEP clients N=1,581, condoms distributed N=322,000, education sessions N=4,517.



The *FHIV* logic model incorporates two implementation science frameworks: The Consolidated Framework for Implementation Research (CFIR) and the Reach Effectiveness Adoption Implementation and Maintenance (RE-AIM). <sup>1</sup>CFIR scoring: strongly agree = 2, agree = 1, neither agree nor disagree = 0, disagree = -1, and strongly disagree = -2. The closer the score to 2 the more positive answers for the questions within each subconstruct. Findings are based on 20 interviews with community partners. <sup>2</sup>These mechanisms are based on the Social Contagion Theory.

Figure 1. Finishing HIV logic model.

**Conclusions/Next steps:** This year, we will launch a hybrid-1-implementation-effectiveness RCT of *FHIV*.

## THPEE584

Caring for young carers: co-conceptualising, implementing and adapting psychosocial and clinical support for young PrEP peer navigators in semi-urban Western Cape, South Africa

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**Background:** Peer-supported PrEP services offer a tailored solution for young people, building knowledge, agency and addressing barriers to PrEP use, including PrEP stigma, unfriendly service provision and complex intimate relationship dynamics. Peer-supported services enable PrEP initiation and continued use by creating a customised, non-stigmatising setting to receive ongoing education and refills.

We describe an initiative to support peer navigators (PNs) which is part of a study "FAST-PrEP": scaling differentiated PrEP provision for 15-29 year olds in Klipfontein and Mitchell's Plain, Western Cape, South Africa.

**Description:** FAST-PrEP has 32 PNs working across 12 health facilities and 4 mobile clinics. PNs are trained to welcome young clients, provide relatable, non-judgmental psychosocial support, accurate health information, and navigate adolescents through PrEP and other health services. PNs also coordinate with clinic staff on record-keeping and client follow-up.



A framework for clinical and psychosocial support, refined with PNs to align with their specific clinical settings and work experience with adolescents, was used in bi-monthly, debriefing and mentorship sessions.

**Lessons learned:** Themes from the semi-structured sessions included:

1. Motivation to serve – PNs consider their "responsibility to educate adolescents" an important task and meaningful job that serves their community;
2. Fragmentation in care – prospective PrEP users recruited by PNs face multiple barriers in completing the PrEP cascade at facilities, including limited and noncontinuous testing, counselling and prescribing services;
3. Tension with established medical hierarchy – PNs perceive a low level of respect for the contributions PNs make to optimising clinic flow and integrating HIV and SRH services;
4. Mental burden – PNs experience social anxiety, face rejection from prospective PrEP users, and secondary trauma risk from responding to emergency referrals outside of the scope of their role.

**Conclusions/Next steps:** Peer workers can be considered "experience-based experts" that can shape design of PrEP programming but need continuous training, routine supportive supervision, and psychosocial support. Findings from this collaborative work with PNs indicated the need for a co-designed, structured training and psychosocial support plan, as well as a strengthened supportive supervision and integration process at health facilities. This will create a shared framework for PNs, and clinical supervisors to ensure ongoing well-being and effectiveness of PNs.

## THPEE585

### Utilization of digital tools to enhance TB screening in communities for a lasting impact

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**Background:** Zimbabwe faces a significant challenge in managing tuberculosis (TB), particularly among people living with HIV (PLHIV). In 2020, an estimated 29,000 TB cases with an incidence rate of 181.3 per 100,000 people were reported. The TB mortality rate (excluding HIV) increased, while the rate among HIV-positive individuals slightly decreased.

Discrepancies between notified and estimated cases highlight suboptimal treatment coverage, emphasizing the need for enhanced case detection.

**Description:** The Target Accelerated Sustainability Quality of Care program, an ongoing initiative within the Organization for Public Health Interventions and Development (OPHID), has significantly transformed the approach to TB screening among HIV clients by moving from a paper-based system to a digital platform across 15 districts. Community Outreach Agents (COAs) efficiently collect and input screening data into the Open data Kit (ODK) during outreach programs. Each client undergoes a thorough TB screening process. Those responding affirmatively to screening questions are identified as presumptive TB cases, triggering a seamless referral process to designated facilities, health posts, or alternative service delivery points.

This structured approach ensures timely interventions for individuals at risk of TB within the HIV clients. Routine programme data were collected from January to December 2023 using ODK. Data were analyzed descriptively using STATA 15.

**Lessons learned:** A total of 125,750 HIV clients were screened for TB in the community, of whom, 86,337 (68.7%) were female and overall median age was 43 years (IQR 34–51 years). Of these, 9163 (7%) were presumptive TB cases and were referred to the health facilities for further TB diagnosis. Of the remaining 116,587 excluded TB symptoms, 11,131 were linked to the facility for TPT initiation which translated to community contribution of 18% of 60,812 annual TPT initiations.

**Conclusions/Next steps:** This study demonstrated that the integration of digital tools for TB screening among HIV clients can significantly streamline the identification and referral process for TB in community settings. However, it also points out the need for better linkage to care for clients after they are screened. The tools have demonstrated the potential for enhancing TB control within HIV service delivery. Future research should evaluate the long-term impact and cost-effectiveness of digital screening interventions.



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## THPEE586

Lessons learned from integrating GBV response services into HIV prevention care and treatment in four CDC supported provinces of Zambia

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**Background:** Gender-based violence (GBV) is a driver of the HIV epidemic globally and in Zambia, particularly among adolescent girls and young women aged 10-24 (AGYW). In 2023, 29.5% of post-violence service provision in Zambia were in response to sexual violence, and 69.9% of these cases were among AGYW.

The U.S. Centers for Disease Control and Prevention (CDC) through its partners has been supporting public health facilities in Eastern, Southern, Lusaka, and Western provinces of Zambia in offering the post-violence care as part of HIV Prevention intervention. We gathered lessons learned from 3 years of scale up of the GBV minimum package.

**Description:** Between October 2020 and September 2023, we scaled up post GBV care services in public health facilities from 116 to 551 (375% increase). The scale up also included capacity building of health care providers as first line responders to GBV disclosure. The scale up of the GBV services in health facilities improved access due to reduced distance to the nearest health facility and capacity building of health care providers improved the GBV services offered to the survivors.

**Lessons learned:**

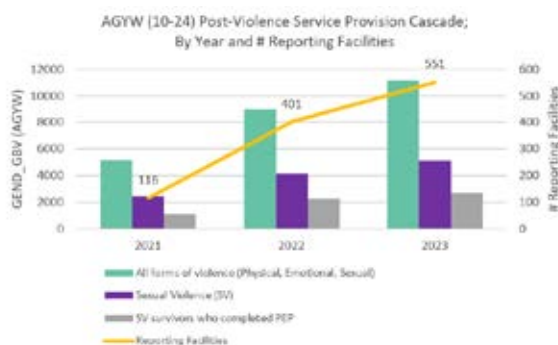


Figure 1.

In 2023, the total number of post-rape care services offered increased from 3527 in 2021 to 7473 in 2023 (111.9% increase). The post-rape care services among AGYW specif-

ically increased from 2,447 in 2021 to 5,114 in 2023 (109.0% increase). AGYW completing post-exposure prophylaxis increased from 1,109 in FY21 to 2,713 in FY23 (144.6% increase).

**Conclusions/Next steps:** Scaling up of GBV service points closer to survivors is key to increasing access to the services and improved outcomes.

Despite these positive strides, however, PEP completion rates remain low. Further analysis is needed to determine the challenges in PEP completion rates as the scale-up process continue.

## THPEE587

The drivers of gender-based violence in rural settings and its implications in achieving HIV epidemic control, North Central, Nigeria

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**Background:** Gender based violence (GBV) is a global public health problem, an act of violence/abuse perpetrated against a person's will that usually results in physical, sexual, or emotional/psychological harm. Global statistics shows 35% of women have experienced physical, emotional, or sexual GBV. 38% of murders of women are committed by the intimate partner.

The purpose of the study is to highlight the drivers of GBV in rural settings and its implications to achieving HIV epidemic control.



**Methods:** This is a mixed method retrospective study. We reviewed the hospital records of 2,000 clients randomly selected from 60 public hospitals in Kwara and Niger States (23 in Kwara and 37 in Niger) who had received gender-based services; including routine enquiry/GBV screening, GBV prevention and post GBV services in the community from October 2022 - September 2023. We analyzed the data with statistical tables/formula.

**Results:** From the 2,000 (F1,300; M 700) records reviewed, 778 (F509; M269) clients corresponding to 39% experienced different forms of GBV. 751 (F511; M 240) clients experienced physical/emotional violence, while 28 (F25; M 3) clients experienced sexual violence.

Out of 778 GBV survivors, 25%(195) had only basic or primary education as their highest educational qualification, 33% (257) were unemployed or do menial jobs, 8% (62) got married early before 25years of age, and 11% (86) were in polygamous marriages/family.

In total, 77% (599) out of 788 survivors (p-value <0.05) have one of these characteristics; illiteracy/low literacy levels, low socio-economic status/poverty, early marriage, and being in polygamous marriage/family.

**Conclusions:** Illiteracy/low literacy levels, low socio-economic status/poverty, early marriage, and being in polygamous marriage/family were the major drivers of GBV in rural community settings in North Central Nigeria. GBV (especially different forms of sexual violence) are among the drivers of the HIV epidemic.

It is important and timely to design GBV interventions which will focus in both urban and rural communities and hard-to-reach areas, this is a crucial step in the journey to achieve HIV epidemic control.

Further research is needed to shed light on the use of technology, digital application/software to enhance GBV prevention interventions and post GBV management.

of 2022, signifying a 29% increase from 7,920 in quarter four of 2021 [1]. We aimed to investigate the place of the Coaching Boys into Men (CBIM) initiative in addressing the root causes of gender based violence and HIV in Zambia's Kapiri Mposhi District.

1.<https://www.afrobarometer.org/publication/ad685-zambians-see-gender-based-violence-as-a-top-priority-though-many-consider-domestic-violence-a-private-matter>

**Methods:** Between October 2023 and December 2023, the USAID Controlling HIV Epidemic for Key and Underserved Populations (CHEKUP II) implemented by JSH, Implemented the Coaching Boys Into Men (CBIM) unified approach in fighting gender-based violence and HIV in Kapiri Mposhi District. CBIM aims to prevent sexual and gender-based violence in schools and communities. The Activity identified male coaches in schools to lead boys aged 10-14 into a series of 15-minute 13-card series. Focus group discussions were incorporated into sports with conversations around GBV, HIV and mental health. Desk reviews, pre and post session surveys were used.

**Results:** 19 coaches in 10 schools were trained and lead boys in a 13- card series. Out of a quarterly target of 282, 505 boys aged 10-14 were trained and graduated, representing 177% achievement. 101 boys were screened for mental health, of which 66 received Psychological First Aid, and 35 enrolled in sessions. According to a post-session survey, services enhanced the boys' coping mechanisms with them adopting equitable non-violence attitudes.

**Conclusions:** When boys and young men are 'caught young' with the knowledge of how to challenge harmful gender norms and promote healthy relationships, sustainable HIV and gender-based violence prevention outcomes are assured. The paper recommends the exploration of more all-encompassing approaches to the HIV response and the fight against GBV.

## THPEE588

Engaging boys in DREAMS programming for a safer tomorrow: a model for Coaching Boys Into Men (CBIM) in Kapiri Mposhi District, Central Zambia

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**Background:** Historically, there has been a greater emphasis on programs tailored for adolescent girls than those for adolescent boys. This trend continues to pose a strain on gains in HIV prevention among adolescents. With epidemic control efforts increasingly shifting towards addressing structural barriers as a way to sustain current gains and an understanding of the intersection between sexual gender based violence and HIV transmission, there is an increasing need of including boys and men in GBV and HIV programs. The Zambia Police Victim Support Unit recorded 10,241 GBV cases in quarter four

## THPEE589

Effectiveness of the use of an evidence-based curriculum in the reduction of sexual violence among adolescent girls at risk of HIV infection in Kano State, North-West, Nigeria

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**Background:** Sexual violence against adolescent girls and young women (AGYW) increases their risk of HIV infection. In parts of the sub-Saharan Africa, sexual violence among adolescents is as high as 24% (pediatrics). The No Means No Worldwide reported that nearly half of sexual violence





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is against girls aged 15 and younger. This study evaluated the effectiveness of an evidence-based curriculum (No Means No) that teaches empowerment self-defense skills for adolescent girls in preventing sexual violence in Kano Municipal Council, Tarauni, Fagge, Ungogo and Nassarawa LGAs of Kano State, Nigeria.

**Methods:** We conducted an orphaned and vulnerable children vulnerability assessment to identify adolescents at risk of HIV infection. The intervention collected data from the Sexual Assault Referral Centre, Kano State to identify communities with high cases of sexual violence. We taught the adolescent girls (N = 8,955) the skills to prevent sexual violence for 11 months.

We sampled 71 training cohorts of adolescent girls (n = 4,622) aged 9-17 to measure the knowledge gained and change in attitude through pre/post-test and focused-group discussions.

We measured behavioral outcome using anonymous beneficiary disclosure data from the total size of the population. We established a network referral system to provide post-GBV care to the survivors of sexual violence.

**Results:** The average increase in immediate knowledge on how to prevent sexual violence was 76% (pre-test 44%, post-test 78%); while the average change in attitude on gender and socialization was 68% with (pre-test 42%, post-test 71%). At baseline, adolescents had 65.5% rate of awareness about the occurrence of sexual violence in their communities.

After 11 months of intervention, 70 adolescents disclosed sexual assault against them and used the skills to prevent it. Sampled caregivers n = 12 representing 100% of the sample size, reported the effectiveness of this intervention on their children. 55 adolescent girls voluntarily conducted peer education for their peers in their communities.

**Conclusions:** The adolescent girls prevented sexual violence in these LGAs by using these skills. The intervention should be adapted by the Federal Government of Nigeria for implementation in secondary schools across the country to improve impact.

# Integration of HIV services with other health and support services

## THPEE590

**DOTS PLUS: a promising approach to increasing adherence to tuberculosis, drug resistant tuberculosis and antiretroviral HIV treatment in Mozambique**

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**Background:** According to WHO Global Tuberculosis (TB) Report (2023), Mozambique is extremely high burden for TB, drug resistant TB (DR-TB) and HIV-associated TB, where over 75% of estimated DR-TB cases remain undetected and one-third of people with DR-TB also live with HIV. Addressing barriers to (DR-) TB diagnosis and treatment adherence is a national priority for reducing morbidity and mortality. Since 2019, ADPP Mozambique, a local NGO, has implemented a holistic, client-centered approach through the enhanced Direct Observation Treatment Strategy (DOTS) PLUS model.

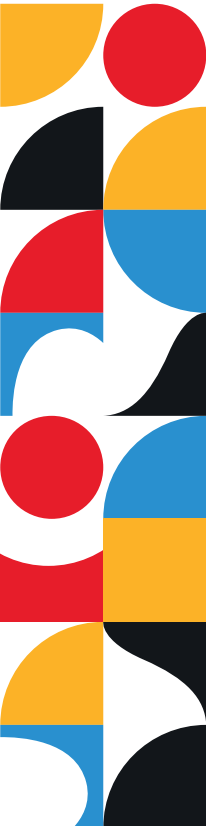
**Description:** ADPP Mozambique, funded by USAID, leads implementation of the Local TB Response project in four provinces, in partnership with FHI360, Comusanas, Kupulumusana and DIMAGI.

The model, DOTS PLUS, comprises direct observation of (DR-) TB treatment **plus** psychosocial and financial support (for nutrition, transport, and other costs), and provision of pill boxes. DOTS PLUS support services include medication monitoring, regularly scheduled visits, drug home deliveries, client escort for clinic visits, contact investigation plus TPT for eligible contacts.

**Lessons learned:** From May 2020 to September 2023, the project diagnosed 85,904 people with TB and 743 people with DR-TB (53% of all new TB diagnoses and 39% of new DR-TB diagnoses in the 50 target districts); 291,649 contacts of people with TB were screened for TB and HIV resulting in 1898 people diagnosed with TB (1715 DS TB and 183 DR-TB) and 394 (23%) people with TB also diagnosed with HIV. A total of 73,570 people were initiated on TPT and all people with concomitant HIV started on ART.

In total, DOTS PLUS support was provided to 1,219 people with DR-TB achieving 99% adherence to TB and ART (for those with concomitant HIV), 79% treatment success, 7% death, 4% not evaluated and 2% lost to follow up. These results compare positively to previous results of 52% treatment success and 21% of mortality.

**Conclusions/Next steps:** Providing DOTS PLUS for people with TB, DR-TB and concomitant HIV has demonstrated both scalability and good outcomes in the Mozambican context. Providing wraparound care and communi-



ty-based follow-up support improves (DR-) TB case finding and treatment success, HIV-TB integration and TPT uptake reducing morbidity and mortality.

## THPEE591

The facilitators and barriers to the access of mental health services and support for people living with HIV in China: a qualitative study from a client's perspective

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**Background:** People living with HIV (PLHIV) in China face significant mental health burdens, including depression, anxiety, and suicidal tendencies. The mental health needs of PLHIV remain unmet due to the fragmented nature of the Chinese healthcare system. Mental health screening and treatment are lacking in the HIV clinic, and mental healthcare providers lack expertise in HIV care. This dual service gap contributes to fragmentation in the HIV care cascade.

The aim of this study was to explore the factors that influence access to mental health services from the perspective of PLHIV in China.

**Methods:** This qualitative research, through online in-depth semi-structured interviews, was conducted with 21 PLHIV nationwide in China between November 2023 and January 2024. The interviews explored participants' understandings and experiences of mental health coping, help-seeking, and related social and health services, as well as perceived facilitators and barriers to accessing service. Data was coded in NVivo 14 employing the Anderson service utilization model.

**Results:** 21 PLHIV, mostly identifying as men who have sex with men (MSM), were recruited with various educational backgrounds and ages ranging from 25 to 49. Half of the participants have experience in coping with and accessing services when confronted with mental health challenges. The key barriers encompassed deficient mental healthcare infrastructure at the contextual level, and limited access and privacy concerns at the individual level. Stigma and discrimination associated with HIV and strained doctor-client relationships were identified as barriers at the health behavior level.

The key facilitators involved CBO-led care linkage at the contextual level. At the individual level, facilitators included awareness and destigmatization of mental healthcare, knowledge and economic capital, and social support from peers, CDC workers, and relatives.

Streamlined healthcare logistics were identified at the health behavior level. Designated hospitals were preferred for PLHIV due to privacy protection, culture adaptation, and empathy of service providers.

**Conclusions:** Our findings underscore the importance of addressing disparities in access and healthcare information, ensuring privacy protection, fostering cultural competence among healthcare providers, and establishing an inclusive environment within the mental healthcare setting. Future research should consider the provider's perspective on the barriers and facilitators in service delivery in China.

## THPEE592

Nature of PEPFAR's above-site health system investments in 52 countries: PEPFAR led, PEPFAR supported integration, or partner country led?

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**Background:** The United States President's Emergency Plan for AIDS Relief (PEPFAR) has invested in health systems above the site of service delivery. PEPFAR's Five-year Strategy states, "it will be critical to integrate large parts of the PEPFAR HIV programmatic effort more effectively into country-led programs and systems." A new indicator tracks integration of PEPFAR above-site activities into partner country systems.

**Methods:** We quantified above-site health systems investments according to a new measure in the PEPFAR Planning for Above-Site Investments Tool (PASIT) as part of the Country/Regional Operational Plan process for investments from October 2024 to September 2026. The Nature of Health Systems Investment measure includes three mutually exclusive response options for each above-site health system investment planned: 1. PEPFAR led (defined as "investment not integrated into health system"), 2. PEPFAR supported integration (defined as "jointly managed investment dependent on PEPFAR and host country support"), 3. Partner country led (defined as "host country ownership and management, PEPFAR enhances system"). PEPFAR country teams categorized each above-site health systems activity into one of the three options. We describe these activities by country, by World Bank income group (Low, Lower Middle, Upper Middle, High), and by region (Africa, Asia, Americas, Europe).

**Results:** Of 1,574 above-site health system investments planned by PEPFAR and partners across 52 countries, 18% were PEPFAR led, 49% were PEPFAR supported integration, and 33% were partner country led. The percentage of above-site health systems investments that were partner country led increased by each income group level (i.e., Low 30% to Lower Middle 33% to Upper Middle 37% to Upper 50%), yet the percentage of PEPFAR led activities was relatively constant across income groups (i.e., 15-20%). The corresponding proportions for PEPFAR led, PEPFAR supported integration and partner country led varied considerably by region.



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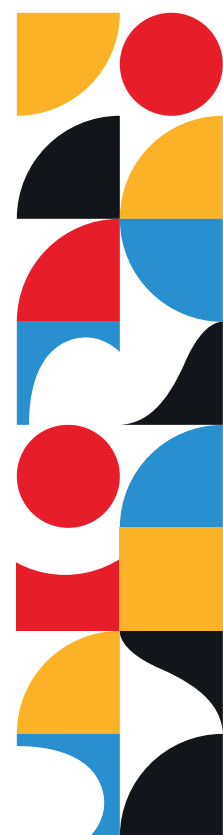
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**Conclusions:** The percentage of above site health systems activities that were partner country led increased by income groups, which may indicate a relationship between partner country economic capacity and its leadership of these activities. Most activities were PEPFAR supported integration. Integration into partner country health systems may promote HIV response sustainability.

## THPEE593

**Mainstreaming HIV/AIDS prevention services within government health systems: a critical measure for sustaining interventions for PWID's in Bangladesh**

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**Background:** HIV intervention was NGO driven program from the beginning of the HIV from different funding streams but funds was winding up day by day and government is taking over the development project like HIV. The HIV prevention program is a major project undertaken by the Bangladesh government and a major target of the SDGs 3.3 From that point of view, the government is determined to fulfill this responsibility. Global fund is in transition phase and integration to the Government facilities of the KP services.

**Description:** APOSH emerged as a Shelf-Help Group of ex-drug users in Bangladesh in 1999. APOSH has been implementing Demand & HR intervention for PWID since 2004 through different projects. Currently, APOSH serves around 4564 PWIDs.

In 2022 APOSH started a comprehensive HIV prevention and treatment services in five Government hospital with National AIDS/STD Control (NASC) & SCI. Government Hospital provided space; NASC & SCI provided all TA support & APOSH is implementing this program. At present, in 5 Govt service center total 1807 PWID are provided the comprehensive package: last six months 1028 HIV testing, 62 STI, 75 Abscess management, 555 General Health service, 812 Health Screening, 246038 S/N distribution and 35650 Condoms distribution. Supplementary services medical consultations were also provided. PWID were referred to government services for all clinical services, TB care & drug dependence counseling.

**Lessons learned:** The project spends \$ 200 taka per month per service center/\$ 2400 per year/5 Services center, total \$ 12000 In one year these five service centers, to run this program by renting a house outside, but now no money is being spent. Now all utility cost is borne by the Hospital authorities.

**Conclusions/Next steps:** KP intervention which will be implemented by the APOSH from the hospitals. KPs are stigmatized in our society and their behavior may not be similar to general people. Thus, they deserve separate attention from the service providers.

Moreover, integration of this program to government hospitals is making it possible to provide all services under one umbrella. It is cost effective and sustainable as well. This is a unique and innovative HIV Program in Bangladesh.

## THPEE594

**Transformative impact: scaling OST services leads to substantial decline in HIV prevalence among PWID in Dhaka, Bangladesh**

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**Background:** CARE Bangladesh has spearheaded the PWID intervention since 1998, continuing through the Global Fund from 2008. Notably, HIV cases peaked from 2016-2018, reaching 27.3% prevalence among PWID in Dhaka City in 2016. The intervention saw significant growth in 2018 when CARE and Save the Children rapidly scaled up OST services across 11 centers by 2023, benefiting 2,750 PWID, including 550 HIV-positive individuals.

This strategic scale-up contributed to a remarkable decline in HIV prevalence among PWID in Dhaka, reaching 5.1% as per IBBS 2021, showcasing the program's substantial success in HIV prevention.

**Description:** Adhering to the global commitment of 95-95-95, the PWID intervention aims to annually engage 95% of the listed PWID in HIV Testing Services (HTS). The data from 2016 to 2023 provides valuable insights into HIV testing and treatment trends. The number of HIV tests conducted annually has remained relatively stable, fluctuating between approximately 7,000 and 14,000 tests. Notably, the number of HIV-positive cases peaked in 2018 at 176, followed by a decrease in subsequent years.

Despite the variations in the number of positive cases, the HIV identification rate has generally declined from 2.5% in 2018 to 0.3% in 2022 and 2023.

This suggests a positive trend in controlling and identifying HIV cases within the tested population. Concurrently, the number of clients receiving Opioid Substitution Therapy (OST) in Dhaka has shown a consistent increase, reaching 2,150 in 2023. This growth in OST clients underscores the importance of comprehensive healthcare strategies, including both HIV testing and substance abuse treatment, in addressing public health challenges.

**Lessons learned:** The majority of hard-core People Who Inject Drugs (PWIDs) are consistently participating in Opioid Substitution Therapy (OST) and maintaining regular contact with the Psycho-social Counselor.

Consequently, the likelihood of needle syringe sharing has been significantly reduced, leading to a declining trend in HIV transmission. This underscores the noteworthy impact of the OST program on the PWID community.



**Conclusions/Next steps:** OST proves to be an effective and successful initiative in preventing the transmission of HIV. This service plays a crucial role in halting the spread of HIV among individuals who inject drugs.

## THPEE595

**Bridging the gap: integrating mental health screening into routine HIV care at Anti-Retroviral Treatment Center in Delhi, India**

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**Background:** People living with HIV (PLHIV) bear a disproportionate burden of mental health conditions. Worldwide, PLHIV frequently encounter mental health challenges at an elevated rate compared to the general population. These mental health conditions can significantly affect adherence to HIV treatment and retention in care. To address this concern, we integrated a mental health screening initiative at the Anti-Retroviral Treatment (ART) center in Delhi.

This approach involves collaboration between lay healthcare workers and clinicians, aiming to seamlessly integrate mental health services into the routine care provided at the ARTCs.

**Description:** This ongoing initiative involves systematically screening all adult PLHIV aged  $\geq 18$  years during their routine visits. A screening protocol, following current national guidelines, was established, and the staff at the ART center received specialized training to screen and identify mental health conditions.

The trained lay healthcare workers conducted initial screenings using a designated mental health screening tool, specifically Patient Health Questionnaire-2 (PHQ-2). Subsequently, individuals identified as positive for PHQ-2 underwent a comprehensive screening using PHQ-9. Those testing positive on PHQ-9 are referred to trained clinical mental health experts for further assessment, diagnosis, and treatment.

Depending on the results, ART clients identified with mild disorders received counseling from ARTC counselors, those with moderate disorders were referred to psychologists for counseling, and individuals with moderate to severe disorders were linked with the Department of Psychiatry for initiation of treatment.

**Lessons learned:** During the initial three-month implementation phase (November-2023 to January-2024), healthcare staff at ARTC screened 1500 PLHIV for mental health. Among those screened, 11.7% (171/1500) identified positive on the PHQ-2 and underwent the PHQ-9 assessment. On the PHQ-9, 87.7% (150/171) were identified as likely to have mild to severe mental health conditions.

Among these, 64.7% (97/150) individuals received individual counseling at the ARTC, while 35.3% (53/150) with suspected moderate to severe mental health condition were referred to psychiatrists for further evaluation and management.

**Conclusions/Next steps:** Routine screening of PLHIV for mental health helps to proactively identify and manage PLHIV with co-morbidities. The integration of mental health services into HIV care through a task-sharing approach is a feasible strategy that could increase access to mental health services among PLHIV.

## THPEE596

**Screening for mental health disorders among vulnerable people living with HIV: lessons learned from 11 demonstration facilities in Tanzania can inform broader integration**

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**Background:** Integrating mental health screening within existing HIV programming is a global priority given the high risk of mental health disorders among people living with HIV (PLHIV). Mental health screening in Tanzania is not routinely done as recommended by the World Health Organization. The Elizabeth Glaser Pediatric AIDS Foundation, through the USAID-funded Afya Yangu Northern project, integrated mental health screening in 11 HIV clinics in Tanzania.

**Description:** Eleven HIV clinics were selected from 472 project-supported sites to serve as demonstration sites. Mental health screening tools for HIV care providers were adapted from existing national mental health diagnostic tools. Recording and reporting tools were developed, as well as referrals pathways.

We screened for symptoms and signs of anxiety, depression, post-traumatic stress disorders (PTSD), psychosis, drug use, and dementia. Screening was prioritized for vulnerable PLHIV—namely, those with a high viral load, newly initiated on antiretroviral therapy (ART), returned to treatment (RTT), pregnant and breastfeeding women (PBFW), and gender-based violence survivors.

Patient-level data were abstracted from routine clinic registers for the period of April 2023 to September 2023. Data analyzed included the proportions of individuals



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screened, disaggregated by sex; proportion with symptoms suggestive of mental health disorders; and proportions referred to mental illness care clinics.

**Lessons learned:** Among 2,129 vulnerable PLHIV 1,974 (88%) were screened for mental health disorders. Those screened included 1500 (80%) women, 749 (40%) PBFW, and 642 (34%) PLHIV newly initiated on ART. At least one symptom suggestive of a mental health disorder was identified in 769 (41%) individuals screened with 364 (47%) requiring referral to mental health providers.

These individuals were escorted to the mental health clinics and completed referrals for diagnosis and treatment were confirmed by mental health providers. Depression and anxiety were the most frequently reported disorders at 33% (254/769) and 28% (216/769) respectively.

**Conclusions/Next steps:** Integrated mental screening targeting vulnerable cohorts of PLHIV is feasible in routine care. Without screening, serious mental disorders could be missed. For full integration, systems are needed to ensure HIV providers are equipped with skills to manage common mental health disorders and refer those with serious illness.

## THPEE597

The effectiveness and impact of point-of-care diagnosis on improving TB case finding among people living with HIV (PLHIV); a strategic intervention for optimizing TB/HIV collaboration

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**Background:** HIV and Tuberculosis are the world's two most deadly diseases and TB is the leading cause of death among people living with HIV (PLHIV). In addition to early access to ART, high quality TB screening, and prompt TB testing are critical interventions to ensure that people with HIV receive timely treatment for TB disease thereby preventing mortality and improving their quality of life.

**Description:** This study was conducted in a facility with the highest burden of TB/HIV co-infection in Ogun state, Nigeria. As part of effective TB/HIV collaboration, active TB screening takes place at ART clinic while HIV testing and counselling is also done for all TB presumptive cases identified from OPD screening activity. HIV positive clients

with CD4 count less than 200 (Advanced HIV disease) are tested with LF-LAM while other HIV positive clients are evaluated with GeneXpert or Chest X-ray appropriately.

**Lessons learned:** With LF-LAM point-of-care TB diagnosis, the facility recorded the highest TB/HIV co-infection case finding in Quarter 4, 2021 with an overall documented statewide incidence rate of 10% in 2021 compared with the 8% of 2020. A downward trend in the case finding began from Quarter 1, 2022 when the stock of LF-LAM test kit started declining and then nosedived in Quarter 3 and 4 of 2022 due to stock-out of LF-LAM test kit in the country.

Table 1.0 Means of Diagnosis

Quarter	GeneXpert	LF LAM	CXR	Total Diagnosed
Q4 2021	12(44%)	12(44%)	3(11%)	27
Q1 2022	5(28%)	11(61%)	2(11%)	18
Q2 2022	7(41%)	7(41%)	3(18%)	17
Q3 2022	3(33%)	1(11%)	5(56%)	9
Q4 2022	4(40%)	0(0%)	6(60%)	10

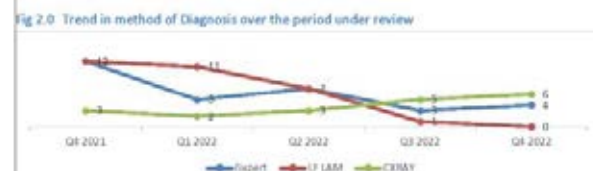
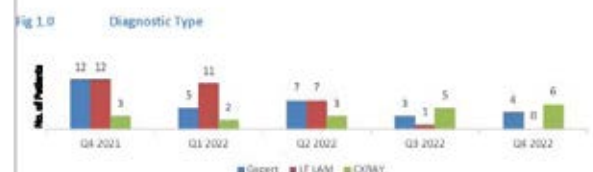


Table 2.0 CD4 Status.

Quarter	Sub Total	New FX CD4 Count		Sub Total	Old FX CD4 Count		Sum Total
		>200	<200		>200	<200	
Q4 2021	20	11 (52%)	9 (42%)	7	0 (100%)	27	
Q1 2022	14	5 (36%)	9 (64%)	4	0 (100%)	18	
Q2 2022	14	9 (64%)	5 (36%)	3	0 (100%)	17	
Q3 2022	9	3 (33%)	6 (67%)	0	-	9	
Q4 2022	10	4 (40%)	6 (60%)	0	-	10	
Total	67	32 (48%)	35 (52%)	14	0 (100%)	81	

**Conclusions/Next steps:** LF-LAM point-of-care TB diagnosis is effective at improving TB case detection among PLHIV and comparatively more sensitive than GeneXpert and CXR in TB diagnosis particularly among patients with advanced HIV disease because of the paucibacillary TB disease.

It is therefore recommended that policy should support resource mobilization for adequate supply of LF-LAM test kits to national TB program which can positively impact on finding all missing TB cases among PLHIV, consequently promoting prompt TB treatment and reducing TB-related mortality.

## THPEE598

### The integration of a mental health referral system within adolescent HIV clinics

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**Background:** Mental health screening in HIV clinics is rare, especially in resource-limited settings. This is in part due to the lack of referral systems. This study evaluates the feasibility of integrating a mental health referral pathway for young people living with HIV (YPLWH) who screen positive for symptoms across four unique clinical settings in Tanzania.

**Methods:** As part of Sauti ya Vijana (SYV), a peer-led mental health intervention for YPLWH, we developed an integrated referral pathway within adolescent HIV clinics. At each study visit, youth responded to interviewer-guided mental health screening tools using the REDCap Mobile app. Automatic referral alerts were sent to the study team if: a score of  $\geq 10$  on the Patient Health Questionnaire-9 or General Anxiety Disorder-7 is met, any instance of sexual abuse, self-harm, or suicidal ideation is reported, or by an interviewer specified concern. Site-specific referral flowcharts were developed based on site-specific manpower and facilities. Referrals were documented in the study logbook, entered into REDCap, and analysed for incidence, attendance, and outcome.

**Results:** To date, 52 (15%) of the 351 enrolled youth generated 63 alerts (Figure 1).

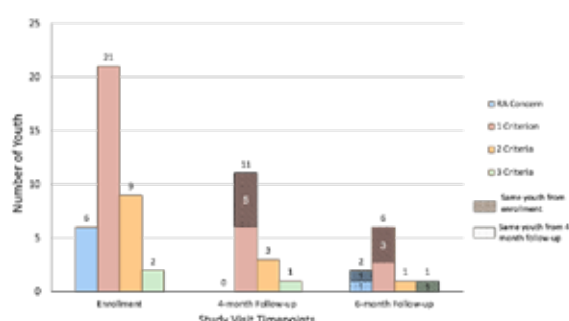


Figure 1. Number of youth referrals by study visit timepoint.

Seventy-one percent attended their referral appointment, of which 76% reported resolution of their mental health distress, with 62% after a single visit. Referred YPLWH saw a trained counsellor (68%), and the remaining

saw psychologists (14%), psychiatrists (14%) and the clinic physician (5%). Challenges included undocumented outcomes (15%), refusal (2%) and non-attendance (12%) of referrals, particularly in one clinic, which relies on referrals to an external mental health department, unlike the other three clinics with on-site referral services.

**Conclusions:** Despite barriers such as stigma, logistics, and financial limitations, many YPLWH improved after a single referral visit for mental health distress.

The study demonstrated the feasibility and benefits of integrating a mental health referral pathway within the existing adolescent HIV clinic structure.

## THPEE599

### Implementation determinants for PrEP among peripregnant women who use drugs and have a history of incarceration in the U.S.

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**Background:** This study addresses the syndemic of drug use, incarceration, reproductive health, and HIV risk among women of reproductive age. We conducted a community-engaged, mixed-methods research study to identify the implementation barriers and facilitators to implementing PrEP and understand the multilevel barriers to HIV risk reduction during reentry from the perspective of peripregnant women who use drugs and have a history of incarceration living in Miami-Dade County, a priority county for ending the HIV epidemic in the U.S.

**Methods:** During 2023 we conducted semi-structured qualitative interviews and brief surveys with 34 peripregnant women who use drugs and have a history of incarceration and semi-structured qualitative interviews with 11 providers working in the areas of HIV or reentry services. The research was funded by the NIH Ending the HIV Epidemic initiative (3P30MH116867-04S2) and was approved by the University of Miami Human Subjects Review Board. Qualitative interviews were transcribed verbatim and were analyzed using a general inductive approach and team-based thematic coding in NVivo.

**Results:** Individual-level determinants described by women include not being familiar with PrEP, concerns about taking medications during pregnancy, and not perceiving themselves as having risk for HIV acquisition. Most women expressed preference for LAI PrEP versus daily oral medication. Women did not have a regular reproductive health provider and when they experienced pregnancy it was difficult to find appropriate services. Women reported that when they did receive reproductive health care, their provider did not discuss PrEP with them. Women



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seemed supportive of integrating reproductive health services into harm reduction programs. Data from both women and providers indicate a fragmented service system: HIV providers had very little knowledge of the complex legal challenges that women in our study reported, and reentry providers had very low knowledge about, but high interest in, HIV/PrEP services.

**Conclusions:** Supportive and non-stigmatizing reproductive health should be part of reentry and harm reduction/drug treatment services in combination with HIV prevention/PrEP for women of reproductive age who use drugs. Given the high level of coercive system involvement (family services, police, etc.), which complicates healthcare treatment for women, a medical legal partnership model may be effective for this client population.

## THPEE600

### USAID/PEPFAR contributions to dual HIV and syphilis elimination efforts in pregnant persons in eight countries

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**Background:** Elimination of vertical transmission of HIV and syphilis is a global priority and has been validated in several countries. Multiple stakeholders support inclusion of HIV and syphilis testing at the first antenatal care (ANC1) visit, in alignment with World Health Organization (WHO) guidance, and some PEPFAR-funded programs have procured syphilis testing and treatment commodities.

This analysis quantifies PEPFAR's testing and commodity contributions to dual elimination efforts in eight countries that report syphilis in pregnancy data to WHO.

**Methods:** We reviewed routine data from eight USAID/PEPFAR-supported countries (Haiti, DRC, Kenya, Lesotho, Nigeria, Tanzania, Uganda, Zimbabwe) including: 1) HIV testing coverage at ANC1 in Fiscal Year 2022 (FY22, USAID/PEPFAR), 2) procurements of syphilis rapid test kits (RTKs),

HIV/syphilis RTKs, and Benzathine Penicillin G (BPG) (FY20-22, PEPFAR), and 3) national syphilis testing coverage, seropositivity, and treatment coverage in pregnancy in calendar year 2022 (WHO Global Health Observatory data). Data on accessibility of quality-assured BPG for syphilis treatment and congenital syphilis case estimates were too limited to include.

**Results:** HIV testing coverage at ANC1 averaged 96% (range: 83-100%), while syphilis testing coverage in pregnancy averaged 67% (range: 21-96%). The average syphilis positivity among ANC attendees was 2.3% (range: 0.59-8.03%), and an average of 72% (range: 17-100%) of ANC attendees with a reactive syphilis test received treatment. In FY20-22, Nigeria, Uganda, and Zimbabwe procured dual HIV/syphilis RTKs, Uganda and Haiti procured syphilis RTKs, and Nigeria, Uganda, and Haiti procured BPG using PEPFAR funds.

**Conclusions:** USAID/PEPFAR strongly supports global goals to eliminate vertical transmission of HIV and syphilis. The stark differences in testing coverage for syphilis and HIV in pregnancy may be attributable to gaps in necessary commodities and service delivery approaches for syphilis. Additionally, poor treatment coverage in some settings, limited availability of high-quality data on syphilis treatment coverage, partner follow-up, congenital syphilis rates, and syphilis commodity procurements across procurement agents warrants further attention.

Multi-stakeholder efforts are needed to develop integrated approaches to service delivery and procurement to ensure that platforms created to prevent vertical HIV transmission are adequately leveraged to support elimination of vertical transmission of syphilis, and expanded to include triple elimination of hepatitis B.

## THPEE601

### Breaking barriers to integration of HIV and mental health services delivery in Kenya

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**Background:** Mental health conditions increase the risk of HIV infection, and PLWH have increased risk of mental health conditions and low adherence to HIV treatment, increase risk behaviours, and HIV prevention.

The purpose was to strengthen integration of mental health and HIV services delivery in Kenya in order to promote early detection and management of comorbidity of HIV and mental health conditions.

**Description:** Conducted baseline survey, targeted key influencers of HIV and mental health at community, health facilities and policy levels, increased their awareness of HIV and mental health comorbidity and WHO quality rights. Further, improved attitude and practices in services provision. Advocated for legal, policy, planning and budgetary reforms, and conducted end line survey.


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**Lessons learned:** Both HIV and mental health conditions were associated with multiple stigma leading to discrimination and social exclusions. However, HIV services delivery systems were advanced and provided platform to promote mental health interventions. HIV services providers and support groups were trained on Problem Management Plus (PM+) and Mental Health Gap (mhGAP). This sustained access to HIV and mental health services for 1,331 clients, establishment of 17 psychosocial support groups, and mobilisation of 18 champions.

Factors determining HIV and mental health were multi-sectoral, hence interventions adopted a multi-sectoral approach. Incorporated HIV and mental health in all facets of the economy including justice system. This enabled women, teen mothers, PLWHA and PWDs with mental health conditions facing abuse, disinheritance and abandoned to access justice with support of *probono* lawyers. Universal health coverage successes require targeted legal, policy, planning and investments. While HIV programmes have sound and progressive laws, policies and investment plans, mental health was incapacitated. Rigorous advocacy led to amendments to mental health law, policy, establishment of coordination structures and integrated costed mental health plans provided opportunities for joint HIV and mental health planning, facility and outreach services delivery.

**Conclusions/Next steps:** Integration of mental health to HIV services is challenged by lack of understanding of mental health, and relationships between HIV and mental health. Nonetheless, creating awareness, capacity building, working with gatekeepers, health providers, policy makers and stakeholders is crucial for successes on integration of HIV and mental health services delivery.

## THPEE602

### Integration of HIV services with primary health care in Africa: a comprehensive review of costs and cost-effectiveness

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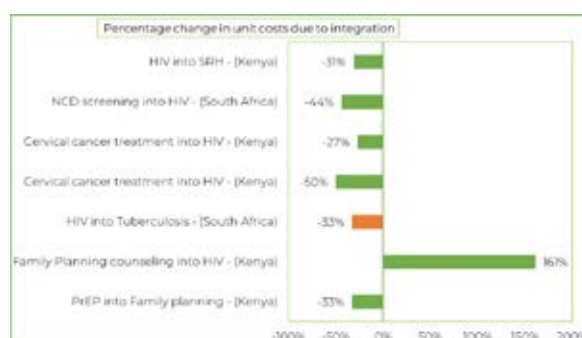
**Background:** The integration of HIV services with primary health care (PHC) has gained significant attention in recent years, as a strategy to enhance the delivery of comprehensive care for individuals living with HIV. This review aimed to assess existing literature about costs and cost-effectiveness of integrating HIV services in PHC, to identify gaps in understanding pathways to integration, and the resulting economic implications of HIV integration in PHC.

**Methods:** A literature search was conducted in PubMed and the National Health Service - Economic Evaluation database, from 01 January 2012 to March 30, 2023. Out of

90 studies, 19 studies (including 1 systematic review) were included, with 10 estimating cost-effectiveness and 9 focusing on costing for integration. An exploratory analysis of costing methods, components, and the economic impact of integrating HIV services in PHC, was undertaken.

**Results:** Most studies were implemented in Kenya (n=7) and South Africa (n=5), with additional studies in Zambia, Malawi and Uganda. Integrated services included non-communicable diseases, family planning, and Sexual and Reproductive Health (SRH).

Findings suggest that integrating HIV services reduces unit costs and is associated with cost-effectiveness. However, its impact non-major cost drivers, such as personnel and medical supplies, remained inadequately addressed and examples from integration beyond facility-level pilot programs are limited.



**Conclusions:** This review underscores that integration of HIV services with other health services is largely associated with cost-savings and cost-effectiveness, but evidence from interventions beyond pilot studies remains limited. In addition, pathways of how integration unfolds and impacts on costs are not well-documented or illustrated, specifically at the health system level. Developing a framework for these pathways is crucial for understanding integration and its impact on unit and total costs. Further research is essential to explore these pathways and assess the long-term costs and cost-effectiveness of HIV integration in PHC at all levels of the health system.



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## THPEE603

### Implementation of screening for hazardous alcohol use to address mental health among key populations in three Zambian provinces

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**Background:** In sub-Saharan Africa individuals from marginalized or vulnerable key populations (KPs) with limited access to healthcare often face increased risk of engaging in hazardous drinking behaviors. Addressing hazardous alcohol use among KPs requires equitable mental health (MH) services integrated into safe spaces to provide support and reduce harm. The Community Impact to Reach Key and Underserved Individuals for Treatment and Support (CIRKITS) project integrated MH and alcohol use screening into KP safe spaces in Southern, Western, and Eastern provinces of Zambia.

**Methods:** From October 2022 through June 2023, healthcare workers at KP safe spaces were trained to administer the Cutting down, Annoyance by criticism, Guilty feeling, and Eye-openers (CAGE) questionnaire. The CAGE tool consists of four standardized questions to screen for hazardous alcohol use to identify individuals with problematic drinking behaviors.

A "yes" response to two or more questions indicates that further assessment for alcohol-related problems may be warranted. All KP clients accessing HIV services at the safe spaces were offered MH screening, including CAGE. All clients who consented were screened and data documented.

KP clients were categorized with hazardous use and non-hazardous use; clients at risk for hazardous use were referred to services at the health facility. Data were analyzed using R Studio.

**Results:** Using CAGE, 236 KP were screened for hazardous alcohol use, with 172 (73%) categorized as hazardous alcohol users. When disaggregated by age, 81% of KPs aged 17-24 years and 70% of KPs over 25 years had hazardous alcohol use. A higher proportion of KPs aged 17-24 exhibited hazardous behaviors around their alcohol use. Among KPs with hazardous alcohol use, 80 (47%) were men who have sex with men, 64 (37%) were female sex workers, 19% (11) were people who inject drugs, and 9 (5%) were people who are transgender.

**Conclusions:** In Zambia, about three quarters of KPs screened reported hazardous alcohol use. The integration of screening services is the first step to providing additional care and support to KPs, but further services need to be implemented to provide critical mental health services to vulnerable populations.

## THPEE604

### Who is the grim reaper: a descriptive retrospective review on causes of mortality amongst PLHIV in 4 counties in Kenya

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**Background:** Despite significant advances in HIV treatment, mortality remains high among PLHIV in Kenya, with advanced HIV disease (AHD) as the leading cause. In Kenya, approximately 28,200 people living with HIV (PLHIV) died in 2017, a 48 % decline compared to 53,900 in 2010. Among children <15 years, the deaths were estimated at 4,300 in 2017 down from 10,200 in 2010, a 58% decline. This review was done to analyze the causes of death with the aim to strengthen the health system to address preventable causes of death.

**Description:** USAID Tujenge Jamii is an HIV project supporting 60,150 clients on ART in 189 clinics as of 31st October 2023. The project developed a customized open data kit (ODK) collection tool to collect data for any client reported as died across the 189 sites in 4 counties in Kenya. Health care providers were sensitized on monthly data collection of all the mortalities from October 2022 to September 2023. The cause of death was based on verbal autopsy as reported by the next of kin or the health care workers post data review. Data was reviewed and disaggregated by cause of death, geographical area, age, and sex.

**Lessons learned:** From the treatment cohort of 59,849, the crude death rate was 1.06% for Clients aged above 15 years (Male=1.4%, Female=0.9%), and 0.9% for children aged below 15 years (Male=0.9%; Females=0.4%). Of these, 30% (194) were classified as WHO stage 3 and 4, while Stage 1 and 2 were 55% and 15% respectively. Among the Females, the highest causes of death were TB 53(14.9%) and Cancers 49(13.8%), while in males was TB 56(21.5%) and cancers 20 (7.7%). 25% children died of TB.

**Conclusions/Next steps:** TB and cancer remain the highest contributors of death in adults with HIV in this region and efforts to intensify TBHIV and NCDs integration within HIV services need to be prioritized, even as quality of care is strengthened. It's imperative to continually review the causes of mortality and use the data to inform early detection and avert early deaths though more integrated programming, especially for TB and HIV as program managers.

## THPEE605

### Integrated and user-centered care model for pregnant adolescents with HIV in the Dominican Republic

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**Background:** According to PAHO, in 2022 the adolescent fertility rate in the Dominican Republic was 97 births per 1,000 women between the ages of 15 and 19, significantly higher than the average for Latin America. As of December 2023, the National Health Service (NHS) reported 76 HIV pregnant adolescents in the health facility network. Pregnant adolescents with HIV are cared for in adult units and do not have access to differentiated care to avoid stigma, discrimination, confidentiality, and clinical care appropriate to their needs. The NHS and the MoH's DIGECITSS, with the support of UNICEF and GIS Grupo Consultor, designed and implemented a user-centered model of care for pregnant adolescents to increase health care demand and adherence to treatment, and contributed to the reduction of mother-to-child transmission of HIV.

**Methods:** A baseline study was conducted in 12 Specialized Adolescents Units (SAU) reporting the highest incidence of HIV in pregnant adolescents.

The study focused on the conditions to organize the provision of HIV care services in the SAU:

- Availability of physical space;
- Personnel trained in adolescent care, STIs, and HIV;
- Conditions to offer a comprehensive package, including counseling focused on adolescent health, HIV rapid tests, CD4, viral load, TB screening, ARVs, and syphilis treatment.

**Results:** To close the gaps identified in the baseline study 12 SAUs were conditioned and habilitated to provide HIV services and 223 health personnel were trained in adolescent care, pre and post HIV test counseling, HIV, syphilis treatment, and adherence to treatment strategies. From May to December 2023, 3,247 pregnant adolescents attended these improved SAUs and were provided with HIV tests and same-day results. Out of all the adolescents tested, 37 were HIV positive, and 25 (68%) of those received ARVs and counseling on the same day as the diagnosis.

**Conclusions:** HIV and pregnancy care of adolescents in adult health facilities was identified as a barrier to health care demand, adherence to treatment, and the reduction of mother-to-child transmission of HIV. The improvement of SAUs to provide these services proved to be an effective strategy to increase demand, diagnosis, and early treatment of HIV in pregnant adolescents.

## THPEE606

### Unraveling the intersection of HIV and hepatitis C among males who inject drugs

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**Background:** The co-infection of Human Immunodeficiency Virus (HIV) and Hepatitis C Virus (HCV) poses a significant public health concern, particularly within the demographic of males who inject drugs (MWID).

This intersection of viral infections presents complex challenges, as individuals engaging in injection drug use are at heightened risk for acquiring both HIV and HCV.

**Methods:** In one model, we provided Hepatitis C Virus self-tests (both oral-fluid and blood-based) during HIV service visits. In the other model, community-based HCV self-testing (HCVST) was conducted through outreach efforts. This comprehensive approach aims to understand the intricate relationship between HIV and HCV among males who inject drugs.

By offering HCV self-tests in different key populations, we aim to gain insights into their acceptance and the feasibility of self-testing. Individuals who tested positive for HCV on the self-test were given the option for confirmatory testing.

Those confirmed positive for HCV on polymerase chain reaction (PCR) were eligible to receive free Direct Acting Antivirals as part of the study.

**Results:** From June 2023 to December 2023, a total of 1058 males who inject drugs participated in the study. Out of these, 874 (82.6%) tested positive on the HCV self-test. Among the positive results, 754 individuals (71.3%) were confirmed positive through PCR testing. For those who visited the sites for HIV services, 274 had undergone HIV testing. Among them, 84 (30.7%) tested positive, while 190 (69.3%) tested negative.

The study found that 1005 participants (95%) admitted to injecting multiple times a day, and a significant number, 1032 (97.5%), had never been tested for Hepatitis C before. Notably, 90% of the participants expressed a willingness to conduct future self-tests using an HCV self-test.

**Conclusions:** Ultimately, our findings underscore the need for comprehensive public health strategies that address the specific challenges faced by men who inject drugs, promoting both awareness and accessibility to testing services for HIV and Hepatitis C. The integration of HCVST into existing HIV services represents a step forward in advancing public health initiatives that target key populations and contribute to the control of these epidemics.



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## THPEE607

Integrating peer-led mental health interventions into adolescent Sexual and Reproductive Health (SRH) services: design perspectives from adolescent mental health service providers and researchers

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**Background:** The importance of including mental health interventions in combination with HIV prevention and treatment is increasingly recognized. Mental health and illness are known to impact behaviours related to HIV prevention and treatment outcomes, with poor mental health identified as a barrier to PrEP uptake and persistence. As SRH and HIV services for adolescents become more differentiated, establishing optimal ways to intervene to address mental health issues within service delivery platforms is key.

**Methods:** As part of a larger implementation science project (FastPrEP), scaling PrEP through a hub and spokes model offering multiple ways for young people to access PrEP, formative qualitative research was conducted to explore adolescent mental health provider and researcher perspectives on how best to integrate a mental health intervention into this model. Ten in-depth interviews were conducted with participants who were purposively recruited, exploring recommended intervention content, structure and operationalization. Interviews were coded using Nvivo 14 and analysed using thematic analysis.

**Results:** Participants acknowledged that despite numerous environmental drivers of mental illness, intervening at the individual level remains important for developing ability and skills to respond to external stressors.

Key recommended intervention components included building problem-solving and interpersonal skills, and developing emotional regulation, in combination with stress management and alcohol and drug education.

For sufficient dosage, most recommended a minimum of 4 to 7 intervention sessions, and favored group intervention sessions (of 6 to 8 adolescents), noting the value of opportunities for young people to learn from and build connections with their peers. Some however recommended inclusion of an initial one-to-one session to establish individual concerns.

Suggestions for delivery included leveraging the differentiated service delivery platform of FastPrEP to offer multiple venues and varying levels of intervention to suit adolescent needs. Key concerns included adequate training and ongoing support for peer facilitators and ensuring safe spaces for sessions.

**Conclusions:** Expert input indicates the value of peer-led group mental health interventions for adolescents that offer choice and variety in delivery location and level of

intervention to meet diverse and fluctuating adolescent mental health needs. Input from adolescents will be vital to further inform intervention development.

## Innovations in data collection, monitoring and evaluation

### THPEE608

Developing an international Quality of Care (QoC) benchmark for strengthening Community Led Monitoring systems

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**Background:** Community Led Monitoring (CLM) is a process whereby service users or local communities gather, analyze, and use information to support quality improvements of HIV services to increase uptake and retention of HIV services and improve health outcomes for key populations. A key component of CLM success is ensuring that data are used for decision-making and that feedback from communities of people living with HIV and other key populations improves HIV outcomes. Currently, there are no universally established minimum standards to assess CLM feedback mechanisms.

**Description:** The Sustainability of HIV Services for Key Populations in Southeast Asia (SKPA-2) program has reviewed CLM tools, technical briefs, and case studies to develop a quality of care (QoC) benchmark framework. The framework covers design, implementation, and monitoring and evaluation (M&E) stages of CLM, with sub-criteria developed under each phase. These include community leadership, data security, referral mapping and verification, duty of care, and links to advocacy. The tool aims to ensure CLM is fed back to all relevant stakeholders. We used the criteria to assess CLM initiatives in Bhutan, Mongolia, and Sri Lanka. For each country and category, scores between one and four were generated to assess strengths and gaps.

**Lessons learned:** The CLM QoC benchmark identified strengths and weaknesses of CLM systems to ensure they remain strong and responsive to key populations and that client feedback could be analyzed and actioned.



- Community leadership and confidentiality (including data security and mapping of referral service providers for serious incidents) were well documented across each country.
- Gaps were identified in documenting verified referral networks to ensure survivor centered services, and lack of duty of care among implementors.
- Engagement in advocacy for improving services, and ongoing M&E and refinement, was found to be weak or not well documented, indicating the need for increased attention to problem resolution and case management.

**Conclusions/Next steps:** SKPA-2's QoC CLM benchmark tool provides a set of standards that programs can use for self-assessment to identify strengths and areas requiring improvement. This will ensure that CLM is community-led, catalyzes actions, and supports progress to ending AIDS by 2030.

## THPEE609

Enhancing key communities' power in HIV advocacy in CECCA by equipping them with tools and knowledge in community-led monitoring

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**Background:** Community-led monitoring (CLM) is increasingly recognized in the Central and Eastern Europe and Central Asia (CECCA) region as a crucial tool for identifying and addressing gaps in HIV services. Despite its importance, community groups often hesitate to engage in CLM due to perceived complexities, costs, and uncertain advocacy effects. This situation significantly reduces the community's ability to use data to influence HIV programs.

This project aims to develop a practical compendium and web tool to empower community groups to be involved in CLM by simplifying the process and demonstrating its effectiveness.

**Description:** The project involves creating a comprehensive, yet accessible compendium, coupled with an interactive web tool. The compendium presents key practices and concepts of CLM, essential steps in the monitoring cycle, and a catalog of 19 CLM methods. These are explained in a manner suitable for diverse community groups. The web tool, designed for groups familiar with their monitoring objectives but unsure about the best methods, guides users in selecting appropriate CLM methods based on their specific questions, advocacy goals, and available resources. The project focuses on ten common areas for CLM, including accessibility, service quality, human rights violations, stigma, and medicine availability.

**Lessons learned:** The implementation of these tools has underlined the importance of user-friendly resources for community groups. It showed that with the right tools,

these groups are more likely to engage in effective monitoring, improving their capacity for evidence-based information collection and advocacy in HIV response.

The initiative also highlighted the need for further capacity building and knowledge among communities, promoting the use of scientifically proven research methods within CLM.

**Conclusions/Next steps:** This project underscores the significance of promoting scientifically proven research methods for use in CLM for community groups in the CECCA region, facilitating their active participation in shaping the HIV response through CLM and advocacy.

The next phase involves the widespread dissemination of the compendium and web tool, along with the evaluation of their impact on enhancing community-led monitoring initiatives.

Feedback from users will be crucial in refining these resources, ensuring their continued relevance and effectiveness in supporting community-led HIV response and advocacy efforts.

## THPEE610

Electronic systems for services in HIV prevention among key populations and care and support for PLHIV programs

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**Background:** Since 2019, State Institution Public Health Center of the MOH of Ukraine (PHC) has been successfully implementing HIV prevention and care and support for PLHIV state programs in Ukraine. Considering the WHO key recommendations, the negative impact of Russia's invasion of Ukraine and the high risk of losing data on paper/electronic carriers without a comprehensive information protection system, PHC launched a project on single national system of comprehensive monitoring of public health services provision.

**Description:** In February 2023, PHC received the property rights to the DATACHECK.GOV computer program on care and support services for PLHIV by All-Ukrainian Network of PLWH (current name – Information and Analytical System "Service Management in the Field of Combating Socially Dangerous Diseases", short name – Public Health). During March-August 2023, PHC technically adapted and refined the system according to the state program needs, and piloted it in 4 Ukrainian regions.

On September 1, 2023, PHC officially launched the system, and 100% of care and support services for PLHIV in Ukraine (state budget) are currently accounted for in Public Health.



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The project allowed to improve data accounting, optimize the reports submission and acceptance, and increased the quality of M&E of services. Public Health is:

- recipients and services provided database since the state program beginning;
- an effective audit system: indicators of program implementation, limits of paid services, verification of the contract conditions fulfillment;
- automatic program reports construction;
- mobile application for providers to record work information with the possibility of telephone verification of services by recipients.

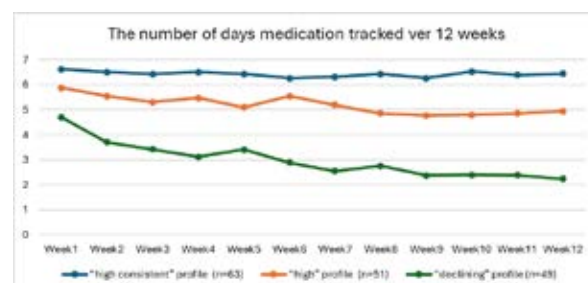
**Lessons learned:** Starting the system allowed to:

- carry out at the national level high-quality collection, processing, monitoring and protection of data on state program;
- analyze the quality of service provision using different statistical information about services;
- monitor violations of the service provision algorithm by provider, promptly respond to them;
- reduce the PHC monitors workload by automating some operational processes.

**Conclusions/Next steps:** In 2024, PHC plans to develop and launch HIV prevention services module among key populations, which will allow, among other impacts, to identify risk groups and individuals, take proactive measures to prevent diseases, provide individual recommendations for health preservation, adapt state programs for changes in public health.

number of days that they tracked in a week over 12 weeks of the intervention period. We used latent trajectory analysis to identify clusters of individuals who shared similar trajectories in medication tracker engagement over 12 weeks. Once trajectories were estimated, we examined whether trajectories were associated with the intervention outcome; PrEP adherence at week 13 was defined as TFV-dp $\geq 1,000$  fmol/punch (reflection of taking  $\geq 4$  doses/week).

**Results:** We identified three trajectories: a "high consistent" profile (n=63; 38.7%), a "consistent" profile (n=51; 31.3%), and a "declining" profile (n=49; 30.1%). Among participants who provided dried blood spots to test for TFV-DP at week 13 (n=103), 77.7% achieved PrEP adherence. Moreover, there was a significant association between tracker engagement trajectories and PrEP adherence (p=0.017), indicating higher rates of PrEP adherence among participants in the "high consistent" profile (90.1%) compared to those in the "consistent" profile (63.6%) and "declining" profile (74.1%).



## THPEE611

Trajectories of medication tracker engagement in P3 (PrEPared, Protected, emPowered) intervention app to improve PrEP adherence

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**Background:** Despite the importance of adherence to pre-exposure prophylaxis (PrEP) in HIV prevention, there are limited evidence-based digital health interventions (DHIs) to promote and sustain PrEP adherence. Therefore, this study explores the efficacy of P3 (PrEPared, Protected, emPowered), a novel, theory-based mobile app that utilizes game mechanics and social networking features to improve PrEP adherence among young men who have sex with men (YMSM) and young transgender women who have sex with men (YTWMSM).

**Methods:** Intervention arm (P3 and P3+ arms) participants (n=163; mean age=21.43) had access to a medication tracker where participants could track whether or not they took their PrEP medication. We explored participants' medication tracker engagement by counting the

**Conclusions:** Our findings highlight the potential for DHIs that utilize medication trackers to improve PrEP adherence among YMSM and YTWMSM. Understanding participant engagement profiles and app components that facilitate engagement is critical for the design and implementation of DHIs to address the HIV epidemic.

## THPEE612

ShoutLink: leveraging technology to improve layering of behavioral and biomedical HIV prevention services among adolescent girls and young women in South Africa

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**Background:** Shout-It-Now (Shout) is a community-based PEPFAR CDC DREAMS partner providing combination behavioral and biomedical HIV prevention services to adolescent girls and young women (AGYW) in two South African provinces. DREAMS aims to fortify vulnerable AGYW with multiple layers of behavioral and biomedical protections, which are often delivered by multiple partners. Like many other NGOs who refer clients to partners for

additive services, Shout experienced challenges tracking service provision by its largest partner, Community Media Trust (CMT), and other service providers due to organizations' separate data systems and different client engagement priorities. These challenges created a barrier to collaboration and to delivering comprehensive services to AGYW.

**Description:** To improve implementation, monitoring and reporting of layering, as well as promote a continuously supported journey for clients; Shout developed *ShoutLink*, an app that tracks each client's referral and service access data across multiple service providers. *ShoutLink* is designed to follow AGYW longitudinally as they access behavioral and/or biomedical services from different organizations, as well as track their enrollment, attendance, vulnerability assessments and graduation from behavioral programs. *ShoutLink* is integrated with Shout's electronic client management system which allows for transparent, real-time monitoring and reporting of DREAMS layering and enables more timely programmatic decision making for resources to be allocated and make real-time program improvements. This also provides clients with a seamless experience as they are layered between the behavioral programs and biomedical services without having to repeat their details or feel that they're being referred to a different, unknown service provider.

**Lessons learned:** The fit-for-purpose *ShoutLink* app significantly improved the delivery of comprehensive, layered HIV prevention services to vulnerable AGYW between two separate organizations (see table).

Indicator	COP21 Layering (pre-ShoutLink)	COP22 Layering (using ShoutLink)	% Increase in Layering
Number of 15 – 19 year olds who graduated at least one program AND had an HIV test	23,720	33,579	41.6%
Number of 15 – 19 year olds who graduated at least one program AND accessed PrEP	12,948	22,750	75.7%
Number of 15 – 19 year olds who graduated at least one program AND accessed contraception	5,091	8,630	69.5%
Number of 15 – 19 year olds who graduated at least one program AND had a reported GBV case	1,970	4,587	132.8%
Number of 20 – 24 year olds who graduated at least one program AND had an HIV test	16,474	27,141	64.8%
Number of 20 – 24 year olds who graduated at least one program AND accessed PrEP	8,751	17,395	98.8%
Number of 20 – 24 year olds who graduated at least one program AND accessed contraception	5,200	10,274	97.6%
Number of 20 – 24 year olds who graduated at least one program AND had a reported GBV case	988	3,115	215.3%

**Conclusions/Next steps:** Shout is offering *ShoutLink* to other providers to support interoperable linkage and referrals of clients across a range of services, while simultaneously providing real-time data for monitoring, program improvement and reporting.

## THPEE613

### Result of the application of the PDSA assessment cycles in Health Facilities to ensure compliance with national standards for the provision of HIV in Mozambique

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**Background:** The HIV Response Acceleration Plan (2013/17) and the Test & Start approach (2016) have increased the demand for ART and the challenge of ensuring quality of care has arisen. The Quality Improvement (QI) guideline was developed to balance the demand for ART and the supply of services within standards with the aim of raising quality levels in service provision through interventions for HIV viral suppression.

**Description:** The QI Directorate provides for the creation of provincial and district structures, which monitor implementation through implementation reports and technical support visits.

Evaluations are carried out using the PDSA model, which combines efforts to make changes that lead to better results for clients, professional development and system performance; in each cycle, indicators are selected taking into account national priorities.

The activities during the cycle are monitored through: clinical services management committee meetings (weekly); intensive monitoring (monthly); mid-term evaluation (mid-cycle).

Providers benefit from clinical mentoring and, in each cycle, there is an exchange of experiences between the health units/districts and the provinces, and also to recognize the health units with the best performance.

**Lessons learned:** Although the categories of indicators have varied over the years, some have stood out positively since the beginning of the evaluation shown below in the graphic:

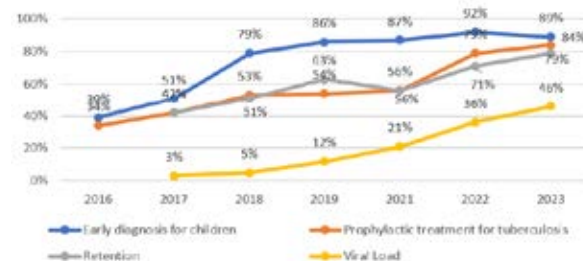


Figure. The performance trend of the indicators in the Quality Improvement Assessment cycles.

The organizational structure (bellow) at all levels has made it possible to consolidate this activity and maintain an upward trend in the performance of the indicators:



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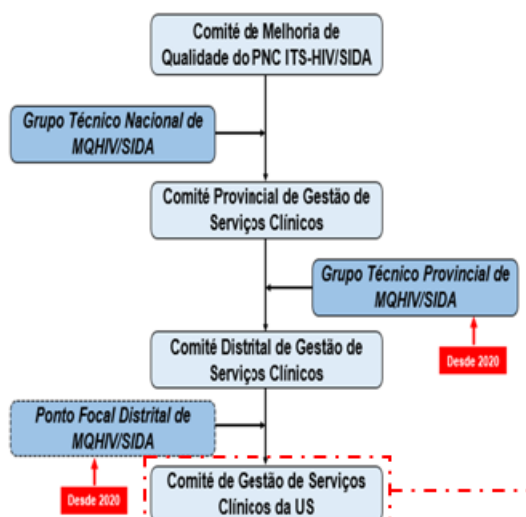
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**Conclusions/Next steps:** This approaches has driven the improvement of the quality of care in HIV services for the control of the epidemic.

## THPEE614

Novel questions to broaden the understanding of injection risk behaviours among people who inject drugs in Unguja, Zanzibar, 2023

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**Background:** Sharing needles or syringes put people who inject drugs (PWID) at increased risk of hepatitis C virus (HCV) and HIV acquisition. Questions about sharing needles or syringes are a standard part of collecting information on HCV and HIV risk among PWID.

We report findings from a biobehavioural survey that included novel questions about needle or syringe sharing conducted among PWID in Unguja Island, Zanzibar, in 2023.

**Methods:** We recruited people aged  $\geq 15$  years who lived in Unguja for  $\geq 3$  months and injected drugs in the past 3 months using respondent driven sampling. Participant information was collected through an interviewer-administered questionnaire. Questions pre-tested through key informant discussions probed different forms of needle or syringe sharing. We asked whether they ever shared a needle or syringe. We also asked whether they ever left their needle somewhere and returned to use it later and

whether they thought someone else may have used it in the interim. We also asked whether they ever injected with a needle that they found which was not theirs. We produced weighted estimates, reported as percentages with 95% confidence intervals (95%CI).

**Results:** Among 455 PWID, 43.5% (200/455; 95%CI: 38.2-48.8) ever shared a needle. Of PWID, 31.6% (141/432; 95%CI: 28.5-34.6) had ever found a needle somewhere that was not theirs and used it to inject drugs; of those, 9.3% (13/141; 95%CI: 4.9-13.6) reported never sharing a needle. Of PWID, 67.7% (278/432; 95%CI: 63.2-72.3) had ever left their needle somewhere and returned to use it later, of whom 20.9% (60/278; 95%CI: 15.7-26.1) believed someone else used their needle in their absence, and among those, 20.9% (11/60; 95%CI: 10.5-31.5) reported never sharing a needle.

**Conclusions:** The findings suggest that there are varied understandings of what it means to share a needle or syringe and that many PWID do not report all means of sharing needles or syringes, such as leaving a needle and returning to it.

Introducing new survey questions about different forms of needle or syringe sharing, including indirect sharing, may provide more accurate information about risk behaviors. Key populations stakeholders can play a critical role in developing these questions.

## THPEE615

Enhancing viral load coverage: the impact of a customized electronic medical records system in UPDF health facilities for people living with HIV in Uganda

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**Background:** By September 2020, 20,444 people living with HIV (PLHIV) were active in care at Uganda People's Defense Forces (UPDF) Military health facilities across the country, yet the viral load coverage lagged at 72% compared to the national average of 94%. The University Research Co., LLC Department of Defense HIV and AIDS Prevention Program (DHAPP) initiated the use of Uganda's Electronic Medical Record (EMR) in 2020 in the military to streamline client management, real-time data capture, and viral load tracking. The UPDF-EMR is integrated with the national Uganda-EMR with a customized camouflage background, strategically designed for enhanced ownership by military personnel.

Feedback on the functionality and areas of improvement on some concepts was given to the system developers by the end users for improvement in subsequent versions.



**Description:** The methodology involved leveraging EMR-generated line lists to identify clients overdue for viral load tests, appointments, and those returning for both. Clients were promptly contacted, given appointments for viral load sample collection, and offered other aligned services. Monthly viral load test data were downloaded from the national dashboard and compared with the health facilities' EMR records to ensure all clients had been monitored for viral load. A retrospective analysis, utilizing DATIM datasets from September 2019 to September 2023, assessed progress in viral load coverage and suppression. Data queries addressed quality issues, and trend analysis illuminated changes over the four-year period.

**Lessons learned:** Viral load coverage showed a consistent increase from 72% in FY19 to 94% in FY22, followed by a slight decrease to 90% in FY23. This upward trajectory aligns with the introduction and consistent use of UPDF\_EMV for viral load tracking by the health workers. EMR generated line lists enabled health workers to track and promptly contact all clients due for or missing a viral load testing appointment.

**Conclusions/Next steps:** The Uganda\_EMV has emerged as a transformative tool in managing HIV care. The UPDF\_EMV, through its accurate and consistent application in client management, significantly enhances viral load coverage and retention for PLHIV in Uganda's military health facilities.

This success underscores the pivotal role of electronic medical records systems in advancing HIV care and outcomes.

## THPEE616

Implementation of a data review intervention to mitigate data leakages in the South African VMMC programme: a case study on Gert Sibande district

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**Background:** In South Africa, adolescent boys and men, aged 10 and above, have access to Voluntary Medical Male Circumcision (VMMC) services. These services are provided by service delivery partners (SDPs) funded by the government and PEPFAR. Data on VMMC services rendered is submitted to the Department of Health (DOH) hubs based in facilities and sub-districts, where DOH staff capture the data into the District Health Information System (DHIS). This data capturing process has been identified as being susceptible to data loss.

To combat this issue, MMC SUSTAIN, in its role as a technical assistance partner, has implemented systematic data review protocols to enhance data accuracy and integrity.

**Description:** From June to October 2021, data review was conducted to ensure complete data capture on DHIS. The review process followed five steps:

1. Collating service delivery data from the SDPs via an excel based data collection tool,
2. Extracting and comparing DHIS data to detect variances between the two data sources,
3. Joint review sessions with DOH and SDPs,
4. Sourcing outstanding data from SDPs for entry into DHIS,
5. Validating captured data through retrospective DHIS analysis.

These efforts were aimed at bolstering the data's completeness and validity.

**Lessons learned:** The intervention led to the recovery of 21,380 VMMC records previously unreported, markedly improving data completeness and accuracy as reflected in the table below:

Data Element	Jun-21	Jul-21	Aug-21	Sep-21	Oct-21	Total
VMMC data before review	3019	8224	1399	1899	3176	17717
VMMC data after review	7904	13543	7136	6954	3560	39097
VMMC data recovered	4885	5319	5737	5055	384	21380

Overall, routine reviews cultivated better compliance with data management protocols among partners, and the introduction of pre- and post-verification protocols enhanced the quality of data in the DHIS.

**Conclusions/Next steps:** The institutionalisation of the district led data review processes fostered a sense of ownership which is crucial for the sustainability of VMMC programmes and is pivotal to informed decision-making in HIV prevention strategies. The success of this intervention underscores the effectiveness of ongoing data verification in maintaining data integrity within the DHIS.



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## THPEE617

### Virtual mapping of key populations: lessons learned from MSM and opportunities for expanding to FSW and TG in Nigeria

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**Background:** Accurate data on key populations (KP), including female sex workers (FSW), men who have sex with men (MSM), and transgender people (TG), is crucial for effective public health interventions. The Key Population Size Estimation (KPSE 2023) in Nigeria employed novel methods for virtual mapping (VM) of MSM, leading a more precise population size estimates.

The objectives were to estimate the number of MSM who operate virtually and to understand the extent of overlap between virtual sites and physical locations. The aim is to expand this approach to other Typologies for accuracy and comprehensiveness of KP size estimates in Nigeria.

**Methods:** The VM approach used in the KPSE 2023 in Nigeria involved a sequential listing of virtual sites uses three stages: listing of virtual sites, profiling and size estimating MSM on those sites, and sampling MSM quantitative interviews with a sample of MSM selected from these sites. The method employed Virtual Mappers who moved from LGA to LGA, observed each site and app virtually during peak days and times, estimated the number of MSM using the various sites in the LGA, and generated estimates for MSM in the state by LGA.

**Results:** The VM of MSM in the KPSE 2023 in Nigeria revealed that 18% of MSM only operate virtually, with 54% aware of programs for MSM and 35% in contact with a peer educator. On average, MSM own profiles on 2 different virtual platforms. The mean age of virtual MSM is 28 years, with 61% having tertiary education. Virtual MSM are active during various times of the day, with 49% in the evening and 64% at night.

The findings provide valuable insights into MSM who operate in virtual spaces, which can inform targeted for KP interventions and programs.

**Conclusions:** The VM of MSM in the KPSE 2023 provides valuable insights into the MSM who operate in virtual spaces. The method used in the KPSE2023 can be expanded to cover FSW and TG to enhance the accuracy and

comprehensiveness of population size estimates for KP in Nigeria. The findings highlight the potential impact of VM on future mapping for targeted KP interventions and programs.

## THPEE618

### Monitoring and evaluation (M&E) of wartime adaptations in an HIV program in Ukraine: shifting from disease-centric to person-centric

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**Background:** Community Action for HIV Control - USAID/PEPFAR-funded project implemented by Pact Ukraine focuses on HIV prevention, testing, and linkage to care among key populations (KP) through implementation of innovative approaches and strengthening the capacity of local organizations. In the face of war, "putting people first" has become an innate motto for the project, with its M&E system being no exception.

**Description:** Due to the war, priorities in services for KPs have shifted, and to fulfill the project's objectives, it became necessary to develop differentiated service delivery (DSD) models, taking into account the provision of immediate needs for KPs. Adapting approaches to implement M&E for the development of effective DSD models has become an urgent task. To tailor approaches for engaging with KPs in dynamic circumstances, a range of adaptive measures to enhance M&E were introduced. These included studying the regional landscape concerning KPs needs, monitoring the availability of services, visualizing real-time data on rendered services, etc. These lead to project scope shifted from HIV only (disease-centric) to inclusion of emergency services (person-centric), making some objectives being irrelevant.

**Lessons learned:** While operating amidst conflict and chaos, CAHC and its local partners continue to tackle service delivery obstacles through highly collaborative, person-centered adaptations and innovations in data collection, reporting and quality assurance. The adaptation of M&E approaches created an opportunity to customize project activities and deliver HIV-related services to KPs whose priorities have shifted towards basic needs.

Due to these strategies and despite the dynamic and complex operating environment, CAHC delivered emergency support services to 81,332 people (70.8% male, 29.2% female) between 1 April 2022 – 1 January 2024. Among them tested 65,589 individuals, of them 1,604 were confirmed newly positive; of them 1,499 (93.5%) were enrolled on ART.

**Conclusions/Next steps:** For HIV programs operating in conflict, timely and accurate data is especially critical to enable programmatic decision making. As evidenced by the project, enhanced collaboration, innovation and

collective feedback from KPs can enable successful M&E in even the most challenging contexts; and amidst war integrate innovative needs and methods into services provision. Complex adaptive M&E system can customize project activities and further implement them in challenging times.

## THPEE619

### Enhanced engagement for individuals with interrupted HIV treatment through person-centered empathetic communication ("Uzwelo/Empathy"): a quasi-experimental study

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<sup>3</sup>Organization for Public Health Interventions and Development, Programs, Harare, Zimbabwe

**Background:** Person-centered approaches are essential for sustained engagement in HIV care and crucial for achieving viral suppression among individuals living with HIV. The Uzwelo approach, embodying empathy and the Ubuntu philosophy in the clinic-client-next of kin interaction, was developed to optimize the re-engagement of individuals with interrupted HIV treatment within Zimbabwe's HIV Program.

**Methods:** This quasi-experimental study employed a pre/post-test design in Chitungwiza City, Zimbabwe. It aimed to evaluate the re-engagement rates of individuals identified as having interrupted their HIV treatment, defined as a delay of more than 28 days from their scheduled HIV care appointment. A simple random sample of 202 individuals was selected in April 2023 from a pool of 1,100. The study compared the Uzwelo approach, incorporating empathetic emotional attunement and respectful interactions into the phone tracing, with the standard-of-care method. Quantitative data were analyzed using the T-test for paired proportions, while qualitative questions were employed to explore underlying reasons for treatment interruption.

**Results:** The Uzwelo approach significantly increased successful re-engagements, with 148 out of 202 individuals (73%;  $p < 0.01$ ) reached, compared to 91 (45%;  $p < 0.01$ ) with standard phone calls.

Furthermore, 101 individuals (50%;  $p < 0.01$ ) were re-engaged using Uzwelo, versus 48 (24%;  $p < 0.01$ ) with the standard phone call method. Stratification by demographic characteristics showed increased re-engagement rates across different groups with Uzwelo, notably among those on Antiretroviral Therapy (ART) for more than one year, with an increase from 24% to 50% ( $p < 0.01$ ).

Qualitative findings indicated that individuals and their Next of Kin felt more valued and integral to the care process under Uzwelo.

**Conclusions:** The Uzwelo model, emphasizing empathetic communication within the context of the Ubuntu philosophy, markedly enhances the re-engagement of individuals with interrupted HIV treatment.

This approach offers a promising model for patient-centered engagement in culturally sensitive settings and underscores the importance of considering individuals' emotional and social needs in HIV care.

## THPEE620

### Putting people first: developing a minimum practice standard for person-centered care based on ART client and provider perspectives

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**Background:** Person-centered care (PCC) in HIV services aims to improve client experiences, service accessibility, treatment adherence and outcomes. For PCC to be effectively and sustainably practiced, providers and clients must work together with clients' priorities at the forefront.

**Methods:** JSI conducted a mixed-methods study in May 2023 piloting the PCC assessment tool (PCC-AT), which measures health facility PCC service delivery, in five facilities in Ghana's Western region. PCC-AT implementation was followed by focus group discussions with antiretroviral treatment (ART) providers (n=37) and interviews with ART clients (n=20) to assess PCC-AT feasibility and content validity.

While evaluating results, similarities and differences in client and health staff perspectives were identified and examined.

**Results:** Clients reported treatment concerns that providers were often unaware of (e.g. fear of delayed/lost viral load results).

Most ART providers assumed clients prefer not to receive digital outreach (e.g. appointment reminders, adherence check-ins) due to fears of unintentional disclosure; however, many clients indicated such outreach as helpful. Both clients and ART providers noted gaps in systems to collect client preferences (e.g. space on medical visit forms to select when/where to receive services).

While most facilities reported having some client feedback mechanism (e.g. hotlines, drop-boxes), clients were often unaware or lacked confidence in confidentiality to provide feedback. ART providers emphasized that QI approaches and tools, such as the PCC-AT, support identification of priorities that enable consistent PCC implementation.



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Figure 1. Proposed PCC minimum practice standard.

**Conclusions:** Findings elucidated the need for a PCC minimum practice standard, for which the study team proposes five components (Figure 1).

Together with the PCC-AT, the PCC minimum practice standard provides a framework against which HIV services can be upheld and evaluated. This systematic approach holds potential to further providers' ability to provide care that is responsive to and aligned with clients' needs and expectations.

## THPEE621

Using routine data quality improvement through triple tally verification to enhance viral load coverage in CDC-supported regions of Zambia

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**Background:** Improvement in viral load (VL) testing for individuals on antiretroviral therapy (ART) leads to enhanced quality of treatment delivery and adherence services. Viral load suppression (VLS) among people living with HIV (PLHIV) significantly reduces the risk of secondary transmission of HIV. In 2021, the viral load coverage (VLC) for Zambia plateaued at 76%.

We aimed to demonstrate the impact of implementing strict data quality improvement processes on VLC in the US Centers for Disease Control and Prevention (CDC)-supported regions of Zambia.

**Description:** Between August and September 2022, CDC Zambia implemented a Triple tally verification process (TTV) of VL data from the health facility records, the hubs (Regional coordinating health laboratory centers) and laboratory data system.

The process ensured all samples at facility level were well documented and transported to the hubs where they were recorded in the data intensive system and application (DISA) and eventually transported to the polymerase chain reaction (PCR) laboratory and reviewing the submission of results trail back to the facility. CDC provided technical assistance and monitoring through weekly meetings and on-site visits. Data were obtained from data for accountability, transparency, and impact monitoring (DATIM) system

**Lessons learned:** VLC increased by 8 % in all the CDC supported regions within four weeks. By region, VLC significantly jumped between 2022 quarter three to quarter

four in Lusaka Province from 82% to 91%; Eastern Province 76% to 88%; Southern Province 77% to 85%; Western Province 76% to 85% (Figure 1.0).

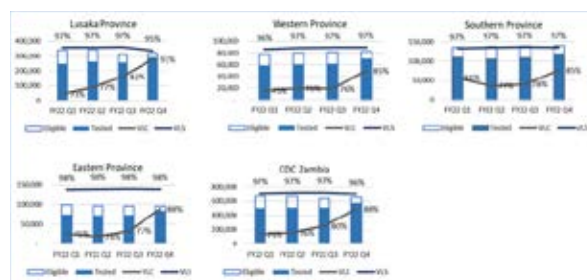


Figure 1.0: Viral load suppression and coverage by province in the CDC supported provinces, 2022.

**Conclusions/Next steps:** The TTV process revealed gaps in the VL sample and results documentation at all levels. The emphasis on reviewing records from the three critical VL client recording systems proved to be an effective approach to address program, systemic and data quality gaps, thereby improving the VLC. Scaling up the TTV process to all regions has the potential to improve VL coverage countrywide.

## THPEE622

SIDAINfo: an electronic medical record (EMR) system tailored to provide solutions for HIV care and data management in Burundi

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**Background:** HIV care is inherently complex and involves multifaceted treatment and monitoring regimens for people living with HIV (PLHIV). In Burundi, this complexity includes challenges related to the manual maintenance of paper-based medical records, which leads to errors, loss of information, and delays in record retrieval, directly impacting the efficiency and efficacy of client health care.

Additionally, exchanging data between the siloed systems of healthcare facilities and laboratories has been a challenge, causing delays in diagnosis, treatment change, and viral load (VL) monitoring.

**Description:** Developed through a partnership between the Burundian government and USAID/PEPFAR, SIDAINfo is a local EMR solution designed to address these challenges that has been deployed in over 400 facilities currently covering more than 80% of the PLHIV cohort in Burundi. It features a unique biometric identification (UID) for PLHIV, a real-time lab module for VL and early infant diagnosis (EID), recent infection tracking, and a prevention of mother to child transmission (PMTCT) module for supporting



effective care for mothers and children. The system facilitates antiretroviral therapy (ART) monitoring, targeted support identification, pharmacy management, and critical data reporting. SIDAInfo interoperates with the national District Health Information System (DHIS2) and laboratory information system, reducing siloed medical records and promoting evidence-based healthcare decisions.

**Lessons learned:** SIDAInfo's special features, such as quick alerts by SMS to clients for ART refills and transmission of crucial lab results including VL and EID/PCR to healthcare providers and PLHIV, enhanced client adherence and follow-up. The system has significantly reduced VL turnaround times from 11-35 days to 7-10 days, and the incidence of missed appointments has decreased dramatically. The integration of UID-facilitated clients' deduplication and accurate tracking and the management of their data is crucial for intervention planning and resource allocation, while also allowing PLHIV to seamlessly receive care at different health facilities. By limiting client visits to hospitals, discrimination is mitigated, expenses are reduced, and inclusion for mobile and key populations is improved.

**Conclusions/Next steps:** The implementation of SIDAInfo, complemented by other innovative strategies, has helped Burundi accelerate and sustain progress towards the UNAIDS (95-95-95) goals. As of September 2023, the achievement rate stands at 93-99-95.

## THPEE623

Integrating machine learning models in EMR systems to deliver targeted client-centric HIV testing services in Nigeria

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**Background:** To meet its UNAIDS 95-95-95 targets, Nigeria must improve HIV case-finding; recent UNAIDS progress reports indicate that less than 90% of people living with HIV (PLHIV) know their HIV status. Machine learning (ML) can leverage client and contextual data from electronic medical record (EMR) systems to identify clients at high risk of acquiring HIV and maximize testing yield.

**Methods:** We built and deployed ML model for HIV testing services (HTS) and integrated them with LAMISPlus—the open-source, modular EMR system for USAID implementing partners (IPs)—to generate real-time risk scores at service points even without internet connectivity. The models predict the risk of acquiring HIV based on prediction scores after screening questions and client sociodemographic information. We trained three models (XGBoost, logistic, and random forest) on 264,178 client records captured by

the HTS modules of LAMISPlus at 15 key population testing sites across six states from 2021 to 2023. Predictive variables included clients' social, health, and sexual behavior history and location-specific prevalence of risk factors. We evaluated the models on their ability to identify positive test cases (precision-recall). Final model was converted from R to PMML for compatibility with LAMISPlus, which allows models to run real-time in offline settings.

**Results:** The XGBoost model performed better than logistic and random forest models, with an AUCPR of 0.79. The HTS model identified most of the positive cases in a fraction of total tests: 57% of all positive cases were concentrated in the top 8.1% of the highest risk scores.

	Highest Risk (≥0.75)	High Risk (≥0.50)	Medium Risk (≥0.25)	Low Risk (≥0.05)
Total tested	4620	6085	9184	28326
# Positives	4432	5357	6499	8493
# Negatives	188	728	2685	19833
Sensitivity Rate	47.5%	57.4%	70%	91%
Positivity Rate	96%	88%	71%	30%

**Conclusions:** Implementation of ML models improved HTS yield by identifying more HIV-positive clients while minimizing test numbers. High-risk clients who test negative for HIV are referred to prevention services. By enabling IPs to run these predictive models in real-time at point-of-service, these models allow Nigeria to continue its progress toward epidemic control efficiently and proactively.

## THPEE624

Promoting data integrity: a milestone towards improving early infant diagnosis and mother- to-child HIV elimination in Ethiopia

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**Background:** Since 2001, Ethiopia's Ministry of Health (MOH), with support from the U.S. President's Emergency Plan for AIDS Relief (PEPFAR) program implemented a comprehensive prevention of mother-to-child transmission (PMTCT) and early infant diagnosis (EID) program across over 2,865 health facilities. However, inconsistent practices have led to poor data quality, and hindered program improvement.



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We implemented data quality improvement (DQI) activities to ensure high-quality patient data for effective program management and monitoring.

**Description:** We compared client charts and clinic registers of PMTCT ART data from 139 select high volume health facilities representing 56% of PMTCT ART clients reported nationally that offer PMTCT services. Data were analyzed for completeness, validity, consistency, and verification. Twelve data elements were assessed for both PMTCT ART and the mother-baby cohort register. Additionally, nine reportable indicators were examined for data verification between registers and MOH (DHIS2).

**Lessons learned:** Data completeness was assessed for 2420 and 2191 unique records of mothers with HIV and HIV-exposed infants (HEI), respectively, in service delivery from July 2022 to June 2023. Of the 12 data elements reviewed for record completeness, both the maternal & HEI charts showed higher percentages of completed and valid data than the respective registers. Data completeness was higher in charts (92%) than registers (87%), with syphilis test (69.3%) and viral load (52.8%) data being the least complete (Table).

Data consistency between charts and registers was below 90%, with tuberculosis preventive treatment (TPT) start date (74%) and infant enrollment (78%) having the lowest consistency. Data verification between registers and DHIS2 suggested under-reporting of pregnant women on ART (18%) and HEI receiving cotrimoxazole (21%).

Data element	Completeness	Chart	Register
1 Age (n=2,420)		99.90%	99.70%
2 Date of entry to PMTCT (n=2,417)		96.20%	99.20%
3 Syphilis test result (n=2,306)		69.30%	81.40%
4 Date ART initiated (n=2,318)		97.90%	94.10%
5 ART Regimen at last visit (n=2,319)		99.10%	98.00%
6 TB Screening (n=2,318)		97.30%	88.50%
7 TPT Start date (n=2,393)		89.50%	75.50%
8 Latest Viral Load result (n=2,308)		71.80%	52.80%
9 Date of infant enrolment (n=2,191)		89.10%	90.60%
10 Date infant received ARV prophylaxis (n=2,185)		90.20%	89.10%
11 Result of DNA PCR for infants (n=2,085)		80.00%	86.10%
12 Cotrimoxazole treatment started (n=2,151)		90.40%	91.90%

**Conclusions/Next steps:** Major data quality issues identified, including under-reporting and inconsistencies, leading to inaccurate estimation of mother-to-child transmission rates and children living with HIV. This assessment may help inform future interventions to improve data quality and increase program effectiveness.

## THPEE625

Impact of community-led monitoring on the uptake of ART refills in Gauteng, South Africa.

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**Background:** ART retention is a public health challenge in South Africa and threatens efforts to ending HIV/AIDS epidemic as a public health threat by 2030. These challenges are attributed to but not limited to healthcare provider's attitude, HIV medication stockouts and missing files. The provision of friendly and welcoming services has been documented as an intervention that supports long-term ART retention.

Data collected through community-led monitoring (Ritshidze project) implemented by the People Living with HIV (PLHIV) sector aimed at improving services at public health facilities indicated trends of progress on ART refills in Gauteng, South Africa.

**Description:** Community-led monitoring is a system of community-developed and community-owned data collection and monitoring at the site of service delivery that leads to the implementation of solutions to respond to the evidence that communities have collected. As part of the Ritshidze's interventions, routine data collection in Gauteng among people living with HIV has indicated an improvement in ART refill as friendly and welcoming services are advocated for which have highlighted progress with 3 – 6 months ART refill with 29% in 2020, 38% in 2021, 46% in 2022 and lastly 56% in 2023.

**Lessons learned:** CLM participatory approaches increase leadership among the community and being involved in all the phases of the project ensures that the community takes ownership of the data and interventions resulting from the project.

Data collected between 2020 and 2023 indicate an increase of 27% of 3-6 months ART refill among surveyed PLHIV.

An important lesson learnt through the Ritshidze project is the value of cooperation between the community and stakeholders. The project allowed coordination and collaboration among multi-sectoral stakeholders which avoided duplication of effort, provided an opportunity for resource mobilisation and sustainability.

**Conclusions/Next steps:** CLM enables communities to hold duty bearers accountable and demand friendly and welcoming services. This has led to the progress made to the 3 – 6 ART refills and ultimately overall improvement in ART retention. The initiatives implemented through community-led monitoring improves availability, accessibility and good quality of HIV services for PLHIV. Ritshidze project implementation has offered an opportunity in ending HIV/AIDS epidemic as a public health threat.

**THPEE626****Improving data quality for HIV implementation in Akwa Ibom, Nigeria: adaptation of the Ottawa Hospital Innovation Framework**

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**Background:** Data quality is essential for effective monitoring and evaluation of HIV programs, but many health facilities in Nigeria face challenges in reporting quality data. The PEPFAR/USAID-funded Accelerating Control of the HIV Epidemic in Nigeria Project adopted The Ottawa Hospital Innovation Framework, a five-step simplified quality improvement approach, to improve data quality standards. This study reports the outcome of this intervention.

**Description:** To define the problem, Data Quality Assessment (DQA) was conducted for July-September 2022, in October 2022 at 25 high-volume health facilities in Akwa Ibom State, Nigeria. Data availability, integrity, consistency, and validity were assessed using a program-adopted Data Verification/Validation Tool, with a benchmark score of 95-105% as passed.

Root-cause analyses by the project quality improvement team for scores outside the benchmark revealed that gaps in data quality were due to low staff capacity a high staff attrition rate, new staff hires with limited experience, poor collaboration between government and project staff, and stock-out of data capturing tools.

A health systems strengthening intervention to improve data quality included implementing corrective actions from the DQA, central daily/monthly gap profiling with feedback for immediate corrections, structured monthly capacity building sessions, team building efforts, peer-to-peer learning, use of bi-monthly tools inventory reporting systems, and site-supportive supervisory visits. Data validity, the most failed DQA domain, was monitored weekly using a resilience dashboard.

To evaluate the intervention, another DQA was conducted for January-March 2023, in April 2023, and the mean number of domains passed per site was compared pre- and post-intervention using t-test.

**Lessons learned:** Overall, 69% (69/100) domains were passed at baseline DQA (data availability: 84% (21/25), integrity: 56% (14/25), consistency: 88% (22/25), validity 48% (12/25)). Post-intervention, the domain pass rate was 85% (85/100), with better scores in 3 domains: data integrity: 72%, consistency: 100%, and validity: 84%. Data availability remained at 84%. The mean number of domains passed per site improved from  $2.76 \pm 1.26$  to  $3.4 \pm 0.81$  ( $p=0.054$ ).

**Conclusions/Next steps:** A simplified quality improvement approach focused on improving data quality using evidence-based strategies, led to improvement in data validity of the HIV implementation program. However, strategies to address data availability can be further strengthened and implemented.

**THPEE627****Using the National reporting system to harness data for informed action: eradicating parallel partner systems for efficient HIV data management in Lesotho**

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**Background:** The National AIDS Commission in Lesotho has made significant contributions to streamlining national information systems as part of the HIV response, and these are highlighted in this abstract. The main objective of the program is to do away with parallel reporting systems in order to promote a unified and effective method of gathering and reporting HIV data. Development Partners have for a long time highlighted that there is fragmented reporting on the Implementing Partners efforts to end AIDS in Lesotho. It has always been a challenge to consolidate the efforts of civil society organizations at the national level. With financial resources from the Global Fund, Efforts were made to set up an National reporting system that would be used by Partners to report on their contribution in the National HIV response. The developed system is called the Lesotho Output Monitoring System for HIV and AIDS.

**Description:** The roll-out of the Lesotho Output Monitoring System for HIV and AIDS (LOMSHA) is a national project and it aims to strategically optimize national information systems. In order to establish an effective monitoring and evaluation system for the HIV response, LOMSHA promotes collaboration among important players that include CSOs. With an emphasis on eliminating redundant procedures and guaranteeing accuracy in HIV-related data, the project highlights the significance of standardized reporting by Implementing Partners.



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**Lessons learned:** One of the lessons learnt highlights the difficulty the National AIDS Commission to report on the progress made in the HIV response in Lesotho.

The research emphasizes the value of standardized reporting, collaborating with stakeholders for greater impact, and elevating data from program level to national level through an integrated reporting system that is easy to use.

**Conclusions/Next steps:** The existence of LOMSHA shows the possibility of an effective M&E system for the HIV response in Lesotho. The project aims to improve data accuracy and allocate resources more efficiently by ending parallel partner systems. In this era of the expanding digital health sphere, the National AIDS Commission continues to advocate for one system for an effective and efficient HIV response.

## THPEE628

Utility of integrated data repositories to estimate mortality for patients on antiretroviral therapy (ART) in Botswana 2010-2023

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**Background:** Data repositories from electronic medical records (EMRs) and other systems improve program capacity to track health outcomes, including mortality and lost to follow up (LTFU). The Botswana EMRs are not currently linked to Births and Deaths Registry System (BDRS); mortality data may be incomplete. To assess the value added by linking systems, we compared outcomes for patients on ART using EMR data and integrated EMR and BDRS data.

**Methods:** Data were extracted from the national data repository with individual-level data from multiple public health facilities EMRs and merged with data from BDRS using identifiers. Analysis was done with and without BDRS data. A cohort of people on ART in the repository as of 31 December 2010 was used. Survival analysis methods using STATA 16 censoring on 31 October 2023 was conducted using person months. The study outcome was mortality and survival rates for both EMR data and integrated EMR and BDRS data.

**Results:** As of 31 December 2010, 73,841 people were on ART; 62.1% women. During follow-up, 9,508 (12.9%) deaths were recorded, of which 3990 (42.3%) were marked LTFU using EMR alone. More than half 2065 (51.6%) of the pa-

tients who were marked as LTFU using EMR alone were women while men were 1925(48.3%). Survival probability at the end of follow-up was 0.91 (95%CI 0.90-0.92) using EMR; 0.85 (95%CI 0.84-0.86) for integrated EMR and BDRS data. Incidence of mortality per 100, 000 person-months using EMR data was 55 deaths (95%CI 54-57); 96 deaths (95% CI 94-98) using EMR and BDRS data. Incidence of mortality per 100,000 person-months among women was 46 (95%CI 44-48) using EMR and 79 (95% CI 77-81) using EMR and BDRS data. Among men it was 72 (95% CI 69-75) using EMR and 125 (95%CI 121-128) from EMR and BDRS data.

**Conclusions:** We found EMR data underestimated deaths and overestimated survival, compared to integrated EMR and BDRS data. Use of EMR data alone could misrepresent the success of the program. Implementing interoperability between EMR and BDRS data will be key to strengthen HIV mortality surveillance, leading to improved outcome documentation for persons on ART.

## THPEE629

Impact of revitalizing medicines and therapeutics committees on antibiotics prescription rates at outpatient departments: a three-year analysis of eight Uganda Catholic medical bureau hospitals

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**Background:** Antimicrobial resistance is a key global health concern, with high antibiotic prescription rates as one of its major drivers. The study assesses the impact of revitalizing medicines and therapeutics committees (MTCs) in eight Uganda Catholic Medical Bureau (UCMB) hospitals on the outpatient department (OPD) antibiotics prescription rates. These hospitals serve many people living with HIV (PLHIV) who receive antibiotics for the treatment of opportunistic infections.

**Description:** The UCMB has been conducting annual drug prescription surveys across 33 Catholic-founded hospitals in Uganda since 2004; the results are presented in an annual assembly to determine targeted improvement interventions for poorly performing hospitals. A common theme at the consistently poorly performing hospitals reporting high antibiotics prescription rates was the absence of active MTCs. Starting March 2021, UCMB provided technical and financial support for the revitalization of MTCs at the eight consistently poorly performing hospitals. MTCs were charged with reductions in OPD antibiotics prescription rates, among other duties.

**Lessons learned:** Within a year following the revitalization of MTCs, a significant positive impact on OPD antibiotics prescription rates was observed across the eight hospitals. Rates dropped from 36% pre-intervention in 2020 to 28% in 2022 and 26% in 2023.

These improvements were sustained over three years post-intervention following both random spot checks and subsequent annual surveys.

**Conclusions/Next steps:** Revitalization of MTCs in UCMB hospitals contributed to a swift and sustained positive impact on antibiotics prescription rates, leaning towards the World Health Organization-recommended <25%. The PLHIV receiving antibiotics as part of their care are, therefore, beneficiaries of this intervention, with the added benefit of contributing to wider antibiotic stewardship efforts.



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## Track F: Political science, laws, ethics, policies and human rights

### Political and legal factors affecting people living with, vulnerable to and affected by HIV

#### THPEF630

##### The relationship between anti-LGBTQ+ legislation and HIV prevention among young sexual and gender minorities in the United States

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**Background:** In the United States (US), many states have recently passed anti-LGBTQ+ legislation targeting young sexual and gender minorities (YSGM). YSGM also face an increased risk of HIV acquisition, yet it remains unknown how anti-LGBTQ+ policies influence HIV dynamics.

We therefore examined the longitudinal associations of state- and local-level policy climate with HIV prevention outcomes among a national sample of YSGM.

**Methods:** The Keeping it LITE-1 cohort prospectively enrolled 3,330 HIV negative YSGM ages 13-34 throughout the US from 2017-2022. Online surveys collected information every 6 months on 3 self-reported HIV prevention measures (current PrEP use (yes/no), past week PrEP adherence (yes/no), HIV/STI testing in the past 6 months (yes/no)). LITE-1 geolocation was linked with publicly available state-level LGBTQ+ policy data and county-level election data.

Multivariable generalized estimating equations estimated the single and joint longitudinal associations for 2 different exposures [state-level LGBTQ+ policy climate (more discriminatory vs. less discriminatory) and county-level political majority (Democratic/swing vs. Republican)] with each HIV prevention outcome.

**Results:** Among YSGM living in a state with more discriminatory laws, residing in a Democratic/swing county was associated with a 6-percentage point increase in PrEP use compared to a Republican county (PD: 0.06; 95% CI: 0.02, 0.09). Among YSGM in Republican counties, living in a state with less discriminatory laws was associated with a 5-percentage point increase in PrEP use compared to those in a more discriminatory state (0.05; 95% CI: -0.02, 0.11). Residing

in both a Democratic/swing county and a state with less discriminatory laws, relative to living in both a Republican county and a state with more discriminatory laws, was associated with a 10-percentage point increase in PrEP use (PD: 0.10, 95% CI: 0.06, 0.14) and a 5-percentage point increase in HIV/STI testing (PD: 0.05, 95% CI: 0.00, 0.09).

**Conclusions:** More progressive state and local LGBTQ+ policies were each associated with increased PrEP use, and together, doubled the magnitude of this association. PrEP is greatly underutilized among American youth, and these findings provide preliminary evidence that state and local-level anti-LGBTQ+ policies may be exacerbating this gap.

Future studies should examine the effects of specific legislation to pinpoint areas of intervention and protect YSGM.

#### THPEF631

##### Navigating legal and political challenges: a spotlight on trans people living with HIV

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**Background:** Within the context of Track F in the RedLac-Trans network, CeDoSTALC 2023 delves into the unique challenges faced by trans people living with HIV in accessing healthcare services. The persisting inequalities and politicization of health, exacerbated by events such as Mpox and the COVID-19 pandemic, underscore the urgency of addressing the intersections of politics, governance, law, policy, and human rights.

This research aims to shed light on the specific barriers faced by transgender individuals, focusing on the legal and political factors that hinder their access to HIV testing, prevention, treatment, care, and support.

**Description:** The study meticulously examines the political and legal dimensions affecting trans people within the realm of HIV. It scrutinizes laws and policies related to reproductive rights, bodily autonomy, and integrity, particularly coercive practices like sterilization and abortion. Special attention is given to legislation concerning HIV transmission, exposure, and non-disclosure, and the ensuing implications on various aspects of trans people's lives, such as travel, employment, work, and residency permits. The study explores the nuanced challenges trans people face in accessing healthcare services and the role of legal frameworks in perpetuating or dismantling these barriers.

**Lessons learned:** The research illuminates critical lessons regarding the intricate interplay of political and legal factors affecting trans people living with HIV. It emphasizes the need for targeted, rights-based approaches in policymaking and law enforcement to dismantle discrim-



inatory barriers. The lessons learned underscore the significance of fostering legal environments that safeguard the human rights and healthcare access of transgender individuals, acknowledging the unique intersectionality of their experiences.

**Conclusions/Next steps:** Moving forward, the study advocates for proactive interventions tailored to the needs of trans people living with HIV. Recommendations include the creation of supportive legal environments, ensuring gender-affirming healthcare policies, and addressing discriminatory law enforcement practices.

Future research should focus on evolving challenges specific to transgender communities, fostering collaboration between policymakers, legal experts, healthcare providers, and transgender advocacy groups.

By addressing these specific challenges, we can work towards a more inclusive and accessible healthcare landscape for transgender individuals living with HIV.

## THPEF632

### Global trends in HIV criminalisation

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**Background:** HIV criminalisation describes the unjust application of criminal law to people living with HIV based on HIV-positive status, either via HIV-specific criminal statutes or general criminal or similar laws. Such state-sponsored stigma and discrimination within the criminal legal system is a barrier to universal access to HIV prevention, testing, treatment and care, and a human rights issue of global concern.

**Methods:** An audit of laws and cases included in the HIV Justice Network's Global HIV Criminalisation Database focusing on 2022-24. We define 'recent' as reported cases of the application of HIV-specific (i.e. singling out people with HIV and/or treating HIV as a separate element) or non-HIV-specific (a wide range of general laws applied to allegations of HIV non-disclosure, potential or perceived exposure, or transmission) criminal laws since Jan 1st 2019. Abstract data to 15th January 2024; final presentation will include data to June 30th.

**Results:** Following a COVID-19 era decline in reported HIV-related prosecutions, we documented 86 cases in 18 countries in 2023 (compared to 49 cases in 16 countries in 2022). Most case reports were from the EECA region, North America and Western Europe.

However, Sub-Saharan Africa has the greatest number of HIV-specific laws (30 countries). Since 2022, repeal or reform succeeded in eight jurisdictions in four countries (Belize, Mexico, United States, and Zimbabwe); and positive court rulings took place in a further four countries (Ireland, Lesotho, South Korea and Taiwan). However, 2023 saw Latvia apply its 2013 HIV-specific criminal law for the first time, and the death penalty for 'aggravated

homosexuality' was included in Uganda's anti-LGBT law, adding to an already draconian HIV-related legal environment.

**Conclusions:** Despite the high number of HIV-specific criminal laws (104 jurisdictions in 85 countries) these laws have only recently been applied in 33 jurisdictions in 17 countries. Non-HIV-specific criminal laws have recently been applied in 26 countries.

These data suggest that the global movement to limit or end HIV criminalisation is succeeding, although the pace is currently too slow to achieve the UN target of fewer than 10% of countries with punitive laws and policies that negatively impact the HIV response, requiring further focus and funding.

## THPEF633

### Communities dismantling barriers: the Make Medicines Affordable (MMA) consortium's patent opposition experience for affordable access to medicines

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<sup>1</sup>International Treatment Preparedness Coalition, Johannesburg, South Africa

**Background:** Abusive patents on medicines may prevent or delay market entry of cost-effective generics leading to high prices and limited access. Patent oppositions (POs) are legal and administrative procedures aiming to prevent the granting of such patents.

The Make Medicines Affordable (MMA) consortium constituted of civil society (CS) and community organizations from 17 low and middle-income countries (LMICs) is leading patent opposition work in Eastern Europe and Central Asia, Latin America, North Africa, and South East Asia.

**Description:** Since 2019, the MMA consortium has filed 104 challenges on patents and patent applications on medicines. Selection and prioritization of medicines are informed in consultations with local community representatives and health officials. Opposition cases are prepared by multidisciplinary teams of local community representatives, lawyers and chemists.

Of the 104 POs filed by MMA partners, 39 covered 13 HIV treatment; 15 were filed on HCV; 25 were filed on 7 COVID-19, and 25 were filed on 8 TB medicines. 33 of 104 oppositions filed had a positive outcome: patent application rejected or withdrawn. The successful POs yielded resulting in significant savings in health budgets, which allowed expansion of treatment coverage. 12 oppositions have failed and the rest is still under procedure.

**Lessons learned:** The MMA experience demonstrates that, despite the complex technical aspect of POs, local communities and civil society organizations are able to file successful cases. Capacity building, technical support and follow-up, communication, and advocacy are key elements for success.



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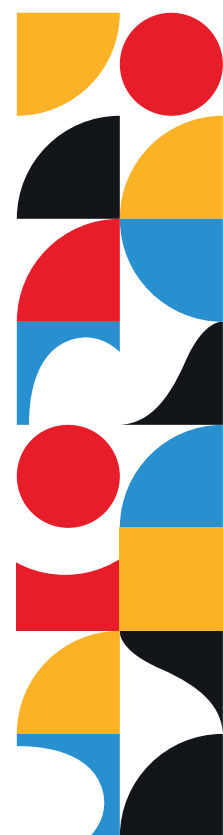
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Thanks to the Patent Opposition Academies capacity has been built in countries where such capacity didn't exist and first ever oppositions have been filed.

**Conclusions/Next steps:** Patent challenges processes are technical and lengthy, requiring time for preparation, support, follow-up, communication, and advocacy - yet they achieve major results. PO are one of the most accessible options for improving affordability of, and access to medicines. The successful POs yielded resulting in significant savings in health budgets, which allowed price reductions and expansion of treatment coverage.

## THPEF634

### Continuity of key population service delivery in the community drop-in centers amidst anti-homosexuality act 2023 enactment in Uganda

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**Background:** Ministry of Health has adopted innovations and efficient strategies such as the community DIC for delivering HIV/AIDS services that are client centered. The Anti-Homosexuality Act assented to by the President on 26th May 2023, has affected service delivery in community DICs. It is with this background therefore, that the Ministry of Health conducted an assessment in the community drop-in-centre to find out the current status of service delivery for key population and inform its adaptation strategy.

**Methods:** This cross-sectional study was conducted in all community DICs in July 2023. We targeted 74 DICs as informed by the Ministry of Health DIC assessment report done in June 2022 and any other community DIC as reported by regional Implementing Partners, Community Based Organization (CBO), districts and Civil Society Organizations (CSOs).

Data collection was conducted using a standard tool, the activity started with a preparatory meeting involving the national technical staff during which the team familiarized itself with the assessment tools and terms of reference for the activity.

**Results:** Out of the 74 DICs previously documented as functional by MoH a year prior to this assessment, only 64 were found to be operational. Majority, 85.9% (55/64)

of the DICs noted that the turn up of clients had declined during the AHA law 2023 Period. About 45% (29/64) had experienced safety and security concerns since March 2023(AHA 2023 period). Of those who experienced safety and security incidences, more than 55.1% (16/29) noted that they had media outing, 44.8% (13/29) experienced physical assault and eviction from premises by the landlord, 37.9% (11/29) had been raided by police or local authority and 34.5% (10/29) reported to have been chased away from the community. Of those that experienced incidents 65.5% (19/29) reported targeting transgender, 58.6% (17/29) reported targeting MSM.

**Conclusions:** The enactment and commencement of enforcement of the Anti-Homosexuality Act, 2023 has and continues to affect service delivery in the community DICs. Ministry of Health should follow up the DICs especially those which had closed, to establish circumstances leading to closure and support accordingly.

## THPEF635

### The relevance of gender to potential or perceived HIV 'exposure' charges in HIV criminalisation cases

S. Beaumont<sup>1</sup>, E. Bernard<sup>1</sup>, A. Symington<sup>1</sup>

<sup>1</sup>HIV Justice Network, Amsterdam, Netherlands, the

**Background:** HIV criminalisation is a global phenomenon with a significant impact on public health and human rights. "Protecting women" has been a common argument in favour of HIV criminalisation. However, studies have shown that women are more vulnerable to prosecution because they are often the first to discover their HIV status through prenatal screening, and disclosing their HIV status or negotiating safer sex can be challenging due to power imbalances. This audit aims to identify the relevance of gender to HIV criminalisation cases.

**Methods:** An audit of all cases of HIV criminalisation documented in the HIV Justice Network's Global HIV Criminalisation Database from January 2006 to December 2023, involving cisgender women and heterosexual cisgender men defendants. Database entries are based on media monitoring, information provided by representatives of civil society organisations and legal records, where available.

**Results:** Of 723 HIV criminalisation cases, 227 defendants were women and 496 heterosexual men. Of 227 women's cases, 146 were for potential or perceived HIV 'exposure' (64%) and 81 for alleged transmission (36%) in the context of alleged HIV non-disclosure. In contrast, of 496 cases against heterosexual men, 175 were for 'exposure' (35%) and 321 for alleged transmission (65%).

Women defendants comprised only 31% of all HIV criminalisation cases but represented 45% of all potential or perceived HIV 'exposure' cases. 20% (30/146) of these were for acts that do not transmit HIV, such as spitting or biting. The defendants in 18% (27/146) of the 'exposure'



cases were identified as sex workers, usually arrested before any sexual act. Proportionally, twice as many women were charged for HIV 'exposure' compared to heterosexual men, regardless of actual risks of transmission.

**Conclusions:** Our data show that women are disproportionately facing HIV 'exposure' charges, rather than being accused of transmitting HIV. Although there may be biological factors involved (from a transmission science perspective), there may also be potential gender bias from law enforcement and the criminal legal system.

Further research is essential to identify the causes of this phenomenon and assess potential gender bias in sentencing. This understanding is pivotal for fostering equitable legal systems and effective public health strategies.

## THPEF636

Welcome to Aotearoa New Zealand!

Successful advocacy to remove HIV-related travel restrictions attracts migrants living with HIV

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<sup>2</sup>Australian Research Centre in Sex, Health and Society,

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Inc., Auckland, New Zealand, <sup>4</sup>University of Otago, AIDS

Epidemiology Group, Dunedin, New Zealand, <sup>5</sup>University

of Auckland, Auckland, New Zealand, <sup>6</sup>GNP+, Amsterdam,

Netherlands, the, <sup>7</sup>Positive Women Inc., Auckland, New

Zealand

**Background:** In 2017, legislative change making HIV a notifiable disease also allowed all people living with HIV in New Zealand (NZ) access to free antiretroviral treatment, regardless of visa status. However, HIV was specifically listed by Immigration NZ as a medical condition deemed to impose significant costs and/or demands on New Zealand's health services, resulting in people living with HIV automatically considered to not meet an 'acceptable standard of health' for migration.

Most work or residence visas were therefore declined, and the country was one of 48 countries with HIV-specific travel restrictions.

**Description:** Burnett Foundation Aotearoa partnered with other community organisations, clinicians, and researchers to advocate to government to remove this automatic exclusion of people living with HIV, arguing blanket restrictions were stigmatising, advances in treatment enabled people living with HIV to lead long and fulfilling lives, well-controlled HIV was not a public health risk, and the availability of generic antiretroviral medication had significantly decreased costs.

We were invited to work with the Ministry of Health and Immigration NZ to inform these policy changes, and HIV-specific rules were removed in October 2021.

**Lessons learned:** In the context of U=U and generic medication, relatively simple, small but specific policy changes can have significant outcomes for communities. Since the legislative change in 2021, we have seen an increase in migration queries and the number of overseas-diagnosed people living with HIV migrating to NZ, leading to greater demand for services.

The true impact of the legislative changes, however, are likely impacted by an overall increase in migration to NZ, and therefore requires monitoring.

**Conclusions/Next steps:** Since the removal of HIV-travel exclusions, higher numbers of people living with HIV are migrating to NZ. Open immigration is important for all people living with HIV, especially when immediate safety is at risk, and this policy change allows people living with HIV to have their human right to move freely be upheld without discrimination.

Ongoing medical inadmissibility persists with mandatory HIV testing and a cost threshold on medical conditions in place satisfied only through the provision of generic medications, limiting choice and best medical outcomes, and therefore ongoing advocacy is required.

## THPEF637

Who suffers the most – receives the least protection: recent data on sexual violence against women from vulnerable groups and sex workers in the EECA region

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<sup>1</sup>Alliance for Public Health, Kyiv, Ukraine, <sup>2</sup>Equal

Opportunities, Dushanbe, Tajikistan, <sup>3</sup>AO Iniciativa Pozitiva,

Chisinau, Moldova, the Republic of, <sup>4</sup>Soros Foundation

Kyrgyzstan, Bishkek, Kyrgyzstan

**Background:** Although sex work is decriminalized in some countries in the EECA region, it remains a cause for unwarranted persecution and pressure from the police.

There is limited data and documented evidence regarding the actual situation of sex workers' rights in the region.

For the years 2022-2023, a total of **2k+ complaints were recorded in Moldova, Georgia, Ukraine, Kyrgyzstan, Tajikistan, and Uzbekistan** from sex workers, who experienced rights violations, discrimination, legal barriers, or violence.

**Methods:** To **monitor human rights violations and discrimination**, as well as to **track responses and assistance to victims**, NGOs and CBOs in the EECA region use the online **tool REAct**.

REAct agents (activists and paralegals) document appeals from KPs and provide support. The use of a unified tool enables **regional analysis of collected statistical data**.



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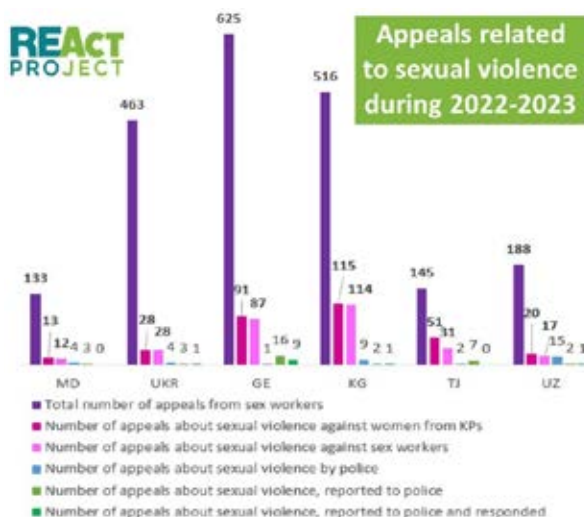
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## Results:



The chart shows that **women from KPs, especially sex workers, are particularly vulnerable to sexual violence**. Although the number of cases of sexual violence is small compared to the total number of sex work-related incidents, this is because the **topic of sexual violence is either taboo or has become so widespread that many survivors prefer to remain silent**.

The number of cases of **sexual violence by police** is almost equal to the number of cases when **the victim filed a police report**. This indicates that the **police do not provide adequate protection**, and may even be the source of violence. The smallest bar represents **cases of sexual violence that reached the court** and the court gave an adequate judgment. This paltry number emphasizes how few sexual violence cases reach court. This is because the **process of proving sexual violence for survivors is extremely difficult**, exhausting, time-consuming, and traumatizing.

**Conclusions:** The states should **reduce legal barriers to access to justice** and **decriminalize sex work** to protect women from the violation of their rights and discrimination.

## THPEF638

Understanding the complexity of legal frameworks that shape access to HIV-related information and services

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**Background:** Laws provide the framework for implementing HIV-related policies, programmes, and services. They can promote good HIV outcomes and fulfillment of human rights; they may also limit achievement of these goals.

**Methods:** Using data collected under SDG Indicator 5.6.2, we analyzed the existence of HIV-related laws from 153 countries, any restrictions therein based on age, sex, marital status or third-party authorization requirements and any contradictions from plural legal systems. We combined this with Policy Lab data on the existence of other relevant laws in these countries.

**Results:** Of the 153 countries, only four (2.6%) reported having no legal guarantee for voluntary HIV counselling and testing; the same four were also the only countries to report having no legal guarantee for HIV treatment and care services. Only one country (0.7%) reported having no legal guarantee for the protection of confidentiality for people living with HIV. While few restrictions were reported, 6-7% of countries reported the existence of a plural legal system that might impede effective implementation of these laws. 107 countries (70%) report having a law, regulation or policy making sexuality education mandatory within the school curriculum. While 139 report having a law that guarantees access to contraceptive services, 40% of these report one or more associated restrictions. Overall, 95 countries (62%) report having legal guarantees for HIV testing, treatment, and confidentiality that contain no restrictions or contradictions caused by a plural legal system. Of these, 22 (23%) have laws that criminalize non-intentional HIV exposure/transmission, and there are reports of recent arrests/prosecutions; 27% (n=26) have laws that criminalize consensual same-sex acts, and there are reports of recent prosecutions.

Only 15 of the 153 countries report having all of the studied supportive HIV-related laws in place with no restrictions or contradictions, and also do not criminalize HIV exposure/transmission or consensual same-sex activity, whether in law or practice.

**Conclusions:** Much work is still needed to strengthen HIV-related legal environments. Looking across different databases can create a fuller understanding of the many different laws affecting HIV-related outcomes to promote a supportive legal environment for achieving HIV-related targets and supporting people to access relevant services.

## THPEF639

### The ABCs of HIV law reform in Latin America and the Caribbean: case studies on HIV (de) criminalisation in Argentina, Belize and Colombia

E. Hatt<sup>1</sup>, S. Varguez<sup>1</sup>, E. Bernard<sup>1</sup>, A. Symington<sup>1</sup>

<sup>1</sup>HIV Justice Network, Amsterdam, Netherlands, the

**Background:** In the past five years, Argentina, Belize and Colombia made changes to their HIV laws. Due to the diversity of their motivations for reform and advocacy strategies, analysing the processes in these three countries together provides a broad perspective on the realities, challenges and opportunities to repeal punitive laws in Latin America and the Caribbean.

**Methods:** In August 2023, we conducted in-depth interviews with key stakeholders in each country to understand the legislative and political landscapes, reform drivers, repeal processes, and the impacts of legislative changes. We undertook additional research into the history of HIV criminalisation in each country, analysed the impact of these reforms on the respective criminalisation landscapes, and noted appropriate follow up activities, including training and awareness raising, to ensure the potentials of these reforms are maximised.

**Results:** Key lessons learned are:

- Civil society strength, and the arguments and advocacy tactics employed, are key to successful legislative reform.
- The importance of high-level champions for the success of reform cannot be overstated.
- Support from and dialogue with international civil society can also be influential, helping to add weight to arguments for reform, and enabling cross-learning about successful advocacy strategies.
- Human rights-based litigation can be a legitimate and successful route to reform especially if strong rights protections exist in national constitutions.
- Regardless of domestic constitutional protections, introducing scientific evidence and relevant international jurisprudence to legal arguments adds authority and increases the likelihood of success.
- Public awareness of law reform is often limited, hence the need for effective awareness-raising campaigns to maximise the positive impacts of reform.

**Conclusions:** Collectively, these studies provide a snapshot of how reform of HIV laws can be achieved. While the motivation and process in each country was, and always is, a product of factors unique to the local context and cannot be replicated exactly, these case studies demonstrate that reform of HIV laws can be accomplished, whether through the legislature or the courts, when the power of advocates including activists, lawyers, and politicians is effectively leveraged. These studies also highlight the vital importance of centering latest scientific evidence and appeals to human rights protections in reform campaigns.

## THPEF640

### Do abortion laws influence hiv risk among young females in uganda?

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<sup>1</sup>Family Rescue Initiative Uganda, Legal and Human Rights, Kampala, Uganda, <sup>2</sup>Ultra Medical Hospital, Public Health, Kampala., Uganda

**Background:** There is an intersection between abortion laws and HIV risk. Except in extremely rare cases where a mother's health could be in danger, rape, incest, or fetal deformity, Ugandan law forbids abortion. These policies on abortion are interpreted inconsistently by law enforcement, health workers and the judicial system, which makes it difficult for women and the medical community to understand when abortion is permitted. Uganda's young female population has been most impacted by this situation. We conducted a study on understanding of abortion laws and link between access to safe abortions and HIV risk among young girls' resident in two military bases in Uganda and health workers.

**Methods:** This was a qualitative study that conducted key informant interviews among adolescent girls and young women and health workers in 2 public health facilities in Uganda. Thematic analysis was done to identify key themes regarding knowledge levels about abortion laws, where young girls seek abortion services, link between HIV and abortion, type of methods and knowledge and attitudes of health workers about abortion and those who seek these services.

**Results:** A total of 6 young women and 5 health workers were interviewed. Two young women reported threats of arrest at mention of abortion when they asked for the services. All women reported being aware of colleagues who had accessed abortion services, all of which had been from unlicensed clinics or through use of foreign sharp objects to induce abortions. The young women reported no HIV related information or services were offered in these abortion clinics. The women did worry about contracting HIV from these unlicensed clinics. All health workers reported reluctance to manage or deal with legal abortions.

**Conclusions:** A culture of stigma and discrimination surrounding abortion is prevalent among young women and health workers in Uganda. This creates an environment that increases HIV risk and prevents early seeking of HIV services. Public awareness and training of health workers about abortion laws in Uganda is needed. Legal aid for these young women should be made available.



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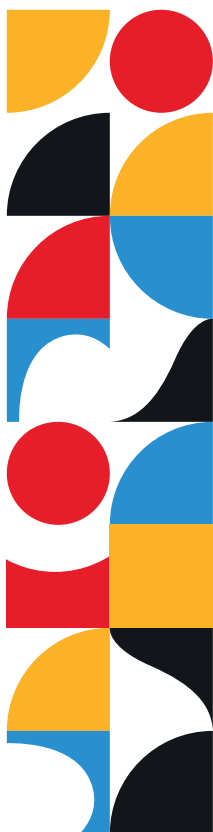
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## THPEF641

### Challenging coercion and misplaced punishment: HIV and infant feeding choices

A. Symington<sup>1</sup>, S. Beaumont<sup>1</sup>

<sup>1</sup>HIV Justice Network, Amsterdam, Netherlands, the

**Background:** While mothers living with HIV in many countries are advised to breastfeed their infants for best health outcomes, some women living with HIV have faced disapproval, child protection intervention, and even prosecution for breastfeeding an infant. Punitive approaches to breast/chestfeeding by people living with HIV are inconsistent with current scientific information regarding HIV transmission and fundamental principles of human rights and criminal law.

**Description:** To help protect the rights of people living with HIV, the HIV Justice Network (HJN) monitors and engages in legal cases against people living with HIV for infant feeding. HJN searches English-language legal databases and media reports, and consults with the HIV Justice Worldwide Coalition to identify cases. HJN documents cases in our Global HIV Criminalisation Database and offers technical legal assistance to local defence lawyers and HIV organisations.

**Lessons learned:** HJN's monitoring reveals that women living with HIV continue to experience surveillance and judgement with respect to their infant feeding choices. Medical guidance about HIV and infant feeding varies between countries. Clinicians could help their patients avoid prosecution by ensuring they receive accurate and comprehensive information regarding their legal obligations and infant feeding options. Legal interventions have been threatened recently against two women in Latin America who voiced their intention to breastfeed. Coercing parents' infant feeding decisions with the threat of child protection or criminal intervention is a violation of their human rights and a misuse of punitive responses.

**Conclusions/Next steps:** Science supports that the best outcomes for a mother and a child result from proper medical care, access to treatment and openness. The law should too. Our findings indicate that authoritative, up-to-date guidance is urgently needed from international and national health agencies regarding HIV and breast/chestfeeding. Parents must be empowered with accurate information about the benefits and risks of different modes of infant feeding. Guidance should clearly indicate that criminal prosecution and/or child protection intervention are unjustified.

## THPEF642

### Preventing overly broad criminalisation of HIV exposure, non-disclosure and transmission through multi-sector collaboration on education initiatives

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**Background:** It has long been best practice for criminalisation of HIV transmission, exposure, and non-disclosure to only occur in a "worst case scenario" where transmission has occurred and where intent can be proven to the relevant criminal law standard. In the Australian state of Queensland (QLD), peer representative bodies, lawyers, law enforcement and health policy experts have collaborated to develop educational materials and forums to prevent an overly broad application of legislation criminalising PLHIV for transmission, exposure and non-disclosure offences.

Instead, this initiative promotes the use of existing public health interventions where more appropriate.

**Description:** In the lead up to IAS 2023, Brisbane (capital of QLD) joined the Fast Track Cities network to end HIV transmission by 2030. HIV sector organisations noted that this couldn't be achieved without removing barriers to HIV testing and treatment, including removal of HIV criminalisation offences.

While HIV sector organisations continue to advocate for legislative reform, a ground up approach was also taken. Steps were taken to promote education of law enforcement personnel (police and prosecution) to prevent overly broad criminalisation of PLHIV.

**Lessons learned:** Achieving legislative reform can be a lengthy process, as a stop-gap, engagement with grassroots and frontline organisations to work within existing legislative frameworks can achieve favourable results. HIV sector organisations found that when provided with appropriate materials law enforcement agencies were highly supportive of a best practice human rights approach and engaged favourably with training and education initiatives.

Law enforcement personnel reported that they were unaware of public health interventions and had previously seen criminalisation as the only option where PLHIV are seen to be placing others at risk of HIV.

**Conclusions/Next steps:** Through successful collaboration: Queensland Positive People, the QLD Health Department, the HIV/AIDS Legal Centre (HALC), the Director of Public Prosecutions and QLD Police, are planning on launching training seminars and materials in the first half of 2024. This education will bring greater awareness to the existing public health interventions and reduce overly broad application of criminal laws; the outcomes

ultimately being reduced stigma and discrimination towards PLHIV and removal of one of the barriers to HIV testing and treatment.

## THPEF643

### Empathetic law enforcement training: fostering support for sex worker rights and public health

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<sup>1</sup>Service Workers In Group Foundation, Bangkok, Thailand

**Background:** In Thailand, sex work is governed by laws, particularly the Prevention and Suppression of Prostitution Act, B.E. 2539 (1996), and the Act on Entertainment Places, B.E. 2509 (1966), which criminalize various aspects of sex work, including solicitation in public areas, association with sex establishments, and advertising for sex work.

Recent years have witnessed police conducting often violent raids on sex establishments, while reports of widespread corruption and official involvement in prostitution add to the challenges faced by sex workers in Thailand. In this context, police cadet internships hold potential for safeguarding sex workers' rights and well-being through education and awareness.

**Description:** Since 2007, the Service Workers In Group Foundation (SWING) has annually enrolled 5-10 cadets in a specialized Police Cadets Internship Course. This program features interactive sessions, field experiences, and direct engagement with sex workers, emphasizing human rights, public health in sex work, and sex workers' rights and health. A central focus is the discussion how police enforcement of these laws can potentially violate the rights of sex workers.



**Lessons learned:** The emphasis on potential law enforcement misuses had a profound impact. Graduates of this internship program with SWING have formed an alliance, providing assistance when sex workers are arrested under these laws.

This collective effort contributes to the overall well-being of sex worker communities, underscoring the crucial role of empathetic law enforcement training in advancing rights and public health.

**Conclusions/Next steps:** Moving forward, it is crucial to expand and replicate this model in other law enforcement training contexts to promote greater understanding and support for sex workers.

Additionally, ongoing monitoring of long-term outcomes and the incorporation of these lessons into broader policies and initiatives will be essential for creating lasting positive impacts on HIV prevention, treatment, care, and support efforts within sex worker communities.

## THPEF644

### Legal barriers and facilitators to HIV service access for men who have sex with men in Uganda

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**Background:** Uganda faces significant challenges managing the HIV epidemic, particularly among MSM. Legal and societal environments can facilitate or hinder HIV service uptake, so we assessed legal barriers and facilitators affecting access to HIV services among MSM in Uganda.

**Methods:** This cross-sectional study was conducted in 15 randomly selected districts in five regions of Uganda during January and February 2022 using desk reviews of existing laws and policies, two consultative workshops, 56 key informant interviews, and 16 focus group discussions. We engaged diverse stakeholders, including healthcare workers, MSM, key-population-led civil society organizations (KP-led CSOs), legal professionals, and government officials, to gauge the impacts of laws, policies, and societal attitudes on MSM's access to HIV services. Data were analyzed using the thematic approach with Atlas.ti software.

**Results:** MSM reported barriers to accessing health and HIV services, justice services, and basic ethical rights, such as lack of privacy, autonomy, and confidentiality. They reported being subjected to police brutality and viewed as criminals, resulting in fear and mistrust impeding their ability to seek HIV services. Legal barriers included criminalizing same-sex relationships under the Penal Code Act cap 120 in Sections 145-6. The absence of anti-discrimination protections for LGBTI populations further marginal-



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izes MSM. Individual barriers (e.g., being unaware of legal rights) render MSM unable to defend themselves when violated. Facilitators of service access included Uganda's ratification of international and regional human rights treaties, ensuring rights to health and justice, laying the foundations for advocacy, and promoting non-discrimination. KP-led CSOs facilitate MSM service access through free legal services and training.

**Conclusions:** Laws, policies, and behaviors that violate the basic human rights of MSM in Uganda hinder access to essential HIV services, aggravating the HIV epidemic's challenges in the country. This highlights the need for legal reforms and shifts in societal attitudes towards MSM. Alongside advocating for legal reforms, confidentiality, and privacy, key actors might prioritize awareness of human rights and bolster access to health and justice services.

More support in legal assistance and human rights education of KPs and service providers could foster an inclusive, unprejudiced, equitable, and just environment.

## THPEF645

### Increasing access to affordable generic medicines through patent opposition academies

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<sup>1</sup>ITPC, Kyiv, Ukraine, <sup>2</sup>ITPC MMA Consultant, Rio-de-Janeiro, Brazil, <sup>3</sup>Independent Consultant, New Delhi, India, <sup>4</sup>ITPC, Johannesburg, South Africa, <sup>5</sup>ITPC, Marrakesh, Morocco

**Background:** The removal of intellectual property (IP) barriers has been instrumental in providing access to cost-effective generic medicines, fostering competition among manufacturers and significantly reducing prices. Since 2001, the price for a year of HIV treatment has plummeted from \$ US 10,439 to under \$60, enabling dramatic scale up, from 0.6 million people to 30 million people.

Despite these advancements, certain middle-income countries (MICs) continue to face challenges in accessing affordable generic antiretrovirals and other essential medicines due to lingering IP barriers.

Civil society organizations (CSOs) play a pivotal role in overcoming these challenges by utilizing Trade-Related Aspects of Intellectual Property Rights (TRIPS) flexibilities, particularly through patent oppositions (POs). However, POs are intricate processes that demand a diverse range of expertise.

**Description:** International experts can provide support and guidance for POs, but local expertise is needed for national results. To prepare local CSOs for case filing, the Make Medicines Affordable consortium, working in 17 low- and middle-income countries (LMIC), established Patent Opposition Academies (POAs), aiming to train local lawyers, scientists and CSOs together on the legal and technical aspects of POs.

During 2019-2021, 89 lawyers, chemists, scientists and CS representatives from 17 LMIC have benefitted from three regional POAs, which provided practical training and joint capacity-building. Pre- and post-training questionnaires found a 56% increase of knowledge among POA participants. After the POAs, CS groups, lawyers, chemists and scientists worked together in Armenia, Belarus, El Salvador, Georgia, Guatemala, Honduras, Kazakhstan, Kyrgyzstan, Moldova and Morocco to file and argue the first-ever CSO-led patent oppositions in those countries in 2020-2023.

Since 2015, members of the MMA consortium has filed 103 patent oppositions on ARVs, direct-acting antivirals for hepatitis C virus, and treatment for tuberculosis (TB) and COVID-19; their work has yielded projected savings of US \$901 million.

**Lessons learned:** POAs are a vital steppingstone towards country-specific PO strategies. Participation of mentors from local NGOs enhanced POAs, through sharing their experience, and building the connection between the MMA campaign and participants.

**Conclusions/Next steps:** POAs are effective; they have increased the number of patent oppositions filed by CSO participants.

## THPEF646

### Bodily autonomy and integrity amidst anti-rights protests

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**Background:** Public protests against the legal instrumentalisation of Botswana's decriminalisation of same-sex intercourse reflected other anti-rights movements across Africa. This occurred 2 years after the Court of Appeal and 4 years after the High Court decriminalised same sex intercourse. This was further fuelled by public discourse on key populations, including sex workers who are part of the LGBTI community.

Harmful gender norms, digital phobia and gender based violence have exasperated efforts to remove human rights barriers to the HIV response. Success Capital Organisation and its partners, working at a grassroots level - adopted intersectional feminist approaches to activism, health promotion, community referral services and improving the human rights situation for LGBTI through a Bodily Autonomy and Integrity (BAI) project.

**Description:** The BAI project, supported by the AIDS Rights Alliance for Southern Africa and in partnership with the Botswana Network on Ethics, Law and HIV/AIDS, spent over two years across rural Botswana educating and providing community health referral services to key populations through an intersectional lens; health promotion on HIV and SRHR, documentary screening, community dialogues, public theatre, poetry and engaging policy



makers at city, district and national levels. It advanced the rights of LGBTI and Sex Workers, including those with disabilities, from ethnic minority, indigenous, rural and impoverished communities. It engaged communities in spaces of recreation, public malls, informal trading and even public transportation.

**Lessons learned:** Key populations are resilient and creative through their struggles. Socioeconomic conditions such as Botswana's ranking as the 4th most unequal per Gini coefficient in the world is reflected in lived experiences of LGBT and sex workers. Consent, non-physical forms of violence (digital, financial, psychological) are not deemed forms of violence and marital rape is not outlawed. This only highlights the structural and societal inequities.

**Conclusions/Next steps:** There are knowledge gaps on HIV underpinned by harmful gender norms, stigma, discrimination, variant forms of violence and a lack of political will to prioritise HIV within SRHR, UHC and SDG discourse.

Further polarised by anti-rights elements influencing political, religious, traditional leadership. It reflects the decreased investments in HIV literacy, socio-behavioral change and human rights. BAI 2.0 has been started to address these challenges.

## THPEF647

Advanced HIV policy dashboard: results from tracking policy adoption of WHO cryptococcal meningitis recommendations in national guidelines in sub-Saharan Africa

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**Background:** Cryptococcal meningitis (CM), an opportunistic infection caused by the *Cryptococcus* fungi, accounts for 15% of global HIV-related deaths. Despite progress in biomedical interventions to prevent and manage CM, mortality rates remain high: an estimated 3 out of 4 PLWHA with CM died in 2021. The HIV Policy Lab's Advanced HIV Disease (AHD) Dashboard:

(<https://www.advancedhiv.org/>) tracks policy alignment between national guidelines and WHO recommendations on CM.

**Methods:** The AHD Dashboard, a collaboration between the Drugs for Neglected Diseases initiative and HIV Policy Lab, compares CM-related national policies with the 2022 WHO Guidelines for the diagnosis, prevention, and management of cryptococcal disease in adults, adolescents, and children with HIV. We track 13 policy indicators related to AHD and CM in Eastern and Southern Africa (ESA) and

Western and Central Africa (WCA). Relevant documents for these countries were found via desktop reviews or document repositories of HIV Policy Lab ([www.hivpolicy-lab.org](http://www.hivpolicy-lab.org)).

**Results:** Relevant guidelines were found for 35/46 countries. Overall, we found that policy alignment was better in ESA than in WCA.

ESA: Relevant guidelines were found for 17/21 countries. Zambia, Mozambique, and Kenya adopted 11/13 policies while South Africa, Rwanda, and Malawi adopted 7 policies. 16 countries require baseline CD4 testing but 5 lack guidelines on CD4 testing for those reentering ARV care. All countries in ESA have adopted point-of-care rapid cryptococcal antigen (CrAg) test as a screening tool.

Only 4 countries have adopted the WHO-recommended liposomal amphotericin B (LAmB)-based induction regimen for the treatment of CM for PLHIV. In the essential medicines lists, LAmB is least adopted, with only Mozambique including LAmB for CM.

WCA: Relevant guidelines were found for 18/25 countries. Among them, 15 have adopted baseline CD4 testing for people entering care, but only 3 countries require it for people reentering HIV care. 7 countries have adopted CrAg test as screening tool. Pre-emptive and prophylactic fluconazole therapy is adopted by only 6 and 5 countries, respectively. Only DRC has adopted the LAmB-based induction therapy.

**Conclusions:** The AHD dashboard is a tool to identify areas for policy reform to align with WHO CM-related recommendations.

## Political drivers and policy contexts of HIV

### THPEF648

Empowering people living with HIV: the Village Banking project to reduce poverty and stimulate socio-economic growth in Mumias, Kenya

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**Background:** In 2014, the Western Organization for People Living with HIV (WOPLAH) in Mumias, Kenya, implemented the Village Banking project to address challenges linked with both living with HIV and experiencing poverty. This ongoing initiative aimed to alleviate vulnerabilities, enhance income opportunities, and establish socio-financial safety, offering group-level soft loans and fostering sustainable entrepreneurship. The Village Banking empowered people living with HIV, enabling them to invest loan capital and generate income for basic needs—food,



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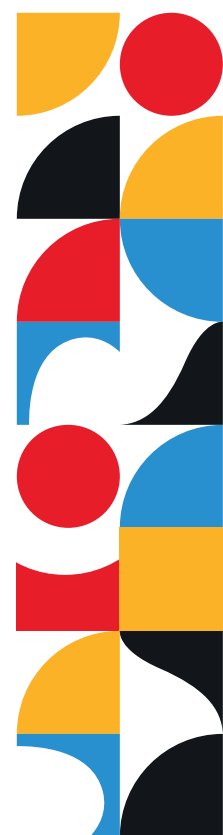
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transportation costs for antiretroviral collection, school fees, and caring for orphans and children. This economic strategy addressed financial hardships, stigma, financial illiteracy, and gender disparities, promoting holistic well-being.

**Description:** The Village Banking initiative, spanning 2014 to 2024 across 36 villages, trained people living with HIV in financial literacy, microfinancing, and entrepreneurship. Initially providing 600 USD per member for business activation, leaders established community support groups, allocating funds through low-interest loans and developing communal projects. The Village Banking followed five phases: training leaders, business plan development, project implementation, loan repayment, and impact analysis. Monitoring and evaluations were conducted with the Ministry of Health, the Gender and Social Officers, NASCOP, CABDA, group leaders, and partner organizations.

**Lessons learned:** From 2014 to 2024 the project trained 90 leaders previously living in poverty, impacting and enhancing the socio-economic situation of their families and communities, supporting a total of 4570 people living with HIV, including 3000 women, 1,270 men, and 300 children. The Village Banking improved financial stability and social inclusion, diminished HIV-related stigma, and reduced gender disparity by 80% at the household and community level. An initial SWOT analysis, annual evaluations, and participatory approaches were employed for impact measurement and documentation. Best practices included the development and sustainable use of 30 training manuals and consistent monitoring mechanisms.

**Conclusions/Next steps:** The Village Banking addressed the financial challenges faced by individuals living with HIV in Mumias, Kenya, underscoring the importance of establishing a community-driven culture centered on financial empowerment and sustainable lending. This approach reduces inequities and alleviates vulnerabilities, contributing to the holistic wellbeing of people living with HIV. WOPLAH aims to expand the Village Bank to further contribute to poverty reduction, social inclusion, and community resilience.

## THPEF649

### Assessing the landscape of community-led HIV responses in the 7th Global Fund grant-making cycle

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**Background:** For over four decades, community-led organizations (CLOs) have been essential in the HIV response, formally recognized by the adoption of the specific 30-80-60 targets by UN Member States in 2021, a global call to scale up their work. The 2023-2028 Global Fund Strategy, aligned with the Global AIDS Strategy, underscores community engagement and leadership. Current WHO guidelines recommend HIV services led by and for each key population (KP).

This research examines the impact of these new targets and guidelines in the 7th Global Fund grant-making cycle (GC7), particularly focusing on key-population- and people living with HIV (PLHIV)-led responses.

**Methods:** We selected funding requests from 13 countries across 4 regions, based on submission window and eligibility for UNAIDS Technical Support Mechanism.

We extracted and synthesized information on engagement of networks of:

- KPs as HIV service providers,
- PLHIV, from diverse gender and age groups, in differentiated service delivery,
- PLHIV and KP in community-led data for advocacy,
- across communities in community systems strengthening.

**Results:** Provisional findings suggest that the majority of countries have adopted UNAIDS and the Global Fund CLO terminology and indicate to increase KPs and PLHIV engagement in service provision and human rights interventions. However, few have explicit plans for achieving 30-80-60 targets specifically. While community members are often engaged in service delivery, they are often engaged as individuals rather than as contracted CLOs. Few funding requests specify a role for networks of young people and women living with HIV in implementation arrangements for treatment and human rights efforts or in community systems strengthening.

Additionally, despite major investments in community-driven data, including community-led monitoring, few funding requests used this data for prioritization of interventions.

**Conclusions:** Global targets and guidelines worked to create more visibility and agreement on language supporting CLOs. However, limited engagement of KPs and PLHIV in their diversity as implementing partners of GC7 programmes weakens long-term effectiveness and sustainability not only of community systems, but also of health responses in general. Bridging these gaps is im-

perative for reaching the end of AIDS, as a public health threat, through recognition of and funding for CLOs as legitimate partners.

## THPEF650

### Reframing the AIDS activist agenda for a new era: participatory development of a global AIDS advocacy Agenda for 2030 and beyond

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<sup>1</sup>International Council of AIDS Service Organizations (ICASO), Toronto, Canada

**Background:** Since the beginning of the AIDS pandemic, community and civil society activism has been the engine of the AIDS response. Advocacy has been indispensable for ensuring political commitments and resources so that individuals living with HIV have access to affordable life-saving medication, comprehensive services, and non-discriminatory legal frameworks. Recent developments threaten the sustainability and safety of ongoing activism around HIV and its social determinants. This participatory assessment sought to test the hypothesis that the lack of robust civil society engagement and oversight is critical to explaining why the global AIDS response is faltering, particularly regarding stagnating financial resources, and determining if it is time to reformulate AIDS advocacy agendas.

**Methods:** Between September and December 2023, a team of community researchers undertook a desk review, key informant interviews with global advocates (n=50), an online survey in four languages (n=206) of community advocates around the world, and a verification meeting of results in a satellite meeting at ICASA with a focus on advocacy needs for east and southern Africa.

**Results:** The abovementioned methods consulted more than 500 community advocates and key global community networks and agencies. It resulted in a consensus that it is indeed time to revisit advocacy agendas. Key findings included the need to better integrate HIV into related health and social issues while addressing the specific needs of populations affected by HIV; better access to services requires a strategic focus on structural impediments to the response; communities need to be at the center of the response through strategic investment in outreach systems, community-led monitoring and systematic evidence, and meaningful community participation in priority setting.

The process highlighted the need to highlight communities' contributions to UHC, vigorously addressing resistance to human rights for all and building responses from the ground up.

**Conclusions:** The study noted the need to work collaboratively. In early 2024, the study will continue the consultation process across regions and within local communities and explore common advocacy priorities with

SRHR (sexual and reproductive health and rights), social justice, and other health concerns, including TB and NCDs (non-communicable diseases).

## THPEF651

### Community advocacy to decriminalise HIV in NSW, Australia

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**Background:** In December 2023, the Australian Government released the report of the National HIV Taskforce. It recommends the Australian Government engage with state and territory governments to promote the use of current HIV science in the creation and implementation of law and policy, and identify how laws and policy are contributing to stigma, which undermines the public health response and impacts negatively on the community, especially people living with HIV.

**Description:** In NSW, an Australian jurisdiction, there are several laws that do not apply current HIV science, and contribute to stigma and undermining the public health response to HIV. This presentation examines the ways community organisations can collaborate and leverage the recommendations of the National HIV taskforce to advocate for change in NSW. It outlines the current legal situation in NSW, the work achieved following the release of the National HIV Taskforce report to date, and the opportunities ahead to ensure NSW's laws are evidence-based and not further stigmatising people living with HIV.

**Lessons learned:** ACON, a community organisation with almost 40 years of history in HIV advocacy, has always leveraged the strength of its partnerships to achieve positive change in the HIV sector, including in law and policymaking. The current advocacy work applies the lessons of the last 40 years, including working with partners and careful negotiations with the NSW government to advocate for changes to the Public Health Act, the Crimes Act, and the repeal of the Mandatory Disease Testing Act. It is a challenging environment in which to seek legislative change, but this paper also outlines the work being done to minimise the harm of these laws, should advocacy for their repeal or amendment be unsuccessful.

**Conclusions/Next steps:** NSW has been a world leader in the HIV response for decades, in large part due to strong partnerships between community, researchers, and government that created a robust, well-funded and evidence-based public health response to HIV. As we find ourselves on the brink of virtual elimination of HIV, our legislative framework stands in the way. This presentation concludes with recommendations for continued community advocacy in NSW to end HIV stigma alongside virtual elimination.



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## THPEF652

Community monitors advancing quality of HIV care: lessons learned from introducing the secret client methodology in Ukraine

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**Background:** Community-led monitoring (CLM) has successfully documented HIV services availability since the beginning of the Russian invasion and may be advanced to assess quality. The secret client method, where a trained observer poses as a patient, has been used in research to evaluate service quality. We applied this methodology to CLM in Ukraine to identify barriers to and strengths of HIV service quality within the context of armed conflict.

**Description:** Between August and October 2023, the US-AID/PEPFAR-funded Community Action for HIV Control project identified and trained interested community representatives/monitors on the secret client method, which includes care standards, in 12 Ukrainian regions and Kyiv city. Trained key population representatives visited 24 public health facilities, seeking HIV testing services (HTS) using the secret client approach. Findings were shared with the Ministry of Health's Centre for Public Health to determine responsive quality improvement measures.

**Lessons learned:** Twenty-four HTS secret client visits were conducted. Five were incomplete as three secret clients did not have physician referrals, creating a service barrier. A further two facilities did not provide HTS despite national facility services list. Positive findings among 19 completed visits included rare experiences of stigma (1 visit); pre-test information sessions (10 visits); clients received test results (18 visits), and no wait required to see a provider (7 visits). All secret clients reported a friendly atmosphere and ability to ask the provider questions. Challenges included difficulty or inability to schedule services in advance; absence of post-test counseling for more than half of visits; partner testing was rarely offered (2 visits); and some clients noted lack of confidentiality during testing. One theme influencing HTS availability was limited provider confidence in rapid test results. Secret client information also allowed verification of routine monitoring data. Results were shared with regional CPH representatives and responsive actions included provider refresher training in HTS, updating the HTS facility list for testing not requiring physician referrals, and restoring HTS in facilities where previously unavailable.

**Conclusions/Next steps:** The secret client approach provided important findings to improve the quality of HTS and other services. This model will be refined and expanded to evaluate services provided by NGOs

## THPEF653

Reporting on a two-day plenary session to develop an HIV strategy to achieve UNAIDS 95-95-95 targets in Saskatoon, Saskatchewan, Canada

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**Background:** Saskatoon, Saskatchewan is facing concurrent and compounding epidemics including HIV, syphilis, homeless, mental health, and opioid addiction. Saskatoon's infection rates are 13x the national average, and UNAIDS 95-95-95 target outcomes at 61-61-42 (2022) - the highest per capita in Canada. Two programs provide the bulk of HIV care to those accessing care in Saskatoon - the Positive Living Program (acute care) and the Westside Saskatoon Community Clinic (community-based care), with UNAIDS outcomes of 51-45-31 and 70-75-50, respectively. In 2022, a group of care providers commissioned an independent HIV program evaluation to identify care gaps and barriers.

Following the evaluation's findings, a two-day strategic plenary session was undertaken with all provider stakeholders to establish a renewed HIV strategy, identifying actionable steps to improve care towards the UNAIDS 95-95-95 targets.

**Description:** Findings from the independent program evaluation were circulated to the advisory committee and served as the foundation informing the two-day strategy planning process with all relevant care, and community service provider stakeholders, including the Saskatchewan Health Authority and the Government of Saskatchewan. The sessions were structured to review the evaluation's findings, hear from people with lived experience, and establish a strategy for HIV care in Saskatoon. To achieve 95-95-95 targets, key components required for each step along the care cascade were collectively articulated, collated and prioritized. The event used a hybrid model to facilitate participation.

**Lessons learned:** The two-day event was received positively by attendees (n=45). Participant feedback validated evaluation findings, and established a common vision



and action plan. The event highlighted political and administrative barriers (resistance) that interfered with the evaluation and subsequent strategy's progress.

**Conclusions/Next steps:** The two-day event established actionable and broader next steps with short, mid, and long-term timelines. Progress is ongoing to achieve identified milestones and mobilize necessary resources.

A final report and strategy are expected in the summer of 2024. Paramount to the success of the report recommendations and strategy is the support and investment from the health authority and provincial government, including the shared commitment to address rising HIV infection rates in Saskatchewan and achieve the UNAIDS targets in a critically timely manner.

## Human rights and responses to HIV

### THPEF654

People living with HIV as subjects of special constitutional protection: a human rights perspective of the Constitutional Court of Peru

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**Background:** In Peru, prejudice & discrimination are factors that have contributed to a historic neglect by the Ministry of Health's authorities regarding their duty to provide medical treatment to people living with HIV. Sometimes, people living with HIV from low-income households had their health negatively impacted by the indolence of those authorities who would justify the suspension of antiretroviral treatments due to budgetary issues. Ever since 2004, the Constitutional Court has adopted resolutions that protected the right to health of people living with HIV, and have deemed them subjects of special constitutional protection. Their landmarks decisions across the years have also shaped public policy and legislation.

**Description:** The Constitutional Court of Peru has guaranteed protection of the human rights of people living with HIV. For example, in the case 02945-2003-PA/TC, it ruled that investment in HIV is not restricted to access of treatment, but also there must be greater focus on information about HIV, prevention campaigns and sexual education programs. Plus, in the case 04749-2009-PA/TC, it established that people living with HIV qualify for a special pension even if they are receiving access to antiretrovirals. Also, through the case 0298-2020-PA/TC, it ruled that not even the context of the COVID-19 pandemic justifies any delays in the access to antiretrovirals, because that situation violates the right to health.

**Lessons learned:** The public budget in Peru for treatment and prevention of HIV has increased in more than 60% due to precedents of the Constitutional Court and the pathway they have set for the protection of people living with HIV, as subjects of special constitutional protection.

**Conclusions/Next steps:** The existence of a breach or suspension of the existing obligations that Peru has towards guaranteeing people the access to HIV treatment does indeed affect their health. Thus, this situation constitutes the violation of their right to health.

As subjects of special constitutional protection, and in accordance with the precedents of the Constitutional Court, the Government needs to take affirmative action to ensure the rights of people living with HIV are protected, and that they receive their treatments and medicines with adequate conditions of quality, opportunity, acceptability and accessibility.

### THPEF655

Recognition of sex work as a formal source of employment in Costa Rica

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**Background:** Sex workers in Costa Rica face pervasive discrimination and violence, despite the absence of legal prohibition on sex work. Reports from the Latin American and Caribbean Network of Sex Workers RedTraSex highlight this issue, revealing gaps in the protection promised by existing anti-discrimination laws.

Costa Rican La Sala Association contends that regulating sex work as any other profession would enhance protection and diminish stigma.

**Description:** In collaboration with the First National Meeting of Sex Workers in 2023, La Sala undertook several initiatives. We devised an advocacy strategy to integrate sex work into all labor laws, sought the Ministry of Education's acknowledgment of justified absences for sex work-related reasons, as well as the commitment to implement community-led educational programs for security forces, and successfully lobbied the Social Security Fund for self-employment coverage.

Contacts with the National Institute for Women and the Ministry of Public Security aimed to mitigate police harassment, resulting in an official apology from the Ministry of Security.

Coordination with the National Insurance Institute is ongoing for occupational risk policies, while efforts to be included in the Minimum Wage Decree were hampered by legal obstacles, prompting La Sala to appeal to the Constitutional Court.

The culmination of these efforts is the official recognition of sex work as legitimate employment in Costa Rica. This landmark achievement signifies broader entitlements



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for sex workers, including physical security, non-discrimination, social security, maternity leave, and benefits for sickness and occupational accidents.

**Lessons learned:** This milestone is the product of more than 30 years of non-stop advocacy.

The support of the Regional Network RedTraSex has been crucial.

Progress would not be sustainable without the unity nationwide of Costa Rica's sex worker community.

**Conclusions/Next steps:** La Sala recognizes that challenges persist and anticipates further strides in securing rights and protections for sex workers. The acknowledgment and legal safeguarding of sex work in Costa Rica represent a significant achievement, setting the stage for continued advocacy and reform in the ongoing pursuit of comprehensive rights for sex workers in the country.

## THPEF656

"I was called 'bencong' while arranging my BPJS" – Forging a community-led intersectional justice approach to health and social security for elderly transgender women in Indonesia

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**Background:** In Indonesia, elderly transgender women face sociostructural barriers that impede their access to essential health and social services. Despite the existence of universal health coverage and social protection programs designed to serve the poor and elderly, these marginalized individuals continued to be excluded. This study aims to

1. Investigate specific barriers that elderly transgender women face in accessing health and social security programs and;
- 2.) Capture the intersecting challenges that come from being trans, poor, and elderly.

### Description:

This mixed-methods study utilized a participatory rapid ethnographic approach to examine barriers to health and social security programs for elderly trans women (n=48), using knowledge and insights from trans communities and government representatives (n=5). The research was operationalized by trained community researchers (n=12) and conducted across five Indonesian cities.

**Lessons learned:** The findings revealed how elderly trans women live at the intersections of being trans, poor, and elderly, resulting in difficulty accessing government support (e.g., health insurance and financial aid). Barriers to services include discrimination based on gender identity

and expression (e.g., being prohibited from appearing feminine when accessing services or being socially excluded from financial assistance programs), bureaucratic registration requirements, sole recognition of traditional nuclear family structure (especially in the context of Program Keluarga Harapan; Indonesia's first conditional cash transfer program), and lack of access to information and technology. Community support, particularly from transgender NGO workers, played a critical role in bridging trans communities with government services, often determining participants' ability to receive support.

**Conclusions/Next steps:** Government policy structures related to "identity" and "family" do not fully align with the lived experiences of elderly transgender women, who often find themselves excluded in Indonesian sociostructural systems.

This study calls for systemic reforms to address barriers to health and social security programs, proposing a justice-centered approach by broadening community involvement to ensure no one is left behind.

## THPEF657

Impact of the Anti-Homosexuality Act 2023 on access to HIV services and comprehensive Sexual Reproductive Health and Rights among men who have sex with men and transgender women in Uganda

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**Background:** The study investigates the consequences of Uganda's Anti-Homosexuality Act 2023 (AHA 2023) on the access to HIV services and sexual reproductive health rights for MSM, gay, bisexual, and transgender women. It aims to test the hypothesis that the implementation of AHA 2023 has significantly hindered healthcare access for these communities.

The research seeks a comprehensive understanding of the impact, providing recommendations to address the adverse effects on access to crucial healthcare services for MSM and transgender women in Uganda.

**Methods:** A three-month study was conducted from September to November 2023 in urban and rural areas across central, eastern, western, and northern regions of Uganda explored the impact of the Anti-Homosexuality Act 2023 (AHA 2023) on MSM, gay, bisexual, and transgender women aged 18 and above. The mixed-methods approach involved qualitative methods including 32 in-depth interviews, 10 focus group discussions, and participant observations, providing nuanced insights into challenges faced. Quantitative data analysis included a retrospective examination of 14 healthcare records, 9 health



reports, and statistical databases related to HIV service utilization of both public and private health centers. The integration of both data types yielded a comprehensive understanding, guiding the development of recommendations.

**Results:** The Anti-Homosexuality Act 2023 in Uganda severely impacted the accessibility of HIV services and Sexual Reproductive Health Rights for MSM, gay, bisexual, and transgender women, with a pronounced decline among those aged 18-25. The Act led to reduced availability of services like counseling and STI screening due to closures of key population organizations and drop-in centers, driven by fear of persecution. Increased stigma, discrimination, and mental health concerns, including anxiety and depression, affected all age groups due to home evictions, job loss, raids, arrests, and attacks. Trust between healthcare providers and patients in public health centers declined, hindering non-discriminatory care.

**Conclusions:** The study highlights the necessity for the targeted HIV prevention initiatives, enhancing access to treatment, comprehensive sexual reproductive Health programs, reduction of stigma and discrimination, mental health integration and policy advocacy for inclusivity for MSM, gay, bisexual and transgender women in Uganda.

## THPEF658

Exposing the false dichotomy between human rights and family values: UNESCO shares lessons for countering the anti-rights movement

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**Background:** Comprehensive sexuality education (CSE) is a flashpoint for anti-rights actors as it represents a hotly contested intersection of young people, sex, reproductive health, sexual rights, gender and power. While opposition is not new, its improved coordination and resources have halted or reversed CSE implementation in some countries. UNESCO, with other UN agencies, is working on building support, examining CSE resistance and backlash, and strategizing tools and approaches to manage and mitigate their harmful impact on CSE policy and programmes.

**Description:** Since 2020, UNESCO is mapping counter-movements against CSE and strategies of response; analysing the media landscape and documenting case studies in 5 sub-Saharan African countries about the surge of externally motivated CSE polarisation and government, CSO and UN response; implementing values-based communications; providing information and technical briefings for national delegations to the UN in Geneva and New York alongside side events at UN meetings; and demonstrating solidarity on CSE through the Global Partnership Forum on CSE with joint research, advocacy, and sharing.

**Lessons learned:** The anti-rights movement uses tactics of confusion, re-framing, disinformation; targets existing fears and makes emotional appeals to families, faith leaders and governments; disseminates pseudo-science and discredits sexual rights actors. The nexus between anti-rights actors and conservative governments is exemplified through policy actions such as adoption of anti-homosexuality bills.

While rights actors have engaged in evidence-based advocacy, it is time to use values-based messaging and take control of the narrative – not only for CSE, but for SRHR as a whole – with a need to focus on shared values and create a positive vision for change, rather than only highlighting the negative consequences of lack of sexual rights and CSE.

**Conclusions/Next steps:** CSE is a key prevention tool for HIV. While the anti-rights movement has targeted CSE, their underlying narrative is against all sexual rights and gender equality, thus affecting any gains made on HIV prevention or reduction of stigma and discrimination. Exposing their tactics while building cross-movement solidarity among SRHR actors is essential to ensure that we retain control over the narrative, build community and stakeholder support, and continue to positively influence policies, legislation and programmes for better sexual rights for all.

## THPEF659

Assessment in 11 cities for the development of a PLHIV, especially WLHIV, and key populations gender-based violence module for field officers

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**Background:** Indonesia's HIV epidemic has reached 543,100 people since 1987, with a high loss to follow-up and death rate. Only 62% of People Living with HIV (PLHIV) know their status, 21% are on treatment, and 1.5% have achieved viral suppression. Challenges include a lack of solid healthcare client relationships, which was caused by stigma, discrimination, and healthcare burden. Gender-Based Violence (GBV) is a significant issue in the HIV response program. Capacity building for field workers can help address GBV during the outreach and mentoring process.

**Description:** The study used a qualitative approach with the Participatory Action Research (PAR) method to assess community engagement in the implementation of the Indonesia AIDS Coalition (IAC)'s Human Rights Program. The research methodology, action dimension, and participation dimension were the three main pillars. The study was conducted in 11 districts from March to May 2022, focusing on community need analysis, problem-solving, and solutions as the basis of transformative actions.



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## Lessons learned:

1. The vulnerability of Women Living with HIV (WLHIV) and key populations includes local customs that affect them.
2. Survivors of GBV within the HIV community (PLHIV, WLHIV, and Key Populations) often do not have access to justice, which causes them to lose confidence in law enforcement.
3. The HIV community experiences challenges when accessing GBV services.
4. Situations related to the referral system for GBV service providers in the HIV community. In general, not all key population groups and field officers know of the referral mechanism.
5. There exists a need for capacity building for field officers to respond to GBV issues in the HIV community.

**Conclusions/Next steps:** The assessment indicates a need for increased awareness about GBV among law enforcement officers, particularly in relation to the amendment of the Legal Aid Law. This can be achieved through advocacy to the Ministry of Law and Human Rights. For certain regions, such as Bali, Papua, and West Papua, it is necessary to sensitize traditional and religious leaders because of the strong influence of customs and religions in the area. Lastly, training modules should be differentiated for each key population group, a special session on self-acceptance added, and guidelines or referral systems.

## THPEF660

### Assessing the gender-responsiveness of HIV services in South Africa: a new facility checklist and indicator for Global AIDS monitoring

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**Background:** Gender inequality stands in the way of global goals to end AIDS by 2030. Women and girls are disproportionately affected by HIV globally, particularly in sub-Saharan Africa where they represent ~64% of people living with HIV. Gender-diverse populations (GDP) are also at higher risk of HIV infection. Intensifying efforts to ensure that HIV services are gender-responsive (designed to address differing needs of men/women, boys/girls, and GDP) is therefore critical.

**Methods:** The new indicator was calculated based on responses to a checklist completed by health facility managers in South Africa. The initial checklist was developed based on literature review. Face validity was established with input from an advisory group composed of community, academia, multi-laterals, and implementers. The checklist was piloted in 18 health facilities (13 urban, 1 semi-urban, 4 rural) in Western Cape Province, South Africa between June-August 2022. Exploratory factor analysis and consultation with technical experts were used to reduce the number of items included. Reliability was assessed using Cronbach's alpha.

**Results:** The final checklist consists of 43-items and two sections: (1) general information on the health facility, and (2) gender-responsiveness of HIV services, which is divided into 7 sub-sections. All sub-sections demonstrated very good reliability (Cronbach's alpha range: 0.75-0.95). Health facilities are considered gender-responsive if they receive a score between 75 and 100 on the checklist. Half of the facilities in the pilot had a score over 91, with scores ranging from 39 and 100.

**Conclusions:** The new indicator and checklist address a critical gap that will help monitor progress towards the 2021 Political Declaration target of "<10% of women, girls, people living with HIV and key populations experience gender inequality and violence", and the sub-target of ">90% of HIV services are gender-responsive by 2025," and identify where intervention is needed to increase the gender-responsiveness of HIV services.

Gender-responsiveness sub-section scores across 18 health facilities in South Africa, 2022	No. of items	Max Score	Mean (SD)	Range	Median
Training for all healthcare staff	7	14	11.9 (2.60)	7-14	13.5
Training for al health facility staff	4	8	6.9 (1.95)	0-8	8
Policy and feedback mechanisms	6	12	9.6 (3.03)	0-12	11
HIV prevention services	5	10	8.7 (1.78)	4-10	10
HIV treatment services	5	10	8.6 (2.73)	0-10	10
HIV care and support services	5	10	8.3 (2.70)	0-10	10
Sexual and reproductive health services	5	10	8.8 (1.93)	4-10	10
Overall score, adjusted to 100	37	100	85.0 (17.07)	39.2-100	91.2
Percentage of health facilities providing gender-responsive HIV services	No. facilities 18	No. scored > 75 12	No. scored >75/No. facilities 66.7%		

## THPEF661

### 'Women's right to health in detention':

United Nations Committee Observations since the adoption of the Bangkok Rules with focus on HIV/AIDS

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**Background:** Approximately 11.7 million people are detained globally, with an observed rise in the female prison population in recent years. A range of human rights treaties, and non-binding minimum standards of care (2016 Standard Minimum Rules for the Treatment of Prisoners (the Mandela Rules), 2010 Rules for the Treatment of Women Prisoners and Non-custodial Measures for Women Offenders (the Bangkok Rules)) protect the rights of prisoners. States however have discretion in defining humane treatment and adequate medical care in detention settings, also in regard to Aids/HIV-treatment.

**Methods:** We scrutinized all United Nations Committee on the Elimination of Discrimination against Women and Committee against Torture Concluding Observations published between 2010 and 2021, and provide a global illustration of violations of women's health rights in detention settings with a focus on HIV. We identified four Bangkok Rules which are directly related to HIV/AIDS.

**Results:** Human rights violations identified in the Concluding Observations reflect 39 countries. HIV/Aids was mentioned in four reports (e.g. "violence faced by women living with HIV/AIDS").

For 21 countries the reports are very general in their findings with statements as "access to adequate health facilities". It therefore seems reasonable to assume that the treatment of HIV/AIDS is only possible to a limited extent, if at all. However, the actual situation is not clear from these reports.

**Conclusions:** Our investigation raises general questions around the continued lack of resourcing of female detention settings and gender-responsive healthcare programming, the lack of data and advocacy on behalf of detained women, and the lack of routine scrutiny of the unique health rights assurances of women within independent monitoring and inspection in detention settings all over the world. There is especially limited information about HIV/AIDS, even as four of the Bangkok Rules (Rule 6, 14, 17 and 34) explicitly refer to HIV/AIDS.

## THPEF662

By partnering with the CDC and various organizations, work towards creating an equitable medical pathway, known as the "green channel," for transgender sex workers living with HIV

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**Background:** This abstract encapsulates the comprehensive program designed to address HIV prevention and care among transgender sex workers. The overarching purpose is to bridge critical healthcare gaps by establishing a tailored approach that focuses on the unique needs of this vulnerable population. The program's scope encompasses a multi-faceted strategy, incorporating prevention, treatment, care, and support initiatives.

**Description:** This initiative is based in the city of Guangzhou, where the primary objective is to establish a streamlined and inclusive healthcare pathway, often referred to as the "green channel," for transgender individuals. Operating within Guangzhou, the program aims to address the specific healthcare needs of the transgender sex workers community. This includes developing and implementing measures to eliminate barriers and ensure equitable access to medical services. The initiative involves close collaboration with local healthcare facilities, community organizations, and governmental bodies to create a supportive environment and navigate the complexities of establishing a green channel tailored to the unique requirements of transgender individuals in Guangzhou. Through targeted activities and interventions, the program seeks to promote awareness, reduce stigma, and facilitate a more inclusive healthcare system for the transgender population in the city.

**Lessons learned:** The program has yielded valuable insights and outcomes. Increased engagement with healthcare services resulted in higher rates of HIV testing and early detection. Outreach efforts led to improved community trust and increased knowledge about safe practices. However, challenges persist, including persistent stigma and discrimination. The program's successes highlight the importance of tailored interventions and community involvement. Lessons learned include the need for ongoing anti-stigma campaigns, continuous training for healthcare providers, and sustained community empowerment.

**Conclusions/Next steps:** The findings underscore the significance of targeted HIV interventions for transgender sex workers. The program has demonstrated tangible improvements in prevention and care outcomes. Moving forward, sustained efforts are required to address the remaining challenges and expand the program's reach. The results have broader implications for HIV initiatives, emphasizing the need for inclusivity, cultural competence,



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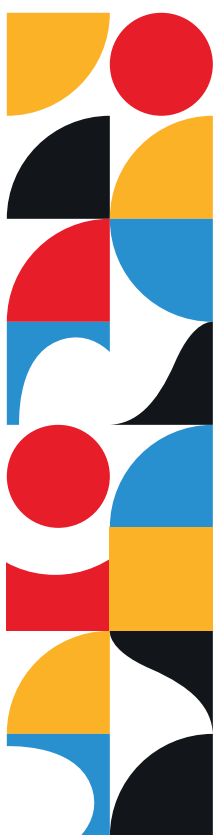
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and ongoing community engagement in public health interventions. The program serves as a model for future endeavors, providing valuable insights for the design and implementation of effective and inclusive HIV prevention and care strategies.

## THPEF663

**Untold realities: human rights perspective on the intersecting challenges faced by orphaned women living with HIV**

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**Background:** The personal narratives shared by young adult girls living with HIV by birth, as discussed within a Chitwan Plus organized sharing circle in Nepal, expose an alarming reality from a human rights perspective characterized by pervasive stigma and discrimination. Seven orphaned young women, aged between 16 and 26, offered unfiltered accounts of their lives, emphasizing the intersectionality of gender, HIV status, and orphanhood, all against the backdrop of alarming experiences of ravishment and abuse.

**Description:** These narratives unveil a profound societal stigma that casts a pervasive shadow over the lives of these young women. Their courageous testimonies shed light on the compounded discrimination they endure, underscoring the intersectional nature of their challenges. The convergence of gender, HIV status, and orphanhood collectively contributes to a hostile environment, leading to their unjust judgment and exclusion.

**Lessons learned:** The particular concern are the testimonies that illuminate the harsh reality of women facing sexual violence and abuse, driven by individuals exploiting vulnerabilities arising from their HIV status and orphaned backgrounds. The absence of adequate social protection mechanisms exacerbates their vulnerability, subjecting them to exploitation and further human rights violations. The sharing circle emerged as a platform for these survivors to advocate urgently for robust social safety nets, essential to shielding women from predatory actions fueled by their HIV status and orphanhood.

The narratives underscore the pressing need for societal education to challenge deeply ingrained prejudices. Stigma not only permeates interpersonal relationships but also infiltrates cultural practices and norms, amplifying the discrimination faced by these individuals.

**Conclusions/Next steps:** The sharing circle thus serves as a powerful call to action, urging society to dismantle the entrenched stereotypes that perpetuate discrimination against women living with HIV from a human rights perspective. The testimonies of these young adult girls portray a painful reality shaped by the intersectionality of gender, HIV status, and orphanhood, highlighting the

immediate need for comprehensive human rights interventions. These should address stigma, bridge social protection gaps, and combat gender-based violence.

By amplifying these voices, the sharing circle becomes a potent catalyst for human rights-driven change, compelling society to confront and eliminate discriminatory forces.

## THPEF664

**Transformative approaches at the intersection: strengthening community led SGBV redress initiatives for enhanced access to HIV services among Adolescent Girls and Young Women (AGYW) in the Bukedi sub-region**

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**Background:** This abstract presents a groundbreaking initiative titled "Strengthened Community-Led Redress Initiative for SGBV," implemented by the SRHR Alliance Uganda with a focus on addressing structural barriers to access HIV services among adolescent girls and young women in the Bukedi Sub-region.

The project, spanning from February 2021 to June 2022, aimed to enhance community-led response systems for survivors of Sexual and Gender-Based Violence (SGBV) and contribute to the broader discourse on the intersection of politics, governance, law, policy, and human rights in the context of HIV services.

**Description:** Operating in Tororo, Busia, and Butaleja districts, the project employed a comprehensive approach, integrating community-based interventions, legal aid services, and innovative strategies such as "Community Response Agents" (CRAs). These CRAs played a pivotal role in identifying and supporting survivors, building community awareness, and fostering collaboration with local government leaders. The project sought to create a functional toll-free center, provide legal aid services, and apply a Gender Transformative Approach for comprehensive protection. Key activities included training sessions, legal aid provision, mentorship programs, community dialogues, and media campaigns, benefiting a total of 17,360 individuals.

**Lessons learned:** The findings of the project revealed significant advancements in the establishment of a functional formal and informal community SGBV response system. The increased awareness and capacity of existing systems demonstrated a positive impact on survivors' access to justice. The utilization of CRAs proved to be an effective strategy in bridging the gap between survivors and available support services. The project also highlighted the importance of addressing societal normalization and discriminatory informal systems as barriers to justice for adolescent girls and young women.


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**Conclusions/Next steps:** The "Strengthened Community-Led Redress Initiative for SGBV" yields pivotal implications for HIV prevention, treatment, and care. Successfully establishing functional SGBV response systems offers a model for integrating community-led initiatives into the broader HIV services framework. Emphasizing a Gender Transformative Approach, the project highlights the need for comprehensive protection and advocacy against systemic barriers.

To sustain and scale-up such initiatives, ongoing collaboration among community organizations, government entities, and international stakeholders is essential, ensuring enduring impacts on human rights, gender equality, and access to essential health services.

## THPEF665

Breaking Down Barriers: integrating access to justice programming with HIV/TB prevention and care in 5 countries

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**Background:** The Global Fund's 2023-2028 Strategy recognizes that ending the HIV, TB and malaria epidemics requires scaling-up programs to remove human rights-related barriers to health services. Aligned with this goal, the "Breaking Down Barriers" (BDB) initiative has funded programs to address structural barriers to HIV, TB and malaria services in 20 countries, including support to community-led paralegals and other interventions for increasing access to justice.

**Description:** Progress assessments were conducted in 2023 and key themes were identified across national contexts. Access to justice programming took a step forward in multiple countries due to combining community-led legal literacy and services with delivery of HIV/TB prevention and treatment.

**Lessons learned:** In Kyrgyzstan, Indonesia, Jamaica, the Philippines and the Democratic Republic of the Congo, paralegals, peer educators and case managers trained in legal literacy were strategically integrated into HIV prevention, treatment and care services. In Kyrgyzstan, community-led paralegals and peers worked with people who use drugs to build legal literacy and skills to counter police disruption of harm reduction and opioid substitution

programs. In the Democratic Republic of the Congo, peer educators, paralegals, 'Mother Mentors' and service providers played key roles in expanding legal literacy and promoting conflict resolution and redress for key populations and those experiencing gender-based violence. In Indonesia, HIV peer educators, outreach workers and paralegals from the sex worker community provided training in legal literacy, human rights documentation and mediation that aided resolution of human rights violations perpetrated by clients, the police and intimate partners. In the Philippines, HIV case managers were trained to assist clients to resolve discrimination cases in education, health and family settings. In Jamaica, peer "legal focal points" from a leading HIV service provider trained clients in legal literacy and responded promptly to clients experiencing discrimination, gender-based violence and other human rights issues.

**Conclusions/Next steps:** Access to justice programs, when strategically integrated with HIV prevention and treatment services, can strengthen the capacity of key populations to challenge discrimination, gender-based violence, police harassment and other human rights-related barriers to HIV and TB services.

## THPEF666

Equality and equal access to health for PLHIV and key population

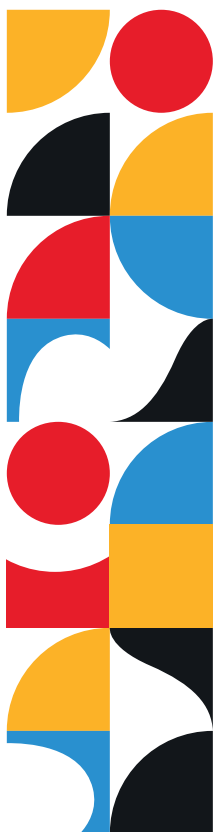
J. Kiti<sup>1</sup>

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**Background:** HAPA-Kenya is a key population-led community-based organization in Mombasa with a mission to provide comprehensive health services to sexual and gender minorities through community health outreaches, support groups, community drop-in-centers and virtual health support. HAPA Kenya was founded in 2011 as a support group for and by gay men living with HIV. HAPA Kenya is supported through The Global Fund to provide HIV, TB, STI and SRHR prevention and treatment service to the MSM, MSW and Transgender communities in Mombasa, Taita Taveta and Kwale counties. The program currently reaches 3,022 MSM in Mombasa County, 140 of whom are PLHIV.

The program uses a peer outreach model to mobilize and organize the community for health services including supporting home-based care, community dispensing strategies and psychosocial support.

**Description:** During anti-LGBTIQ campaigns in 2023, the care and treatment program were identified as the most vulnerable to interruption by the temporary closure of drop-in-centres and suspensions of community health outreaches. The program focused on supporting peer navigators to deliver door-to-door treatment and support, provide psychosocial first aid and support emergency response activities. The peer navigators offered a





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1-week virtual training covering community dispensing models, violence mapping and response, basic counseling skills and referral for health services and SGBV.

**Lessons learned:** Despite the hostile anti-LGBTI climate, the treatment program continued to support 140 KPLHIV clients in care in 2023, with monthly appointments being above 95%. To support this the program trained an additional 11 peer navigators bringing the number to 18 and this offered support to organise support groups outside DICE, door to door visits and referrals and linkage. In total 104 teleconsultations and door-to-door visits were conducted over the year, reaching to 50 individual KPLHIV. The peer navigators were supported through daily debriefing sessions during the high-tension period and monthly psychological supervision by the program counsellor.

**Conclusions/Next steps:** Peer navigation for Key population is effective in addressing the complexities of delivering HIV care and treatment services among men who have sex with men and male sex workers in the volatile anti-LGBTIQ climate. Effective person-centered interventions for KPLHIV requires intentional involvement of community members in strategy making and execution.

## THPEF667

The well-being of sexual and gender diverse people around the world: the intersecting roles of HIV, homophobia and economic precarity

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**Background:** Little is known about the interactions between economic vulnerability, the different dimensions of homophobic stigma and discrimination and their roles on the well-being of lesbian, gay, bisexual, transgender, questioning, and sexual and gender diverse people (LGBTQ+) in low- and middle-income countries. This study aimed to fill this gap by investigating determinants of well-being among LGBTQ+

**Methods:** We used data from the Global LGBTQ+ Happiness survey among 115,000 participants in 195 countries. We applied a socioecological approach to study three levels of homophobic stigma and discrimination: family, local community and institutional (legislation). We estimated the association between well-being, HIV status, the different dimensions of homophobia, and income levels (to address economic heterogeneity) using a multi-level model. Dominance analysis identified the strongest predictor of well-being loss.

**Results:** HIV status highly correlates with the well-being of LGBTQ+ after controlling for homophobia. Compared to those who are HIV-negative, participants living with HIV reported a smaller-than-expected reduction in their well-being. Alternatively, we found that participants unaware of their HIV status reported the largest negative association with their well-being (Table 1).

	N (%)	Coefficient	P> z	[95% conf. interval]	
HIV-Negative	49 595 (62.7)	(Base)			
HIV-Positive	8 609 (10.9)	-0.092	0.000	-0.136	-0.047
Don't want to answer	3 186 (4.0)	0.124	0.000	0.055	0.192
I don't know	17 715 (22.4)	-0.160	0.000	-0.194	-0.125

Table 1: Well-being: Association per HIV status.

The impact of homophobia on well-being varied across socioeconomic statuses, with economically deprived LGBTQ+ reporting the greatest well-being losses attributable to the three homophobia levels. Predictors of well-being loss were greatest from homophobia at the family level(71%), followed by institutional(15%) and inter-personal(14%). LGBTQ+ in the Middle East and North Africa faced the worst impacts, followed by Eastern Europe and Central Asia.

**Conclusions:** Our results highlighted the negative and consistent impact of heterosexist stigma and discrimination, particularly at household level, on LGBTQ+ well-being, with stronger impact among lower-income people.

Considering the association between well-being and preventive health behaviour, public health and HIV measures should dedicate more importance to addressing homophobic stigma and discrimination, focusing on the lowest socioeconomic strata of society.

These new findings have important implications for HIV testing initiatives among LGBTQ+, stressing the need to better account for subjective well-being and, by extension, mental health as a potential determinant of HIV testing intentions.

## THPEF668

Assessing HIV/TB-related stigma against community HIV/TB volunteers and its impact on early HIV/TB case detection in Ghana: evidence from Global Fund NFM 3 Project, Ghana

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**Background:** Traditionally, health facilities passively identify HIV/TB cases when people who are unwell reported to the health facility for medical screening. In order to find cases that might not be identified in the health facility when people who are unwell fail to report to the medical facility for medical checkup and to prevent commu-

nity transmission of HIV/TB, Ghana with the support of the Global Fund has implemented the community HIV/TB case findings and treatment under the Community System Strengthening project of the Global Fund New Funding Model II and III.

This initiative was to make HIV/TB services available to all Ghanaians through a well-coordinated community HIV/TB intervention. The main aim of this study is to assess HIV/TB-related stigma against community HIV/TB volunteers and its impacts on HIVTB case detection in Ghana.

**Methods:** A mixed-methods cross-sectional design was employed. A total of 191 volunteers were sampled using systematic random sampling and surveyed using a validated stigma scale. In-depth interviews were also conducted to get in-depth understanding on the type of stigma faced by HIV/TB community volunteers. The data was statistically analysed using principal component factor analysis, bivariate analysis and multivariate analysis.

**Results:** The result revealed that perceived community stigma was the common form of stigma faced by community HIV/TB volunteers in Ghana. The chi-squared analysis revealed that stigma did not differ significantly by gender (chi-squared = 0.7711, 0.3799). The estimated HIV/TB-related stigma incidence rate of Ghana was 60%. The logistics regression revealed that region and education significantly influenced HIV/TB-related stigma against community HIV/TB volunteers in Ghana.

The analysis further revealed that HIV/TB-related stigma delayed HIV/TB diagnosis, reduced screening/adherence, and lowered detection rates. HIV/TB-related stigma against volunteers undermines case detection in Ghana.

**Conclusions:** Community-specific education is needed to address misconceptions fueling HIV/TB-related stigma against community HIV/TB volunteers in Ghana. Protective policies for volunteers could help optimize their contributions to ending the spread of HIV/TB transmission in Ghana.

It is therefore, recommended that Ghana AIDS Commission, must as a matter of necessity operationalise the HIV/TB workplace policy to help protect community HIV/TB volunteers from stigma and discrimination.

## THPEF669

### Disparities in quality of care among trans men and trans women in South Africa: findings from Ritshidze's community led-monitoring

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**Background:** Trans people bear disproportionate HIV burdens and face stigma and discrimination within healthcare systems. Historically, the HIV response has often inappropriately grouped trans women with men who have sex with men or treated trans populations as homogenous despite growing evidence of health disparities within the diverse groups that exist under the trans umbrella. Few data on trans people within the South African public healthcare system exist, and disaggregated information on trans men and women in this context is even scarcer.

**Methods:** In South Africa, the Ritshidze Community-Led Monitoring Programme recruited trans people to complete a cross-sectional survey via a community-based snowball sampling method across 7 provinces from July – September, 2023. Descriptive statistics, Pearson's  $\chi^2$ , and independent samples t-tests ( $\alpha = 0.05$ ) were calculated to identify significant differences in quality of care between trans men and women.

Additionally, purposive sampling was used to identify respondents for participation in qualitative in-depth interviews (IDIs), which were transcribed and coded.

**Results:** 255 trans men and 708 trans women were included in the quantitative analysis of public facility users. A greater proportion of trans women indicated facility staff were always friendly than trans men ( $n = 263, 37.15\%$  vs.  $n = 63, 24.71\%$ ;  $p < 0.0001$ ). A higher percentage of trans women stated facility staff respected their confidentiality ( $n = 287, 40.54\%$  vs.  $n = 78, 30.59\%$ ,  $p < 0.01$ ) or gender identity ( $n = 240, 33.90\%$  vs.  $n = 59, 23.14\%$ ;  $< 0.0001$ ) relative to trans men. In IDIs, trans men and women reported medical professionals use incorrect pronouns or names; several respondents also mentioned that they felt uncomfortable and there was no privacy at clinics.

**Conclusions:** Trans people report poor quality of care at public facilities, and trans men and women report different experiences in quality of care. Interventions aimed at improving care must be cognizant of the diversity of experiences across trans populations. LGBTQ provider representation, further training/education and expanding the availability of gender-neutral spaces (e.g., toilets) represent areas of particular importance to trans people.



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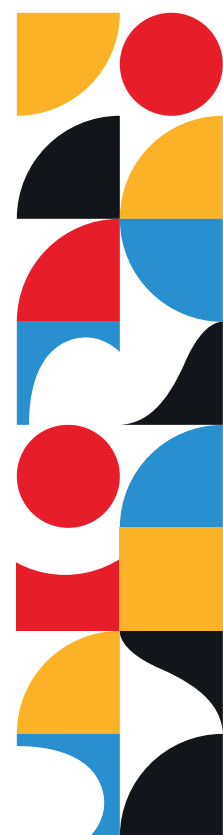
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## THPEF670

### Structural drivers of HIV among AGYW in Lesotho: new findings from the Violence Against Children Surveys

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P. Nyamukondiwa<sup>1</sup>, M. Mchenga<sup>1</sup>, B. Maughan-Brown<sup>1</sup>,  
L. Cluver<sup>2,1</sup>

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**Background:** Adolescent Girls and Young Women (AGYW) in the Kingdom of Lesotho are at high risk of HIV exposure and acquisition. Addressing their unique needs requires an understanding of the structural drivers that result in HIV exposure. Both early motherhood and marriage may increase the risk of HIV among AGYW.

We analyze the Violence Against Children Survey (VACS), a large nationally representative dataset, to investigate effects of adolescent motherhood and early marriage on AGYW HIV risk.

**Methods:** N=7101 13-24-year-olds participated in the 2018 Lesotho VACS: assessing violence experiences, sexual health outcomes and service access. We assessed whether early marriage moderated effects of early motherhood on four HIV risks (condomless sex, transactional sex, age-disparate sex and multiple sexual partners) and a composite high-risk sex outcome (self-reported condomless sex and any other of the three sexual risks). Covariates included age, early sexual debut, violence exposure, education, poverty, and drought. Multivariable covariate-adjusted generalized linear model regressions were used, with an interaction term for early motherhood and marriage.

Marginal effects were calculated to model predicted probabilities of reporting HIV risk for four groups of AGYW:

1. Married & mothers,
2. Married only,
3. Mothers only,
4. Neither.

**Results:** In multivariable analyses, higher HIV sexual risk was associated with early motherhood (Relative risk ratio [RRR]=1.61, 95%CI 1.31--1.97, p<0.001) and marriage (RRR=1.94, 95%CI 1.54--2.45, p<0.001). Early marriage moderated the effect of motherhood on HIV risk for all outcomes (p<0.001).

AGYW mothers were at higher risk of HIV exposure than non-mothers (27% vs 17%), but early marriage was associated with a greater increase in risk of HIV exposure especially among non-mothers (31% vs 4%; Figure 1).

**Conclusions:** Addressing early marriage and motherhood - two structural drivers of HIV exposure among AGYW - is critical to reaching our HIV targets. HIV prevention programming must be tailored to the needs and experiences of married and mothering AGYW in Lesotho.

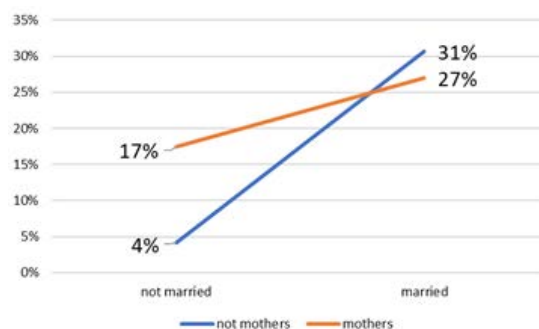


Figure 1. Predicted probabilities of HIV exposure among AGYW (13-24 years) in Lesotho.

## THPEF671

### Lessons from crisis prevention and response mechanism in enhancing KVP programming in Tanzania from 2020 to 2023

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**Background:** In Tanzania, the size estimate for the FSW is 155,450 and their HIV prevalence is 26%. The MSM population is estimated at 49,000 with HIV prevalence at 25%. The PWID population is estimated at 30,000 with an HIV prevalence estimated at 36%. People who use drugs (PWUD) is estimated at 300,000.

Currently, these Key Population groups are criminalized. Hence, they are inherently vulnerable to police interference, harassment and eventually being arrested. They are also in danger of facing violence and rejection from their families and communities.

**Description:** With funding support from PEPFAR, KVP Forum and PEPFAR IPs formed the crisis prevention and response teams (CPRTs) to respond to counter human rights incidents facing KPs. The activities covered 144 hotspots in Dar es Salaam and Morogoro regions. Through the technical support and capacity building provided by FHI 360, training was conducted on paralegals, documentation and how to conduct hospital referrals. The CPRTs were made up of 80 members with members being KPs themselves. These teams engaged KPs' families, health care providers, local government leaders, and police stations and bailed KPs at court level.

**Lessons learned:** CPRTs have significantly contributed to enhancing legal literacy and rights awareness among KPs. Most families, law enforcers and community influential leaders were visited by the CPRTs and have been sensitized on the significance of KVP programming to reduce stigma and discrimination and other structural barriers to reduce overall HIV impact among KVPs. The CPRTs have also built allies with the legal fraternity, human rights groups, activists, and organizations that support crisis response.



Generally, the CPRTs have supported approximately 5,734 KPs, of which 2,641 were FSW, 1,650 PWUDs and 1,404 MSM and 39 Transgender.

**Conclusions/Next steps:** Crisis Prevention and Response Mechanism needs be integrated urgently into national KVP programming, as it comprehensively responds to persisting structural barriers affecting the uptake of existing HIV and other related services among KVPs.

In light to that, KVP Forum will continue mobilizing resources from PEPFAR, Global Fund and potential donors to sustain existing CPRTs as well as scale up the initiative to other regions, especially those with KVP programming.

## THPEF672

### Adolescent girls and young women living with HIV experiences in access to health facilities in Lesotho 2023

M. Fako<sup>1</sup>

<sup>1</sup>Bacha Re Bacha, Maseru, Lesotho

**Background:** Adolescent girls and young women (AGYW) in Lesotho continue to have an unacceptably high risk of HIV because of structural and societal injustices that make AGYW vulnerable to acquire HIV. Bacha Re Bacha (BRB) in Lesotho is implementing Community-Led Monitoring (CLM) of health service quality to allow AGYW to have a voice to the services they are given. BRB is one of the first CLM projects implemented by AGYW, with data collection tools designed specifically to capture the priorities of this population.

**Description:** BRB is implementing both quantitative and qualitative systematic data collection about service delivery among AGYW in six districts of Lesotho with the support from Global Fund. The programme is in its first year of implementation. BRB engaged AGYW and trained them as data monitors and district coordinators.

The team uses client, facility manager, and observation surveys, as well as in-depth interviews to gather data. After data collection, AGYW monitors analyse the data to identify problems and suggest solutions.

A facility interface meeting is held to discuss the identified problems, solutions and tabulate timeframes to the identified solutions. Other issues are taken to the district level and then national level if not solved at the facility level.

**Lessons learned:** 9566 AGYW were interviewed. These data demonstrate AGYW living with HIV do not feel comfortable going to health facilities as they are separated from other health service users, resulting in discrimination and revealing their HIV status to others.

When AGYW miss their check-up appointments, service providers are not friendly and helpful when they go back to the facilities.

For some, viral load results are not explained to them. For young breast feeding mothers, long wait times at facilities are a clear barrier to care.

**Conclusions/Next steps:** Issues of unfriendly staff were solved at the facility level and other issues solved at the district level with the district health management team. AGYW-led CLM offers novel insights into the specific challenges this population faces in HIV services, and leads to targeted solutions.

## THPEF673

### Improving HIV treatment cascade indicators through increased paralegal support: the experience of the Tiberius project in the EECA region

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<sup>1</sup>Eurasian Harm Reduction Association (EHRA), Vilnius, Lithuania

**Background:** Despite substantial evidence supporting paralegal services in improving HIV treatment access, the EECA region lacks an established practice of integrating legal support as part of the HIV treatment cascade. Legal barriers, along with internal and external stigma, continue to hinder vulnerable groups from accessing and continuing HIV prevention and treatment services. Between 2019 and 2022, the Eurasian Harm Reduction Association (EHRA), supported by the Elton John AIDS Foundation, executed the TIBERIUS project in Georgia, Kazakhstan, and Moldova.

Aiming to aid the most vulnerable in EECA, the project offered peer-based legal services and strengthened the capabilities of lawyers and paralegals to assist these communities in navigating legal obstacles to HIV care.

**Description:** Of the 2814 individuals seeking assistance for legal barriers to HIV services, 1538 (55%) gained access to state services. The success rate varied, from 44% in Georgia to 75% in Moldova. Before TIBERIUS, integrating legal support within HIV treatment strategies was uncommon.

This initiative led the way in incorporating legal aid, prompting organizations to address legal, discriminatory, and stigmatizing issues in accessing ART services. EHRA and its partners also documented human rights issues and legal barriers, lobbying for systemic changes to decrease HIV risks in key populations. The project was effective in merging paralegal services with harm reduction and treatment efforts, markedly enhancing HIV treatment access.

**Lessons learned:** The project successfully defined paralegals' roles in linking clients with justice and human rights, addressing stigma and overcoming barriers. It emphasized the synergy between prevention, treatment, and paralegal services, underscoring the need to combat stigma and discrimination.

In Kazakhstan, it identified and addressed systematic service barriers, fostering legislative changes and enhanced dialog between activists and government.



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Enhanced paralegal skills improved case management and advocacy, empowering clients to assert their human rights.

**Conclusions/Next steps:** The project demonstrated the crucial role of paralegal services in enhancing HIV treatment access, seamlessly integrating with prevention and treatment efforts.

It highlighted the inadequacy of available services without addressing stigma and discrimination, underscoring the need for donor support in extending these services beyond HIV care.

This approach significantly benefited vulnerable communities, suggesting its regular adoption in outreach and service cycles globally.

## THPEF674

Efforts to advance human rights of sex workers: evidence from the on-line community-based human rights monitoring and response programme in Ukraine

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**Background:** Criminalization of sex work, stigma and discrimination from both state and non-state actors impede sex workers from accessing and uptaking HIV and other health services and undermine the HIV prevention response.

With the aim of monitoring and responding to human rights violations of key populations, ICF "Alliance for Public Health" in 2019 launched the REAct (*Rights-Evidence-Action*) system.

**Methods:** REAct is an on-line community-based human rights monitoring and response programme. System allows to document cases of human rights-related barriers that key populations experience in accessing HIV and other health-related services, as well as to respond to cases identified.

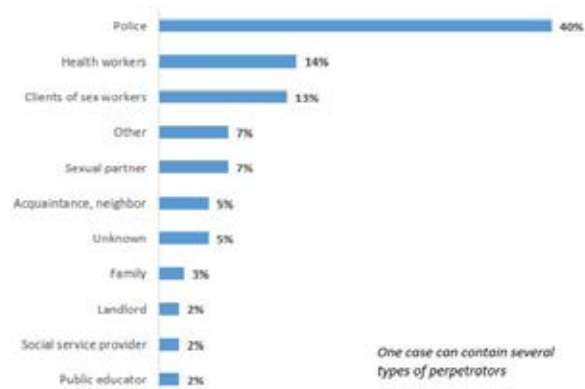
System has been implemented in Ukraine by 101 community-based organizations in 19 regions out of 24. About 10,000 cases of human rights violations among key vulnerable to HIV and TB populations were registered in total.

**Results:** Since 2019, 662 cases of human rights violations against sex workers were registered. In 98% of cases appeals were made by woman and in 2% by man. 95% of all registered cases had signs of stigma and discrimination due to sex work. The perpetrators of sex workers rights most frequently were police officers (40%) and most cases involved emotional abuse (91%).

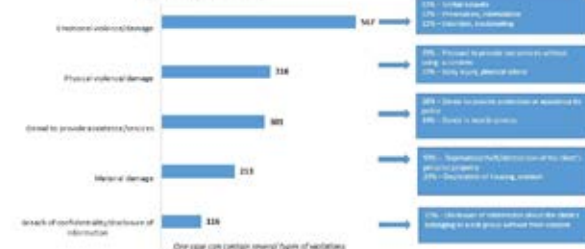
**Conclusions:** REAct provides an evidence for further planning and designing of interventions aiming to eliminate human rights related barriers while accessing HIV prevention and other services, reforming law enforcement practices, as well as strengthening the legal and policy

environment. Furthermore, documenting cases of human rights violations is crucial in amplifying community voices and supporting community empowerment.

REAct cases of rights violations of sex workers by perpetrators (Ukraine, since 2019)



Types of human rights violations of sex workers and key types of incidents registered in REAct (Ukraine, since 2019)



## THPEF675

Gender equality in Funding Requests to the Global Fund: what's the current situation, what's coming up, and how can UNAIDS support?

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<sup>1</sup>UNAIDS, Gender Team, Geneva, Switzerland

**Background:** The Global Fund to Fight AIDS, Tuberculosis and Malaria (GF) has a new GF Gender Equality Strategy, to scale up comprehensive programmes and approaches to remove gender related barriers across the portfolio, and initiate a partnership-wide focus on supporting gender transformative programming.

**Description:** In Grant Cycle 7 (2023), the UNAIDS Gender Team conducted a review of 10 Funding Requests (FRs), to the GF for the period 2023-2025 on how they currently support a gender transformative approach, with the aim of informing UNAIDS guidance to countries and the Global Fund.

The review was based on our ten elements of a gender-transformative approach.

**Lessons learned:** There were some good examples of FRs that consider gender. However, there were recurring issues across different FRs. There was a lack of:

- sex and gender disaggregation of groups such as people who use drugs (groups that can include more than one gender).
- actions for women living with HIV beyond prevention of vertical transmission.
- focus on the specific issues of trans women (who tend to be included with men who have sex with men).
- HIV prevention interventions that go beyond biomedical prevention and ensure the rights of those involved, including those who test positive.
- interventions for and inclusive of adolescent girls living with HIV.
- mention of the specific needs of different groups in treatment modules.
- work on preventing GBV - most interventions on violence focus on post-violence care.
- focus on how gender inequality intersects with stigma and discrimination against women and girls (eg abuse in SRH and maternity services).
- articulation of comprehensive SRH services.
- supporting meaningful community engagement beyond monitoring of services, HIV testing, and treatment adherence support.

#### Conclusions/Next steps:

- A lack of meaningful engagement of networks and organisations of women and girls living with HIV and from key populations in development of FR needs to be addressed so that their insights can be better reflected in FRs.
- These findings, ongoing partnership between UNAIDS and the GF, and the new GF Gender Equality Fund, should work together to accelerate progress towards gender equality, including through community engagement and empowerment of women and girls living with HIV and from key populations.

## THPEF676

### Promoting the human rights of LGBT people to access HIV care: lessons for community practice

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**Background:** Sexual and gender minority people continue to shoulder disproportionate HIV disease burden, mainly driven by persistent stigma and discrimination. We highlight findings from a 2-year (2018-2020) transnational action-research demonstration project, Project ACT, conducted by community-led organizations (CLOs) based in Burundi, Cameroon, Côte d'Ivoire, the Dominican Republic, Ghana, Jamaica, the United States, and Zimbabwe, to eliminate barriers to HIV prevention and care. Specifically, we examine factors that facilitated successful advocacy outcomes.

**Methods:** Each Project ACT partner pursued locally appropriate advocacy strategies to eliminate barriers to HIV care, decrease violence impeding access, and improve local policies. To examine Project ACT's implementation and outcomes, we employed a longitudinal evaluation design. Data included in-depth interviews (n=121 interviews with 112 respondents), document review (n=107), and field observations (n=68 days).

Analyses employed analytic inductive logic and were guided by leading theoretical frameworks on social action processes and the development of power (e.g., Christens, 2021; Klugman, 2011, 2021).

**Results:** We verified over 100 advocacy outcomes. The most successful Project ACT partners were CLOs that pursued constituent-inclusive advocacy strategies and prepared constituents for social action through activities designed to prompt radical healing from past experiences of stigma and discrimination, instill their sense of personal and political agency, and provide them safe and nurturing pathways of opportunity.

Effective CLOs also identified, created, and then leveraged partnerships with allied organizations to mobilize support and propel action, including securing commitments of duty bearers (movement power). In turn, CLOs increasingly gained institutional influence that led to concrete changes in policies, practices, and access to care (e.g., new resources) and to narrative power (e.g., influencing media coverage) (Table 1).

Type of Power (Klugman, 202X)	Type of Change Observed	Defined as a change in:	Frequency (%)
Power Within Individuals	Consciousness and Capabilities	Skills or actions that demonstrate political consciousness and commitment to the equality of LGBTQI people	38 (36.9%)
Institutional Influence	Resources	Resources, freedoms, or ease of access to resources and freedoms	21 (20.4%)
Movement Power	Advocacy Capacity	Skills, relationships, resources required to advocate	17 (16.5%)
Narrative Power	Agenda Setting and Dialogue	Coverage, framing of issues, messages, messengers, and evidence	12 (11.6%)
Institutional Influence	Norms and Practices	Informal discretionary norms, practices, and structures that drive inequality of access or treatment	12 (11.6%)
Institutional Influences	Formal Rules and Policies	Formal rules laid down in law or policy or the financial allocations to support their implementation	3 (2.9%)

Table 1. Frequency (percentage) of Types of Changes Observed Across Project ACT Partner Countries Over 20 Months.

**Conclusions:** We aimed to fill gaps in knowledge on effective community-led advocacy strategies to address the stigma, discrimination, and violence that impedes access to HIV prevention and care in middle- and low-income countries. We found outcomes from Project ACT correspond closely with leading frameworks on empowerment as a foundation for social change.

Lessons learned are potentially instructive to LGBT advocates leading CLOs, funders, and policy makers, especially as human rights concerns grow and resources shrink.



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## THPEF677

Building on the HIV human rights movement to develop an equitable global health R&D advocacy agenda

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**Background:** Structural and social determinants of health (SDH) like education, healthcare, housing, income inequality, gender, racism, and colonialization impacts have historically limited which communities participate in research to develop and implement life-saving technologies. Urgency has grown to confront the adverse impact of these forces and broader power imbalances within the R&D sector—highlighted by COVID-19 vaccine disparities. HIV R&D—which has been on the forefront of addressing SDH and prioritizing community engagement, offers a valuable model for best practices that can be adopted sector-wide.

**Description:** Established in 2020, the Global Health Technologies Coalition (GHTC) Equity Working Group (EWG) emerged in response to the social justice issues within global health R&D. Influenced by the health equity challenges brought to light by the COVID-19 pandemic and the tragic murder of George Floyd, the EWG aimed to address the legacies of colonization and racism, promoting a more inclusive and equitable sector.

**Lessons learned:** The HIV/AIDS sector, a stronghold of social justice activism, forged a partnership with global health R&D advocates to document and share best practices to make the R&D sector more equitable and rectify power imbalances. Together partners have organized a workshop at Africa Health R&D Week, emphasizing funding for Africa-led research and approaches to decolonize the R&D landscape, and collaborated with donor governments, sharing insights, and recommending strategies for equitable funding, research, and program approaches. Leveraging the expertise and best practices of the HIV movement from the last 40 years, the partnership has now developed a draft Global Health R&D Equity Compact, a guiding document for the community that will inform a broader Global Health R&D Equity Advocacy Agenda. The agenda will cover a range of focus areas including institutional DEIA (diversity, equity, inclusion, and accessibility), gender inclusion, participatory research, and decolonization.

**Conclusions/Next steps:** The EWG and partners will pilot test the Global Health R&D Equity Compact with researchers, civil society, philanthropic and government R&D funders, so it can inform cross-sector efforts to foster a more equitable global health R&D enterprise.

## THPEF678

Investigating the burden and pattern of intimate partner violence in HIV-positive individuals: evidence from Ghanaian healthcare settings

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<sup>1</sup>JSI Research and Training Institute, Inc, Hospital, Sekondi-Takoradi, Ghana

**Background:** Intimate partner violence (IPV) represents a significant global health concern. The prevalence of HIV among people who experience IPV is heightened, while antiretroviral adherence is reduced and viral load suppression is less probable. Currently, there is little evidence regarding the prevalence of IPV among PLHIV in Ghana. Given the above, we investigated to ascertain the prevalence of IPV and the type of IPV suffered by PLHIV in Ghana. We aimed to gain insight into the IPV burden and identify factors that could facilitate the identification of persons at risk.

**Methods:** We extracted data from the USAID Care Continuum project DHIS-based index testing register for the period 2019-2023. Per the project protocol, all HIV-positive clients are screened for IPV, before they are offered index testing. We excluded those with incomplete datasets. The final dataset used in the analysis was from 1855. Descriptive statistics and multivariate logistic regression analysis were run. A risk ratio (RR) with a 95% confidence level (CI) was declared significant.

**Results:** Among the 1855 screened for IPV, 1329(71.6%) were females. The mean age was 36.2[age range 15-79 years]. The prevalence of IPV was 105(5.7%). The type of IPV experienced were; emotional 39(37.1%), Physical 34(32.4%) and the least IPV was sexual 32(30.5%). Females have a higher risk of IPV compared to males (ARR 4.12, 95% CI 2.1-8.2), also, older age was associated with lower risk of IPV (ARR 0.97, 95% CI 0.95-0.99).

**Conclusions:** The prevalence of IPV was found to be 5.7%, with emotional IPV being the most common type. Females and younger individuals were found to be at higher risk of IPV. These findings suggest that IPV screening in healthcare settings may be effective in identifying cases or patterns, and targeted interventions should be developed for females and younger individuals.

## THPEF679

### \$LetsTalkSexualHealth Campaign for Young key population (YKP) in Lagos Nigeria

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<sup>1</sup>United Nations Population Fund, Technical, Abuja, Nigeria,

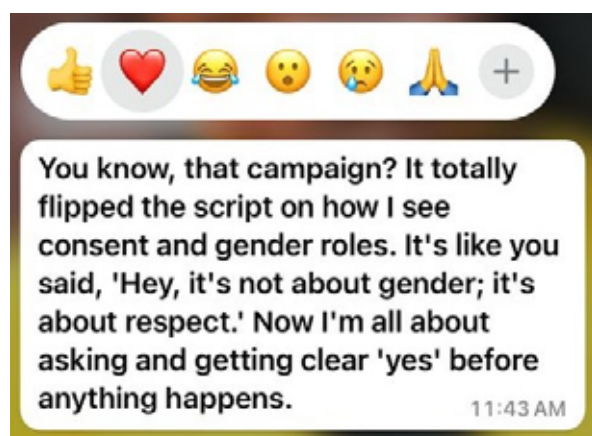
<sup>2</sup>Think Positive Live Positive Support Initiative, Advocacy, Lagos, Nigeria

**Background:** In Nigeria, young people particularly key populations (KP) aged 15-24 years contribute to the high burden of HIV in Nigeria. Despite this reality, many faces additional barriers and discrimination in accessing services and information to prevent acquisition of HIV. It is based on this that an on-line youth led campaign was launched and it sought to raise awareness, provide SRH information, psychosocial support and promote health behaviors among young key population in Lagos State was launched.

**Description:** The daily social media campaign on X, IG, LinkedIn, and closed Facebook group (\$LetsTalkSexualHealth) with engaging posts and infographics was launched and facilitated by trained youth key populations. The on-line campaign covered positive behavioral changes by addressing misconceptions, stereotypes, and risky practices related to sexual and reproductive health. Furthermore, it encouraged the key population to take ownership of their bodies, make informed decisions, and keep healthy relationships.

**Lessons learned:** Supporting Youth key population through on-line platform to access information, services and understand their rights would reduce their vulnerability to acquiring HIV.

A total of 13,000 key population were reached across the various platforms and it was indicated by over 5% that they had a poor understanding of the topics prior to the sessions .



**Conclusions/Next steps:** On-line platform can serve as a safe space , a means to provide CSE and psychosocial support to Young Key Population. There is need to scale up the on-line intervention to reach more left behind Key

populations and consider partnerships with local groups to address conservative resistance and boost access to CSE information.

## THPEF680

### Love Alliance: building resilience in HIV/SRHR in the era of anti-gender movements

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**Background:** The Love Alliance addresses underfunding, criminalization, and exclusion for the LGBTIQ+, sex workers and people who use drugs communities in their intersectionality, while guaranteeing SRHR for these communities and countering traditional power imbalances between the Global North and South. The organized global anti-gender movement has positioned itself as a major challenge, hindering the realization of SRHR for these populations through discriminatory tactics.

The Love Alliance monitors and responds to this growing phenomenon by bolstering community-led responses to counteract this movement and developing tools aimed at protecting hard won gains.

**Description:** The Love Alliance, through community-led monitoring in East, West, and Southern Africa, researched anti-gender groups' strategies, actors, and discourses. This knowledge empowers community-led and broader civil society organizations to counter the growing movement's tactics including international lobbying, recruiting lawmakers to pass criminalising legislation, creating moral panic, social media campaigns, and appropriation of human rights language to create a facade of supporting fairness and empowerment.

Despite its recent growth, communities reject seeing this as a novel phenomenon, proposing instead to identify local and national perspectives to better understand this phenomenon.

This session will discuss Love Alliance research findings, exploring how communities can use evidence-based strategies to counter this movement and protect/promote enabling environments for SRHR and HIV/AIDS responses.

**Lessons learned:** To combat the anti-gender movement, understanding its operations and coordination is crucial. Countering it involves monitoring activities, understanding their tactics, debunking myths, and reporting hate speech. Rights-based movements must unite and share knowledge across countries. Engagement with sympathetic religious leaders and building relations with governments is vital.

The Love Alliance has developed tools to counter the opposition in global fora, such as a compendium of internationally agreed language on HIV/AIDS.



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**Conclusions/Next steps:** Understanding the approaches taken by the anti-rights movement helps us counter the opposition and address the social and structural factors that shape vulnerability and risk. There is a strong need for human rights movements to unite their efforts to counter the anti-rights rhetoric as it is a global threat that is increasingly gaining momentum across numerous countries. Substantially larger investment in community-led initiatives to counter opposition and react to anti-rights groups is needed.

## Ethics and HIV

### THPEF681

**Finding middle ground: public deliberation is a promising method for resolving ethical conflicts in biomedical HIV research with minors**

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**Background:** Minor consent to sexual health research raises ethical conflicts between regulators' and parents' desire to protect minors from harm and minors' concerns about consent-related disclosures of sexual behavior/orientation to parents. Flexible models of consent, such as the option to engage a neutral ombudsperson or a parent, may offer a "middle ground" resolution. In the C-START study, we convened a series of public deliberations (PD)—a method used to educate and then engage laypersons (deliberants) in the resolution of a complex ethical issue—in four U.S. cities in 2021-23, and assessed deliberants' perspectives on traditional and flexible models for minor consent.

**Aims were:**

1. Examine whether participation in the PD changed parents' opinions over time,
2. Determine whether the result of any changes in opinion among parents who participated in PD were significantly different than those from our earlier 2019 *Consent 2.0* study that did not employ PD.

**Methods:** C-START and *Consent 2.0* parents rated (5-point Likert-type scale) the acceptability of three consent approaches:

1. Parental permission,
2. Ombudsperson option,

3. Minor self-consent. C-START parents were surveyed before and after the PD; *Consent 2.0* parents were surveyed once.

**Aim 1 Methods:** C-START parents' scores at the two timepoints were compared using nonparametric tests.

**Aim 2 Methods:** *Consent 2.0* parents' scores were compared to C-START parents' scores at 1) baseline and 2) follow-up.

**Results:**

**Aim 1.** Among C-START parents (N=34), the ombudsperson option was significantly more acceptable after the deliberation ( $p=0.05$ ); there was no change in opinion for the other models.

**Aim 2.** At baseline, there were no differences between the opinions of C-START parents' and *Consent 2.0* parents' (N=125) opinions on any of the consent models. However, after the deliberation C-START parents were significantly more accepting of the ombudsperson ( $p=0.007$ ) and minor self-consent ( $p=0.04$ ) models compared to *Consent 2.0* parents.

**Conclusions:** After participating in PD, parents were more accepting of a "middle ground" model of consent. Further, parents who participated in a PD were significantly more accepting of the ombudsperson model than those surveyed a single timepoint, suggesting PD may offer a path to resolving complex ethical issues in HIV research with minors.

### THPEF682

**An ethical framework for identifying, understanding and addressing bias in EHR-based HIV-related studies**

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**Background:** A growing body of literature identifies and describes bias in electronic health records (EHR) used in health research including HIV-related studies. However, little work has considered how diverse types of biases intersect to generate the structural injustices that further propagate biases.

We developed an ethical framework to articulate ethically meaningful biases in large data studies affecting People with HIV (PWH), explore how these biases intersect in reproducing biases, and inform strategies needed to break this vicious cycle.

**Methods:** The ethical framework development was implemented through an iterative process composed of literature/policy review, content analysis, and interdisciplinary dialogues and discussion. We interviewed data curators, end-user researchers, healthcare workers, and PWH representatives throughout all iterative cycles using various formats, including in-depth interviews of 15 key stakeholders, panel discussions in a conference, and a charette workshop.



**Results:** The framework was designed to align Belmont Principles (i.e., respect, beneficence, and justice/fairness). The meaningful biases thus include not only statistical/computational biases but also social biases (e.g., interpersonal bias, institutional bias, structural bias), and representativeness bias (e.g., underrepresented in the EHR data due to care access, affordability, availability, and acceptability). Social biases prevent marginalized populations (e.g., ethnic minorities, sexual and gender minorities) from accessing care and/or prevent healthcare workers from collecting comprehensive and accurate information about ethical issues (e.g., social determinants of health, sexual/gender identities).

A lack of representativeness and engagement when designing EHR data collection and management results in lost opportunities for PWH subgroups to contribute to the dataset or confirm the data accuracy. Such biases will result in missing data and systematic errors (statistical biases).

Interdisciplinary collaboration within the public health research area and intersectional efforts across government and healthcare system in policies, capacity building, and PWH engagement/involvement are needed to manage and address the biases and protect PWH from the threats of unfairness and inequality in health research.

**Conclusions:** The developed framework illustrates the actions and steps that healthcare providers, health systems, data scientists, and population health researchers can collectively take to reduce opportunities that cumulatively work to produce and reproduce social and statistical biases within EHR data and the resulting population health research products/interventions.

## THPEF683

### Conducting experimental medicine vaccine trials (EMVTs) in sub-Saharan Africa and India - complexities and potential safeguards for trial participants

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**Background:** EMVTs are small, iterative, hypothesis-driven human clinical studies, allowing rapid testing of multiple immunogens to accelerate vaccine development. In the field of HIV, EMVTs address scientific questions necessary for advancement of the field towards producing a vaccine regimen that could be tested in a clinical development program.

More than 30 such trials are planned in various regions, however, there is a need to explore ways to conduct these complex early-stage trials in regions where eventual vaccines would be deployed.

**Description:** A virtual co-learning workshop was conducted in December 2023, engaging 16 domain experts including bioethicists, regulators, clinical researchers, and policy-makers from India, Africa, and globally, to brainstorm on complexities and considerations for EMVTs based on learnings from regionally relevant experiences. Data from the workshop were explored through thematic analysis.

**Lessons learned:** Experience in SSA:

- *Risk-benefit ratio* – This must be understood by participants that there is unlikely to be any direct benefit, but scientific developments could foster positive public health impact. Robust community engagement must be applied to address any misconceptions.
- *Elaboration of study procedures* – Purpose, needs and potential risks must be explained in comprehensible language during informed consent process.
- *Ethically justified compensation* – They should not blind participants to potential risks in the study.
- *Integrated engagement* – Referral systems for medical care, long-term follow-up to manage late side-effects, and minimizing participant burden must be considered.

Considerations for India:

Based on experience from recent development of ethical guidelines for CHIS in India, it was suggested that existing guidance can be drawn on to consider innovative trial designs in local context.

- *Continued community engagement* – Engaging communities from trial conception phase to facilitate co-ownership, avoid stigma, and ensure trial design is sensitive to social, cultural, and religious norms.
- *Capacity building* – Training ethics committees, regulators, investigators, and influencers to ensure scientific rigor in review processes.
- *Health insurance* – Extending insurance beyond research-related injuries and serious adverse events to cover late side-effects.
- *Site selection* – Selecting appropriate sites with trained staff and relevant facilities.

**Conclusions/Next steps:** Advancing the concept in India demands opening communication channels between stakeholders and their buy-in to set the framework for the conduct of EMVTs.



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## THPEF684

### Revisiting informed assent/consent among MSM minor participants in HIV research: a critical review

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**Background:** This review explores the ethical aspects of HIV research with vulnerable groups, specifically MSM under 18 years. Emphasizing human subjects' protections per CIOMS 2016 guidelines, the study examines the informed assent/consent process, prioritizing confidentiality, privacy, and sensitivity. The goal was to systematically synthesize global data on informed assent/consent in HIV research with MSM minors.

**Methods:** We conducted a systematic review of HIV-related studies published in peer-reviewed literature between 2010 to 2021, focusing on the informed assent/consent process for MSM under 18 years. Following the PRISMA guidelines, we used relevant keywords to search in PubMed, Embase, and Scopus databases.

**Results:** Out of 171 articles, only 35 met the study inclusion and exclusion criteria. While all studies implemented an informed consent process, merely 14% incorporated an informed assent process (n=5). Notably, 65% were studies conducted in high-income economies (n=23), with 6% involving people living with HIV (n=2) and only 9% involving transmen and transwomen (n=3). Methodologically, 88% utilized quantitative approaches (n=31), 6% qualitative (n=2), and 6% mixed methods (n=2).

Approximately 26% utilized online platforms for their informed assent/consent process. Furthermore, 20% used waivers of guardian permission (n=7), and 3% sought parental permission (n=1). Noteworthy is the presence of only two studies with a formal built-in informed assent/consent process tailored for MSM minors.

This process included easy-to-understand language, a self-administered assessment of participant understanding, and independent minor advocates ensuring privacy, confidentiality, and sensitivity.

**Conclusions:** In HIV research involving MSM minors, the terminology and processes surrounding informed assent/consent and waivers of guardian permission are often incorrect, unclear, and rushed; creating uncertainty with respects to potential risks and harms, protections from harms, research objectives and methodology, privacy, and confidentiality.

These lack of details from authors may be due to negligence from authors, peer reviewers, and journal editors at best, or due to a lack of information and training in human subjects' protections and informed assent pro-

cess for minors, at worst. Moreover, the few studies that included MSM minors do not reflect the targeted and volatile HIV epidemics globally, indicating that investigators choose to exclude MSM minors. This may indeed be the most shocking finding of all!

## Policy development, implementation and analysis

## THPEF685

### Comparative analysis of the action plans to accelerate HIV prevention options for Persons with Disability in West Africa

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**Background:** Persons with disabilities (PWDs) are one of the most vulnerable populations when it comes to the spread of HIV. In West Africa, the prevalence of HIV among persons with disabilities is higher than in the general population, highlighting the urgent need for effective action to address their specific needs and reduce their risk of acquiring HIV.

This study is the first of its kind to explore disability inclusion as it relates to HIV prevention services in the National Strategic Plan (NSP) documents of West Africa.

**Methods:** This study reviewed the most recent national strategic plans (NSPs) from countries in West Africa and assessed their efforts to address the unique needs of persons with disabilities in the context of HIV prevention.

A Systematic Approach was utilized in the analysis of the action plans to identify common themes and best practices among the national documents. Only countries in West Africa with updated national strategic plans up to 2010 were included in the study.

**Results:** Out of 16 West African countries, only nine (9) met the inclusion criteria for the study. Analysis of their National Strategic Plans (NSPs) revealed that 33.33% (3 countries: Ghana, Senegal, and Nigeria) recognized Persons with Disabilities (PWDs) as a vulnerable group at high risk of HIV exposure, implementing disability-specific protective measures. Ghana and Senegal (22.22%) developed strategies for PWDs' accelerated access to HIV prevention. However, the remaining 6 countries (66.67%), including Nigeria, failed to recognize PWDs as a high-risk group and lacked strategies for HIV prevention. Despite addressing other vulnerable groups, 77.78% omitted PWDs in HIV prevention in NSPs.



**Conclusions:** Progress in accelerating HIV prevention services among PWDs across West Africa is mostly poor. While countries like Ghana and Senegal are making giant strides, this is not the case for the majority.

This is indicative of the need for policymakers and governments across these countries to implement disability-specific approaches and encourage inclusivity, as seen in the NSPs of Senegal and Ghana.

## THPEF686

### Brazil's PrEP dashboard: online tool for PrEP scale up and social accountability

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**Background:** Since 2018, oral PrEP has been offered free of charge in all 27 Brazilian states and monitored nationally through a single system that aggregates data from all PrEP users in public pharmacies in the country.

Data are analysed monthly to inform national policy, and they are also available for consultation on an open online platform for local policy, management and social accountability.

**Description:** Since 2018, approximately 150,000 people have accessed oral PrEP free of charge in Brazil in 880 public pharmacies, which are monitored nationally through a single information system (Medicines Logistics Control System - SICLOM).

In 2019, an open online interactive dashboard was developed to publish subnational indicators on PrEP use and discontinuation profiles, disaggregated by race/color, education, gender identity, sexual orientation and age group.

In 2023, this Dashboard was enhanced to make disaggregated data available down to the levels of health units, municipalities, and states.

Through the PrEP Dashboard, policymakers, health workers, and civil society can easily access and monitor information on new users and services that offer PrEP free of charge, thereby promoting municipal, state, and national scale-up targets and ensuring accountability for communities.

Brazil's PrEP Dashboard is available at: <https://www.gov.br/aids/pt-br/assuntos/prevencao-combinada/prep-profilaxia-pre-exposicao/painel-prep>

**Lessons learned:** The online dashboard is a tool for national, local management and for communities-led monitoring, based on accurate, updated and disaggregated data.

**Conclusions/Next steps:** Brazil is committed to expanding PrEP use nationally by 147% by 2027 to impact the HIV

epidemic in the country. The online PrEP Dashboard collaborates with local managers and civil society to equitably expand access to and use of PrEP.

## THPEF687

### Assessment of the implementation of HIV in the workplace policy in public and private organizations in Akwa Ibom State, Nigeria: a cross-sectional study

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**Background:** Stigma and discrimination heightens the risk of HIV transmission and worsens health outcome among People Living with HIV (PLHIV). To mitigate this, Akwa Ibom State enacted an anti-stigma & discrimination policy, HIV in the Workplace (AKS\_HIV\_WPP) in 2014. This paper assessed the implementation of this AKS\_HIV\_WPP in the Akwa Ibom, Nigeria.

**Methods:** This cross-sectional study utilized data collected from managers of twenty-two organizations (10 public and 12 private establishments) between October 2022 to February 2023 across the three senatorial districts in Akwa Ibom State, Nigeria. AKS\_HIV\_WPP policy implementation was assessed across seven domains: policy availability, socio-economic and political contexts, stakeholders' involvement, resource availability, leadership, operations and feedback. Each domain was scored 0 for no implementation, 1 for sub-optimal and 2 for optimal implementation. Scores were reported by organization type and total scores less than 30% were categorized as no implementation, 31- 69% as sub-optimal, 70 and above as optimal. Frequencies and percentages were used to summarize socio-demographic characteristics of the participants and chi-square test was used to determine the association between type of organization and the level of implementation of AKS\_HIV\_WPP. Statistical significance was set at  $p < 0.05$ .

**Results:** Of the 22 managers, 13 (59.1%) were males with median age of 38 years (IQR 29 – 46 years). Sixteen (72.7%) had university education and the median work experience as a manager was 5.5 years (IQR: 3-10 years). Twenty-one (95%) of the organizations had sub-optimal implementation of the AKS\_HIV\_WPP. The domains with the least performance were the policy availability and feedback domains, each scoring 3.1%. There was an association between the type of organization and the level of implementation of the AKS\_HIV\_WPP ( $p = 0.004$ ).



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**Conclusions:** The implementation of the HIV Workplace policy was suboptimal across most organizations in Akwa Ibom. This gap in HIV stigma and discrimination mitigation could continue to fuel the spread of HIV in the state. HIV in the workplace policy should be made readily available in workplaces in the state and feedback on implementation regularly obtained.

Similar settings where HIV in the workplace policy exist, should consider a monitoring plan that strengthen policy implementation.

## THPEF688

### Policies enabling the transition of HIV financing in Vietnam

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**Background:** Until 2014, ART was financed primarily by international donors. To transition to domestic funding, Vietnam is working to integrate HIV services into Social Health Insurance (SHI). The pre-transition phase, which included the creation of a legal and policy framework to enable HIV financing through SHI, took six years to complete. The government passed legislation to guide how ARVs and treatment should be integrated into SHI, and between 2013 and 2019, developed twenty-four policies to enable the transition of ARVs. This includes guidance for procurement and payment, ensuring access to ARVs without financial hardship, and integration of independent HIV clinics under SHI.

**Description:** USAID support through the Health Finance and Governance and Sustainable Financing for HIV/AIDS (SFA) project (2014–2019) included co-planning the policy agenda and co-development of policy content through an extensive consultation process with government partners.

With appropriate policies in place, the ARV transition began in 2019. USAID, through SFA and the Local Health System Sustainability Project, collaborated with the government to identify implementation issues that could be addressed through the revision of policies. Between 2020 and 2023, three policies were amended to address challenges with national centralized procurement of ARVs.

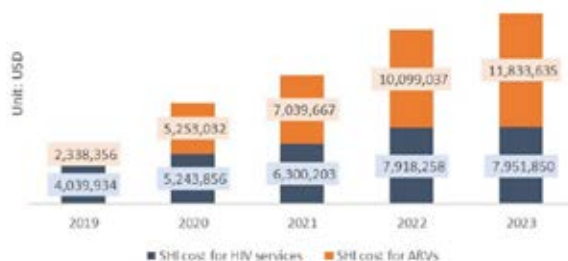


Figure 1. SHI payment for ARVs and HIV services, 2019 - 2023

**Lessons learned:** As Vietnam transitioned to the domestic funding of the country's ARV supply, lessons from implementation informed policy-making. This new environment required dynamic regulations, whose implementation needed monitoring to assess their effectiveness and if changes were necessary.

**Conclusions/Next steps:** Implementation of the policy framework enabled the provision of SHI-funded ARVs for 165,000 PLHIV from 2019 to 2023, accounting for 96 percent of total PLHIV on ART. Integrated HIV services, not limited to ART, can also be accessed through SHI which provides financial protection for PLHIV. By November 2023, the SHI fund's payment for ARVs has been five times larger than in 2019 and almost doubled for HIV services (Figure 1).

## THPEF689

### Filling the gaps in universal access to Mpox preventative programmes among people affected by HIV: reflections on implementation of Mpox vaccination policies across Australia, Taiwan and the United Kingdom

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**Background:** The Mpox pandemic has disproportionately impacted people affected by HIV worldwide. Despite increasing availability, huge gaps in accessible, equitable and person-centred Mpox vaccination persist.

We reflected on policy implementation from countries with universal health coverage to improve Mpox vaccination equity.

**Description:** We compared the implementation process of publicly-funded Mpox vaccination programmes in Taiwan, Australia and the United Kingdom as three representative countries with universal health care in Asia, Oceania and Europe, respectively. After searching governmental documents and public communications published from May 2022 to December 2023, we analysed the eligibility, affordability, accessibility, accountability, scalability and stigma mitigation to synthesise best practices in Mpox vaccination programmes for key populations and people with HIV.



**Lessons learned:** Although all three countries offered free Mpox vaccines to 50,000+ residents affected by HIV through designated public sectors, their strategies for improving equitable vaccine access and mitigating stigma vary (see **Table**).

Firstly, the use of stigma-free language (e.g., Taiwan's governments used 'people engaging in risky sexual behaviour' rather than naming populations with specific gender and sexual orientation) can prevent the unintended spread of Mpox-related stigma.

Secondly, Australia and the UK exemplified co-productive community engagement by working with civil society organisations to not only raise awareness of Mpox but establish social media-based reassurance and trust in Mpox vaccinations.

Thirdly, policymakers should continue normalising Mpox acquisition in health risk communications, so intersecting stigmas of Mpox against key populations can be mitigated.

Policies on person-centred Mpox (self)-care and strategies for regaining social connections after Mpox recovery remain scarce, which devastate populations with limited

social support and/or marginalised identities. Health sectors should continue detecting and tackling misinformation on Mpox vaccination, care delivery and well-being recovery.

**Conclusions/Next steps:** Gender-neutral language use, government-community partnerships and evidence-informed health communications in Mpox prevention, care and recovery are critical for countries to establish preparedness for ongoing syndemics of Mpox and HIV. When planning Mpox vaccination scale-up, countries should always put people first by co-producing accessible, equitable and stigma-free programmes with populations affected by HIV.

Country	Eligibility	Relevance to people with HIV	Affordability	Accountability	Accessibility	Scalability (as of 2023)	Stigma mitigation
Taiwan	<ul style="list-style-type: none"> <li>- High risk contact of Mpox case</li> <li>- People (and their sexual contacts) engaging in risky sexual behaviour or diagnosed with STIs in the last six months</li> <li>- Personnel responsible for Mpox vaccination and care</li> </ul>	<p>People whose CD4 <math>\geq</math>200 cells/mm3: subcutaneous Mpox vaccination</p> <p>People whose CD4 &lt;200 cells/mm3: intradermal Mpox vaccination</p>	Free	Taiwan Centers for Disease Control (CDC)	Medical institutions (both public and private) collaborating with Taiwan CDC	<p>Secured 40,560 vaccines</p> <p>Vaccinated 75,134 persons</p>	Emphasise Mpox as a contact disease (transmitted by close contact) with 1% mortality rate
Australia	<ul style="list-style-type: none"> <li>- Sexually active GBMSM and their sexual partners</li> <li>- Sex workers</li> <li>- Immunocompromised persons</li> <li>- High-risk contact of Mpox case(s)</li> <li>- Healthcare providers for vaccination</li> <li>- Person travelling to a country with a significant Mpox outbreak</li> </ul>	<p>General recommendations on Mpox vaccination</p> <p>Live-attenuated Mpox vaccine (ACAM2000) cannot be used in people whose CD4 &lt;200 cells/mm3 or HIV viraemia uncontrolled</p>	Free	Australian Government Department of Health and Aged Care	Local public health units and public sexual health clinics	<p>Secured 450,000 vaccines</p> <p>Administered 50,000+ units of vaccination</p>	<p>Launch media campaigns that focus on key populations including GBMSM</p> <p>While speaking broadly of Mpox transmission, public messaging often highlights sexual transmission</p>
United Kingdom	<ul style="list-style-type: none"> <li>- Diagnosed with bacterial STIs in the past 12 months</li> <li>- Eligible or have been prescribed HIV pre-exposure prophylaxis</li> <li>- Staff who work in sex on premises venues</li> <li>- Healthcare workers responsible for Mpox cases</li> <li>- GBMSM with multiple sexual partners</li> <li>- High-risk contacts of confirmed Mpox cases</li> </ul>	<p>Recommend all people with HIV for two subcutaneous 'full-dose' Mpox vaccines</p> <p>People whose CD4 <math>\geq</math>200 cells/mm3 and reaching viral suppression can receive intradermal fractionated vaccines</p>	Free	United Kingdom Health Service Agency; National Health Service (NHS)	Sexual health clinics and hospitals commissioned by NHS	<p>Secured 150,000 vaccines</p> <p>67,898 people have received the first dose, and 26,619 received the second dose</p>	<p>Target high-risk groups by emphasising Mpox sexual transmission and utilise social media to propagate vaccination campaigns</p> <p>Describe general symptoms of Mpox</p>

THPEF689 Table. Comparing policy implementation of Mpox vaccination across Taiwan, Australia and the United Kingdom.







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## THPEF690

Impact of third line antiretroviral prices on the comprehensiveness of the Brazilian universal access policy

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**Background:** Comprehensiveness is a principle of the Brazilian national health system, which means that people living with HIV/aids (PLWHA) have the right to antiretroviral therapy (ART) according to their needs, including when multiple treatments fail.

However, antiretroviral (ARV) high prices can be an obstacle. This study aimed to investigate the impact of third line drugs on ART public budget.

**Methods:** From 2019 to 2023, we investigated annual procurement of enfuvirtide (T20) 90 mg/mL, efavirenz (ETR) 200 mg and maraviroc (MVC) 150 mg from the Brazilian government to identify: volume of tablets purchased, BRL unit price and percentage of the ART public budget consumed. The national ARV logistics system was used to identify the number of PLWHA in ART and in use of each of these drugs in December of each year.

Using the preliminary report made by the National Committee for Health Technology Incorporation, we also simulated the scenario in which fostemsavir was officially incorporated in 2024.

**Results:** From 2019 to 2023, the number of PLWHA in ART increased each year, reaching 751,125 PLWHA in 2023. During the period, an average of 0.40% PLWHA in ART used ETR in their regimens, 0.17% used MVC and 0.02% used T20.

The number of PLWHA using these ARV decreased slowly from 2019 to 2021 and abruptly in 2022: a decrease of 54% for ETR, 58% for MVC and 46% for T20 compared to 2021. In 2023, absolute numbers rose to close to the 2021 pattern. Despite being used by just a few PLWHA, the three drugs together consumed an annual average of 2.32% of the ART public budget.

The unit price of fostemsavir is more than 3 times the unit price of T20. If fostemsavir is incorporated to be used by 500 PLWHA, the drug alone will consume 4.1% of the ART budget amount of 2023 (BRL 1,735,258,658.00).

**Conclusions:** High prices can be a barrier to comprehensive and sustainable access to third line ARV – harming, therefore, the universal access to ART. The scenario tends to become more complex as new sky-high priced therapeutic options are launched.

## THPEF692

Building on Australia's HIV partnerships to forge consensus on Doxy-PEP use in gay and bisexual men who have sex with men

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**Background:** Clinical trials of doxycycline post-exposure prophylaxis (Doxy-PEP) have demonstrated significant reductions in syphilis, chlamydia, and to a lesser degree, gonorrhoea among gay, bisexual, and other men who have sex with men (GBMSM). However, guidance on how to use Doxy-PEP varies significantly across jurisdictions, with differences in expert opinion regarding its benefits and risks, particularly in relation to the potential impact of Doxy-PEP on antimicrobial resistance (AMR).

To ensure a cohesive national approach to Doxy-PEP, the Australasian Society for HIV, Viral Hepatitis and Sexual Health Medicine (ASHM) initiated a consensus-building process that included community representatives, clinicians, policymakers and researchers, building on lessons learned and partnerships formed in Australia's HIV response.

**Description:** The process consisted of a national roundtable (45 participants, March 2023) to discuss Doxy-PEP and formulate recommendations, followed by three rounds of feedback on draft recommendations, and a consensus survey on final recommendations. The Australian Consensus Statement on Doxy-PEP was launched in September 2023, and its recommendations have been implemented in clinical and co-designed community education.

**Lessons learned:** Participants agreed on proposed suitability criteria for prescribing Doxy-PEP, and recommendations to:

- Monitor AMR, and to discuss AMR with Doxy-PEP users
- Develop formal clinical guidelines for Doxy-PEP
- Co-design Doxy-PEP education for clinicians and community

While a large majority of participants stated that Doxy-PEP should be used *primarily* for the prevention of syphilis, several stated that Doxy-PEP should *only* be used for the prevention of syphilis.

The consensus process highlighted the strong relationships between key stakeholders in Australia's HIV response, as although participants differed on some points, all agreed that Doxy-PEP has a role to play in Australia's STI response.

**Conclusions/Next steps:** While several Doxy-PEP guidelines have been developed globally, this Statement is unique as the result of a national consensus process involving clinicians, community, and experts in infectious diseases, public health, epidemiology, microbiology, and antimicrobial stewardship. By including these diverse perspectives, the process has helped ensure Australia's Doxy-

PEP rollout is supported by all key stakeholders. This builds on Australia's history of multi-sector collaboration in the HIV response, in particular, between clinicians and affected communities.

## THPEF693

### Promoting HIV information dissemination and public awareness through media engagement

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**Background:** While the media has played a key role in promoting information dissemination and awareness in Zimbabwe, the National AIDS Council noted that the HIV and AIDS story was slowly falling off the radar of media priority and that interventions in most remote areas were barely covered. In addition, detrimental stigmatising and discriminating language characterised various articles. People living with HIV were roundly portrayed as victims and villains, which pushed them to withdrawal and non-utilisation of prevention and treatment services. In response the National AIDS Council in 2022 developed a multi-pronged media engagement strategy to ensure that HIV and AIDS remain relevant to the media.

**Description:** The media engagement strategy has been animated by four pillars namely workshops, tours to community interventions, and timely sharing of diaries and response to media enquiries as well media awards. Through this strategy, two hundred (200) editors and reporters were trained on current HIV trends while two hundred and forty (240) editors and reporters were taken on media tours to various under-reported community interventions.

**Lessons learned:** Following the engagement in 2022 and 2023, 1200 news articles were reported both in print and electronic media in the first year and rose to 1269 in the second year, up from a baseline of 690 in 2019 before the emergence of COVID-19. The COVID years of 2020 and 2021 were excluded as implementation of most HIV interventions was limited. In addition to the increased coverage, the content of the articles also improved with use of stigmatising and discriminating language declining. Articles that used such language declined from 401 in 2019 to 89 in 2021 and 23 in 2022. Although media awards were already in place, the number of articles entered was equal to the those that appeared in the media. New winners emerged following the engagement as more junior reporters started taking more interest in the HIV story.

**Conclusions/Next steps:** The media engagement strategy has led to improved quantity and quality of HIV stories. The strategy has now been turned into an ongoing programme, with partners including various United Nations agencies now supporting the interventions.

## THPEF694

### Unity for purpose: a case for the decriminalization of harm reduction services in Kenya

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**Background:** Since its promulgation, section 5 (d) of the Narcotic Drugs and Psychotropic Substances (Control) act criminalized provision of harm reduction services such as: the needle and syringe program in Kenya. This continually led to persons who use drugs dropping out of harm reduction programs for fear of arrest. In the long run this increased the spread of HIV.

**Description:** An opportunity presented itself in 2019 when the Narcotic Drugs and Psychotropic Substances (Control) (Amendment) Bill was tabled in Parliament. With support from Open Society Foundation we embarked on a project where we brought together all like minded organizations and individuals keen on drug policy reforms under an initiative known as the Caucus on Harm Reduction and Drug Policy Reforms (The Caucus); the aim of the caucus was to enable members to leverage on diversity, expertise and skills to catalyze law reforms in Kenya. Through this initiative, we jointly developed memorandums for legislators, we conducted engagement meetings with legislators from various parliamentary committees; we also developed simplified memorandums that outreach workers used to build capacities of persons who use drugs during outreach visits. Unfortunately, the bill passed without our recommendations, which catapulted us to the next phase of our project, where we embarked in an aggressive media campaign: Wrote opinion pieces, spoke on TV and Radio stations all over the country, spreading the message "persons who use drugs need medical intervention and not incarceration".

Our campaign successfully led to the President refusing to assent to the bill and referring it to the Ministry of Health for recommendations. On 24th February 2022 the President assented to the bill, the new law effectively deleted section 5 (d) of the old Act, Our initiative had successfully decriminalized provision of harm reduction services in Kenya.

**Lessons learned:** For a long time drug policy reform advocacy has been done in silos and thus not making any traction. In this project we broke the silos and unified our advocacy initiatives and worked as one team creating a platform for our success.

**Conclusions/Next steps:** We intend on using this model to push for the development of a harm reduction legislation



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## The role of politics, human rights and law in pandemic preparedness

### THPEF695

Impact of COVID-19 on PrEP adherence and condom use in anal sex among adolescent men who have sex with men and transgender women in Brazil

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**Background:** Amid the COVID-19 pandemic, there may have been an impact on PrEP adherence and sexual behaviors. We aimed to analyze the role of the pandemic on adherence to oral PrEP and the condom use in anal sex (CUAS) among adolescent men who have sex with men (AMSM) and transgender women (ATGW).

**Methods:** PrEP1519 constituted a single arm, multicentric demonstration cohort study focusing on daily oral PrEP among AMSM and ATGW aged 15-19 years, in three Brazilian cities. Baseline assessments were carried out, followed by visits at weeks 4, 12, and then quarterly. Our analysis encompassed two longitudinal outcomes collected between February/2019-December/2021: i) three levels of quarterly adherence assessed by medication possession ratio (MPR) [optimal ( $\geq 0.90$ ) vs. sufficient ( $\geq 0.57$  &  $< 0.90$ ) vs. low ( $< 0.57$ )] and ii) quarterly binary CUAS [Inconsistent vs. Consistent/ absence of sexual partners]. Outcomes were evaluated across three distinct periods: pre-pandemic ( $< 01/04/2021$ ), the 1st pandemic wave ( $\geq 04/01/2021$  to  $\leq 07/11/2021$ ) and the 2nd pandemic wave ( $> 11/07/2021$ ). To estimate the effect of the pandemic on adherence and CUAS, we employed a proportional odds model and binomial logistic regression with mixed effects, respectively. Adjusted odds ratios (aOR) were derived for each regression model.

**Results:** 1,199 adolescents were enrolled, and 76.3% in the 18-19 age group, 91.1% identified as MSM, 72.7% self-declared Black/Brown skin color, 70.8% had completed high school. There was a significant increase in the odds of low adherence in the 1st wave (aOR: 1.39) and 2nd wave (aOR: 1.77). Additionally, there was an increase in the odds of consistent condom use/absence of sexual partners in the 1st wave (aOR: 1.51) and 2nd wave (aOR: 1.53) when compared to the pre-pandemic period.

**Conclusions:** During the COVID-19 pandemic, changes in prevention dynamics and sexual behavior, influenced by lockdowns, social isolation, and negative emotions, may

have impacted PrEP adherence, condom use, and sexual contact. This shift could potentially lead to negative effects on HIV incidence rates, necessitating ongoing surveillance for timely detection and care.

### THPEF696

Pandemic preparedness in Nigeria: an analysis of the intersection of politics, human rights, and legal dynamics in mitigating COVID-19's impact on care and vulnerability of people living with HIV/AIDS (PLHIV)

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**Background:** With an estimated 1.9 million people living with HIV in Nigeria, ensuring their access to essential care during the COVID-19 pandemic was paramount. However, disruptions in antiretroviral therapy (ART) access and heightened vulnerabilities due to legal and human rights concerns raise critical questions about the effectiveness of pandemic preparedness measures.

This study sought to analyse how politics, human rights, and legal dynamics in Nigeria impacted the care and vulnerability of people living with HIV/AIDS (PLHIV) during the COVID-19 pandemic.

**Methods:** A review of Nigeria's most recent National Strategic Plan for HIV/AIDS (2020-2025) and the Nigeria COVID-19 Response Plan (2020) was conducted to understand Nigeria's pandemic preparedness. For insights into HIV prevalence, vulnerability factors, and legal barriers in Nigeria, the UNAIDS Country Profile and the most recent Nigeria HIV/AIDS Indicator and Impact Survey (NAIS) (2018) were scrutinised.

The analysis was further enhanced with insights from relevant quantitative and qualitative studies. The six principles employed in an earlier study, based on the UNAIDS International Guidelines on HIV and Human Rights and the HIV Policy Briefs, were key focus areas in the analysis process.

**Results:** The implementation of laws restricting certain fundamental human rights, like travel restrictions, to manage the COVID-19 pandemic in Nigeria affected the accessibility and availability of HIV services, worsening vulnerabilities and inequalities for PLHIV. It also threatened the achievement of 95-95-95 targets for ending AIDS by 2030, with a notable 10% reduction in ART access reported between January and June 2020. The rights of (PLHIV), particularly the right to health, privacy, and freedom of movement, were violated by lockdown measures. Concurrently, the deployment of human resources from HIV services to the COVID-19 response disrupted tests, diagnoses, and ART initiations.

**Conclusions:** Nigeria's COVID-19 response exposed vulnerabilities in HIV care, stressing the need for a human-centred approach in future pandemics. Travel restrictions



and resource shifts disrupted essential services, widening inequalities and jeopardising progress towards ending AIDS. To protect PLHIV and ensure equitable healthcare for all, future pandemic preparedness must prioritise Human rights. Invest in healthcare infrastructure that can adapt to changing needs and empower vulnerable populations to participate in decision-making.

## THPEF697

Impact of emergency financial support program on testing demand, SARS-CoV-2 incidence, and social isolation during COVID-19 outbreak in Brazil: a quasi-experimental study

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**Background:** Programs offering financial support have been established to mitigate the economic fallout and vulnerabilities arising from the COVID-19 pandemic. Moreover, financial incentives have been introduced to promote compliance with isolation measures, thereby preventing SARS-CoV-2 acquisition and transmission. However, few low- and middle-income countries have implemented financial aid to alleviate the COVID-19 outbreak.

We estimated the impact of the Brazilian Emergency Aid (EA) Program on SARS-CoV-2 testing demand, SARS-CoV-2 incidence, and social isolation levels.

**Methods:** In this quasi-experimental study we assessed microdata information from 380,000 individuals surveyed in COVID-19 National Household Sample Survey between July 1, 2020, and Nov 30, 2020. Individuals meeting the EA eligibility criteria, those who have taken the SARS-CoV-2 test, those diagnosed with COVID-19, and/or those following social isolation were included.

Beneficiaries and non-beneficiaries were matched (1:1) using propensity score matching, considering socioeconomic and health covariates. We performed logistic regression to compute the monthly average impact of EA benefits on the aforementioned outcomes.

**Results:** We included 171,183 performed tests; 19,218 COVID-19 cases; and individuals complying with mild, moderate, and strict social isolation. EA recipients showed greater testing demand (November; odds ratio [OR]=1.014, 95% confidence interval [CI]: 1.001-1.026); however, this did not significantly reduce SARS-CoV-2 incidence.

Beneficiaries adhered better to mild isolation from July-September (Sep; OR: 1.017, 95% CI: 1.007-1.028), with no significant improvement from October-November. EA receipt did not improve adherence to moderate (July, OR:

0.95, 95% CI: 0.94-0.97; November, OR: 0.83, 95% CI: 0.80-0.86) or strict (July, OR: 0.79, 95% CI: 0.75-0.84; November, OR: 0.77, 95% CI: 0.73-0.81) isolation compared to non-beneficiaries.

**Conclusions:** Despite the deteriorating COVID-19 situation in Brazil owing to the lack of effective public health policies and government resistance to scientific guidance, being EA beneficiary is associated with better healthcare access and increased adherence to mild social measures.

## Politics and geopolitics

## THPEF698

PEPFAR adapts to sea-level-rise and storm-surge: potential impacts to coastal cities and facilities (2030)

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**Background:** Climate change presents significant threats such as sea-level rise, impacting vulnerable coastal cities and healthcare facilities within the PEPFAR portfolio. By 2030, the year targeted for achieving UNAIDS 95-95-95 goals, significant flooding due to sea-level rise could severely impact HIV epidemic control in these regions.

The displacement caused by these climate events poses a health and climate equity concern, disproportionately affecting marginalized populations, including those targeted by PEPFAR programs.

**Methods:** This study utilizes the Intergovernmental Panel on Climate Change 2018 report and Climate Central's Coastal Risk Screening Tool to analyze the potential impact of sea-level rise and annual flooding on large coastal cities within the PEPFAR portfolio by 2030, under different Representative Concentration Pathways (RCP); specifically comparing the impact under the RCP 2.6 scenario with projected global climate increase under 2 degrees centigrade by 2100, and the RCP 8.5. scenario, with a projected climate increase of 4.4 degrees by 2100.

Geographic Information Systems and data science methodologies were employed to visualize and estimate the impacts of sea-level rise and storm-surge on these cities.



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**Results:** Several large coastal cities within the PEPFAR portfolio are at an increased risk of significant flooding by 2030. In the best-case scenario (RCP 2.6), 108 facilities would be vulnerable to flooding by 2030. The number of PEPFAR facilities vulnerable to flooding will increase substantially by 2100 compared to 2030, by (2.8 times) in the RCP 2.5 scenario and (3.81 times) in the RCP 8.5 scenario.

*Table (RCP 8.5):*

	2023	2030	2040	2050	2060	2070	2080	2090	2100
Districts	Potential Flooded Facilities n, (%)								
Abidjan	137	11, (8.0)	12, (8.8)	12, (8.8)	12, (8.8)	39, (28.5)	42, (30.7)	43, (31.4)	44, (32.1)
Bangkok	24	18, (75.0)	18, (75.0)	18, (75.0)	19, (79.2)	19, (79.2)	19, (79.2)	20, (83.3)	21, (87.5)
Ho Chi Minh City	54	2, (3.7)	2, (3.7)	2, (3.7)	2, (3.7)	2, (3.7)	10, (18.5)	20, (37.0)	33, (61.1)
Lagos	94	1, (1.1)	1, (1.1)	2, (2.1)	2, (2.1)	6, (6.4)	9, (9.6)	15, (16.0)	27, (28.7)
Mombasa	90	0, (0.0)	0, (0.0)	0, (0.0)	0, (0.0)	0, (0.0)	0, (0.0)	0, (0.0)	0, (0.0)

**Conclusions:** The findings of this study underscore the urgency of addressing climate change impacts within PEPFAR. It highlights the importance of incorporating climate adaptation and resilience strategies into the strategic planning of PEPFAR programs. The study shows that climate change-induced displacement could hamper the efforts of PEPFAR in reaching and sustaining HIV epidemic control, especially in marginalized populations. The results emphasize the need for integrating climate disaster mitigation strategies into PEPFAR's planning cycle.

## THPEF699

The impact of Uganda's Anti-Homosexuality Act of 2014 on queer women's health and human rights: a retrospective analysis

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**Background:** This scholarly study examines the repercussions of Uganda's Anti-Homosexuality Act of 2014 on the health and human rights of queer women, particularly those living with HIV. The Act, criminalizing same-sex relationships, exacerbated existing homophobia, resulting in negative consequences for HIV prevention and treatment.

**Methods:** Findings emanated from surveys from queer women in Uganda, focusing on aspects such as access to healthcare, prevalence of violence, and levels of discrimination available. Additionally statistical data on HIV prevalence and treatment accessibility among the LGBTQ+ community in Uganda.

**Results:** Despite being struck down by the Ugandan Supreme Court in 2014, the Act left enduring challenges, including increased difficulty in accessing essential services, heightened stigma and discrimination, and elevated

levels of violence against queer women. The study underscores the need for sustained efforts to cultivate an inclusive and accepting society, emphasizing the lingering impact on the well-being of queer women in Uganda.

**Conclusions:** The research findings underscore the profound and lasting impact of Uganda's Anti-Homosexuality Act of 2014 on the health and human rights of queer women, especially those living with HIV. The Act, though repealed in 2014, left enduring challenges that persist in the form of heightened stigma, discrimination, and violence against this vulnerable population. Quantitative data revealed tangible difficulties in accessing essential healthcare services, with fear of discrimination or arrest hindering many queer women from seeking HIV prevention and treatment.

# E-poster abstracts

## Track A: Basic and translational science

### EPA001

#### A specific inflammatory profile is associated to the spontaneous control of HIV

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**Background:** Elite controllers (EC) are a group of people living with HIV (PLWH) able to control HIV replication without antiretroviral therapy and have been proposed as a model of functional cure. Significant evidence suggests that despite viral control, EC subjects may have altered levels of systemic inflammation. We have performed a comprehensive characterization of the systemic inflammation profile in EC compared to non-controllers PLWH either with or without ART-mediated control of viral replication.

**Methods:** 40 participants were included: 10 EC, 10 non-controllers PLWH on ART (on-ART), 10 non-controllers PLWH ART-naïve (off-ART), and 10 uninfected controls (UC) as reference. Plasmatic levels of 92 surrogate markers of inflammation were assessed using the proximity extension assay (Olink proteomics, Sweden). Differential expression analysis, principal component analysis (PCA), and clustering analysis were carried out using the Metaboanalyst software. Pathway enrichment analysis (PEA) was carried out using the STRING platform.

**Results:** EC and on-ART groups were matched for CD4 counts, years since diagnosis, route of acquisition and gender. CD4 counts were lower in off-ART group ( $p=0.02$ ). Compared to UC, off-ART showed the highest disturbance in the inflammatory markers with 30 different proteins differentially expressed (DE) (29/30 upregulated;  $p<0.05$ ). In contrast, on-ART presented a profile similar to UC with only 4 proteins DE (3/4 upregulated). Interestingly, EC presented a more disturbed inflammatory profile than on-ART, with 10 different proteins DE with respect to UC (10/10 upregulated;  $p<0.05$ ), of which 3 were DE only in EC. Of note, among these 3 proteins were CCL4 (a ligand for HIV-correceptor CCR5) and CCL13 (a ligand for HIV-correceptor CCR2). The comparison between EC and on-ART also supported a higher inflammatory status in EC with 6 proteins DE expressed (5/6 upregulated in EC;  $p<0.05$ ),

and the PEA ( $FDR<0.05$ ) of these proteins revealed several pathways related to "immune defense against other organisms".

**Conclusions:** Our results show that while spontaneous control of HIV is a benefit for EC subjects, it may have an associated cost (probably due to a more efficient immune response against the HIV) reflected in the maintenance of a chronic inflammatory status, what could be a compelling argument to consider treating these EC subjects.

### EPA002

#### CD70-induced differentiation of proinflammatory Th1/17/22/GM lymphocytes associated with disease progression and immune reconstitution during HIV infection

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**Background:** Overexpression of CD70 on CD4<sup>+</sup> T cells was recently reported to be associated with highly pathogenic proinflammatory Th1/Th17 polarization in multiple sclerosis. CD70 was found to increase on CD4<sup>+</sup> T cells during HIV infection. However, the role of CD70 in the imbalance of Th polarization during HIV infection is not fully understood.

**Methods:** We performed a study in 200 people living with HIV (PLWH), including 143 treatment-naïve patients (TN) and 57 patients who had experienced antiretroviral therapy (ART). We examined the expression of CD70 on CD4<sup>+</sup> T cells by flow cytometry. Then the specific makers of Th cells were detected by flow cytometry and PCR. Finally, the ROC and KM curve measured the predictive value of the baseline proportion of CD70<sup>+</sup>CD4<sup>+</sup> T cells on immune reconstitution in TNs.

**Results:** We found the frequency of CD70<sup>+</sup>CD4<sup>+</sup> T cells negatively correlated with CD4<sup>+</sup> T cell count and positively correlated with HLA-DR<sup>+</sup>CD38<sup>+</sup>CD4<sup>+</sup> T cells and several plasma inflammatory markers. Moreover, CD70 expression defined a population of proinflammatory Th1/17/22/GM subsets in PLWH, and the mRNA expression of specific markers of Th1/17/22/GM differentiation decreased when blocking



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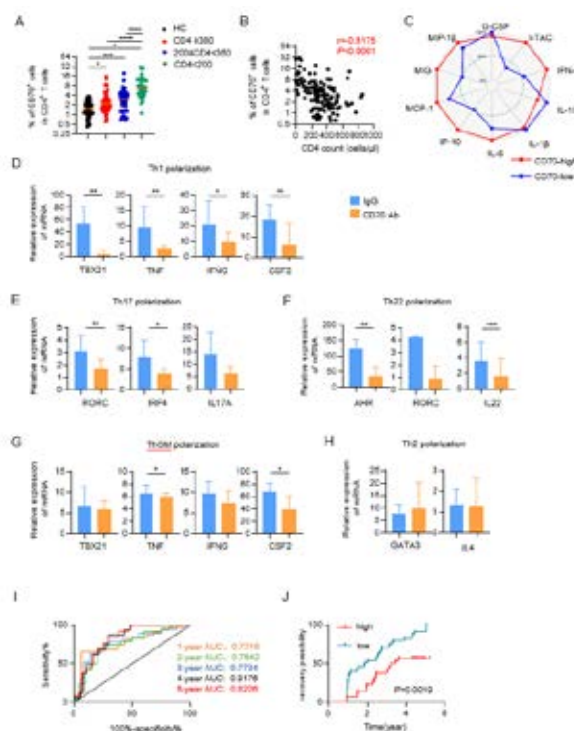


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CD70. Notably, CD27 blocking resulted in similar results in Th1 and Th17 polarization, whereas it did not affect the differentiation of Th22 and ThGM. Furthermore, CD70-CD4<sup>+</sup> T cells exhibited higher phosphorylation of JAK/STAT molecules, which could be reversed by blocking CD70 during Th polarization. Finally, patients with a higher baseline percentage of CD70-CD4<sup>+</sup> T cells exhibited a greater risk of poor immune reconstitution after 1 to 5 years of ART than those with low CD70.



**Conclusions:** CD70 defined a more broadly inflammatory subset of Th1/17/22/GM lymphocytes, which led to a sustained and aggravated inflammatory environment during HIV infection. More importantly, the percentage of CD70-CD4<sup>+</sup> T cells at the baseline could predict CD4<sup>+</sup> T cell recovery in PLWH.

## EPA003

The predictive role of CD4/CD8 ratio on T lymphocyte functions in long-term virally suppressed people living with HIV

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**Background:** Long-term management of people living with HIV (PLWHs) is currently assessed by monitoring CD4<sup>+</sup> T cell counts to assess their immune recovery, but a single metric provides less information. In contrast, the CD4/CD8 ratio is gradually being recognized as a potential marker of immune dysfunction. To investigate the association between T lymphocyte activities and the CD4/CD8 ratio and its value in predicting immunological traits in PLWHs.

**Methods:** One hundred and twenty-five PLWHs and 31 HIV unacquired controls (UCs) were enrolled and classified into four groups according to their CD4/CD8 ratios (ELR group:  $0.4 < \text{CD4/CD8}$ ; LR group:  $0.4 \leq \text{CD4/CD8} < 0.7$ ; MR group:  $0.7 \leq \text{CD4/CD8} < 1$ ; HR group:  $\text{CD4/CD8} \geq 1$ ), and the activation and proliferation phenotypes, mitochondrial functions and inflammatory indexes of CD4<sup>+</sup> T cells and CD8<sup>+</sup> T cells were detected, and the correlations between CD4/CD8 ratio and T cell functions were analyzed.

**Results:** We found that T cell activation and proliferation were significantly increased in the ELR group compared to UCs. However, compared to the other four groups, the ELR group had a considerably larger proportion of T cells with accumulated lipid peroxidation, mitochondrial lipid reactive oxygen species (ROS), and mitochondrial membrane potential (MMP) abnormality. As the CD4/CD8 ratio increased, the damage of mitochondrial lipid peroxidation was gradually reduced and the MMP was gradually restored. Simultaneously, compared to the other groups, the ELR group had noticeably more inflammatory markers in CD4<sup>+</sup> T cells. The correlation analysis showed that the CD4/CD8 ratio linked with multiple functions of T cells, and the correlation coefficient with mitochondrial function was higher than that of CD4<sup>+</sup> T cell count.

**Conclusions:** In conclusion, the CD4/CD8 ratio was closely related to T lymphocyte functions, and significantly better than the CD4<sup>+</sup> T cell count in predicting the mitochondrial lipid peroxidation level and mitochondrial functions in T lymphocytes.

## EPA004

Safety and pharmacokinetics of SAMT-247 released via intravaginal rings in rhesus macaques

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**Background:** In 2022, there were 39 million people living with HIV, 1.3 million people were newly infected and of them, 46% were women or girls. Our prior work demonstrated that combining the  $\Delta\text{VIDNA}/\text{ALVAC}/\Delta\text{V1gp120}/\text{Alum}$  vaccine platform with vaginal administration of the zinc-finger protein inhibitor, SAMT-247, augments vaccine efficacy in female rhesus macaques. A limitation of the approach, however, is that SAMT-247 was given in a gel formulation, which may not be sufficiently user-friendly, and therefore affect compliance. We have designed a vaginal ring that might overcome this limitation. Here, we investigate the drug-release rate, stability, and safety of the intravaginal ring (IVR) formulation of SAMT-247 in macaques.

**Methods:** Eight female rhesus macaques were divided into two groups of four. IVR was inserted and maintained in the first group for 2 consecutive weeks and in the 2nd group for 4 consecutive weeks. Blood, vaginal and rectal swabs, and pinch biopsies were collected prior to and/or during the study. IVRs were removed and analyzed for re-



sidual drug. After 3 days of ring removal, 2 animals from each group were sacrificed to investigate vaginal mucosal and other tissue pathology.

**Results:** The *in vivo* drug release rates were 0.97 +/- 0.25 mg/day and 0.84 +/- 0.53 mg/day for the two groups of animals, respectively. Moreover, 81.9 +/- 4.8% and 68.5 +/- 20% of SAMT-247 were retained in the IVRs after study completion, respectively. IVR-loaded SAMT-247 demonstrated an acceptable stability profile, with 88.0% and 79.0%, respectively of the remaining drug retained in its original form. Administering SAMT-247 at the observed rates and duration did not severely alter hematology, clinical chemistry, body weight, and pathology profiles when compared to the baseline controls or reference ranges.

**Conclusions:** Taken together, the IVR formulation of SAMT-247 demonstrated acceptable drug release, stability, and safety profiles for up to 4 weeks.

## EPA005

### Epistatic interaction between ERAP2 and HLA modulates viral adaptation and HIV-1 disease outcome

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**Background:** A strong genetic predictor of outcome following untreated HIV-1 infection is the carriage of specific alleles of human leukocyte antigen (HLA) molecules that present viral peptides (epitopes) to T cells. Residual variation in outcome measures may be attributed, in part, to viral adaptation to HLA-restricted T cell responses via mutations that can abrogate HLA-peptide binding, T cell receptor recognition of infected cells, disrupt intracellular epitope processing or create ineffective neoepitopes. HLA adaptation signatures in viral sequence can therefore be used to inform an understanding of other interacting genetic determinants of suppressive antiviral responses. Variants of the endoplasmic reticulum aminopeptidases (ERAPs) influence the repertoire of T cell epitopes presented by HLA alleles as they trim pathogen-derived peptide precursors to optimal lengths for antigen presentation along with other functions unrelated to antigen presentation.

Here, we explore whether ERAP variants influence HLA-associated HIV-1 adaptation with demonstrable effects on overall HIV-1 disease outcome measures at the population level.

**Methods:** To investigate the influence of HLA, ERAP1 and ERAP2 on disease outcome, we utilized high-resolution host and HIV genetic data of 249 pre-treatment individuals living with HIV from the Western Australia HIV cohort with clinical measures.

**Results:** We identified a novel association between two linked ERAP2 single nucleotide polymorphisms (SNPs; rs2248374 and rs2549782) with plasma HIV RNA concentration (viral load) (P adjusted=0.0024 for both SNPs). Greater HLA-associated HIV-1 adaptation in the HIV-1 Gag gene correlated significantly with clinical markers of poor outcome (high viral load and lower CD4+ T cell count and proportion; P=0.0103, P=0.0061, P=0.0061, respectively). Strikingly, there was a significant interaction between the two ERAP2 SNPs and HLA-associated HIV-1 adaptation on viral load (P=0.0111) that accounts for approximately 6% of the variance in HIV viral load in this cohort.

**Conclusions:** We show that epistasis between ERAP and HLA genetic loci modulates HIV adaptation to T cell immunity to influence clinically relevant markers of pathogen fitness in-vivo.

This suggests that the ERAP2 association with antiviral responses is mediated by its role in shaping the peptide repertoire presented to HLA class I-restricted T cells, serving as a model for antigen presentation in the immune defences against viruses.

## EPA006

### Unraveling gender-related molecular patterns in HIV: divergent peripheral blood bioprofiles in young women and men without HIV or with undetectable plasma viremia on ART for targeted care and treatment strategies

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**Background:** Women constitute 53% of people with HIV and 46% of new acquisitions, but their involvement is disproportionately low in HIV treatment (19%), vaccine (38%), or cure research (11%). The current study compares young women and men without or with HIV to define molecular bioprofiles associated with gender.

**Methods:** Study cohort included 90 young adults [median age: 23 years]: 33 women and 57 men. The effect of birth gender without or with HIV was evaluated by comparisons between 16 women and 26 men without HIV (WwoH versus MwoH) and between 17 women and 31 men with HIV (WwH versus MwH) with similar demographic and clinical characteristics (age, CD4 count, limited comor-



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bidities, and viral load  $\leq 50$  HIV-1 RNA copies/ml plasma on treatment). The concentrations of twenty-three plasma immune activation and inflammation biomarkers were measured using MesoScale multiplex assays and compared between two groups by a Mann-Whitney test. Peripheral blood-cell mRNA was sequenced using Illumina HiSeq 2500 and analyzed for significant differentially expressed genes (DEGs) using DESeq2 ( $|FC| \geq 1.3$  and  $FDR \leq 0.05$ ) and volcano plot ( $|FC| \geq 2$ ) using Enhanced Volcano. Pathway analysis used Ingenuity Pathway Analysis [ $P < 0.001$ ;  $Z\text{-scores} \geq 1/ \leq -1$ ].

**Results:** Compared with MwoH, WwoH showed increased concentrations of MMP2 (immune activation) and IL-6 (inflammation), 74 DEGs (44 upregulated, 30 down-regulated), significant upregulation of X-linked and down-regulation of Y-linked genes, and a more active interferon  $\alpha/\beta$  signaling pathway. In young adults with HIV and controlled viremia, WwH compared with MwH, had higher LBP (microbial translocation) and sICAM-1 (vascular inflammation) biomarker concentrations, 965 DEGs (561 upregulated, 404 down-regulated), significant up-regulation of MARCH2 (HIV inhibitor) and multiple RNA genes (RNA5515, RNA5-855, RNA57SL2, SNORA10, MIR3648.1, MIR6753), down-regulation of IL-7 (a T cell development cytokine) and Y-linked genes, and multiple activated pathways related to protein synthesis, immune response, anti-oxidation, and metabolism.

**Conclusions:** Molecular bioprofiles distinguish young women from young men without and with HIV. The distinct gender effect in response to HIV-1 and viral suppression is remarkably amplified among young women. Results provide evidence for the need to develop inclusive clinical studies for appropriate gender-centered HIV care, treatment, and cures.

## EPA007

### Immune response patterns among HIV-1 serodiscordant couples in Anambra state Nigeria

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**Background:** The current management approach to HIV/AIDS treatment is not associated with curative potential via the HAART regimen. However, for some persons living with HIV, their partners remain seronegative despite constant exposure. Currently, no vaccine has been licensed for the prevention of HIV. Therefore, there is a need to discover potential immunogens that could facilitate the development of a candidate vaccine against HIV. Our study

assessed the formation of naturally occurring protective HIV-specific antibodies among HIV serodiscordant couples in Anambra State, Nigeria.

**Methods:** This study was carried out in five hospitals, all of which manage HIV-positive clients and also offer counselling and case management services. Ethical Approval was obtained from the ethics committees of Chukwue-meka Odumegwu Ojukwu University Teaching Hospital Awka (COOUTH) and Nnamdi Azikiwe University Teaching Hospital (NAUTH), Nnewi. A total of 96 participants were selected for this study. We determined HIV-specific antibodies for NEF, TAT, INT (integrase) and MPER antigens.

**Results:** All HIV antigens assessed produced antigen-antibody reactions for all IgG, IgG subclasses and IgM antibodies tested. The results showed that IgM predominantly reacted with HIV TAT antigen (26% of samples tested positive) while HIV TAT and INT antigens predominantly reacted with IgG (36.5% and 35.4%) antibodies. Additionally, the NEF antibodies were detected near-equally in seropositive and seronegative participants while MPER, TAT and INT were detected predominantly in seronegative participants ( $p > 0.05$ ). Also, McNemar's chi-squared test showed that the development of antibodies in seronegative partners was not dependent on their presence in their seropositive counterparts ( $p > 0.05$ ). Further logistic regression analysis suggested that the presence of MPER antibodies was significantly associated with increased odds for the presence of NEF (OR of 6.32 (95% CI 1.53; 34.74)) and INT (OR of 6.74 (96% CI 1.29; 52.88)) antibodies in seropositive partners; thereby suggesting the possibility of its use for the development of a candidate vaccine.

**Conclusions:** Our study identified the presence of an immune response to all HIV antigens assessed. It further provided evidence for the production of HIV-specific antibodies in exposed seronegative partners which may play a role in protection. Therefore, future studies are needed to explore the protective efficacy of these antibodies.

## EPA008

### Anti-viral and anti-inflammatory effects of novel PPAR $\gamma$ agonist, INT131, in an EcoHIV mouse model: relevance to the treatment of HIV-associated neurocognitive disorders

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**Background:** Approximately 50% of people living with HIV experience HIV-Associated Neurocognitive Disorders (HAND), characterized by a decline in behavior, motor skills, and cognitive functions. Peroxisome proliferator-activated receptor gamma (PPAR $\gamma$ ), a transcription factor involved in regulating glucose/lipid metabolism, has demonstrated potential for eliciting anti-HIV and anti-inflammatory responses. Our hypothesis centered on the notion that stimulating PPAR $\gamma$  via a novel selective

agonist, INT131, could potentially attenuate HIV-induced brain inflammation in vivo, using an ecotropic HIV-1 (EcoHIV) mouse model that simulates HAND. This study aimed to investigate the ability of INT131 to counteract both viral gene expression and inflammation within various brain regions (cerebellum, subcortex, and cortex) in EcoHIV-inoculated mice.

**Methods:** We quantified markers of interest using qPCR analysis, including viral genes, inflammatory cytokines/chemokines, blood-brain barrier (BBB) tight junction proteins, and examined BBB permeability applying the NaF permeability assay, 21 days post intracranial injection of saline or EcoHIV ( $2 \times 10^6$  pg/ml) in: i) Saline-inoculated mice, ii) EcoHIV-inoculated mice, and iii) EcoHIV-inoculated mice treated with daily oral administration of INT131 (50 mg/kg/day). In parallel, we conducted immunohistochemical analyses on paraffin-embedded sections of human brain tissue extracted from the cerebellum, basal ganglia, and cortex. Our investigation focused on evaluating the protein expression and localization of specific markers: GFAP (indicative of activated astrocytes), Casp-3 (cell death), and PPAR $\gamma$  (utilizing antibody ab59256).

**Results:** Exposure of mice to EcoHIV significantly increased the mRNA expression of viral genes (*Vif* and *Tat*), inflammatory markers (*Tnf- $\alpha$* , *Il-1b*, *Il-6*, and *Ifn- $\gamma$* ) and decreased BBB markers (*Ocln*, *Cldn5* and *Tjp-1*) in brain regions. INT131 significantly reduced the expression of viral genes, inflammatory markers and restored the expression of BBB markers to control levels. INT131 also restored BBB permeability in the EcoHIV mouse model. Moreover, HIV-positive individuals with neurocognitive impairment showed increased GFAP+ and apoptotic cells alongside reduced PPAR $\gamma$  localization in brain tissues compared to HIV-negative individuals and HIV-positive individuals with normal neurocognitive status.

**Conclusions:** Our findings suggest PPAR $\gamma$  as a potential target for treating/preventing HIV-associated brain inflammation, BBB dysfunction, and potentially HAND. Future studies will explore INT131's efficacy in reversing neurocognitive deficits (motor, learning and memory) in the EcoHIV mouse model through behavioural assessments.

## EPA009

### ALVAC-prime and monomeric gp120 protein boost induces distinct HIV-1 specific antibody and cellular responses compared with adenovirus-prime and trimeric gp140 protein boost

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**Background:** Although clade-specific and cross-clade mosaic HIV-1 vaccine regimens elicited immune responses in early phase trials, neither regimen prevent HIV acquisition in the Uhambo or Imbokodo efficacy trials in sub-Saharan Africa. Using the rich immunological data from the respective Phase 1/2a trials, HVTN 100 and HVTN 117/HPX2004, we compared immune responses from these trials over time. It is important for future HIV-1 vaccine development to understand the similarities and differences in the immune responses elicited in these early phase vaccine trials.

**Methods:** HVTN100 tested a clade B/C canarypox vector Gag/Env insert prime (ALVAC-HIV (vCP2438)) with ALVAC-HIV + clade C Env gp120/MF59 protein boosts. HVTN117/HPX2004 tested a tetravalent adenovirus serotype 26 vector with mosaic Gag/Pol/Env insert (Ad26.Mos4. HIV) followed by an alum-adjuvanted trimeric subtype C gp140 protein vaccination. We compared antibody, CD4+ and CD8+ T-cell responses in HVTN100 (n=186) with HVTN117/HPX2004 per-protocol vaccinees (n=99) after month 6 and month 12 vaccinations, and at month 18.

**Results:** At month 12.5/13, both regimens induced similarly high IgG breadth scores against gp120, gp140, and V1V2 antigens, with similar IgG responses to gp70caseA2



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V1V2. However, IgG V1V2 responses were more durable in HVTN117/HPX2004, with the largest difference at month 18 in the gp70-BCaseAV1V2 IgG response rate (17.8% in HVTN100 vs 61.9% in HVTN117/HPX2004,  $p < 0.001$ ). IgG3 consensus Env antigen responses were higher and more durable in HVTN117/HPX2004 at month 12.5/13. Both regimens induced low IgG3 responses to gp70-BCaseA2 V1V2 at month 12.5/13 (9.6% in HVTN100 vs 10.3% in HVTN117/HPX2004). Polyfunctional CD4+ Env responses were significantly higher in HVTN100, but CD4+ Gag responses were higher in HVTN117/HPX2004. While CD8+ T-cell responses were not seen in HVTN100, HVTN117/HPX2004 elicited CD8+ responses to Env and Gag with response rates reaching 42%.

**Conclusions:** Both regimens induced robust gp120- and gp140-specific IgG responses, while the HVTN117/HPX2004 regimen elicited more durable IgG V1V2 responses. In contrast, HVTN100 induced higher polyfunctional CD4+ Env T cells. Nevertheless, neither vaccine regimen demonstrated protection, suggesting that broader, and/or more robust immune responses likely including neutralization are needed for clinical protection against acquisition.

## EPA010

**PWH who spontaneously cleared HCV showed decreased senescence and activation levels with a favorable soluble IC profile**

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**Background:** Spontaneous HCV clearers possess immune strengths which make them able to eliminate HCV in absence of treatment. However, there is little information about its effects on PWH. Our objective is to evaluate how different HCV infection status impact on the immunophenotypic profile of different CD4+ and CD8+ T-cells subpopulations and the levels of Immune Checkpoints (IC).

**Methods:** Cross-sectional study of 116 people with HIV (PWH) classified in 3 groups: a) 36 spontaneous Clearers (SC) who eliminated HCV spontaneously; b) 45 Chronic

Hepatitis C (CHC) with active HCV infection; c) 35 PWH without previous HCV infection, as a control group. Frequencies, activation (middle activation: CD25+HLADR+; late activation: CD38+HLADR+) and senescence (CD57+PD1+) levels of CD4 and CD8 T lymphocytes were measured by spectral cell cytometry. Additionally, soluble IC levels were measured by immunoassay. Differences between groups were evaluated using a GAMLSS model adjusting by age, infection time and baseline clinical stage, with statistical cut-off  $p$ -value  $< 0.05$  and  $q$ -value  $< 0.2$ .

**Results:** Our population median age was 50 years, with 55% males. SC group had a better immune profile than HIV group, with a healthier T lymphocytes compartment, having lower counts of more mature subpopulations like TEMRA both CD4 and CD8, and a generalized reduction of senescence, especially in CD4 Effector Memory (EM) (40% reduction) and CD4t (35% reduction). Also SC had reduced levels of 6 IC, highlighting a reduction of 25% of E-cadherin and TIM-3. In addition, SC group showed a better immune status compared to CHC, having higher counts of CD4t and less mature subpopulations like CD4 EM Th0-1, lower late activation in several subpopulations like CD8 TEMRA and CD8 EM, and decreased levels of 15 IC. Finally, CHC group showed lower levels of middle activation in CD8 increased levels of 10 IC compared to HIV.

**Conclusions:** -SC immune system strengths allow to maintain a healthier immune profile, with lower senescence and activation, reducing the risk of developing age-associated comorbidities.

-CHC group has a worse immune profile than SC, however their T lymphocytes status has no major differences with the HIV group.

## EPA011

**COVID-19 and HIV: inflammatory markers in a cohort from a reference hospital in Rio de Janeiro, Brazil**

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**Background:** Severe COVID-19 presents a broad spectrum of clinical manifestations associated with a highly inflammatory profile, including cytokine storm, and deregulation of lymphocyte subsets. Depending on the immunosuppression levels, a higher risk of hospitalization and mortality has been described for COVID-19 in people

living with HIV (COVID/PLWH). This study describes clinical and inflammatory markers in COVID-19 clinical outcomes with and without HIV.

**Methods:** The study analyzed 134 inpatients of the Hospital Center for COVID-19 (INI/FIOCRUZ), including 22 cases of COVID/PLWH, stratified according to the severity profiles during hospitalization. Plasma samples were tested for a panel of 15 cytokines by Luminex. Sociodemographic, clinical, and laboratory data were obtained from the patient's clinical records. The Mann-Whitney U-test and Fisher's exact test were performed in the analyses.

**Results:** Among the individuals analyzed, 59.7% were discharged and 40.3% died during the hospital stay. Most of them (76.7%) were classified as having WHO severity scores of 6-8 (severe) and 9-10 (critical). The levels of IL-8 ( $P=0.0002$ ), IL-10 ( $P=0.0012$ ), TNF- $\alpha$  ( $P<0.001$ ), IFN- $\alpha$  ( $P=0.0002$ ), IL-1 $\beta$  ( $P=0.0093$ ), IL-17A ( $P=0.0010$ ), and IL-23 ( $P=0.0064$ ) were higher among individuals with critical COVID-19 than those individuals with severe COVID-19. Besides that, the levels of IL-8 ( $P=0.0030$ ), IL-10 ( $P=0.0191$ ), TNF- $\alpha$  ( $P=0.0022$ ), IFN- $\alpha$  ( $P=0.0020$ ), IL-1 $\beta$  ( $P=0.0060$ ), and IL-6 ( $P=0.0083$ ) were higher among individuals with critical COVID-19 than those individuals with moderate COVID-19 independent of the HIV-associated infection. It is of note that the COVID/PLWH individuals included in our cohort showed CD4 counts of 64 cells/mm<sup>3</sup> (IQR=239), CD8 counts of 514 cells/mm<sup>3</sup> (IQR=351), and a viral load median of 92,151 copies/mL (IQR=628649.75). Individuals with COVID-19 showed significantly elevated levels of IL-1 $\beta$  ( $P<0.0001$ ), IL-8 ( $P=0.0241$ ), IL-10 ( $P=0.0373$ ), IL-17A ( $P<0.0001$ ), IL-17F ( $P=0.0404$ ), IL-23 ( $P=0.0003$ ), TNF- $\alpha$  ( $P<0.0001$ ), and IFN- $\alpha$  ( $P=0.0010$ ) compared with the COVID/PLWH individuals. Regarding comorbidities, only systemic arterial hypertension ( $P=0.012$ ) and active tuberculosis ( $P=0.001$ ) had a difference between the COVID/PLWH and COVID-19 groups.

**Conclusions:** A higher inflammatory profile was observed in our cohort according to the severity of COVID-19 independent of the HIV-associated infection. No difference in mortality was observed between the COVID-19 and COVID/PLWH groups. Tuberculosis was more frequent in the COVID/PLWH group.



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## EPB012

Magnitude of food insecurity and associated factors among hiv infected women of reproductive age on art services: in Debre Markos town public health facilities, Northwest Ethiopia, 2021

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**Background:** Women are the most affected group by the parallel epidemics of HIV and food insecurity, because of sex discrimination, poverty, and the absence of support as head of household and their primary role is within families in preparing food and feeding families. However, there are some studies done on adult HIV-positive clients that documented the prevalence of food insecurity and associated factors. Still, there are no studies disaggregated by sex for women that show the magnitude and factors of food insecurity specifically in HIV-positive women in Ethiopia.

**Methods:** A cross-sectional study design was conducted at Debre Markos town public health facility from September to October 2020. A total of 406 participants were selected by computer-generated Excel simple random sampling method. Secondary data were collected from the patient's ART record card. Data were collected using a Structured and pre-tested questionnaire to collect sociodemographic, clinical, behavioral, mental health, and nutrition-related data. Data was first coded and entered by Epi data version 3.1 and exported to SPSS Version 25 for further recording, cleaning, and finally analysis. The model fitness was checked by using the Hosmer and Lemeshow goodness of fit test. Analysis done by Binary logistic regression and variables shows a significant association  $P$  value  $< 0.05$  entered to multiple logistic regression to assess the effect of the various factors on food insecurity with statistical tests at  $P < 0.05$  will be considered as significant by using adjusted odds ratio.

**Results:** The prevalence of food insecurity among HIV-infected women in Debre Markos town Public health facility was 42.1% (95% CI (37.5-46.5)). This study identified that factors found to be associated with food insecurity among HIV-positive women were: -education of women who are unable to read and write AOR: 2.53 (95% CI (1.59-4.03)), depression AOR 1.88, 95% CI, (1.18-3.01). and opportunistic infections AOR: 1.64, 95% CI (1.07-2.52) were some of the factors significantly associated with food insecurity.

**Conclusions:** Magnitude of food insecurity among HIV-positive women in Debre Markos town Public health facility was 42.1% with 95% CI (37.5-46.5). Thus, Policymakers and the Ministry of Health need to work collaboratively and plan for decreasing the number of food insecure women in a comprehensive manner with ART.

## EPB013

Differences in causes of death between virally suppressed and unsuppressed hospitalised PWHIV in South Africa

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**Background:** Antiretroviral therapy (ART) has reduced incident TB, HIV-related deaths, and increased longevity in developed settings. However, people with HIV (PWHIV) in developing settings continue to die at higher rates and younger ages than seronegative peers. Accurate causes of death (CoD) determination in virally suppressed (VS) PWHIV in developed settings are poorly reported but needed to improve ART outcomes. We compare CoD in adults admitted to internal medicine wards by VS status.

**Methods:** We included PWHIV,  $\geq 18$ -years who died at Tshepong Hospital, South Africa whose next-of-kin provided consent, who had viral load (VL) prior to death and autopsy within 16 hours. VS was VL  $\leq 400$  copies/ml. Three internists reviewed hospitalization records. Multi-organ tissue samplings were examined by a pathologist. Thereafter, using standardised clinicopathological conferences, immediate, contributing and underlying CoD were determined by consensus according to ICD-10; HIV diagnosis was an underlying CoD in all.


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**Results:** We approached 172 next-of-kin from May 2018 -April 2022; 59 provided consent, 38(64,4%) VS and 21 unsuppressed; respectively, 19(50%) vs 7(33,3%) were women; median age(years):55(IQR:44-61) vs 42(IQR:30-50) and median CD4 count(cells/ $\mu$ l) at death or <12 months:180(IQR:79.5-370) vs 42(IQR:15-139). In VS, median duration of ART was 107.5 months(IQR:31.5-232.5). Over half VS had immune failure and advanced HIV disease(AHD). The prevalence of some CoD differed markedly by viral suppression (Table 1). Leading causes of death are listed(tables 1 and 2).

	Suppressed (N=38) (%)	Unsuppressed (N=21) (%)	Odds Ratio (95% Confidence Interval)
Hypertension	9 (23,7)	5 (23,8)	0.99 (0.28 to 3.47)
Fatty liver disease	5 (13,2)	5 (23,8)	0.49 (0.12 to 1.92)
Tuberculosis	4 (10,5)	5 (23,8)	0.38 (0.09 to 1.59)
Malignant tumours	9 (23,7)	1 (4,8)	5.33 (0.62 to 45.99)
Iron overload	0 (0)	6 (28,6)	0.03 (0.0016 to 0.58)

Table 1: Underlying causes of death with their odds ratios for risk of death from lead causes of death in suppressed compared to unsuppressed decedents.

**Conclusions:** Causes of death were similar in VS and unsuppressed decedents (Table 2). Despite successful ART, immune failure and AHD was frequently observed at time of death, likely due to delayed ART initiation and inadequate adherence. Urgent interventions are needed to address premature mortality through earlier ART commencement at higher Cd4 counts.

	Suppressed (N=38) (%)	Unsuppressed (N=21) (%)	Odds Ratio (95% Confidence Interval)
Respiratory failure <sup>#</sup>	9 (23,7%)	6 (28,6%)	0.78 (0.23 to 2.59)
Sepsis <sup>#</sup>	8 (21,1%)	5 (23,8%)	0.85 (0.24 to 3.04)
Septic shock <sup>#</sup>	2 (5,3%)	7 (33,3%)	0.11 (0.02 to 0.60)
Acute kidney Injury <sup>*</sup>	7 (18,4)	9 (42,9)	0.301 (0.09 to 0.99)
Bacterial Pneumonia <sup>*</sup>	9 (23,7)	6 (28,6)	0.78 (0.23 to 2.59)
Immunological failure <sup>*</sup>	7 (18,4)	2 (9,5)	2.15 (0.40 to 11.42)
Tuberculosis <sup>*</sup>	5 (13,2)	3 (14,3)	0.91 (0.19 to 4.25)
Gastro-enteritis <sup>*</sup>	4 (10,5)	4 (19,0)	0.50 (0.11 to 2.25)

Table 2: Immediate<sup>#</sup> and contributing<sup>\*</sup> causes of death with their Odds ratios for risk of death from lead causes of death in suppressed compared to unsuppressed decedents

## EPB014

### Hospitalization patterns and risk factors among people living with HIV in Luzhou, China (2013-2022): a call for targeted interventions

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**Background:** Despite advances in HIV management, hospitalization remains crucial for people living with HIV (PLWH). This study investigated hospitalization patterns in Luzhou, China, from 2013 to 2022, aiming to understand trends, differentiate AIDS-related vs. non-AIDS-related cases, and identify risk factors. This knowledge is vital for developing targeted interventions to reduce hospitalizations in high-risk PLWH.

**Methods:** A retrospective cohort study analyzed data from 5,265 PLWH with hospitalization records and engaged in comprehensive HIV care in Luzhou. Descriptive statistics and Poisson regression were used to analyze hospitalization types, distributions, and risk factors.

**Results:** Among 12,936 PLWH enrolled, 5,265 were hospitalized (72.9% male). Notably, the proportion of hospitalized patients with CD4 counts <200 cells/ $\mu$ L increased from 11.1% in 2013 to 26.2% in 2022, and the hospitalization rate rose from 0.92 to 12.24 per 100 person-years. Heterosexual transmission was the main risk factor for HIV acquisition (95.7%). Of the hospitalizations, 994 were for AIDS-related conditions and 4,271 were non-AIDS-related. Notably, 34.8% of AIDS-related cases involved CD4 counts  $\leq$ 200, compared to non-AIDS-related cases.

Non-AIDS-related conditions accounted for 81.1% of hospitalizations, with respiratory (14.2%), gastrointestinal (12.9%), and unspecified symptoms (12.9%) being the most common. AIDS-related admissions (18.9%) were primarily due to respiratory illnesses (40.5%) and specific infectious/ parasitic diseases (32.0%).

Multivariable analysis showed that individuals with CD4 counts >200 had lower risks of all-cause, AIDS-related, and non-AIDS-related hospitalizations compared to those with  $\leq$ 200 counts (IRRs: 0.68, 0.43, and 0.77, respectively). Patients with two comorbidities had a higher risk of AIDS-related hospitalization than those with three or more (IRR: 0.78). Hospital stays of 7-14 days were associated with higher risks of non-AIDS-related admissions compared to <7 days and  $\geq$ 14 days (IRRs: 1.61 and 1.80, respectively), while stays  $\geq$ 14 days had a higher risk of AIDS-related admissions compared to <7 days (IRR: 1.80).

**Conclusions:** Non-AIDS-related events remain the primary driver of hospitalizations in PLWH. Studying hospitalization patterns in PLWH provides valuable insights for



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prevention, healthcare utilization, and managing HIV and comorbidities in inpatient settings. Targeted interventions should focus on strengthening preventive measures, enhancing treatment and prevention adherence, improving patient compliance, and reducing non-AIDS-related hospitalizations.

## EPB015

### Plasma proteomic signature of HIV death: a nested case-control study

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**Background:** Antiretroviral therapy is shifting the primary driver of mortality for people with HIV (PWH) from opportunistic infections to noncommunicable chronic diseases (NCDs). Protein biomarkers differentiating AIDS-related and NCDs-related deaths may help early and precise risk prediction and intervention of death for PWH.

**Methods:** The prospective Comparative HIV and Aging Research in Taizhou (CHART) cohort with 2608 HIV-positive and 5414 HIV-negative participants had reported 144 HIV deaths during 2017-2022. In this nested case-control study, 126 HIV deaths, 162 age-sex-matched HIV survivors and 152 HIV-negative controls were analyzed with 92 protein biomarkers of the Olink Organ Damage panel by proximity extension assays (PEA). LASSO regression model, logistic regression model and ROC curve were applied to determine candidate protein biomarkers for predicting AIDS-related and NCDs-related deaths.

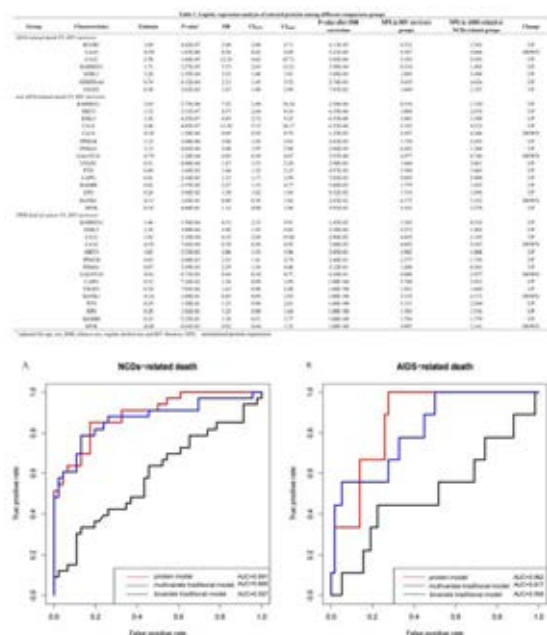


Figure 1. Results on candidate biomarkers. ROC curve of prediction values for different logistic regression models. (A) The ROC curve is differentiating non-AIDS-related deaths from the AIDS-related deaths. (B) The ROC curve is differentiating AIDS-related deaths from the non-AIDS-related deaths. The legend indicates four models: protein model (red line), LASSO model (blue line), multivariate model (black line), and multivariate model including the variables of age, gender, and CD4 (grey line).

**Results:** Thirteen proteins were associated with HIV death, of which seven (SIRT5, PPM1B, PSMA1, GALNT10, VEGFC, PTN, CAPG) were specifically associated with NCDs-related death, two (RCOR1, SERPINA9) were specifically associated with AIDS-related death, and four (CA12, CA14, RARRES1, EDIL3) were associated with both NCDs-related and AIDS-related deaths. The adjusted protein panel well predicted NCDs-related death (AUC=0.891) or AIDS-related death (AUC=0.862) in PWH, respectively.

Several biological pathways were enriched for HIV death, including the one-carbon metabolic process and response to hypoxia. The selected proteins also displayed a significant correlation with traditional biomarkers of NCDs among PWH ( $P<0.05$ ).

**Conclusions:** A distinct panel of plasma protein biomarkers may help identify PWH at high risk of AIDS-related or NCDs-related death. The potential clinical utility of these biomarkers warrants further investigation, which could also shed light on pathogenesis of end-stage organ dysfunction in PWH.

## EPB016

### Implementation of continuous quality improvement to reduce viral load and early infant diagnosis turnaround time in Nigeria

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**Background:** WHO has recognized virological markers (Viral Load Result) as a gold standard for monitoring treatment response in persons living with HIV. However, there is always a delay in having the results timely for client management. In 2019, the turnaround time (TAT) for HIV Viral load (VL) and Early Infant Diagnosis (EID) testing in Nigeria averaged 39 days as compared to the National goal of  $\leq 10$  days. This study aimed at using continuous quality improvement to reduce the turnaround time of VL and EID in selected Health facilities supported by APIN with PEPFAR funding through the CDC.



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**Methods:** We used a continuous quality improvement (CQI) approach focusing on strengthening the Laboratory Interface and processes across the VL/EID cascade. Baseline data were collected monthly between January and April 2021.

We conducted training, Go and see process mapping, and implementation periods between May and August 2021. Endline data were collected from September 2021 to March 2022. The fishbone analysis and the 5 Whys were used to identify root causes for prolonged turnaround time. Contextually appropriate change ideas were identified using a driver diagram and prioritized using an impact-effort matrix. Identified change ideas were tested using the Plan-Do-Study-Act (PDSA) cycles from the Model for Improvement. VL and EID TAT were tracked throughout implementation using run charts.

**Results:** At baseline, 15,226 VL data was retrieved, and 4870 (32%) have complete data. 2289 (47%) met the target of  $\leq 10$  days. 511 EID results were retrieved, 306 (60%) have complete data 119(39%) met the target of  $\leq 10$  days. At the end-line, 65,723 VL results were retrieved, and 64,409 (98%) had complete data. 41,866 (65%) met the target of  $\leq 10$  days. 8746 EID data were retrieved 7959 (91%) had complete data. 3741 (47%) met the target of  $\leq 10$  days. Root causes for long TAT included frequent breakdown of equipment and frequent stockout of reagents.

**Conclusions:** A CQI approach improved VL and EID TAT, through the implementation of contextualized change ideas across the laboratory interface and processes. However, the changes were not sustainable because the facility has no control over some of the factors responsible for long TAT such as equipment breakdown and stock-out of reagents.

## EPB017

Quality improvement initiative to improve viral load re-suppression among children and adolescent living with HIV(CALHIV) in St Paul Hospital, Addis Ababa, Ethiopia

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**Background:** Unsuppressed viral load leads to a higher case fatality rate among children and adolescents living with HIV (CALHIV's) and increases transmission of HIV, making it difficult to achieve UNAIDS objectives and

sustainable development goals. The aim of the quality improvement initiative was to improve viral load re-suppression of CALHIV from 24 to 5 during the QI initiative period at St. Paul Hospital, Addis Ababa City Administration, Ethiopia.

**Methods:** After the quality Improvement (QI) collaborative team established at the community and health facility, QI training was provided for QI collaborative team members. The QI team identified that there were 24 CALHIV with high viral load, which constituted about 15% of all CALHIV in the hospital. The QI team had followed these CALHIV for 28 months (November 2021 to September 2023). Applying QI principles, the team conducted the root causes analysis, generated change ideas using driver diagrams, and tested of change ideas using Plan-Do-Study-Act cycles. A run chart was used to assess changes over time.

**Results:** Following the implementation of the QI initiative, the high viral load of CALHIV improved from 24 to 4, indicating that about 87.5% of CALHIV with a high viral load were suppressed during the QI initiative. The remaining four were switched to second-line ART, and their status was being monitored. The run chart showed a shift on 11 consecutive data points below the median after the QI initiative which indicates a significant improvement.

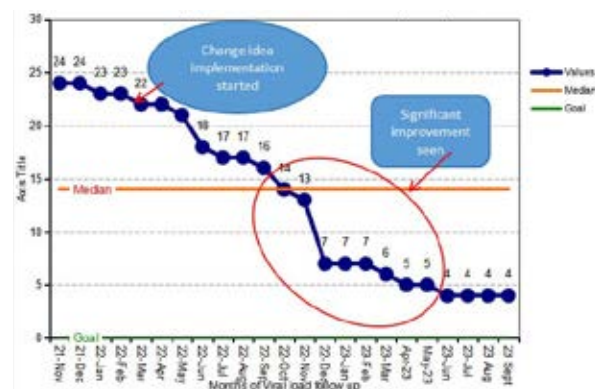


Figure. Run chart of quality improvement project on OVC\_VL\_Re-suppression at Gulele Sub-City, Ethiopia.

**Conclusions:** High viral load re-suppression among CALHIV at St. Paul Hospital significantly improved as a result of the QI initiative. Quality improvement initiative integrated into clinical settings can effectively improve CALHIV outcomes and care quality in resource limited setting.





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## EPB018

### Identifying factors related to unsuppressed viral load among people living with HIV

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**Background:** Suppression of HIV viral load is a prime target of many initiatives aimed at reducing HIV prevalence. In addition to the public health impact of viral suppression among people with HIV (PWH), which is based on the idea that "undetectable = untransmittable", there are numerous individual health and well-being benefits to viral suppression. The purpose of this study was to 1) identify patterns of viral suppression over four years, and 2) determine the association of these viral suppression patterns with demographic characteristics.

**Methods:** This study involved a retrospective chart review and analysis of 2,677 adult members of a managed care plan who were continuously enrolled from 2016 through 2019 and who were HIV positive.

**Results:** Using cluster analysis, five distinct viral suppression patterns were identified: unsuppressed (n = 401), became unsuppressed (n = 331), suppression fluctuated (n = 426), became suppressed (n = 314), and consistently suppressed (n = 1,205). In multivariate analyses, PWH aged 30 to 49 (OR = .45, p < .001) and aged 50 and older (OR = .40, p < .001) were less likely to be consistently unsuppressed than young adults aged 18 to 29. Compared to non-Hispanic White individuals, PWH who were non-Hispanic Black (53% of the sample) more likely to become suppressed (OR=1.90, p < .05), become unsuppressed (OR=1.40, p < .01), and be consistently unsuppressed (OR = 4.28, p < .01). Hispanic PWH also had greater odds of being consistently unsuppressed (OR = 2.51, p < .01). In terms of gender identity, PWH who were transgender or gender diverse had a greater likelihood of being in the fluctuating viral load group compared to cisgender (male or female) PWH (OR = 1.94, p < .01).

**Conclusions:** From a practical standpoint, demographic information is useful in identifying groups at risk for unsustained viral suppression, namely young adults, people who are non-Hispanic Black and Hispanic, and those who identify as transgender or gender diverse. These findings are consistent with other research on social determinants of health among PWH, and future research should examine how to reduce barriers to accessing healthcare and medications for these groups.

## EPB019

### Baseline HBsAg quantitative and CD4 cell counts are predictive factors for HBsAg loss in people living with HIV/HBV coinfection

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**Background:** Achieving Hepatitis B surface antigen (HBsAg) loss is a significant goal for chronic hepatitis B individuals. This study aims to evaluate HBsAg loss in people living with HIV/HBV coinfection and explore the association of clinical variables with this outcome.

**Methods:** We enrolled 138 subjects with HIV/HBV coinfection from a prospective cohort (ChiCTR2200064212). Additionally, we retrospectively included 480 HBV mono-infected individuals who initiated antiviral treatment for the first time. We employed Kaplan-Meier analysis to compare the rate of HBsAg loss between individuals with HIV/HBV coinfection and those with HBV mono-infection. In the prospectively followed HIV/HBV coinfection cohort, we used Cox proportional hazards models to assess the association between various factors and the incidence of HBsAg loss.

**Results:** The cumulative HBsAg loss rate was higher among people living with HIV/HBV coinfection (13 patients, 11.5% at year 3) compared to HBV mono-infected patients (1 patient, 0.6%). In the HIV/HBV coinfection cohort, the multivariable analysis revealed that a lower baseline HBsAg level (HR 0.53; 95% CI 0.38-0.74, p<0.001) and baseline CD4 cell counts < 180 cells/uL (HR 0.32; 95% CI 0.10-0.96, p=0.042) were associated with an increased risk of HBsAg loss. Additionally, the receiver-operating characteristic curve analysis indicated an area under the curve of 0.771 for baseline HBsAg levels and 0.758 for baseline CD4 cell counts at year 1 in predicting HBsAg loss.

**Conclusions:** After antiretroviral therapy, people living with HIV/HBV coinfection achieve higher rates of HBsAg loss. Baseline HBsAg quantitative levels and CD4 cell counts are predictive factors for HBsAg loss in people living with HIV/HBV coinfection and can inform treatment decisions.

## EPB020

### Assessing the burden of advanced HIV disease and mortality among people living with HIV who are treatment naïve and treatment experience: a quantitative study from Nigeria HIV Program

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**Background:** Antiretroviral treatment (ART) has been massively scaled up to decrease HIV-related morbidity, mortality, and HIV transmission. However, despite documented increases in ART coverage, morbidity and mortality have plateaued since 2014 in Nigeria because a significant proportion of individuals present to care with advanced HIV disease (AHD).

We evaluated the burden of advanced HIV diseases among treatment naïve and treatment-experienced people living with HIV/AIDS and mortality in APIN-managed facilities with support from US-CDC through PEPFAR funding.

**Methods:** A multicenter retrospective study of AHD package of care implementation in 334 treatment sites across APIN-supported states in Nigeria. Persons newly diagnosed with HIV and Clients who returned to care (RTT) after interrupting treatment for at least 90 days and those with unsuppressed viral load for >1 year of treatment between October 2021 and September 2023 who were pro-

vided with complete AHD package of care were assessed. Data was exported from the register to Excel and analyzed using SAS version 9.4. The cause of death was established using the WHO verbal Autopsy standard checklist.

**Results:** 65,714 were screened for CD4, 1315(2%) were RTT, 329(0.5%) were viral unsuppressed. Among treatment naïve, 14,540 (22%) had CD4 below 200 cells/mm<sup>3</sup>. 8987 (62%) were screened for TB using the Abbott Urine Lipoarabinomannan kit, and 1881 (21%) were diagnosed with TB and were started on treatment. 7421(51%) were screened for Cryptococcal infection using Immy Cryptococcal Antigen lateral flow assay, 145(2%) were diagnosed with Cryptococcal infection. 13(30%) were diagnosed with Cryptococcal Meningitis.

Among treatment experience, 720(44%) are AHD. Mortality surveillance was carried out for 671 clients, 320(48%) died of HIV, Malaria 127(19%), chronic diseases 76(11%), Myocardial infarction 20(3%), Pneumonia 20(5%), Cancers 7(1%), Maternal 7 (1), road traffic 47(7%), Other infectious diseases 13(2%), undetermined 34(5%).

**Conclusions:** Advanced HIV disease is still high among individuals newly diagnosed with HIV and contributes to AIDS-related death. HIV-associated morbidity is also largely from treatment-experienced clients not being in continuous care or not being fully virologically suppressed. Screening for persons affected with HIV for opportunistic infection and associated illnesses before ART initiation and when in treatment should be a global focus to reduce HIV-related mortality and achieve epidemic control.

## EPB021

### Lipoarabinomannan urinary antigen (uLF-LAM) and MTB/RIF Xpert Ultra tests for the diagnosis of tuberculosis in PLWH in a tertiary public hospital in Colombia

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**Background:** Urine lateral-flow lipoarabinomannan assay (uLF-LAM Determine, Abbott) has been used alone and in combination with Xpert® MTB/RIF Ultra (Xpert, Cepheid, Sunnyvale, CA, USA) for the diagnosis of tuberculosis in PLWH, with good diagnostic performance, mostly in African countries, with very scanty reports in Latin America. WHO has prioritized its implementation as a strong recommendation. No experiences have been reported with the use of uLF-LAM and Xpert in combination in Latin America.

Our objective is to determine the diagnostic performance of uLF-LAM alone or in combination with TB Xpert in a public tertiary care hospital in Colombia, a country with a high burden of both HIV and TB.



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**Methods:** This is a prospective longitudinal study at the Hospital Universitario del Valle in Cali, Colombia, in which we included consecutive adults living with HIV who were admitted with clinical suspicion of pulmonary or extrapulmonary tuberculosis to the emergency department. After Informed consent was obtained all participants had uLF-LAM and, when possible, respiratory sample for TB-Xpert Ultra. A laboratory-confirmed diagnosis of tuberculosis required a positive culture or TB-Xpert.

**Results:** We enrolled 138 patients between April 2021 and April 2023, 70.4% men, had a median age of 38 years (IQR: 30-47), and 51.4% (n=71) were newly diagnosed with HIV. The CD4+ LT cell count was 41 cells/mm<sup>3</sup> (IQR: 18-119). Urine LF-LAM was positive in 46/138 patients (33.3%), TB-Xpert in 39/132 (29.5%), respiratory AFB smear in 26/138 (19%) and culture in 35/139 (25.4%). A total of 60 cases of tuberculosis were identified, with 43% (n=26) pulmonary. The sensitivity and specificity for urine LF-LAM, were 60 and 76%. LT-CD4+ <100 cells/mm<sup>3</sup> yielded a higher S than in >100 (65 vs 53%). See figure for more test performance results.

**Conclusions:** Urine LF-LAM is a simple, rapid, and point-of-care test that contributes to a prompt TB diagnosis in PLWH in Latin America similar as shown in Subsaharian African countries, and when combined with respiratory Xpert, will result in almost all TB patients being diagnosed expeditely.

Parameter	Culture and/or Xpert (+)	
	LAM (+)	LAM and/or Xpert (+)
Sensitivity	0.605	0.98
Specificity	0.79	0.8
PPV	0.57	0.69
NPV	0.82	0.99
LR +	2.88	4.89
LR -	0.5	0.03
n	138	138

Figure: Performance of uLF-LAM alone or combined with TB Xpert in PLWH with positive culture and/or Xpert. PPV: Positive predictive value, NPV: Negative predictive value, LR +: Positive likelihood ratio, LR -: Negative likelihood ratio.

## EPB022

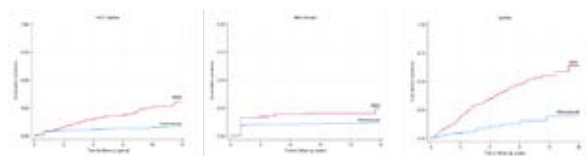
### HCV, HBV and syphilis infections incidence among people living with HIV in a Thai cohort

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**Background:** Sexually transmitted infections (STIs) are major public health issues worldwide. Emerging evidence suggests a rising prevalence of hepatitis C virus (HCV), hepatitis B virus (HBV) infections and other STIs among young men who has sex with man (MSM) living with HIV. Our study investigated the incidence rates of HBV, HCV and Syphilis infections over time in our cohort.

**Methods:** We conducted a longitudinal cohort study of people living with HIV aged ≥18 years who underwent regular STI screening at The HIV Netherland-Australia-Thailand Research Collaboration from 2010-2023. HCV (HCV antibody and/or HCV RNA), HBV (HBs Ag and/or HBc antibody/antigen) and Syphilis (*Treponema pallidum* antibody and/or VDRL test) were performed as screening tests in our clinic annually. A positive test result was defined as an incident infection. We excluded those with positive tests at baseline and who did not have follow-up testings. We assessed incidence rates of HBV, HCV and syphilis infections. Cox-regression was performed for each STI.

**Results:** Of three thousand and fifty-eight participants (3058) in our cohort, 70.3% were male, and 38.2% were men who have sex with men (MSM). Median age was 32 (interquartile range (IQR) 26-39) years and only 3.3% (N=102) self-reported substance use. The overall incidence rate of HCV, HBV or syphilis was 2.92 (95% confidence interval 2.65-3.21) per 100 persons year follow-up (PYFU). In MSM, the incidence rate 7.26 (95%CI 6.42-8.20) per 100 PYFU. For multivariable analysis, Incidence rates of each individual infection were higher in MSM compared to heterosexual men and women, adjusted hazard ratio (aHR) for HCV, HBV and syphilis of 3.09 (95%CI 2.00-4.78; p<0.001), 1.83 (95%CI 1.22-2.74, p=0.003) and 2.88 (95%CI 1.63-5.10); p<0.001) respectively.



**Conclusions:** STIs incidence was significantly higher in MSM than heterosexual clients in our cohort. Regular screening and treatment for STIs should be implemented in prevention packages for young PLWH and high-risk population.

## EPB023

### Assessing the accessibility of diagnostics and prophylactic medications from the advanced HIV disease package of care in Uganda

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**Background:** In 2017, The World Health Organization (WHO) published comprehensive guidelines outlining a package of care for persons with advanced HIV disease (AHD) to screen and prevent opportunistic infections. The AHD package of care includes diagnostic tools for common opportunistic infections such as cryptococcus and tuberculosis (TB) and prophylaxis to prevent such infections. Despite WHO guidelines recommending a package of care for AHD, concerns remain about its accessibility in resource-limited settings.

**Methods:** This study was a cross sectional assessment on the availability of the diagnostics and prophylaxis components of the WHO AHD package of care in Ugandan government healthcare facilities in 2019 and 2023. We collected clinic stock data through convenience sampling of government clinics (41 2019, 17 in 2023) using a standardized Microsoft Excel data capture tool.

Availability of key components (antiretroviral therapy (ART), TB lipoarabinomannan (TB-LAM), cryptococcal antigen (CrAg) lateral flow assay (LFA), cotrimoxazole, and fluconazole) served as the primary outcome. Secondary analysis explored temporal changes in access.

**Results:** First-line ART was universally available during 2019 and 2023, while other components showed marked significant increases between the two data collection periods: TB-LAM (23% to 94%,  $P<0.01$ ), Cotrimoxazole prophylaxis (28% to 100%,  $P<0.01$ ), and CrAg LFA (49% to 94%,  $P=0.03$ ).

**Conclusions:** Uganda has demonstrated significant improvement in the availability of diagnostics and prophylaxis associated with the WHO-recommended AHD package of care. Uganda implemented key interventions to improve access to the package of care including forming an AHD technical working group, updating HIV guidelines to include AHD screening and treatment, and expanding national supply chain data tools to include AHD commodities.

This model offers valuable lessons for other countries aiming to scale up AHD services and ending HIV as a public health threat by 2030.

## EPB024

### Implementing a quality improvement intervention to increase tuberculosis prophylactic treatment (TPT) coverage and documentation at a high-volume clinic in Eswatini

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**Background:** Tuberculosis prophylactic treatment (TPT) treats latent TB (LTB) and is recommended for preventing active TB in high-risk groups. Left untreated, 5 – 10% of those with LTB can develop active TB disease. PLHIV are 20 times more likely to develop active TB than HIV-negative people. With an HIV prevalence in adults aged  $\geq 15$  years of 24.8% in Eswatini, the Eswatini Ministry of Health (MOH) adopted the WHO recommendations to treat all PLHIV with TPT at least once in their lifetime. A chart audit conducted at AHF LaMvelase, a specialized HIV facility with 15,000+ HIV clients, showed that only 61% of PLHIV had received TPT by September 2021. In March 2022, we implemented a quality improvement project (QIP) to increase TPT coverage to 90% within 12 months.

**Description:** A multidisciplinary QI team identified the root causes of low TPT uptake and developed change packages (Table 1) using the PDSA approach. Identified reasons for low TPT coverage are illustrated in Figure 1.

Figure 1: Root cause analysis

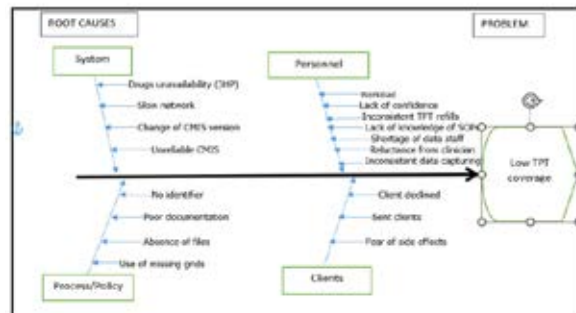


Table 1: Quality improvement objectives and action plan

Objectives	Key action steps	Person responsible	Timeline	Start date	End date
Improve TPT coverage and identification flagging	Training of Healthcare workers on TPT	Clinical lead	November 2021	November 2021	N/A
	Dissemination of SOPs	TB Focal Clinical lead	November 2021	November 2021	N/A
	Use of Service eligibility assessment stickers to identify clients who are not yet on TPT	Clinicians	January 2022	January 2022	Ongoing
	Actively update TPT status in the systems (APMR and CHS). Use the Service eligibility sticker as a flag	Data Clerk	January 2022	January 2022	Ongoing
Improve TPT initiation and documentation	Actively initiate clients on TPT in line with the guidelines, and document in the file, booklet, TPT initiation list, TPT register, CHS and service eligibility assessment sticker	Clinicians	January 2022	January 2022	Ongoing
	Document TPT initiation status in APMR, CHS. Collect the TPT initiation initiation list and register weekly, and update the system. Consistently document TPT completion in the booklet, file, TPT completion list, TPT register and CHS and the completion date on the Service eligibility assessment sticker	Data clerks	January 2022	January 2022	Ongoing
Improve the number of TPT completion	Consistently document TPT completion in the booklet, file, TPT completion list, TPT register and CHS and the completion date on the Service eligibility assessment sticker	TB Focal Clinicians	January 2022	January 2022	Ongoing
	Consistently collect TPT completion forms and update APMR and CHS (if not done by clinicians). Use the completion on the Service eligibility assessment sticker to update the system, and tick next to the date	Data clerks	January 2022	January 2022	Ongoing

**Lessons learned:** TPT coverage increased from 61% to 89% (Figure 2). The absence of identifiers to track eligible clients and the use of multiple documentation systems



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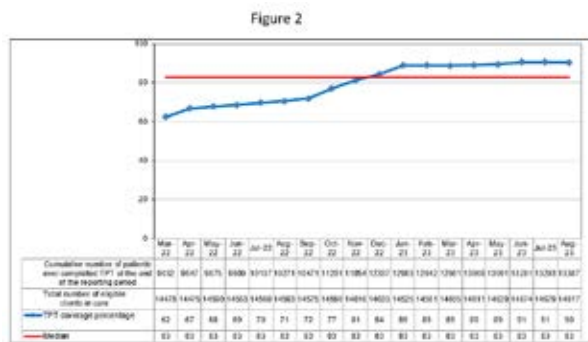


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hindered the identification of clients initiated on TPT. Limited client education and inconsistent documentation by clinicians and data clerks resulted in low TPT coverage.



**Conclusions/Next steps:** TPT stickers increased the identification of eligible clients, hence TPT initiation and coverage. Actively initiating clients on TPT, strengthening documentation with monthly tracking, continuous engagement with clinicians on the benefits of TPT, and client education are necessary to increase TPT initiation and coverage.

## EPB025

Increased soluble IDO and circulating Treg FoxP3+Helios+ could lead to a tolerogenic response in adults with low-level HIV viremia under long-term ART in the INSTI era

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**Background:** The clinical significance of low-level viremia (LLV) (50-200 copies/mL) during antiretroviral therapy (ART) remains unclear. Our objective was to evaluate the impact of LLV on the development of non-AIDS events, such as cancer, in people with HIV (PWH).

**Methods:** Prospective observational study in eighty-one individuals matched for clinical and epidemiological characteristics: i) n=27 PWH with LLV (50-200 copies/mL) (LLV); ii) n=27 PWH with suppressed viremia (<50 copies/mL) (SV); iii) n=27 non-HIV controls (NHC). Twenty-eight soluble immune checkpoint (IC) molecules related to cancer were assessed by immunoassays and regulatory T cells (Treg) subpopulations were characterized by spectral flow cytometry. Differences were evaluated using generalized linear models, adjusted by age, gender and ART. P values were corrected by false discovery rate (q<0.15).

**Results:** The median age was 53 years and 77.8% were male. The predominant ART was integrase inhibitors, accounting for 74% and 48% in the LLV and SV group, respectively. The LLV group showed significantly higher levels of indoleamine 2,3-dioxygenase (IDO) [aAMR=2.32 (1.27-4.24), p=0.008, q=0.118] (Figure 1A) and Treg CD4+CD25+FoxP3+Helios+ cell frequency compared to the SV group [aAMR=1.40 (1.13-1.73), p=0.003] (Figure 1C and B). Both PWH groups showed a significant increase in sICs compared to NHC (26 of 28 biomarkers in LLV vs NHC and 27 of 28 biomarkers in SV vs NHC), highlighting with aAMR>1.5 CD80, CD274 (PD-L1), PDCD1 (PD1), BTLA, TNFRSF9 (CD137), MICA, ULBP4, PRF1 (Perforin), ARG1 (Arginase-1), IDO, and LAG-3 (p<0.001, q<0.001) (Figure 1A).

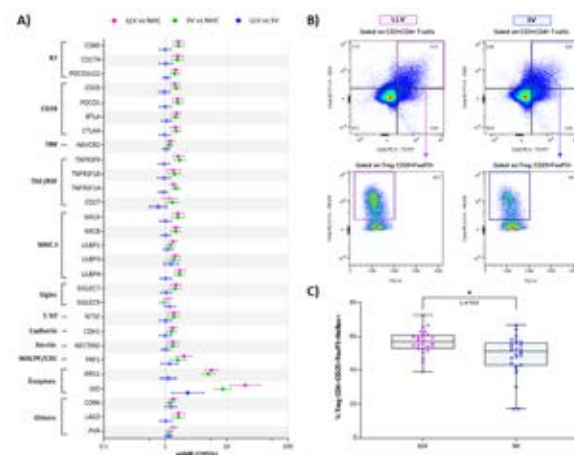


Figure 1. Comparison of immune biomarkers between study groups. A) Comparison of soluble immune checkpoints molecules between the three groups. B) Frequency of Treg cells in LLV and SV groups analyzed by spectral flow cytometry. C) Comparison of Treg frequency between LLV and SV groups. Data are the Arithmetic Mean Ratio was obtained by generalized linear model adjusted by age, gender and antiretroviral therapy. Statistically significant results are represented with filled symbols in \* (post SV and end SV) distributions. LLV: low-level viremia, SV: suppressed viremia, NHC: non-HIV controls, aAMR, Adjusted Arithmetic Mean Ratio, Treg, regulatory T cells.

**Conclusions:** Immune exhaustion produced by viral acquisition facilitated the expression of soluble ICs in both PWH groups. The LLV group showed an increase of the inhibitory molecule IDO that promotes Treg differentiation, which are upregulated. This suggests a higher immunosuppression and tolerogenic response that could increase the risk of comorbidities such as cancer.

These findings strongly advocate for heightened surveillance of these participants to promptly identify potential future complications.

## EPB026

### Association of antiretroviral therapy with cognition and resting-state functional connectivity in people with HIV

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**Background:** Neurocognitive impairment still occurs in controlled HIV diagnosis with antiretroviral therapy (ART). However, it is unclear if and to what extent available treatments play a role in the observed neurocognitive changes.

We aimed to:

1. Examine group differences in cognition and resting-state functional connectivity (RSFC) of brain regions implicated in neuroHIV, and;
2. Examine the association between RSFC and cognition in 3 groups: controls, PWH on ART, and PWH not taking ART.

**Methods:** This was a retrospective, cross-sectional analysis of 569 participants from 4 sites within the ENIGMA HIV working group (USA and South Africa). Participants included controls (n=358), PWH on ART (n=188), and PWH not on ART (n=23). Analysis of variance (ANOVA) test was conducted to examine group differences in:

1. RSFC of the posterior cingulate cortex (PCC) with regions of interest (ROIs) implicated in neuroHIV (i.e., hippocampus, basal ganglia, lateral prefrontal cortex, and posterior parietal cortex (PPC)), and;
2. Global cognition, attention, and working memory performance. Multiple linear regression analysis was conducted to investigate the association between cognition in the 3 groups after controlling for age, sex, and education.

**Results:** There were no significant differences in the PCC RSFC with ROIs between the 3 groups. There was a significant difference in working memory Z scores between the 3 groups (ANOVA:  $p=0.049$ ), mainly between controls and PWH on ART. Increased PCC-Left caudate RSFC was positively correlated with higher scores in global cognition tests in all groups (Pearson's correlation test:  $r=0.19$ ,  $p=0.03$ ). Increased PCC-Left PPC RSFC was negatively correlated with lower scores in attention tests in all groups (Pearson's correlation test:  $r=-0.17$ ,  $p=0.03$ ). There was no significant association between performance on working memory tests and RSFC of the PCC and ROIs.

Performance in working memory was negatively correlated with taking ART (linear regression:  $p=0.05$ ) and positively correlated with length of education (Linear regression: secondary education,  $p=0.04$ ; university education,  $p=0.0002$ ).

**Conclusions:** In this sample, RSFC of ROIs was neither affected by HIV acquisition alone nor by HIV acquisition and taking ART. This may suggest that neurocognitive impairment in PWH may be attributed to aging rather than to HIV acquisition or treatment-related neurotoxicity.

## EPB027

### Cancer Risk in People Living with HIV (PLHIV) and Solid Organ Transplant Recipients (SOTR) – a systematic review and meta-analysis

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**Background:** Comparing and contrasting patterns of cancer incidence between PLHIV and SOTR could provide unique insights into the role of the immune system in cancer risk.

**Methods:** This systematic review and meta-analysis considered studies published in English and listed on PubMed or Embase before 1 July 2022. Studies were eligible if they used population-based registries and compared cancer incidence in PLHIV or SOTR with the general population in the same geographical area. We extracted the number of observed site-specific cancers and expected cases and



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calculated meta-standardised incidence ratios (SIR). Patterns of cancer meta-SIR between PLHIV and SOTR were compared.

**Results:** Forty-six studies in PLHIV and 67 in SOTR were included. Meta-SIRs for cancers associated with human papillomavirus (HPV) were increased in both populations, with substantially higher SIR in PLHIV for anal cancer (37.28 vs 7.03) and in SOTR for lip cancer (30.95 vs 2.32). Meta-SIRs were significantly elevated for non-HPV viral-infection-related cancers in both populations, but markedly higher in PLHIV than in SOTR for Hodgkin lymphoma (7.64 vs 4.20), non-Hodgkin lymphoma (32.53 vs 10.24) and Kaposi sarcoma (801.52 vs 47.31). The meta-SIR for cutaneous cancers was increased more so in SOTR than PLHIV. Risk of cancer at some gastrointestinal and urinary tract sites were raised only in SOTR. No cancer type was elevated in risk in PLHIV only.

**Conclusions:** There was a mostly similar elevated risk of a range of viral infection-related cancers in PLHIV and SOTR, but divergent trends in these and other cancers have emerged. The cancer risk patterns largely reflect differences in the degree of impaired immunity, exposure to carcinogenic viruses, and/or perhaps exposure to carcinogenic immunosuppressive agents.

## EPB028

**Prioritizing clients with risk of disengagement from HIV care for screening of mental health disorders: lessons from integration of mental health into HIV in a conflict affected region of Ethiopia**

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**Background:** Compared to the general population, people living with HIV (PLHIV) have a higher risk for mental health disorders (MHD), which can affect engagement into HIV care. In areas of conflict, like the Amhara region of Ethiopia, exposure to traumatic events may increase the chance of developing MHD. Due to limited psychiatry care in Ethiopia, the Ministry of Health (MoH) has been integrating mental health (MH) services into primary care units.

**Description:** The MoH, in collaboration with the International Center for AIDS Care and Treatment Programs and the U.S. Centers for Disease Control and Prevention, developed a task-sharing approach among lay healthcare

workers (LHCW) who are PLHIV, and antiretroviral therapy (ART) clinicians. LHCW proactively screened clients for MHD and linked those screening positive to ART clinicians for further diagnosis and treatment. Program documents were developed, including standard operating procedures and training materials. A brief MH screening tool assessing common MHD (depression, anxiety, psychosis, mania, depression, epilepsy, and substance use) was prepared in local language. LHCW and ART clinicians were provided with tailored training. We analyzed reports in 153 health facilities which implemented the program from Oct 2022 to Jun 2023.

**Lessons learned:** LHCW targeted clients with increased risk of disengagement from care (clients with detectable viral load (DVL) >50 copies/ml), returned to treatment after interruption (RTT), poor adherence, newly started on ART, refused to start ART, delayed ART initiation, and advanced HIV disease (AHD) for MHD screening.

Overall, LHCW screened 7,529 PLHIV for MHD, 853 (11.3%) were diagnosed as having MHD by clinicians, and 84.5% of these (721/853) were referred to psychiatry clinics. A higher proportion of MHD were reported among clients who refused to start ART (18.0%, 49/272), delayed ART initiation (13.4%, 54/403), and had AHD (13.4%, 33/247), compared to clients who newly started on ART (11.0%, 229/2089), had poor adherence (11.4%, 173/1524), with DVL (10.7%, 181/1690), and RTT (10.3%, 134/1304).

**Conclusions/Next steps:** Prioritizing PLHIV with potential risk of disengagement from care for MHD screening is important to proactively identify and manage clients with MHD. This program highlights the benefits of task-sharing with peers for person-centered integrated services to reinforce clients' retention in HIV care.

## EPB029

### Polyphenol-rich Camu Camu capsules decrease liver inflammation and weight in people living with HIV on antiretroviral therapy

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**Background:** Non-AIDS comorbidities such as liver steatosis are linked with gut microbiota dysbiosis, gut permeability and inflammation in people living with HIV (PLWH) on ART. Camu Camu (CC), an Amazonian superfruit, modified the gut microbiota and decreased inflammation in obese mice and in smokers.

In a single-arm pilot clinical trial, we assessed the influence of daily intake of CC on gut permeability and inflammation in ART-treated PLWH.

**Methods:** We recruited 22 ART-treated PLWH with a CD4/CD8<1 to select those with higher levels of inflammation. Participants took 1g of CC in capsules daily for 12 weeks while remaining on ART. Blood and stools were collected at 2 baseline visits, after 4 and 12 weeks of CC and 8 weeks after stopping CC. Plasma biomarkers were quantified by ELISA. Stool microbiota was characterized by 16S rDNA sequencing. HIV DNA and RNA in CD4 T-cells were quantified by nested qPCR.

**Results:** Median age of participant was 53, and 21/22 were male. CD4 and CD8 counts (median 473.5 and 756), and plasma viral load remained stable during the study. Participants lost a median of 1.2 kg after 12 weeks of CC. Serum levels of liver enzymes AST and ALT decreased from baseline to week 4 (23.5 vs 20.5 and 18 vs 16 IU/mL respectively,  $p<0.01$  for both), and tended to decrease at week 12. Levels of FGF21, a biomarker a metabolic dysfunction-associated steatotic liver disease (MASLD), decreased at week 4 (63.5 vs 60 pg/mL,  $p<0.05$ ). Levels of gut damage markers I-FABP and REG3 $\alpha$ , as well microbial translocation marker LPS tended to decrease at week 4. Gut microbiota composition remained stable at the genus level during the study.

Plasma levels of CC-chemokine ligand 20 (CCL20), an attractant of protective Th17 T-cells in the gut, decreased at week 4 ( $p=0.002$ ). Plasma TNF $\alpha$  levels tended to decrease at week 4.

HIV DNA levels were stable in CD4 T-cells. A 1.3-fold increase in HIV RNA levels was observed at week 20 only ( $p=0.03$ ).

**Conclusions:** CC intake slightly reduced weight, liver transaminases and tended to decrease inflammation in ART-treated PLWH. This effect should be validated using higher dose of CC in larger studies.

## EPB030

### Prevalence and factors associated with neurocognitive impairment among people living with HIV attending a tertiary care clinic in Colombo, Sri Lanka

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**Background:** HIV-associated neurocognitive disorder (HAND) is a condition where reductions in neuropsychological functions are seen among people living with HIV (PLHIV). Despite effective antiretroviral treatment (ART), this condition remains a crucial issue.

This study aims to describe the prevalence and factors associated with neurocognitive impairment (NCI) among PLHIV at a tertiary care clinic in Colombo, Sri Lanka.

**Methods:** A descriptive cross-sectional study was conducted at the Central HIV Clinic in Colombo in a study period of six months. Systematic random sampling was done and PLHIV who are more than 18 years and on ART for three months or more were included. Data was collected from 400 participants using a pre-tested semi-structured interviewer-administered questionnaire, Montreal Cognitive Assessment (MoCA), Lawton-Brody Instrumental Activities of Daily Living Scale (LB-IADL) and Patient Health Questionnaire-9. NCI was identified as having abnormal MoCA, with or without abnormal LB-IADL. Univariate analysis and logistic regression were performed to determine the factors associated with NCI.

**Results:** The mean age of the sample was 43.79 years ( $SD\pm 12.3$ ) with a male to female ratio of 4:1. The prevalence of NCI in this study population was 59%. Age, biological sex, education level, monthly income, marital status, belonging to a key population, pre-ART duration, months since HIV diagnosis, ART duration, baseline CD4 count, history of hypertension, substance use including alcohol and substance use duration were significantly associated with the presence of NCI in the univariate analysis. The use of lamivudine, efavirenz, abacavir, zidovudine, nevirapine, dolutegravir and antihypertensive medications was also significantly associated.



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The multivariate analysis revealed having only a secondary educational level or below ( $p=0.022$ ,  $OR=2.059$ , 95% CI [1.110, 3.820]), and lower-income ( $p=0.008$ ,  $OR=2.136$ , 95% CI [1.223, 3.732]) as risk factors, while younger age ( $p=0.004$ ,  $OR=0.401$ , 95% CI [0.214, 0.752]) was identified as a protective factor against NCI.

**Conclusions:** The prevalence of NCI is significantly high in this study population and further neuropsychiatric assessment is required. PLHIV from lower socio-economic class should be given more attention to detect NCI-related symptoms early.

### EPB031

#### Monitoring of major adverse cardiac events (MACE) in people living with HIV

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**Background:** Currently, expanded access to antiretroviral therapy (ART) has significantly reduced HIV/AIDS-related mortality. In addition to traditional risk factors such as increasing age, comorbidities, smoking, and obesity, some HIV-specific factors are thought to increase the risk of coronary artery disease (CAD). In this study, our aim was to determine CVD risk factors in the long-term follow-up of people living with HIV (PLWH) and receiving ART, and to determine the follow-up and epidemiology of MACE.

**Methods:** In the ACTHIV-IST (Action on HIV in Istanbul) cohort, which included clients from two HIV treatment centers in Istanbul, the data of all PLWH over the age of 18 who had been followed up for at least 10 years were recorded. Clients with a history of MACE before HIV diagnosis and not related cardiac deaths were excluded from the study. MACE refers to acute myocardial infarction, congestive heart failure, recurrent stent thrombosis, malignant arrhythmia, stroke, sudden cardiac death. Statistical analysis was performed with R program and  $p<0.05$  was considered significant.

**Results:** In our study, 900 PLWH who were followed up for at least 10 years were analysed and 40 were excluded. Of 860 (88.3% male, mean age=47) clients, %4.8( $n=40$ , 95% male) developed MACE. Since 6 clients had more than one event, total MACE was 47 (5.73%). Hypertension, diabetes mellitus, hyperlipidemia, history of CAD and HIV diagnosis above the age of 40 years were risk factors for MACE ( $p<0.01$ ). 73% ( $n=29$ ) had no history of HT, DM, CAD before HIV diagnosis and 98% had MACE 6.5 years after HIV diagnosis. There was no statistically significant difference between those who had MACE and those who did not in CD4+ at the time of diagnosis, HIV RNA levels and virolog-

ical response at follow-up, and experience with protease inhibitors, abacavir and integrase inhibitors. The most common MACE were myocardial infarction ( $n=23$ , 57.5%), stroke ( $n=7$ , 17.5%) and dysrhythmia ( $n=5$ , 13%). Statin use was significantly more frequent in MACE cases and 45% ( $n=18$ ) were started after MACE.

**Conclusions:** In PLWH, the development of MACE, particularly MI, has been associated with an increased frequency of comorbidities after HIV diagnosis and advanced age at HIV diagnosis.

### EPB032

#### Liver fibrosis was significantly associated with metabolic but not with nonalcoholic fatty liver disease in large cohort of PLWH in Rio de Janeiro (PROSPEC-HIV)

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**Background:** Recently, a multi-societies consensus has recommended to change the terminology from nonalcoholic fatty liver disease (NAFLD) to metabolic dysfunction-associated steatotic liver disease (MASLD). We aimed to evaluate the relationship between advanced liver fibrosis and NAFLD or MASLD and in people living with HIV (PLWH) in Brazil.

**Methods:** This cross-sectional study analyzed data of the PROSPEC-HIV study (NCT02542020) baseline visit. 744 PLWH completed questionnaires, fasting blood sample and transient elastography by Fibroscan [Controlled Attenuation Parameter (CAP) for steatosis and liver stiffness measurement (LSM) for fibrosis] on the same day from July/2015 to June/2019. Hazardous alcohol intake was defined as AUDIT > 8. Participants with unreliable CAP/LSM ( $n=59$ ) and those with missing data for metabolic features ( $n=2$ ) were excluded. Presence of steatosis was defined as CAP  $\geq 248$  dB/m. The primary outcome was the presence of advanced liver fibrosis defined as LSM  $\geq 9.5$  kPa. NAFLD was defined as the presence of steatosis without hazardous alcohol intake or viral hepatitis. MASLD was defined as the presence of steatosis with at least one cardiometabolic risk factor (overweight/obesity; pre-/diabetes; hypertension; high triglycerides or low-HDL-c) without excessive alcohol intake. Logistic regression models were adjusted for age, sex at birth, physical activity, viral hepatitis, CD4 count and duration of antiretroviral therapy.

**Results:** 683 PLWH [52% female; median age=45 (IQR,36-53) years, 87% with HIV mono-infection, BMI=25.6 (23.0-29.3) Kg/m<sup>2</sup>] were included. NAFLD and MASLD were present in 27.9% ( $n=191$ ) and 30.3% ( $n=207$ ) of PLWH, respectively. The prevalence [95%CI] of advanced liver fibrosis was 8.9% [7.0-11.3]. The presence of advanced fibrosis was significantly higher in people with MASLD (13.0 vs 7.1%,  $p=0.013$ ), but not in those with NAFLD (10.0 vs 8.5%,  $p=0.562$ ) com-

pared to those without. In multivariate logistic regression models, MASLD [aOR=2.31 (95%CI, 1.23-4.34),  $p=0.009$ ], but not NAFLD [2.02 (0.96-4.28),  $p=0.065$ ], was independently associated with the presence of advanced fibrosis. Older age [aOR=1.54 (1.14-2.10) and aOR=1.58 (1.16-2.14)] and the presence of viral hepatitis [aOR=6.36 (3.24-12.47) and aOR=7.15 (3.37-15.17)] were also associated with advanced liver fibrosis in models using MASLD or NAFLD as fatty liver disease.

**Conclusions:** PLWH with MASLD are at high risk of liver fibrosis independently of the presence of viral hepatitis.

## EPB033

### Effect of GLP-1 receptor agonists on circulating CD4 cells

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**Background:** GLP-1 receptor agonists (RA) are an increasingly used group of drugs with unprecedented efficacy in the treatment of type 2 diabetes (T2D) and obesity. However, potential immunologic effects of GLP-1 RA have not been studied until now, despite a widely recognized immuno-metabolic interplay.

**Methods:** Retrospective bi-centric longitudinal study in two large HIV centers in Germany (ICH Hamburg, MVZ München am Goetheplatz), including virologically suppressed people with HIV (PWH) using dula- or semaglutide for either diabetes and/or obesity. A mixed-effect quantile regression for the median was fit to the development of CD4 cells up to 56 weeks prior to and after initiation of GLP-1 RA.

**Results:** Overall, 586 observations from 76 PWH (46.1% from the Hamburg center) were included into the analysis. 52.6% of PWH used GLP-1 RA for diabetes, with semaglutide being the most frequently used drug (55.3%). Being on a GLP-1 RA was significantly associated with a decrease in circulating CD4 cells ( $\beta = -66.0$ , one-sided 95% confidence interval [-206.2; -6.1]), while no significant effects on CD8 cells ( $\beta = -86.9477$  [-211.1; 37.2]) and lymphocytes ( $\beta = -179.5668$  [-620.0; 260.9]) were found.

**Conclusions:** Our data imply a negative association between the use of GLP-1 RA and the subset of circulating CD4 cells in PWH, while no alterations in CD8 cells and overall lymphocytes were found. We encourage further research to verify our findings and to determine the clinical meaning and significance of this effect.

## EPB034

### Association of severity of metabolic dysfunction-associated steatotic liver disease with gut dysbiosis and shift in the metabolic function of the gut microbiota in people with HIV

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**Background:** The progression of metabolic dysfunction-associated steatotic liver disease (MASLD) to its severe forms (metabolic dysfunction-associated steatohepatitis (MASH) and fibrosis), might be associated to lifestyle and genetic factors. Gut microbial dysbiosis seems a key driver in this process. However, the role of gut dysbiosis in people with HIV (PWH) is unknown.

We aimed to evaluate the association between gut dysbiosis and severe MASLD (MASH and fibrosis) in PWH.

**Methods:** Consecutive PWH underwent transient elastography (controlled attenuation parameter (CAP)+serum cytokeratin-18). Included patients had MASLD (CAP  $\geq 238$  dB/m). Severe MASLD was defined as presence of MASH (cytokeratin-18  $\geq 130.5$  U/L) and/or significant fibrosis (stiffness measurement  $\geq 7.1$  kPa).

Gut microbiota composition was determined using 16S ribosomal RNA in stools. PICRUST-based functional prediction, bacterial and functional differences were assessed using a generalized linear model, with adjustment for age and sex using a negative binomial distribution.

**Results:** 34 patients with MASLD were enrolled (mean age 52 years, 15% females, mean stiffness 6.7 kPa, mean cytokeratin-18 184 U/L). Among them, 32% had severe MASLD. After adjusting for age and sex, severe MASLD explained 7% of the overall variation ( $r^2 = 0.07$ ,  $p = 0.09$ ) in bacterial composition. Several genera were significantly different between PWH with severe MASLD. Functional analysis revealed increases in fatty acid degradation and flavonoid biosynthesis, and decreases in several metabolic pathways.

**Conclusions:** In HIV mono-infection, MASLD severity is associated with gut dysbiosis and a shift in metabolic function of the gut microbiota. Some taxa are similar to those associated with MASLD in HIV-negative populations. Thus, gut microbiota analysis adds information to classical predictors of MASLD severity needing further investigation.



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## EPB035

Cognitive Behavioral Therapy (CBT)-based group intervention to reduce psychological distress, facilitate positive behavior change, and mitigate inflammation in Older People with HIV

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**Background:** The number of people living with HIV aged 50 or older is growing, with recent estimates of up to 8.1 million globally. Older people with HIV (OPWH) experience significant age-related health disparities, where non-communicable diseases associated with inflammation are the leading cause of death among those with treatment access. There is a critical need to intervene on age-related comorbidities to ultimately improve long-term HIV care.

The current pilot randomized controlled trial (RCT) evaluated the feasibility, and acceptability, and explored preliminary evidence of a signal for a cognitive behavioral therapy (CBT) group to reduce inflammation by teaching skills to cope with psychological distress and make positive health behavior changes.

**Methods:** Participants were 31 virally undetectable OPWH (age  $\geq 50$  years) on antiretroviral therapy and deemed psychiatrically stable based on clinical interview. Recruitment occurred via clinic referrals and community-based outreach. Participants were randomized 1:1 to enhanced usual care or the CBT intervention involving 12 weekly virtual group sessions with two interventionists. Self-report questionnaires and intravenous blood draws were collected at baseline, and follow-up visits 12-16 weeks later, with intervention participants completing an exit interview.

**Results:** Participants had a mean age of 60.5-years old (standard deviation [SD])= 5.3) and were 65% men, 55% White, and 79% non-Hispanic, and 45% reported an annual income between \$20-40,000 USD. Overall, 78% (31/40) of screened participants were eligible, 97% (30/21) of whom were randomized, 87% (13/15) completed the intervention, and 87% (26/30) completed the follow-up. On a scale of 0 to 3, with higher scores indicating greater acceptability, participants reported the intervention to be of high quality (mean(SD)=3.00(0.0)), high satisfaction (mean(SD)=3.00(0.0)), their needs were met (2.67(0.50)), and their coping skills improved (2.60(0.52)).

In exploratory comparisons, intervention participants showed a mean two-point decrease in depressive symptoms (Patient Health Questionnaire-9), and stress (Perceived Stress Scale); 212-minute increase in physical activity; three-point increase in self-reported health-related quality of life; and reduced inflammation (interleukin-6; -1.56 picograms/ milliliter of blood) from baseline to follow-up.

**Conclusions:** CBT group intervention is feasible, acceptable, and displays exploratory evidence of a signal for improving psychological distress, health behaviors, and inflammation for OPWH. A fully powered RCT is strongly warranted.

## EPB036

Genome-wide association study identifies new risk loci of hand grip strength among middle-aged and older people with HIV

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**Background:** Hand grip strength is a marker of frailty and a predictor of various morbidities and mortality in people with HIV(PWH). Genome-wide association study (GWAS) exploring the genetic variation in grip strength among PWH is still lacking.

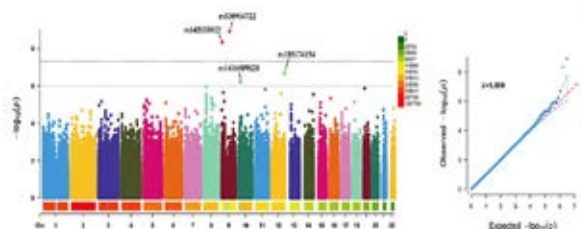
**Methods:** A two-stage(discovery and replication) GWAS was performed for grip strength among PWH aged  $\geq 40$  years. 1657 PWH(median age, 53.1 years; male 77.2%) from the Comparative HIV and Aging Research in Taizhou (CHART) cohort was included for the discovery GWAS, and 308 PWH (median age, 50.0 years; male 64.9%) from the Dehong HIV Study (DHS) was enrolled for replication. Linear regression analyses were constructed for GWAS and replication analyses.

To discover more susceptible loci, we selected SNPs with  $P < 1.0 \times 10^{-5}$  in the replication stage. Genome-wide interaction analyses were also conducted.

**Results:** After quality control and imputation, we included 3,162,867 variants with an imputation score  $> 0.6$  for GWAS. Two genome-wide significant variants(rs530914722,  $P_{\text{discovery}} = 1.22 \times 10^{-8}$ ; rs142033922,  $P_{\text{discovery}} = 4.63 \times 10^{-8}$ ) and two suggestive significant variants(rs185174154,  $P_{\text{discovery}} = 2.08 \times 10^{-7}$ ; rs1416609628,  $P_{\text{discovery}} = 6.22 \times 10^{-7}$ ) were identified to be associated with grip strength among PWH  $\geq 40$  years in the discovery phase, which were enriched in the molecular function of transferase activity, pyridoxal phosphate and vitamin B6 binding.

Similar analyses were performed in DHS and found three loci were replicated and significantly associated with grip strength (rs2504853,  $P_{\text{replication}} = 0.029$ ; rs142828624,  $P_{\text{replication}} = 0.020$ ; rs185174154,  $P_{\text{replication}} = 0.021$ ). Genome-wide association meta-analysis identified one significant SNP (rs185174154,  $LINC00944$ ,  $P_{\text{meta}} = 1.31 \times 10^{-5}$ ) of grip strength among HIV-positive participants.

Furthermore, genome-wide interaction analyses revealed significant gene-environment interactions with depression, neurocognitive impairment, and diabetes among PWH. This evidence might be useful for discovering high-risk individuals for the prevention of poor grip strength among PWH.



**Conclusions:** This study provided new clues for the genetic contribution of grip strength among middle-aged and older PWH, offering potential directions for improving grip strength and even preventing frailty in the future.

## EPB037

**Reasons, efficacy and safety of switching to dolutegravir-based regimens among virologically suppressed PLWH: a retrospective cohort study of 96 weeks**

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**Background:** Dolutegravir (DTG), with a high genetic barrier to HIV resistance, was recommended as core drug for naïve and treatment-experienced people living with HIV (PLWH).

**Methods:** We conducted a retrospective analysis of treatment-experienced PLWH who switched to DTG-based regimens and assessed their outcomes over a 96-week period. Here, data were collected between the 2018 and 2022. PLWH's basic information, treatment details and reasons for switching were collected, through the electrical clinical medical record system and telephone follow-up. Data included the proportion of PLWH with HIV RNA <50 copies/mL, changes in immunological indicators and metabolic metrics at week 48 and week 96.

**Results:** A total of 319 PLWH were included in the analysis. The three major reasons for switching were neurological toxicity (16.30%), simplification (13.79%) and renal toxicity (11.29%).

Our study showed high rates of virologic suppression in the per-protocol analysis (week 48: 99.69%; week 96: 99.29%) after switching to DTG-based regimens. The median CD4+ T cell count increased from 579 cells/μL (IQR 420.5-758) to 642 cells/μL (IQR 466.5-854) at week 96 ( $p < 0.0001$ ). An improvement was observed in liver function (ALT:  $p < 0.0001$ ; AST:  $p < 0.0001$ ) and fasting glucose ( $p < 0.0001$ ).

However, there was an elevation in creatinine (Cr) ( $p < 0.0001$ ) and a slight decrease in estimated glomerular filtration rate (eGFR) ( $p < 0.0001$ ).

Regarding lipid profile, triglyceride (TG) levels declined, while total cholesterol (TC) and low-density lipoprotein cholesterol (LDL-C) levels increased. Further analysis revealed that the increase in TC and LDL-C was associat-

ed with the withdrawal of tenofovir disoproxil fumarate (TDF). This observed increase in lipid parameters only concerned the PLWH who switched from a TDF-containing regimen to a non-TDF regimen.

**Conclusions:** This study confirmed the virologic efficacy of switching to DTG-based regimens in virologically suppressed PLWH over a 96-week period. The findings also expanded the evidence of immune reconstitution and metabolic safety associated with this switch.

## EPB038

**Effect of switching from an efavirenz-based therapy to a dolutegravir-based therapy on clinical and physical outcomes in PLHIV at the Yaoundé Central Hospital, Cameroon**

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**Background:** The current World Health Organisation (WHO) guidelines recommend the use of Dolutegravir (DTG) as preferred first- and second-line treatment for People Living with HIV (PLHIV). This has resulted in millions of PLHIV switching from efavirenz (EFV)-based to dolutegravir-based antiretroviral therapy.

The objective of this study is to assess the effects of dolutegravir-based therapy in PLHIV transitioning from an efavirenz-based therapy, providing recommendations to antiretroviral programs and clinicians.

**Methods:** We conducted a retrospective longitudinal study at the Yaoundé Central Hospital, focusing on the 2018 cohort (monitored from 2018 to 2022) of PLHIV who transitioned from an EFV-based therapy to a DTG-based therapy. Clinical and socio-demographic data were collected from medical records using a pre-tested questionnaire. An exhaustive sampling method was used for all participants who met the inclusion criteria.

The statistical tests of student were used to the compare paired sample means matched of weight, body mass index, and high blood pressure, while viral load was compared using the chi square of McNemar.

**Results:** Of the 456 active patients on EFV in 2018, 293 (64.3%) switched to DTG, with an average age of  $41.7 \pm 10.7$  years and more than half being women (58.4%). The average duration on DTG was 30 months and on EFV 15 months.

After switching, there was a significant increase in mean body weight (69.05 vs 72.56 kg,  $p < 0.05$ ), body mass index (25.29 vs 26.67 kg/m<sup>2</sup>,  $p < 0.05$ ), diastolic blood pressure (78.09 vs 81.58 mmHg,  $p < 0.05$ ), and systolic blood pressure (124.43 to 130 mmHg,  $p < 0.05$ ). Virological failure increased from 24 (8.2%) to 36 (12.3%) patients, but this change wasn't statistically significant ( $p = 0.058$ ).



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**Conclusions:** The significant increase in metabolic disorders and virological failure observed among PLHIV switching from EFV to DTG in Cameroon warrants stringent monitoring of body weight, blood pressure and viral load among these patients. The increased virological failure also suggests a possible growing resistance to DTG despite its high genetic barrier.

## EPB039

Comparative effectiveness of dolutegravir and efavirenz-based antiretroviral therapy on risk of all-cause mortality in older people living with HIV: emulation of a randomised target trial using electronic health records

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**Background:** Given the unique health challenges faced by older people living with HIV (PLHIV)—including more comorbidities, drug interactions, and metabolic changes - tailored antiretroviral therapy (ART) is needed. However, treatment strategies for older PLHIV often mirror those for younger adults, despite the underrepresentation of this group in randomized controlled trials (RCTs) due to strict criteria and complex health profiles. We aimed to elucidate the comparative effectiveness of dolutegravir and efavirenz-based antiretroviral therapy on risk of all-cause mortality in older PLHIV.

**Methods:** We first specified the protocol of two two-arm RCTs (for 50+ years old [older PLHIV] and 18-49 years old [younger PLHIV]) and then emulated it using the National Free Antiretroviral Treatment Program database from 12 centers across China. This method meticulously minimizes the limitations of observational data to closely approximate the results of RCTs. Patients with confirmed diagnosis of HIV between 1 January 2017 and 31 December 2023, aged 18 years or older on day of diagnosis, started efavirenz- or dolutegravir-based ART, and had no previous exposure to ART medications will be enrolled. The propensity score matching and clone method with inverse probability of censoring weighting was used to balance baseline characteristics between the groups and adjust for informative censoring. The Cox proportional hazards models were used to estimate the adjusted hazard ratios (HR) and 95% confidence intervals (CI).

**Results:** We matched 484 older PLHIV who started dolutegravir-based ART to 4840 who started efavirenz-based ART for the first emulated RCTs, then matched 1223 younger PLHIV who started dolutegravir-based ART to 12230 who started efavirenz-based ART for the second emulated RCTs. After controlling for immortal time bias, informative censoring, and baseline confounders, compared with efavirenz group, older PLHIV who started dolutegravir-based

ART has significant lower risks of all-cause mortality (HR 0.52, 95% CI 0.29-0.92). However, younger PLHIV who started dolutegravir-based ART has no significant differences in risks of all-cause mortality (HR 0.82, 95% CI 0.47-1.42) comparing with efavirenz group.

**Conclusions:** Dolutegravir should be preferentially recommended for older PLHIV, particularly in middle- and low-income countries where its use is not yet extensive.

## EPB040

A point-of-care urine tenofovir assay is highly acceptable and has strong predictive utility for virologic suppression among adolescents/young adults with HIV in Kenya

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**Background:** Adolescents/young adults on antiretroviral therapy (ART) experience suboptimal viral suppression and greater mortality due to multifactorial challenges. Adherence monitoring of ART could improve adherence rates. Our group developed a point-of-care tenofovir (POC-TDF) immunoassay which can assess pill-taking in real time. We set out to assess the acceptability and accuracy of the assay to monitor adherence and predict viral suppression (VS).

**Methods:** Young adults (ages 18-24 years) living with HIV and participating in a Kenya-based study evaluating the effectiveness of the quadrivalent HPV vaccine were enrolled in our sub-study. During the 12-month follow-up, adherence counselling was provided at each study visit. A cross-sectional survey was done at the last study visit, assessing self-reported adherence to ART and acceptability of the POC-TDF test. In a subset of participants, most of whom were experiencing virologic failure, the POC-test was run, and descriptive statistics analyzed in relationship to VS.

**Results:** In the cohort, 155 participants were seen for the last study visit (median age 22 years (interquartile range [IQR]= 21-23), 82 (52.9%) were female, and most (N=153, 98.7%) called the POC-TDF acceptable. Moreover, 142 (91.6%) did not anticipate the POC-TDF test would impact relationships with their provider, 149 (96.1%) thought the test would improve adherence, and 140 (90.3%) wanted to see the test performed in subsequent visits. The test


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was performed for 58 participants, 48 of whom had virologic failure at the enrollment visit. Of the 58, 47 (81.0%) reported ART use in the past 3 days. Among self-reported ART use participants, 35 (60.3%) had a-positive urine test result. Among the 58 tested, 35 (60.3%) had VS at exit, of whom 33 (94.3%) tested positive. The POC-TDF test had a sensitivity of 89.2% (95% CI: 74.6–97.0) for VS with a specificity of 90.5% (95% CI: 69.6–98.8). The positive predictive value for VS was 94.3% (95% CI: 80.8–99.3), while the negative predictive value was 82.6% (95% CI: 61.2–95.0).

**Conclusions:** The POC-TDF was highly acceptable to this cohort of adolescents/young adults living with HIV, demonstrated high predictive value for assessment of VS and presents an opportunity for objective real time adherence evaluation to support counseling.

## EPB041

Scale up of advanced HIV disease assessment and package of services for children and adolescents living with HIV in Kenya

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**Background:** Advanced HIV disease (AHD) contributes to mortality among children and adolescents living with HIV (CALHIV). In 2023, CDC-supported partners in Kenya implemented a continuous quality improvement (CQI) initiative to improve identification and management of AHD in CALHIV. The CQI included a root cause analysis for missed opportunities, targeted efforts to address gaps, health care worker trainings, regular data review, and sharing lessons learnt. We reviewed changes in AHD assessment, prevalence, and service uptake among CALHIV before and after the initiative.

**Methods:** We analyzed data from the Kenya National Data warehouse describing CALHIV 0–19 years at 963 CDC-supported sites. Using chi-square testing ( $p$ -value  $<0.05$ ), we compared proportions among CALHIV aged  $<5$  years (younger) and 5–19 years (older) who had WHO stage and CD4 documentation and AHD diagnosis between Oct 2021–Sept 2022 and Oct 2022–Sept 2023. AHD was defined as being on ART for  $<12$  months or having treatment failure in younger children, and either having WHO stage 3/4 or  $CD4 < 200$  in older CALHIV. Of those with AHD, we compared proportions receiving cotrimoxazole, malnutrition services, and TB services.

**Results:** Among CALHIV on ART, WHO stage documentation significantly improved among younger (74% to 94%,  $p < 0.001$ ) and older CALHIV (71% to 92%,  $p < 0.001$ ). Among

those eligible, CD4 documentation significantly improved in younger (8%–13%,  $p = 0.001$ ) and older CALHIV (49%–77%,  $p < 0.001$ ). AHD diagnosis significantly increased among younger (36%–44%,  $p < 0.001$ ) and older CALHIV (4.7%–5.2%,  $p < 0.001$ ). TB screening (89%–94%,  $p < 0.001$ ) and TPT uptake (62%–74%,  $p < 0.001$ ) significantly improved in younger children with AHD; no improvements in AHD service uptake were noted for older children (Table 1).

Table: Assessment and Diagnosis of Advanced HIV Disease (AHD) and receipt of AHD services among children and adolescents living with HIV (CALHIV) aged 0–4 years and 5–19 years on antiretroviral treatment (ART) served by CDC Kenya between Oct 2021–Sept 2022 (FY22) and Oct 2022–Sept 2023 (FY23)

	0–4 years			5–19 years		
	FY22	FY23	Percentage-point change (p-value*)	FY22	FY23	Percentage-point change (p-value*)
Documentation of WHO stage (%) among all CALHIV	74.3% (n=2,345)	94.1% (n=2,079)	19.8% ( $<0.001$ )	70.5% (n=47,375)	92.4% (n=47,811)	21.9% ( $<0.001$ )
Documentation of CD4 (%) among those eligible for CD4	7.9% (n=800)	12.6% (n=907)	4.7% ( $<0.001$ )	48.6% (n=3,875)	77.1% (n=4,368)	28.5% ( $<0.001$ )
AHD prevalence (%) among all CALHIV	35.7% (n=2,345)	43.6% (n=2,079)	7.9% ( $<0.001$ )	4.7% (n=47,375)	5.2% (n=47,811)	0.5% ( $<0.001$ )
Receipt of AHD services (%) among CALHIV with AHD						
TB screening	n=802	n=907		n=2,225	n=2,189	
	89.0%	93.9%	4.9% ( $<0.001$ )	97.1%	95.2%	-1.9% ( $<0.001$ )
TB Preventive Therapy (TPT) Cotrimoxazole	61.6%	78.2%	16.6% ( $<0.001$ )	94.5%	93.8%	-0.7% (0.30)
Malnutrition screening	91.8%	91.1%	-0.7% (0.31)	76.9%	79.2%	2.3% (0.05)

\*p-value for chi square test comparing proportions between FY22 and FY23 for each age group

**Conclusions:** Following the Kenya CQI initiative significant improvements in AHD assessment, increased AHD diagnosis among CALHIV, and increased TB service uptake among younger children were seen. However, more work is needed to understand why gaps persist and improve AHD diagnosis and service uptake among CALHIV.

## EPB042

The Linda Kizazi Study: a comparison of morbidity and mortality from birth to two years between HIV-unexposed children and children born to women on ART in pregnancy

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**Background:** It remains unclear if HIV-exposed, uninfected (HEU) infants continue to experience greater morbidity and mortality than HIV-unexposed, uninfected (HUU) infants in the era of universal ART. We assessed whether risk



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of acute diarrhea, respiratory tract infections (RTI), hospitalization, and all-cause mortality in the first two years of life differ between Kenyan infants that are HEU versus HUU.

**Methods:** From December 2018-March 2020 at Mathare North Health Centre in Nairobi, we recruited pregnant women living with HIV on ART for  $\geq 6$  months and pregnant women without HIV from the same community.

We followed mother-infant pairs for 2 years postpartum and collected data on symptoms of illness, health-care-seeking behavior, clinical diagnoses, and infant feeding every 3 months; a self-selected subset of participants received weekly data collection for up to 1 year.

To compare the risk of each outcome between HEU versus HUU infants, we used Andersen-Gill (recurrent morbidity outcomes) and Cox proportional hazards (mortality) regression adjusted for maternal age, marital status, and education level.

**Results:** Postpartum data were available for 187/211 (89%) mother-infant pairs; 86 (46%) infants were HEU and 101 (54%) were HUU. All mothers initiated breastfeeding, but a greater proportion of HEU than HUU infants were exclusively breastfed (EBF) for 6 months (88% vs 57%). There were 5 infant deaths (3 HEU, 2 HUU; 27/1000 live births). There was no significant difference in risk of acute diarrhea (Hazard Ratio [HR]=0.79, 95% CI 0.52-1.22;  $p=0.3$ ), hospitalization (HR=1.11, 95% CI 0.30-4.14;  $p=0.9$ ), or mortality (HR=1.87, 95% CI 0.17-20.5;  $p=0.6$ ).

However, HEU infants had lower risk of pneumonia (HR=0.29, 95% CI 0.09-0.89;  $p=0.03$ ) and any upper/lower RTI (HR=0.60, 95% CI 0.44-0.82;  $p=0.001$ ). Infants that were EBF for  $\geq 6$  months, regardless of HIV exposure, had lower risk of any RTI (HR=0.60, 95% CI 0.44-0.82;  $p=0.001$ ); there was a similar trend for pneumonia (HR=0.31, 95% CI 0.09-1.02;  $p=0.05$ ).

**Conclusions:** Among this cohort of healthy mother-infant pairs in Nairobi, HEU and HUU infants generally had similar morbidity and mortality outcomes in the first 2 years of life. However, HEU infants had substantially lower risk of pneumonia and any RTI, which was likely mediated by longer EBF in this group.

## EPB043

### The effect of feminizing hormone therapy (FHT) on phenotypic and functional attributes of T-cells in transgender women living with HIV (TGWH)

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**Background:** Transgender women (TGW) live with highest risk for acquisition of HIV. Many TGW use FHT to increase estradiol levels and decrease testosterone levels for maintaining gender affirming physical appearances. However, the influence of FHT on immune system, particularly on HIV-specific immune responses in TGWH is unknown. The main goal of our study was to investigate the changes induced by FHT on the phenotypic and functional attributes of T-cells in TGWH.

**Methods:** We investigated phenotypic and functional characteristics of T-cells in PBMCs collected from 25 TGWH by Flow cytometry. The phenotypic panel included surface markers to investigate frequency of various T-cell subsets (CD4+, CD8+, Tfh, Th<sub>1</sub>, Th<sub>2</sub>, NC, CM, EM, TEMRA) and their activation (CD38, HLA-DR) and exhaustion status (PD1, 2B4, TIGIT). HIV-specific T-cell response was investigated by intracellular cytokine staining (IFN $\gamma$ , TNF $\alpha$ , IL21, IL2, IL17) upon *in vitro* HIV-gag-peptide stimulation.

Participants were divided into 4 groups depending on the use of FHT (confirmed change in sex hormone levels) and viremic status (if level of HIV RNA  $>30$  IU/ml);

1. NoFTH-viremic,
2. NoFTH-Non-viremic,
3. FTH-viremic and;
4. FTH-Non-viremic.

**Results:** Our data indicated increased level of cytokine production to HIV-gag peptides in various CD4+T-cell subsets in FTH-viremic TGWH group compared to rest of the groups (Table1). The increases in cytokines secretion by CD4+T-cells and its subsets positively correlated with the percentages of highly activated CD38+HLA-DR+ cells. No significant differences in the frequencies of any of the T-cell subsets (Tfh, Th1, Th2, NC, EM, CM, TEMRA) were observed due to FHT. Also, frequencies of PD1, 2B4 or TIGIT exhausted T-cells remained unchanged due to FHT.

Table 1. Influence of FHT on HIV-specific T-cell response in viremic-TGWH. (\* -  $P \leq 0.05$ ; \*\* -  $P \leq 0.01$ ; \*\*\* -  $P \leq 0.001$ ).

	Quantities/fold change	IFN $\gamma$	IFN $\gamma$ + TNF $\alpha$	TNF $\alpha$	IL21	IL17A	IL2
CD4+		Increase**		Increase*	Increase**	Increase*	Increase*
Tfh		Increase*		Increase*	Increase**	Increase*	
Th1		Increase*	Increase*	Increase*			
Th17		Increase**	Increase*	Increase*	Increase*	Increase*	
CD4+CD38+		Increase*	Increase*				
CD4+CD38+HLA-DR+	Increase**						
CD4+HLA-DR+	Increase*						
Th1CD38+HLA-DR+	Increase*						
Th1CD38+HLA-DR+	Increase*						
Th17CD38+HLA-DR+	Increase***						



**Conclusions:** FHT induced activation and high pro-inflammatory immune response in various subsets of helper T-cells against HIV-specific peptide in viremic TGWH. Hence, FHT can increase comorbidities associated with HIV due to its enhanced effect on host inflammatory response.

## EPB044

Local response to extreme climate events to mitigate the Impact on service delivery for people living with HIV in Nampula Province, Mozambique

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**Background:** Climate change represents a great threat to human health in the 21st century, and the most vulnerable are disproportionately affected, including people living with HIV (PLWH). In March 2022, intense tropical cyclone Gombe made landfall in Nampula Province, Mozambique, affecting an estimated 736,015 people. Health service delivery was temporarily interrupted with infrastructure damage and population displacement. We aimed to assess its impact on HIV service delivery.

**Methods:** ICAP worked with local leadership to ensure continued access to essential services. This included rapid allocation of temporary infrastructure; revising client flows; integrating multiple clinical services; and intensifying community-level interventions, including offering prevention, care, and treatment services through Mobile Units. We analysed a subset of routine HIV indicators reported in 18 health facilities supported by ICAP and affected by the cyclone from the pre-cyclone period: October to December 2021 (Q1), during the cyclone: January to March 2022 (Q2); and after the event: April to June 2022 (Q3). We reviewed data from DHIS2 and performed descriptive analyses.

**Results:** Data from October 2021 to June 2022 showed an effect in the number of individuals tested at the supported services (72,605 during Q1, 80,807 in Q2, and 87,869 in Q3). However, we observed a slight decrease in the number of individuals who tested positive (3,143 in Q1, 3,062 in Q2, and 3,170 in Q3) and initiated antiretroviral therapy (ART) (4,454 in Q1, 4,047 in Q2 and 4,441 in Q3). Over the three quarters there was no evidence of deleterious effects on treatment continuation, with the number of clients active on ART increasing over time (42,522 in Q1, 45,319 in Q2, and 49,456 in Q3). There was no increase in proportion of ART clients lost-to-follow-up after the cyclone: 6.7% in Q1, 6% in Q2 and 3.9% Q3.

**Conclusions:** A rapid response was able to mitigate the impact of cyclone Gombe on HIV outcomes. Coordination and collaboration with government and partners was es-

sential to reduce service disruption and reengage clients. However, further service adaptations are needed to build resilient HIV services that can withstand potential disruptions, e.g. implementation of multi-month ART dispensing at locations at high risk of extreme climate events.

## EPB045

Avidity and neutralization: potential of anti-SARS-CoV-2 antibodies in PLWHA and healthy controls

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**Background:** HIV primarily targets CD4+ T cells, posing challenges in developing specific immunity against SARS-CoV-2. The co-infection of HIV and SARS-CoV-2 is a significant global concern, especially for those people living with HIV (PLWHA) and having pre-existing conditions, implying a greater risk of morbidity and mortality. Antibodies against SARS-CoV-2 are crucial for an effective neutralizing response.

The objective goal was to compare the levels of neutralizing antibodies and avidity between PLWHA and healthy controls in Brazil.

**Methods:** The ADEE3002/HCFMUSP HIV outpatient clinic follows 450 HIV-1-infected individuals and collects two samples of plasma and buffy coat per year, constituting an important biorepository since 1998. During the COVID-19 outbreak, the ADEE3002 team quickly mobilized to investigate potential coinfections with SARS-CoV-2. In the period from July 2021 to July 2022, 279 HIV-1 plasma samples from the biorepository, collected from December 2019 to April 2020, were screened for SARS-CoV-2 antibodies using an in-house ELISA test (Tozetto-Mendoza TR, et al). To confirm the in-house test, a chemiluminescence immunoassay (CLIA) (Liaison® SARS-CoV-2 TrimericS IgG) was performed. Additionally, neutralizing antibodies against SARS-CoV-2 were quantified using an ELISA Kit (Thermo Fisher®), and an in-house antibody avidity was evaluated using 8 M urea.

**Results:** From 279 samples tested, 36 (12.9%) showed positivity for antibodies against SARS-CoV-2. The cohort was composed of 50% men and 50% women, with an average



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age of 49 years. The percentage of neutralizing antibodies in the group of PLWHA was significantly lower when compared to the healthy control group ( $p=0.009$ ).

Despite the significant decrease in the production of these essential molecules for an adequate neutralizing response, PLHIV did not present a more severe form of the disease. The urea analysis revealed a lower avidity in HIV-positive individuals compared to HIV-negative individuals.

**Conclusions:** Significant decreases in the presence of high-affinity antibodies and the quantity of neutralizing antibodies against SARS-CoV-2 were observed in PLWHA when compared to the healthy group.

However, it is important to emphasize that, despite this reduction, cell-mediated response may be a key factor in symptom regulation in PLWHA, underscoring the need to investigate and comprehend this distinctive immune response.

## EPB221

### Prevalence and consequences of low-level viremia among adolescents living with HIV in South Africa: a longitudinal cohort study

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**Background:** Low-level viremia (LLV), defined by the World Health Organization as viral load between 51-999 copies/mL, has been shown to be associated with an increased risk of virological non-suppression and failure among adults on antiretroviral therapy (ART). It is unknown if adolescents living with HIV (ALHIV) and on ART, are more likely to have experienced LLV. There is also limited data factors shaping progression to virological failure among ALHIV on ART. We aimed to assess the prevalence of LLV among ALHIV on ART and associations between LLV and progression to virological failure.

**Methods:** We analyzed viral load data from a longitudinal cohort study of ALHIV captured by the National Health Laboratory Services (NHLS) in South Africa. Using

routine viral load data between 2015-2022, we calculated the prevalence of LLV at the first viral load test for all adolescents with results, then testing which socio-demographic factors were associated with LLV at first test.

Among ALHIV who had at least three consecutive viral load tests between 2015-2022, we assessed the relationship between LLV and virological failure controlling for age, sex and mode of HIV acquisition using logistic regression.

**Results:** A total of 737 ALHIV had at least one viral load result between 2015-2022, amongst whom the prevalence of LLV increased from 12.4% in 2015 to 18.3% in 2022. Among those with at least one result, older adolescents were more likely to have LLV (OR: 1.09; CI: 1.03, 1.25). Both sex (OR: 0.95; CI: 0.60, 1.51) and mode of HIV acquisition (OR: 0.96; CI: 0.52, 1.79) were not significant predictors for LLV.

Among 628 ALHIV who had at least three consecutive viral load records, 13.4% had LLV at the first viral load and 18.6% had progressed to virological failure. ALHIV with LLV were two times (OR: 2.98; CI: 1.64, 6.15) more likely to progress to virological failure compared to those with undetectable viral loads.

**Conclusions:** The prevalence of LLV among ALHIV on ART is high and LLV strongly predicts virological failure. Age also serves as a predictor for LLV. This highlights the need for enhanced adherence support among ALHIV with LLV and not just those with viral non-suppression.

## EPB223

### Diagnostic performance of the VISITECT® CD4 Advanced Disease Rapid Test in samples in Panama

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**Background:** People living with HIV in rural zones in Panama may have delayed results for CD4+ lymphocyte cell count due to centralized testing; clinical decision-making may be delayed.

This study aimed to evaluate the VISITECT® CD4 Advanced Disease Rapid Test, a semi-quantitative point-of-care assay, for potential use in rural areas of Panama.

**Methods:** This evaluation compared the diagnostic accuracy of VISITECT® CD4 Advanced Disease Rapid Test (Visitect) to the BD FACScalibur flow cytometry. This evaluation used excess venous blood samples that were collected within 24 hours prior to routine CD4 testing among adults (>17 years) living with HIV at a large antiretroviral clinic in Panama City in 2022.

**Results:** A total of 302 samples were included. The median age of the people who provided samples was 36.5 years (IQR=29-45 years). With BD FACScalibur, the median CD4 count was 301.5 cells/mm<sup>3</sup> (IQR:136-499 cells/mm<sup>3</sup>), and 35.8% of samples had CD4<200 cells/mm<sup>3</sup>.

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The reference flow cytometry testing showed a total of 108/302 (35.8%) individuals had advanced HIV disease (AHD, defined at  $<200$  cells/mm<sup>3</sup>). Visitect was below range in 56.9% (172/302) samples and was above range in 43.0% (130/302) samples tested.

Compared to the BD FACScalibur flow cytometry, the Visitect correctly identified 100/108 as having a CD4 count below 200 cells/mm<sup>3</sup>, giving a sensitivity of 92.6% (95%CI: 89.5-95.6%), giving a specificity of 62.9% (95%CI: 57.4-68.3%). The positive predictive value for a CD4 cell count  $<200$  cells/mm<sup>3</sup> was 58.1% (95%CI: 52.6-63.7). The negative predictive value was 93.8% (95%CI: 91.1-96.6%).

The median CD4 cell count of the 8/302 samples misclassified by Visitect at CD4  $<200$  cells/mm<sup>3</sup> was 329.5 cells/mm<sup>3</sup> (IQR: 157-510), whereas for the 72/302 samples misclassified by Visitect as CD4  $<200$  cells/mm<sup>3</sup>, their median cell count was 301.5 cells/mm<sup>3</sup> (IQR: 139-499). Of the 72 samples with cell counts  $>200$  cells/mm<sup>3</sup> that were misclassified as low range by Visitect, 42 (58.3%) were below 350 cells/mm<sup>3</sup>.

**Conclusions:** The evaluation of VISITECT® showed a low specificity. However, the test had an acceptable sensitivity for emergency clinical decision-making in regions where prompt results from flow cytometry are unavailable. However, we recommended not replacing flow cytometry in these regions but supplementing with Visitect Advanced Disease where necessary for on-site decision-making.

## EPB224

### The use of dried blood spot specimens in the community by peer outreach workers increases HIV viral load testing coverage in Mali

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**Background:** In 2017, the World Health Organization (WHO) recommended the use of dried blood spot (DBS) specimens to monitor HIV viral load (VL). However, as of September 2020, Mali was still collecting plasma specimens despite facing logistical, infrastructural, and operational barriers preventing routine VL monitoring. Estimated HIV prevalence is 0.8%. Among people living with HIV (PLHIV), 59% know their status and 53% are on treatment. There is no data on VL suppression. The U.S. President's Emergency Plan for AIDS Relief through the U.S. Agency for International Development funded the Meeting Targets and Maintaining Epidemic Control (EpiC) project that offers HIV VL monitoring to key and priority populations living with HIV (KPLHIV/PPLHIV) through public and civil society organization (CSO) led clinics, in the Bamako, Sikasso, and Segou regions in Mali.

**Description:** Changes in VL testing coverage were measured before (October 2019 to September 2020) and after (October 2020 to September 2023) the roll out of an

intervention for which DBS specimens were collected by peer outreach workers in the community (e.g. CSO-led clinics, clients' residences). Before the intervention, specimens for VL were collected only at public clinics by a laboratory technician using whole blood. Retrospective client records were analyzed from October 2019 to September 2023 through aggregated project data of KP/PPLHIV of all ages and sexes who were on antiretroviral therapy (ART) and eligible for VL testing in public and CSO-led clinics. Viral load coverage was defined as the number of KP/PPLHIV whose specimens were collected from those KP/PPLHIV who were eligible for VL testing.

**Lessons learned:** Following the roll out of the intervention, the VL coverage progressively increased from 50% (253/507) at baseline (October-2019-September 2020) to 72% (1,262/1,747) at first follow up (October 2020-September 2021), to 82% (2,910/3,558) at second follow up (October 2021-September 2022), to 89% (3,670/4,128) at third follow up (October 2022-September 2023).

**Conclusions/Next steps:** Our study confirms that the use of DBS in the community and by peer outreach workers is feasible and it can address logistical, infrastructural, or operational barriers, and result in increased VL coverage among KP/PPLHIV, which is key to ensure optimal ART case management.





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## Track C: Epidemiology and prevention science

### EPC046

Prevalence of metabolic syndrome and its associated factors among newly diagnosed ART naïve PLHIV registered at Central HIV Clinic, Sri Lanka

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**Background:** Metabolic syndrome (MS) also known as syndrome X, Insulin resistance syndrome has a prevalence of 21.5% (95% CI 15.09–26.86) among PLHIV according to a systematic review and is a forerunner of cardiovascular diseases (CVD). Objective is to study the prevalence of MS and its associated factors among newly diagnosed ART naïve PLHIV at HIV Clinic, Colombo, Sri Lanka.

**Methods:** A descriptive cross-sectional study perusing secondary data of adult Sri Lankan PLHIV registered from 2017 – 2019 using simple random sampling technique. MS was defined as per 1999 WHO Clinical Criteria inclusive of preexisting diabetes or impaired fasting glucose with 2 of the below: preexisting hypertension or systolic blood pressure > 140mmHg or diastolic blood pressure > 90mmHg, triglycerides >150mg/dL, HDL < 39 mg/dL in women and < 35mg/dL in men and body mass index (BMI) >30 kg/m<sup>2</sup>.

**Results:** Sample (n=218) was composed of 83.7% males and 16.3% females with a mean age of 35.95 ± 11.09 years. More than 40-year males and females accounted for 24.3% and 62.1% respectively.

Overall prevalence of MS at the time of registration at HIV clinic was 9.6%, while in males and females it was 9.94% and 8.1% respectively. Majority of people with MS (71.4 %) were >40 years old, 33.3 % consumed alcohol, 19 % smoked, 81 % were in WHO stage 1 or 2, 95.2 % were free of diseases caused by opportunistic pathogens including tuberculosis at the time of registration or during past six months, 19 % had CD4 <200 cells/μL, 47.6 % had viral load < 10,000 copies/mL, 19 % had albuminuria and 62 % had high alanine transaminase (ALT). Among them, 62 %, 95 % and 90.5 % were educated ≥ grade 13, employed and had higher monthly income respectively.

Age >40 years, being married, living with family, high ALT, and albuminuria were significant associations. However, age >40 years, living with family and elevated ALT maintained statistical significance in multivariate regression analysis. (p<0.05).

**Conclusions:** MS prevalence was less compared to the global prevalence. PLHIV with an advanced age, living with the family and elevated ALT were the identified risk groups.

### EPC047

Age-standardized comparison of atherosclerotic cardiovascular events and all-cause mortality in people living with HIV and general population

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**Background:** Despite the advancements in antiretroviral therapy, people living with HIV (PLWH) still face disparities in life expectancy and the prevalence of comorbidities. This study aims to compare the age-standardized incidence rates of atherosclerotic cardiovascular disease (ASCVD) and all-cause mortality between PLWH and the general population in Spain.

**Methods:** We compared the VACH cohort (PLWH) and the REGICOR cohort (general population). Participants aged 25-74 years with no history of ASCVD were tracked for a 15-year period. Baseline data, including demographics, cardiovascular risk factors, and comorbidities, were collected.

Age-standardized incidence rates for 15-year ASCVD (coronary artery disease and stroke) and all-cause mortality were calculated. The comparison of ASCVD and all-cause mortality incidence rates was analyzed using the log-rank test and Cox proportional hazards models. The analyses were stratified by gender and age groups (25-54 and 55-74 years).

**Results:** We included 10,218 participants from the general population (53% women) and 6,829 PLWH (22% women). Men with HIV aged 25-54 years had a higher ASCVD standardized incidence rates compared to men in the general population. Young men and women with HIV exhibited significantly higher all-cause standardized mortality rates compared to their counterparts in the general population.

There was no significant differences in the risk of coronary artery disease and stroke between PLWH and the general population after adjusting for ASCVD risk factors. However, the adjusted risk for all-cause mortality was 3-5 times higher in PLWH (Table 1).


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	Coronary artery disease		Stroke		All-cause death	
	HR [95%CI]	p-value	HR [95%CI]	p-value	HR [95%CI]	p-value
Men (25-54 years)						
Adjusted for age	1.35 [1.00-1.83]	0.048	2.00 [1.18-3.40]	0.010	6.62 [5.44-8.05]	<0.001
Adjusted for risk factors*	1.33 [0.91-1.95]	0.141	1.53 [0.80-2.93]	0.197	3.08 [2.42-3.90]	<0.001
Women (25-54 years)						
Adjusted for age	1.23 [0.59-2.59]	0.580	1.36 [0.54-3.42]	0.508	11.70 [8.64-15.85]	<0.001
Adjusted for risk factors*	0.35 [0.12-1.01]	0.051	1.33 [0.42-4.23]	0.634	4.71 [3.13-7.09]	<0.001

Table 1. Hazard ratio (HR) and 95% confidence interval (CI) of men and women with HIV in comparison with men and women from general population (reference).

\*Adjusted for age, sex, blood pressure, total and HDL cholesterol, triglycerides, diabetes and smoking.

**Conclusions:** The higher incidence of ASCVD in PLWH, when compared to the general population, can be attributed to differences in the prevalence of ASCVD risk factors. The risk of all-cause mortality among young PLWH was nearly three times higher than that of the general population.

## EPC048

Advanced HIV disease in children and adolescents: review from a large multicenter program in Nigeria

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**Background:** Antiretroviral Therapy has averted millions of AIDS-related mortality around the world. However, the high mortality of people with advanced HIV disease (AHD) has led to slowness in the reduction of HIV-associated mortality. Monitoring newly diagnosed PLHIV for AHD is important to reduce HIV-related mortality. We assessed our program for AHD in children and adolescents.

**Methods:** Using multi-stage sampling, 17 States were grouped into 6 clusters. CD4 test was conducted for new PLHIV aged 5 to <15 from October 2021 to March 2023, disaggregated by gender and age. Clients having a CD4 count of <200 were classified as having AHD, based on WHO classifications. Descriptive analysis was used to describe the data by age, sex, and cluster, and the prevalence of AHD was analyzed by cluster. A chi-square test of independence was conducted to determine the association between AHD and the different clusters, age bands, and sex. A binomial Logistic regression ascertains the effects of the clusters, age band, and sex on the likelihood of clients having AHD.

**Results:** Out of 4,229 clients, 35% (N=1473, Female 54%, male 46%) with CD4 results were eligible for the study, 40% were within the age band 5-9 while 60% were within the age band 10-14. Cumulative prevalence of AHD was 20.8%, with Cluster 6 having the highest (43.1%) followed by Cluster 4 (37.8%). Cluster 2 had the lowest AHD rate of 14.1%. chi-square of independence shows a significant association between cluster and AHD,  $\chi^2(9) = 93.89$ ,  $p < .001$ , (Wald = 84.5(5),  $p < 0.001$ ). Cramer's V (0.252) shows a moderately strong association. There was no significant association between AHD and age ( $p=0.14$ ), and AHD and sex ( $p=0.67$ ). The logistic regression model was significant,  $\chi^2(7) = 83.$ ,  $p < .001$ . Hosmer and Lemeshow test shows the model is not a poor fit ( $p=0.48$ ) by correctly classifying 79.2% of cases. Persons with HIV in clusters 6 and 4 had 4.1- and 3.3 higher odds for AHD respectively

**Conclusions:** AHD varies by geography with some areas having a very high prevalence. Resources must intentionally target those clusters to reduce AIDS-related mortality. There is a strong association between state clusters and AHD.

## EPC049

Global and regional genetic diversity of HIV-1 in 2010-2021: systematic review, individual patient data meta-analysis, and trend analysis

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**Background:** The extensive global genetic diversity of HIV-1 poses a major challenge to HIV vaccine development. We aimed to determine recent estimates and trends of the global and regional distributions of HIV-1 genetic variants.

**Methods:** We conducted a systematic literature review by searching PubMed, Embase, Global Health and CINAHL for studies containing country-specific HIV-1 subtyping data, published between Jan 1, 2010 and Sep 16, 2022. The proportions of HIV-1 subtypes, circulating recombinant forms (CRFs), and unique recombinant forms (URFs) in each country were weighted by UNAIDS estimates of the numbers of people living with HIV (PLHIV) in each country to obtain regional and global estimates of HIV-1 diversity for the time periods 2010-2015 and 2016-2021.

**Results:** We obtained 1044 datasets, containing HIV-1 subtyping data from 653,013 PLHIV from 122 countries in 2010-2021. In 2016-2021, subtype C accounted for 50.4% of global HIV infections, followed by subtype A (12.4%), sub-





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type B (11.3%), CRF02\_AG (6.6%), CRF01\_AE (5.4%), subtype G (2.9%), subtype D (2.6%), URFs (2.0%), other CRFs (1.9%), CRF07\_BC (1.2%), and subtype F (0.9%). Subtypes H, J, and K each accounted for  $\leq 0.1\%$  of infections.

Compared to 2010-2015, we observed significant ( $p < 0.00001$ ) increases in global proportions of subtype A (+0.9%), subtype C (+3.4%), and CRF07\_BC (+0.4%), decreases in subtype D (-0.5%), subtype G (-0.8%), CRF02\_AG (-0.8%), other CRFs (-0.7%) and URFs (-2.4%), and no changes for subtype B and CRF01\_AE. The global proportion of infections attributed to recombinants decreased from 21.6% in 2010-2015 to 19.3% in 2016-2021 (-2.3%).

Regional distributions of HIV-1 variants were complex and evolving, with global trends in the prevalence of HIV-1 variants supported by trends across the regions.

**Conclusions:** Global and regional HIV-1 genetic diversity are complex and continue to evolve. Continued and improved surveillance of HIV-1 variants remains vital for HIV vaccine development and implementation.

## EPC050

### Trend of newly diagnosed cases of HIV at Assiut university hospital years 2019-2023

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**Background:** This study is addressing the scarcity of data on HIV epidemiology in Egypt by providing a description of the 5-year trend of accidentally discovered HIV cases in the largest university hospital in Upper Egypt serving mainly Assiut Governorate; a population of approximately 5 million.

Egypt is reported to have a fastest growing numbers of HIV cases annually with an increase of 25-30%. University hospitals have a limited role in the national AIDS control program (NAP), mainly notification.

**Methods:** A descriptive study of all newly diagnosed cases of HIV at Assiut University Hospitals 'AUH' between 2019 and 2023.

**Results:** Between 2019 and 2023 there were 355 cases. The annual percent increase between 2020 and 2019 was 41.9%, for the other years 29.5%, 49.1% and 60.47% respectively. In 2023 there were 138 cases comprising 43.1% of all identified cases in Assiut Governorate. 79% of the cases were between 20-39 years of age, males represent 95.7% and 51.8% were single and 42.3 % were currently married. 81% of identified cases had clinical complaints, 25.4% were addicts and 10.9% were blood donors.

Second visits were extremely rare, only 6%. 2023 had the largest number of newly identified HIV cases and HIV deaths (19.6%) as well. The outstanding findings were that 78% of HIV cases had HCV, 62.2% of wives were not tested for their status, those who initiated the treatment were 48.9%, whose knew their status but didn't initiate treatment was 18.0% and 33.3% were drop out.

**Conclusions:** Our finding suggested that the increase in cases is alarming and that the efforts of NAP to contain the outbreak in the key population that was reported since the 90s is questionable and needs evaluation. A better coordination with the NAP is needed that would support the program. University hospitals can be involved in clinical management of HIV with HCV comorbidities. Wives of HIV cases are at great risk due to not knowing their HIV status. The few second visits suggest that stigma and discrimination may be the cause.

## EPC051

### Improving identification and management of advanced HIV disease among people living with HIV in Côte d'Ivoire

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**Background:** Advanced HIV disease (AHD) remains a challenge, with 30% of people living with HIV (PLHIV) presenting with AHD and the majority of HIV-related deaths attributed to AHD. EGPAF introduced a refined and optimized package of care and treatment for AHD clients in five health districts of Abidjan, Côte d'Ivoire.

**Description:** The AHD package of care, implemented in 30 health centers, comprised of monitoring and evaluation capacity building, updated guidelines, standard operating procedures, job aids and tools, training of healthcare workers, technical support and mentorship, strengthened sample transport, and strengthened capacity of lay health workers and expert clients for referrals between hubs and spokes. As of September 2023, clients started to receive AHD screening and care.

**Lessons learned:** From September to December 2023, 1,359 PLHIV were evaluated for AHD (ART naïve individuals 66.1% [n=898], returns to care after ART interruption 28.0% [n=380], ART treatment failure 6.0% [n=81]), among whom 31.1% (n=422) were diagnosed with AHD, compared to 8.2% (n=114) PLHIV with AHD in the previous quarter (June to August 2023),  $P < 0.0001$ . The implementation of the care

package re-introduced the use of CD4 staging for the identification of AHD: 66.4% of eligible clients (n=903) had CD4 tests, compared to 11.8% (n=163) the previous quarter ( $P<0.0001$ ). The emphasis on systematic use of rapid tests has led to an increased use of LF-LAM tests for tuberculosis (TB), with 365/420 (86.9%) PLHIV with AHD screened with LF-LAM vs. 46/114 (40.4%) the previous quarter ( $P<0.0001$ ) resulting in 71 diagnosed with TB (16.9%) this quarter. Similarly, the introduction of the Cryptococcal antigen (CrAg) blood tests resulted in 84.8% (358/422) clients with AHD screened compared to 0% (0/114) previously ( $P<0.0001$ ); the 3.1% (11/358) with CrAg positive tests all received adequate therapy.

**Conclusions/Next steps:** Coaching and mentoring healthcare providers as well as procuring key commodities are essential in the effective implementation of an AHD care package, especially in a low-prevalence setting such as Côte d'Ivoire. This pilot project will continue until October 2024. The effectiveness of this intervention will be measured by comparing clients' outcomes in the periods pre- and post-intervention.

## EPC052

### Estimates of annual HIV incidence and its distribution among key populations in Mexico (2022)

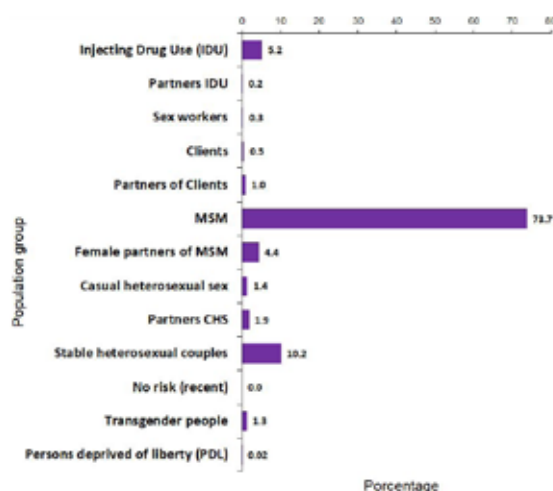
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**Background:** Incidence is the best indicator to understand the evolution of an epidemic and identify the most affected groups. The objective was to estimate the annual incidence of HIV in the adult population and its distribution among key populations in Mexico (2022).

**Methods:** The UNAIDS Modes of Transmission (MoT) model was applied, using the following sources of information: national surveys (Census 2020, ENDISEG 2019, ENCODAT 2016-2017); HIV prevalence (Censida); as well as epidemiological records from health institutions and other additional sources.

**Results:** An estimated 313,000 adults aged 15-49 years were living with HIV (prevalence 0.42%); with an annual incidence of 31 cases per 100 thousand adults (21,300 new HIV cases). 87% of these new cases were concentrated in key populations and their partners: men who have sex with men (73.7%) and their female partners (4.4%); injecting drug users and their partners (5.4%); sex workers, partners and clients (1.5%); trans people (1.3%); and persons deprived of liberty (0.02%). The remaining HIV cases corresponded to low-risk heterosexual population (10.2%) and people who have heterosexual casual sex and their partners (3.3%).



**Conclusions:** MoT provided an estimate of HIV incidence and its distribution among groups by mode of transmission, confirming its high concentration in key populations. Consequently, the best alternative is to prioritize prevention actions in these populations (timely detection of HIV and STIs, condom use, PrEP and PEP). If not, Mexico will hardly meet the 95-95-95 goals by 2030.

## EPC053

### Stigma and use to health services among people who inject drugs in Iran; bio-behavioral surveillance survey in 2020

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**Background:** The use of health services among people who inject drugs (PWID) is crucial for reducing the spread of HIV, sexually transmitted infections, and other diseases. This study aimed to identify the barriers that hinder PWIDs from using health services.

**Methods:** This cross-sectional study was conducted using Respondent-Driven Sampling (RDS) in 11 cities in Iran from June 2019 to March 2020. The data was collected using a standard questionnaire through face-to-face interviews. The questionnaire included participants' demographics, use of health services, income, history of the prison, health condition, and age initiative of drug.

The criteria to participate in the study included;

1. Age  $\geq 18$  years.
2. Confirmed non-medical injection in the last 12 months.



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3. Living in the target city of the study.
4. Provide oral consent.
5. Understanding the Persian language, and;
6. Having a valid RDS referral coupon.

A composite variable was calculated to measure stigma and discrimination, with a score range of 0 to 100. Chi-square tests and logistic regression models were used to analyze the data.

**Results:** A total of 2,663 PWIDs-participated in the survey, of which 96% (n=2564) were male. The mean age was  $41 \pm 0.18$  years. Among 2,651 PWID who responded to the question about stigma and discrimination, 41% (n=1,095) had high levels of stigma and discrimination. PWID who experienced high levels of stigma and discrimination had 70% less use of health services (OR=0.3, 95% Confidence interval=0.2-0.4). PWID with insurance had 60% more use of health services (OR= 1.6, CI; 1.3-1.9). The PWID with a university education had the highest usage of health services (OR= 1.6 (CI; 0.98-2.8).

**Conclusions:** The study found that the use of health services was low among PWIDs, and stigma and discrimination were significant barriers. Increasing the knowledge of health workers and the community can help reduce stigma and increase the use of health services. Of course, with rise in coverage of insurance can increase visits to doctors and other health workers.

## EPC054

The relationship between migrant status and HIV status, antiretroviral treatment, and viral load suppression in Zimbabwe, using population-based HIV impact assessment data, 2020

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**Background:** To address gaps in the UNAIDS HIV treatment cascade in Zimbabwe, there is a need to focus on priority populations, including migrants, who are vulnerable to HIV acquisition because of family/spouse separation, limited social support, and inadequate healthcare access. We assessed relationships between migration and HIV-positive status (HPS), use of antiretroviral treatment (ART), and viral load suppression (VLS) and examined differences by age, sex, and marital status.

**Methods:** We used data from the 2020 Zimbabwe Population-based HIV Impact Assessment, a household-based national survey (age  $\geq 15$  years) assessing sociodemographic characteristics, ART, and HIV outcomes. We examined the relationship between migration (ever vs. never lived away for >1 month) and HPS; self-reported ART; and VLS (<1000 copies/ml), adjusting for age, sex, urban/rural residence, marital status, education, and wealth quintile,

using jackknife weighting procedures and logistic regression models. We assessed multiplicative interaction by age (10-year groups), sex, and marital status (married vs. nonmarried) using chi-squared tests.

**Results:** Among 19,524 participants, 28.5% were migrants (among migrants: 53.3% female, 46.7% male; and 44.6% married, 55.4% nonmarried). Migrants had greater odds of HPS (aOR:1.27; 95%CI:1.16,1.40). Among those with HPS (n=2,956), there was no association between migrant status and ART use (aOR:0.86; 95%CI:0.55,1.37).

Among those on ART (n=2423), migrants had lower odds of VLS (aOR:0.62; 95%CI:0.46,0.84). We found no significant interaction by age (HPS: p=0.184; ART: p=0.699; VLS: p=0.589) or sex (HPS: p=0.964; ART: p=0.440; VLS: p=0.714).

We found interaction by marital status (HPS: p=0.041; ART: p=0.013; VLS: p=0.848), with married migrants experiencing greater odds of HPS (married: aOR:1.31; 95%CI:1.17,1.48; nonmarried: aOR:1.19; 95%CI:1.02,1.38), and lower odds of ART (married: aOR:0.53; 95%CI:0.29,0.95; nonmarried: aOR:2.11; 95%CI:0.96,5.17).

**Conclusions:** Zimbabwean migrants had greater odds of HPS and lower odds of VLS, and married migrants experienced greater odds of HPS and lower odds of ART. This is one of the first studies to examine HIV treatment and outcomes among migrant populations in Zimbabwe. Future analyses should further examine patterns of HIV acquisition and barriers to accessing HIV services in migrant populations to develop targeted interventions for at-risk subgroups and address gaps in the HIV treatment cascade in Zimbabwe.

## EPC055

### Pediatric HIV viral load coverage and suppression in PEPFAR-supported sites in Mozambique, Nigeria, Tanzania, and Zambia, 2021-2023

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**Background:** Despite progress in antiretroviral therapy (ART) access for children living with HIV (CLHIV), achieving viral load coverage (VLC) and viral load suppression (VLS) remains challenging. To address gaps and help achieve

the United Nations Programme on HIV/AIDS' (UNAIDS) goal of 95% VLS among those on ART, the President's Emergency Plan for AIDS Relief (PEPFAR) launched the "Accelerating Progress in Pediatric and Prevention of Mother-to-Child Transmission" (AP3) strategy in October 2022. We describe VLC and VLS trends from 2021 to 2023 among CLHIV at PEPFAR-supported sites across four countries implementing the AP3 strategy.

**Methods:** We analyzed PEPFAR Monitoring, Evaluation, and Reporting quarterly data from January-March 2021 to April-June 2023 for CLHIV aged <15 years attending PEPFAR-supported sites in Mozambique, Nigeria, Tanzania, and Zambia. Quarterly VLC and VLS were calculated overall and for each country. VLC was calculated using the proportion of clients eligible for a VL test (on ART ≥6 months) with a recorded result relative to the total number of clients on treatment two quarters earlier. VLS represents the proportion of clients with a VL result that were <1,000 copies/mL. Trends in VLC and VLS were assessed over the 2.5-year period by calculating percentage-point changes between January-March 2021 and April-June 2023.

**Results:** At the beginning of this analysis, the VLC across all countries was 78% (168,600/215,290). Of those, 80% (135,332/168,600) had VLS. By June 2023, overall VLC increased to 85% (197,743/234,084). Mozambique experienced the largest increase (17%), followed by Tanzania and Zambia (7% and 4%, respectively), and it decreased in Nigeria by 7%. By June 2023, overall VLS increased to 91% (179,209/197,734), with Mozambique and Nigeria experiencing the largest increases (16% and 10%, respectively), followed by Tanzania (9%), and Zambia (8%). Tanzania was the only country to reach the UNAIDS target of 95% VLS.

**Conclusions:** While most countries demonstrated progress in VLC and VLS, achieving the UNAIDS 95% VLS target remains challenging. Findings reveal disparities in improvement across countries, emphasizing the need for continued, targeted strategies tailored to each country's context to ensure equitable access to viral load testing and continuously improve HIV care for all CLHIV.



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## EPC056

### Progress towards the UNAIDS 95-95-95 targets and population HIV viral load suppression among female sex workers and sexually exploited girls in six major towns in Zambia

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**Background:** Progress toward achievement of the UNAIDS 95-95-95 targets among female sex workers (FSW, aged ≥18-years(y) and sexually exploited girls (SEG, aged 16-17y) in Zambia is understudied.

We assess achievements towards the UNAIDS 95-95-95 targets and population viral load suppression (VLS) among FSW/SEG in six major towns (Chipata, Kitwe, Lusaka, Mazabuka, Mongu, and Solwezi) in Zambia.

**Methods:** We conducted a cross-sectional respondent-driven-sample (RDS) survey from March-May 2023 among FSW/SEG (N=2308) who exchanged sex for money, goods, or services in the preceding six months.

Consenting participants completed an interviewer-administered questionnaire and tested for HIV and HIV viral load. Town-specific RDS-weighted results were aggregated by accounting town-specific FSW/SEG population size. Chi-squared tests of independence between age categories and each 95-95-95 target was performed. Prevalence ratios (PR) were calculated using generalized

Poisson regression with robust errors to evaluate correlates of unsuppressed viral load (≥1000 cells/microliter). VLS was adjusted to reflect self-reported prior HIV diagnosis and treatment status to account for FSW/SEG who did not disclose a prior diagnosis or being on treatment.

**Results:** HIV prevalence among FSW/SEG was 37.0% (95% confidence interval (CI): 33.8, 40.1); prevalence was 11.7% (8.9, 14.4) among 16-24y and 55.1% (51.0, 59.1) among ≥25y. Among FSW/SEG living with HIV, 89.4% (86.4, 92.4) were previously diagnosed [16-24y: 63.0% (49.2, 76.8); ≥25y: 93.2% (90.6, 95.7); p<0.001].

Among those previously diagnosed, 99.6% (99.3, 99.9) were on treatment [16-24y: 100.0% (100.0, 100.0); ≥25y: 99.6% (99.2, 99.9)]. Among those on treatment, 96.9% (94.7, 99.0) had VLS [16-24y: 98.9% (97.8, 99.9); ≥25y: 96.8% (94.4, 99.1)]. VLS was 87.3% (83.8, 90.8) [16-24y: 64.8% (51.3, 78.3); ≥25y: 90.5% (87.0, 93.9)].

Prevalence of unsuppressed viral load was higher among FSW/SEG 16-24y compared to FSW ≥25y [35.2% versus 9.5%; adjusted PR: 1.11 (1.02, 1.21), p<0.0001].

**Conclusions:** FSW/SEG across major Zambian towns surpassed the UNAIDS 2<sup>nd</sup> 95, 3<sup>rd</sup> 95, and population VLS targets. However, disparities remain with less than two-thirds of young FSW/SEG aware of their HIV status and one-third having an unsuppressed viral load. The elevated risk among individuals under 25 years demands targeted approaches including increased HIV testing and engagement in targeted HIV prevention programs appropriate for younger key populations.

## EPC057

### Dried blood spot samples more likely to be classified as recent HIV infections than venous-blood samples: a comparison of sample types in a national sex worker programme in Zimbabwe

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**Background:** Routinely delivered recent HIV infection testing could inform our understanding of trends in new HIV infections and improve programme performance. Balancing test accuracy and ease of implementation are important considerations. We implemented a Recent Infection Testing Algorithm (RITA) in a national female sex worker (FSW) programme in Zimbabwe and compared recent HIV infection classifications between dried blood spot (DBS) and venous-blood (plasma) samples.

**Methods:** Between October 2021-January 2023 all FSW newly testing positive were eligible for enrolment. DBS and plasma samples were collected and tested with the Maxim HIV-1 Limiting Antigen Avidity (LAG Avidity) Enzyme Immunoassay (EIA). Plasma samples were tracked and delivered to the laboratory within 24 hours and DBS samples sealed and delivered to the laboratory within 14 days. Samples with a normalized optical density (ODn)



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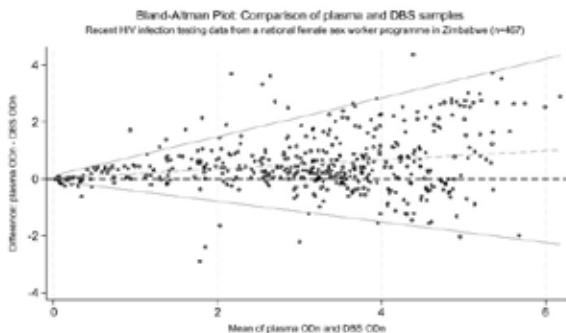
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$\leq 1.5$  and a viral load  $\geq 1000$  copies/ml were classified as recent infections. Bland-Altman regression analysis was used to compare sample classification.

**Results:** 467 FSW consented to paired sample collection. Plasma testing classified 10.3% (48/467) and DBS 12.2% (57/467) as recent infections, with 78% (46/59) agreement. Samples from 13 FSW gave discordant results: 11 samples were classified longstanding with the plasma assay but recent with DBS; 2 samples classified as longstanding with DBS were classified as recent with plasma. Plasma samples generally had a higher ODn, by a mean difference of 0.52 ODn (SD 0.99). Variance across ODn values was inconsistent. Based on the plasma-derived percentage of recent infections, DBS gives a false recency rate of 15.8% (9/57).



**Conclusions:** DBS testing for recent HIV infection as part of a RITA is easier to implement in a programme context than plasma testing, but likely to overestimate recent HIV infections. For surveillance, adjustments could be made for potential overestimation but there may be implications if recent HIV infection testing is to inform a programme response.

## EPC058

Resistance mutations in individuals starting antiretroviral therapy containing dolutegravir and associated factors: retrospective cohort, Brazil 2017-2019

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**Background:** The World Health Organization (WHO) recommends dolutegravir (DTG) as a component of the first-line antiretroviral regimen. Since 2017, Brazil's preferred first-line regimen has been DTG + lamivudine (3TC) and tenofovir (TDF). Considering reports of the emergence of mutations associated with DTG resistance, this study aims

to evaluate the presence of integrase viral resistance mutations in individuals initiating antiretroviral therapy (ART) containing DTG who underwent genotyping and the associated factors.

**Methods:** A retrospective cohort study was conducted, including treatment-naïve individuals initiating ART in Brazil. Participants were identified through a probabilistic linkage of three databases provided by the Ministry of Health to the GEADIC research group: the Drug Logistics Control System (SICLOM), the Laboratory Exams Control System (SISCEL), and the Genotyping Exams Control System (Sisgeno).

Sociodemographic, clinical, and treatment-related characteristics of individuals with genotyping records from January 2017 to December 2019 were analysed. DTG resistances were classified using the HIVdb Program, Stanford HIVdb.

Adherence was measured by the proportion of days covered (PDC)  $>80\%$  through the CMA5 calculation. Factors associated with the presence of DTG resistance were assessed through logistic regression.

**Results:** Of the 430 participants, the majority were male (50.9%), aged 30 to 39 years (31.2%), from the southeastern region of Brazil (34.0%), with 8 to 11 years of education (26.0%), of brown skin color (38.8%), single (37.9%) and non-adherent to ART (62.2%).

At the time of HIV-1 diagnosis, 15.8% had a count  $>100,000$  copies/mL, and 22.1% had a count  $\leq 200$  CD4<sup>+</sup> lymphocytes/ $\mu$ L. At the time of genotyping registration, 10.5% had a count  $>100,000$  copies/mL and 17.7% had a count  $\leq 200$  CD4<sup>+</sup> lymphocytes/ $\mu$ L. There was 7.0% DTG resistance (n=30); the most prevalent mutation is N155H (n=10), followed by R263K and Q148R (n=5), E138K and E92Q (n=4), E138A (n=2), G140S, Q148H, S147G, and G188R (n=1).

The final model with the factors associated with resistance ( $p < 0.05$ ) is sex male, use of raltegravir in a regime following the first-line regime, need to switch ART, resistance to NRTI class, viral load at diagnosis.

**Conclusions:** Although DTG resistance in individuals initiating treatment was rare (7.0%), monitoring DTG resistance should be especially vigilant concerning individual, clinical and treatment-related characteristics.



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## EPC059

### Population estimates of adolescents living with HIV (ALHIV) 15-19 years and proportions undiagnosed in Cameroon, Ethiopia, Kenya, Namibia and Rwanda using the Population HIV Impact Assessment (PHIA) surveys

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**Background:** It is estimated that only half of adolescents living with HIV (ALHIV) 10-19 years know their status and, among those, only 65% are on antiretroviral therapy (ART). We used Population HIV Impact Assessment (PHIA) surveys conducted in Cameroon, Ethiopia, Kenya, Namibia and Rwanda (2017-2019) to estimate country-specific populations of ALHIV and proportions of ALHIV who were undiagnosed by country.

**Methods:** PHIA surveys are nationally representative household surveys measuring HIV outcomes. HIV rapid test data, ARV detection (with dried blood spot) and self-reported data from participants were used to estimate numbers of ALHIV 15-19 years in each country and to estimate the proportion of undiagnosed ALHIV. ALHIV reporting negative or unknown HIV status who did not have detectable ARVs were considered undiagnosed.

Survey weights with jackknife variance were used to generate national estimates of ALHIV and undiagnosed ALHIV (population estimates derived from national statistical projections).

**Results:** Based on the PHIA surveys, conducted between 2017-2019, there were an estimated 95,945 (95% probability band (PB) 75,989-115,902) ALHIV across the five countries; the largest population was in Kenya (41,877; 95% PB 25,985-57,769), Rwanda had the smallest (7,458; 95% PB 4,736-10,180) (Table 1).

Across all five countries, 30,162 (31.4%) ALHIV were estimated to be undiagnosed; 28.7% of ALHIV 15-17 years and 37.9% of ALHIV 18-19 years were undiagnosed. The proportion of ALHIV who were undiagnosed varied by country; Cameroon had the highest proportion (78.2%) of undiagnosed ALHIV while Kenya (16.2%) and Namibia (17.7%) had the lowest.

	Population estimates ALHIV 15-19 years					Population estimates of undiagnosed ALHIV 15-19 years				
	all 15-19 years	15-17 years	18-19 years	all 15-19 years	% of	all 15-19 years	15-17 years	18-19 years	all 15-19 years	% of
Cameroon (2017-2019)	14,176	6,443 (4,600-8,286)	7,733	4,202 (3,124-5,280)	29.7%	10,974	5,241 (3,715-6,959)	5,733	4,007 (2,844-5,170)	28.3%
Ethiopia (2017-2019)	41,877	20,465 (17,180-23,760)	21,412	11,412 (9,785-13,039)	27.3%	11,412	5,706 (4,891-6,527)	5,706	2,706 (2,187-3,225)	23.6%
Kenya (2017-2019)	41,877	20,465 (17,180-23,760)	21,412	11,412 (9,785-13,039)	27.3%	11,412	5,706 (4,891-6,527)	5,706	2,706 (2,187-3,225)	23.6%
Namibia (2017-2019)	7,458	3,729 (2,460-4,998)	3,729	1,864 (1,152-2,576)	25.0%	1,864	932 (588-1,220)	932	466 (284-644)	25.0%
Rwanda (2017-2019)	7,458	3,729 (2,460-4,998)	3,729	1,864 (1,152-2,576)	25.0%	1,864	932 (588-1,220)	932	466 (284-644)	25.0%
All countries	95,945	47,972 (40,816-55,128)	47,973	25,550 (21,657-29,443)	26.6%	25,550	12,775 (10,915-14,635)	12,775	6,388 (5,194-7,582)	25.0%

95% PB = probability band

**Conclusions:** Across five sub-Saharan African countries, more than 30,000 ALHIV 15-19 years of age were undiagnosed and thus not on ART in 2017-2019. These data are evidence of uneven progress in identifying ALHIV by country, and underscore the need to address gaps in diagnosis and treatment for all ALHIV to improve their health outcomes and reduce HIV transmission.

## EPC060

### Mitigating new AIDS cases through poverty elimination by 2030: a Latin American perspective

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**Background:** Amidst the ongoing global polycrisis marked by conflicts and epidemics, compounded by pervasive poverty and social disparities, vulnerable populations bear a disproportionate burden, elevating their susceptibility to HIV transmission and its progression to AIDS. In response, we predict how poverty elimination by 2030 could affect the incidence of new AIDS cases in Latin American (LA) countries.

**Methods:** We developed a mathematical model to analyze HIV transmission and AIDS progression. The population was split into five compartments incorporating the poverty level effect into the model parameters. We forecasted new AIDS cases from 2020 to 2030, leveraging country-specific data spanning 2000 to 2019. This comprehensive analysis factored in population demographics while integrating poverty data across three scenarios: baseline (reflecting a steady-state trend), decreasing, and increasing poverty levels. Our study includes seven of the most populous countries in LA: Argentina, Brazil, Chile, Colombia, Ecuador, Mexico, and Peru.

**Results:** The model showed that in the absence of further interventions and with the assumption of continued poverty reduction reaching zero by 2030, there is a potential decrease in AIDS incidence ranging from 3.75% to 13.86% compared to the baseline scenario. Conversely, under a scenario of gradually increased poverty, our estimates suggest a rise in AIDS incidence between 6.13% to 13.87%.

**Conclusions:** It was possible to show the importance of poverty reduction on the HIV/AIDS dynamics. Eliminating poverty by 2030 holds the potential to initiate a favorable trend, resulting in a decline in new AIDS cases. This, in turn, can play a crucial role in advancing the objectives outlined in the UNAIDS Global Plan, Ending the HIV/AIDS epidemic by 2030. Poverty elimination can positively impact healthcare access, raise awareness, and enhance overall

health conditions, thereby further reducing HIV transmission and improving AIDS care. This study underscores the substantial contribution of poverty alleviation efforts and other social protection policies in the fight against the HIV/AIDS pandemic.

## EPC061

### Pre-Exposure Prophylaxis (PrEP) program performance indicators by race/ethnicity among transgender persons receiving CDC-funded HIV testing in the United States

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**Background:** Although pre-exposure prophylaxis (PrEP) is effective at reducing the risk of HIV acquisition, disparities exist for use. Among transgender persons, PrEP use is particularly low among minoritized racial/ethnic groups. We examined program performance indicators for PrEP use and PrEP-related services by race/ethnicity among transgender persons with negative CDC-funded HIV tests in non-healthcare settings in the United States.

**Methods:** We used 2019-2021 HIV testing data submitted by CDC-funded state and local health departments (n=60) and community-based organizations (n=150) to the National HIV Prevention Program Monitoring & Evaluation system.

We analyzed the following program performance indicators for transgender persons with negative CDC-funded HIV tests: current PrEP use, eligibility for PrEP referral among those not currently using PrEP, referral to a PrEP provider among those eligible, and assistance with linkage to a PrEP provider among those who received a referral.

To compare each indicator by race/ethnicity, we calculated adjusted prevalence ratios (aPRs) with 95% confidence intervals (CIs) and p-values (adjusted for age, U.S. Census region, and year).

**Results:** The prevalence of current PrEP use among transgender persons was 10.6% overall and ranged from 5.7% to 14.8% by race/ethnicity; in adjusted models, current use was higher for Asian (14.8%; aPR: 1.64), Hispanic/Latino (12.2%; aPR: 1.34), and Black/African American (10.6%; aPR: 1.16) persons, and lower for American Indian/Alaska Native (5.7%; aPR: 0.56) persons, compared to White persons (8.6%; all p<0.05). Eligibility was higher for American Indian/Alaska Native (75.1%; aPR: 1.34) and Black (69.0%; aPR: 1.17) persons compared to White persons (61.9%; all p<0.001). Referral was higher for Native Hawaiian/Pacific Islander (59.5%; aPR: 1.36) persons, but lower for American Indian/Alaska Native persons (29.9%; aPR: 0.71), compared to White persons (49.0%; all p<0.05).

Assistance with linkage was higher among Black/African American (73.7%; aPR: 1.07) persons compared to White persons (69.7%; p<0.05).

**Conclusions:** PrEP use was low among transgender persons with negative CDC-funded HIV tests. The prevalence of PrEP-related services varied by racial/ethnic group and program performance indicator, suggesting that PrEP-related services could be expanded broadly to reach transgender persons of all racial/ethnic groups to increase PrEP use and reduce HIV acquisition for all transgender persons at greater risk for HIV infection.

## EPC062

### Model of voluntary medical male circumcision (VMMC) in Papua, Indonesia

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**Background:** Voluntary medical male circumcision (VMMC) as a one-time procedure has been shown to reduce the risk of heterosexually acquired human immunodeficiency virus (HIV) in men by approximately 60%. Most men in Indonesia are circumcised except in Tanah Papua. HIV prevalence in Tanah Papua is ten times higher at 5% than the rest of Indonesia, and nearly all new HIV transmissions in Papua occur through heterosexual encounters.

This study was designed to develop a Papuan model of VMMC and to assess its feasibility, acceptability and safety as a comprehensive, culturally and age-appropriate intervention for HIV prevention among males ages 15-19 years.

**Methods:** Using a community-based participatory approach, the study was conducted from 10/21 – 09/23 in Nabire District, Central Papua Province. A Papuan model of VMMC was developed based on numerous meetings with government officials, health providers, teachers, students, parents, and community leaders, then subsequently introduced in 3 community health facilities. While all males over age 15 years were eligible for VMMC, recruitment focused especially on ages 15-19 years.

**Results:** A total of 104 males were screened at the 3 health facilities. Of these, 2 were underage, 1 lacked parental consent, 2 opted out of participation, 3 were ineligible for circumcision due to steroid injections to enlarge their penis and foreskin, and 2 tested HIV positive and declined circumcision. In total, 94 participants were circumcised of which 52 (55%) were ages 15-19 years. The



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average pain score reported by participants was low: 3.4 (out of 10) immediately after circumcision and 3.3 at 30 minutes post-circumcision. No severe adverse events (AE) occurred. Two participants (2.1%) experienced a moderate AE. Upon follow-up, 98.9% said that all men in Papua should be circumcised; 100% agreed, that, "If I had a son, I would get him circumcised."; and 97.8% of participants reported that if they had it to do again, they would get circumcised.

**Conclusions:** Despite low VMMC uptake, the Papuan model proved feasible and safe with high satisfaction among participants. With additional education and community engagement, adoption should increase and VMMC expanded as an alternative intervention for HIV prevention in Papua.

## EPC063

Factors associated with increased HIV pre-exposure prophylaxis (PrEP) stigma among sexually active, HIV-negative transgender and gender-diverse adults in the United States

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**Background:** PrEP uptake remains low among transgender and gender-diverse (TGD) people in the United States (U.S.) due to a number of barriers including stigma. Among TGD adults in the U.S., we examined factors associated with stigma due to perceived PrEP-user stereotypes.

**Methods:** Data from this study come from a national online survey conducted with sexually active, HIV-negative TGD adults between April 2022 and June 2022 to examine participants' PrEP experiences and preferences. Univariate and multivariable logistic regressions were used to examine associations between high stigma levels due to PrEP-user stereotypes (mean PrEP Stereotype Subscale score >2.2 [range: 1-4] and participants' sociodemographic characteristics; expected disapproval from others for using PrEP (mean PrEP Disapproval Subscale score); and sexual history.

**Results:** Among 304 participants, 272 reported PrEP awareness and were included in the analysis: the median age was 24 years [range 18-56, SD: 5.9]; 150 (55.1%) were transmasculine or trans men; 89 (32.7%) nonbinary or genderqueer; 33 (12.1%) transfeminine or trans women; 165 (60.7%) non-Latinx white, 38 (14.0%) Latinx, 28 (10.3%) non-Latinx Black, and 41 (15.1%) non-Latinx another race. In the multivariable logistic regression model, the odds of high stigma levels due to PrEP-user stereotypes sig-

nificantly decreased as participants' age increased (adjusted odds ratio, aOR: 0.76, p=0.03) and significantly increased as participants' mean PrEP disapproval subscale scores increased (aOR: 3.31, p<0.001). Race and ethnicity, gender identity, and sexual history were not associated with increased PrEP stereotype stigma.

### Outcome: High PrEP-related stigma due to PrEP-user stereotypes (mean PrEP Stereotype Subscale score >2.2)

Characteristic	Unadjusted Odds Ratio [95% CI]	p-value	Adjusted Odds Ratio [95% CI]	p-value
Age (years)	0.80 [0.64, 0.99]	0.04	0.76 [0.59, 0.98]	0.03
Race & Ethnicity (Reference: Non-Latinx White)				
Non-Latinx Black	1.15 [0.51, 2.56]	0.74	1.66 [0.68, 4.06]	0.27
Non-Latinx Another Race	0.85 [0.42, 1.70]	0.64	0.81 [0.38, 1.74]	0.60
Latinx, Any Race	0.61 [0.29, 1.29]	0.20	0.65 [0.29, 1.45]	0.29
Gender identity (Ref: Transfeminine or trans woman)				
Transmasculine or trans man	1.26 [0.57, 2.79]	0.57	0.90 [0.37, 2.19]	0.82
Nonbinary, genderqueer, or another gender identity	1.87 [0.81, 4.31]	0.14	1.54 [0.61, 3.85]	0.36
PrEP-related disapproval stigma score, mean	3.07 [1.86, 5.08]	<0.001	3.31 [1.96, 5.58]	<0.001
Reports sex work (Ref: No sex work)	0.66 [0.36, 1.21]	0.18	0.71 [0.37, 1.38]	0.31
Reports prior STI diagnosis (Ref: No prior STI)	0.80 [0.46, 1.39]	0.43	1.10 [0.58, 2.06]	0.77

Table 1. Multivariable logistic regression analysis of factors associated with high PrEP-related stereotype stigma among a national online sample of HIV-negative transgender and gender-diverse adults in the United States (N=272).

Abbreviations: Ref, reference; 95% CI, 95% confidence interval.

**Conclusions:** Expected disapproval from others for using PrEP and younger age were associated with high levels of PrEP stigma among a diverse sample of HIV-negative TGD adults in the U.S. Tailored interventions should be developed by and in collaboration with young TGD people to disrupt community-level PrEP stigma and ensure interventions are salient to the needs of this diverse priority population.

## EPC064

### Relationship between secondary services referrals and services uptake to facilitate service Layering among adolescent girls and young women 10-24 years: a comparative analysis in four Provinces of Zimbabwe, 2023

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**Background:** Zimbabwe Health Interventions (ZHI) is implementing the Determined, Resilient, Empowered, AIDS-free, Mentored and Safe (DREAMS) program to reduce HIV incidence among adolescent girls and young women (AGYW) in 9 high HIV burden districts of Zimbabwe. Service layering is achieved through the referral of AGYW to clinical and other specialized service providers based on their vulnerabilities.

The program recorded low (60%) sexual and reproductive health (SRH) service referral completion between October 2021 and September 2022.

We assessed the relationship between service referrals and service uptake and availability within communities where DREAMS was implemented.

**Methods:** We conducted a descriptive cross-sectional study where routine program data for the period October 2022 to September 2023 were extracted from the DREAMS database. Relationship analysis was conducted using SPSS version 23 and MS Excel generating proportions and correlations between being referred for a secondary service and receiving the service.

The assessment was covered by the Medical Research Council of Zimbabwe-approved non-research determination protocol (MRCZ/E/254).

**Results:** A total of 23, 348 AGYW were referred for secondary services between October 2022 and September 2023 of which 4% were aged 10-14 years, 57% 15-19 years and 39% 20-24 years. About 93% (22,0930/23,348) received secondary services they were referred for. Uptake of services was 94% for the 10-14 years, 93% for the 15-19 years, and 94% for the 20-24 years.

Availability of services for referred AGYW at referral organizations was 99% across all age groups. There was a strong positive correlation between being referred for services and receiving the services referred for ( $r=0.9998$ ),  $p<0.01$ .

**Conclusions:** Service layering through referrals is an effective strategy for ensuring the provision of comprehensive, need-based HIV prevention services to AGYW. We recommend continued convening of weekly referral technical working group meetings to ensure that AGYW receive and/or take up the services they require.

## EPC065

### HIV Pre-exposure Prophylaxis (PrEP) coverage by geography and population among PEPFAR countries, 2022-2023

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**Background:** Pre-exposure prophylaxis (PrEP) is a valuable intervention in preventing HIV infections and ending HIV as a public health threat. It is important to ensure that PrEP is accessible to populations at highest risk of HIV.

We examined PrEP coverage in countries supported by the President's Emergency Plan for AIDS Relief (PEPFAR) to inform future programming.

**Methods:** To assess PrEP coverage, a PrEP-to-Need ratio (PnR) was calculated as the ratio of the number of individuals newly enrolled on PrEP to the number of new HIV diagnoses by country, key populations (men who have sex with men, female sex workers, transgender persons, persons who inject drugs), and age/sex.

We analyzed two PEPFAR Monitoring, Evaluation, and Reporting indicators, restricting data to the 49 countries that distributed PrEP in the last 12 months. Data may be subject to duplication and reporting errors.

**Results:** From October 1, 2022 to September 30, 2023, 1.9 million individuals were initiated on PrEP and 1.7 million persons were newly diagnosed with HIV. The PnR among countries and populations varied widely, ranging from 0.07-4.38 and 0.17-6.28, respectively (Figures 1 and 2).

PnRs were high for key populations (range: 1.69-4.08). PnRs tended to decrease with age.



Figure 1. PnRs of PEPFAR-Supported Countries.



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**Results:** One hundred and eighty-nine participants, median age 29 years, were recruited and randomized to the DST (n=95) or routine care (n=94). Seventy-six percent identified as Black/African American and 13% identified as Hispanic/Latine.

One percent identified as gender non-binary. Participants reported income <\$10,000 annually (40%), unstable housing (25%), and food insecurity (10%). There were no statistical differences in socio-demographics between intervention and control groups.

At baseline, 25% of participants had ever heard of PrEP, without differences by group. DST exposure increased participants' ability to correctly define PrEP and PEP and identify who may use, how to use, and side effects of PrEP (table).

Correctly identified that:	Total	DST group	Control group	p-value
PrEP is a daily pill to prevent HIV	91 (50%)	54 (59%)	37 (41%)	0.02
PrEP is for all adults	133 (73%)	75 (82%)	58 (64%)	0.01
PrEP will not work if taken once a week	54 (30%)	30 (41%)	16 (18%)	<0.01
PrEP does not prevent STDs other than HIV	83 (46%)	51 (55%)	32 (36%)	<0.01
PrEP side effects do not last forever	74 (41%)	51 (55%)	23 (26%)	<0.01
A baby could be born to HIV discordant parents without transmitting HIV	77 (42%)	46 (50%)	31 (34%)	0.03
There is medication that you can take after sex to prevent HIV (PEP)	72 (40%)	51 (55%)	21 (23%)	<0.001
PrEP efficacy is > 95%	92 (51%)	43 (47%)	49 (54%)	0.29

**Conclusions:** A client-facing HIV prevention DST increased clients' knowledge of PrEP in an urban U.S. public health clinic, serving primarily Black/African American reproductive-age clients facing multiple structural health determinants.

## EPC068

Perinatal outcomes associated with pre-exposure prophylaxis for HIV prevention during pregnancy: a systematic review and meta-analysis

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**Background:** The World Health Organization recommends tenofovir disoproxil fumarate (TDF)-based oral pre-exposure prophylaxis (PrEP), dapivirine vaginal ring, and long-acting intramuscular injectable cabotegravir (CAB-LA) for HIV prevention in populations at substantial risk of HIV infection. Pregnancy is a period of elevated risk of maternal HIV infection and transmission to the infant.

This systematic review and meta-analysis assessed the risk of adverse perinatal outcomes among HIV-negative pregnant women with exposure to any PrEP modality.

**Methods:** We conducted a systematic review by searching Medline, EMBASE, CINAHL, Global Health, the Cochrane Library, WHO ICTR, ISRCTN, PACTR, and ClinicalTrials.gov for studies published between 1 January 2000 and 29 August 2023. We included studies reporting on the association of antenatal exposure to any PrEP modality with 13 perinatal outcomes: preterm birth (PTB), very PTB, spontaneous PTB, spontaneous very PTB, low birthweight (LBW), very LBW, term LBW, preterm LBW, small for gestational age (SGA), very SGA, miscarriage, stillbirth, or neonatal death (NND). Fixed-effects meta-analyses were conducted to calculate odds ratios (ORs) and 95% confidence intervals (95%CI).

**Results:** Of 18,598 citations identified, 13 studies (eight randomised controlled trials and five cohort studies), assessing 8,712 pregnant women in Africa, were included. Oral PrEP, compared to no PrEP, was not associated with PTB in meta-analyses of six RCTs (OR 0.73, 95%CI 0.43-1.26; *I*<sup>2</sup>=0.0%) or five unadjusted cohort studies (OR 0.84, 95%CI 0.69-1.03; *I*<sup>2</sup>=0.0%), but was associated with a reduced risk of PTB in three adjusted cohort studies (aOR 0.67; 95%CI 0.52-0.88, *I*<sup>2</sup>=0.0%).

There was no association of oral PrEP with LBW, vLBW, SGA, or NND, compared to no PrEP. There was no association with PTB when oral TDF/FTC PrEP, oral TDF PrEP, and tenofovir vaginal gel were compared to each other. There was no association of the dapivirine vaginal ring with PTB or NND, compared to placebo or oral TDF/FTC PrEP. We found no data on CAB-LA.

**Conclusions:** We found no evidence of adverse perinatal outcomes associated with PrEP exposure during pregnancy. Our findings support the WHO recommendation to provide oral PrEP to women of reproductive age and pregnant women. More data is needed to assess the safety of all PrEP modalities in pregnancy.

## EPC069

Exploring the effectiveness and sociocultural influences of Voluntary Male Medical Circumcision (VMMC) programs in HIV prevention in Gulu District: a comprehensive analysis

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**Background:** Global HIV prevalence remains a pressing public health concern, impacting approximately 38 million individuals (UNAIDS, 2022). Voluntary male medical circumcision (VMMC) is recognized as a vital intervention, demonstrating a substantial 60% reduction in heterosexual HIV transmission risk (Auvert et al., 2005; WHO, 2007). This study delves into the effectiveness of VMMC in HIV prevention, considering both medical outcomes and sociocultural influences.







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**Methods:** Employing a mixed-methods approach, this study included a diverse sample of 500 participants, comprising VMMC recipients, healthcare providers, and community members. Quantitative analysis, conducted using SPSS, explored medical outcomes, with logistic regression identifying predictors of positive results such as age and regular access to post-circumcision care. Qualitative insights were gathered through interviews and focus groups, providing a nuanced understanding of sociocultural factors influencing VMMC acceptance.

**Results:** Quantitative Outcomes: Participant Characteristics: The study encompassed 500 participants, including VMMC recipients (n=300), healthcare providers (n=100), and community members (n=100). VMMC recipients, with a mean age of 28.5 years (SD = 5.7), represented diverse age groups and socioeconomic backgrounds.

Medical Outcomes: Analysis of medical records revealed a significant ( $p < 0.001$ ) 58% reduction in HIV transmission among VMMC recipients compared to the control group. The prevalence of sexually transmitted infections significantly decreased post-circumcision.

Logistic Regression Analysis: Logistic regression identified significant predictors of positive medical outcomes, including age, socio-economic status, and access to post-circumcision care services. Participants with regular follow-up exhibited a 32% lower likelihood of complications (OR = 0.68, 95% CI [0.52, 0.89],  $p = 0.005$ ).

Qualitative Insights: Sociocultural Factors: In-depth interviews highlighted a range of beliefs among VMMC recipients, with 78% expressing positive narratives emphasizing health benefits. Cultural norms influenced decision-making for 22%, acting as barriers.

Focus Group Discussions: Focus groups emphasized the dual role of cultural norms (63% facilitators, 37% barriers) and the influential role of community leaders in shaping perceptions and promoting acceptance.

**Conclusions:** This study significantly advances our understanding of VMMC's impact on HIV prevention. The effectiveness of VMMC, both medically and socioculturally, underscores the need for tailored interventions. Integrating these insights into future initiatives is imperative for maximizing VMMC's contribution to the global fight against HIV/AIDS.

## EPC070

### Willingness to take and ever use of pre-exposure prophylaxis among men who have sex with men in Ghana

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**Background:** HIV prevalence among men who have sex with men (MSM) is 18.1% as compared to 1.6% in the general population. Pre-exposure prophylaxis (PrEP) is a drug taken by people who are HIV negative and at high risk of acquiring HIV. Since implementation in Ghana, little is known about the national prevalence of PrEP among MSM.

The objective of this study is to assess the willingness and ever use of PrEP among MSM in Ghana and its contributing factors.

**Methods:** We conducted a bio-behavioral survey among MSM aged 18 years and above in Ghana from August 2022 to July 2023 using respondent-driven sampling (RDS). RDS Analyst was used to compute weight based on participants network and Stata version 18 was used for data analysis. Analysis was done on MSM who tested negative to HIV and were sexually active. "Have you ever taken PrEP" and, "Would you take PrEP to prevent HIV" was used to assess uptake and willingness.

We estimated the prevalence of willingness and ever taken and weighted multivariable logistic regression was used to assess associated factors.

**Results:** Out of 2,627 MSM with complete data on ever taken PrEP, 17.8% reported to have ever taken PrEP. Out of 1,094 MSM with complete data on willingness to take PrEP, 90.3% reported their willingness to take PrEP. The median age of the respondent was 24 (IQR=21-27). MSM who had completed Tertiary had 3 times higher odds of ever taking PrEP (aOR: 3.14, 95% CI: 1.26-7.81), 25% higher among those who have come in contact with a peer educator (aOR: 3.08, CI: 1.52-6.2) and 90% lower likelihood among those who have never tested for HIV (aOR: 0.10, 95% CI: 0.06-0.16). MSM aged 25-34 were less likely to use PrEP, (aOR: 0.18, 95% CI: 0.05-0.57) as well as those who were married (aOR: 0.15, 95% CI: 0.05-0.41) and high alcohol intake (aOR: 0.40, 95% CI: 0.16-0.98).

**Conclusions:** In Ghana, willingness to use PrEP to prevent HIV is high but uptake is low. Our results highlight the need for interventions to improve the overall uptake of PrEP among MSM in Ghana.



## EPC071

### Disparities in PrEP use and unmet need across PEPFAR-supported programs in Africa: doubling down on prevention to put people first and end HIV as a public health threat by 2030

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**Background:** In 2022, there were 1.3 million people with newly acquired HIV, over half of whom were in Africa. In the same year, only 2.5 million individuals received pre-exposure prophylaxis (PrEP), falling short of the UNAIDS target of 10 million by 2025. With nearly 80% of global PrEP programming supported by PEPFAR, a better understanding of PrEP coverage and unmet need is needed to inform PEPFAR's approach to reach and deliver prevention services and achieve UNAIDS 95-95-95 goals in all populations by 2025.

**Methods:** We analyzed FY2023 Monitoring, Evaluation, and Reporting (MER) results from 25 PEPFAR countries in Africa to calculate PrEP-to-need ratios (PnR) by country, age, sex, and key population subgroups. PnR was calculated as the ratio of PrEP users to the number of new HIV diagnoses  $[(PrEP\_NEW + PrEP\_CT) / HTS\_TST\_POS]$ , averaged across each quarter. A higher PnR indicates more PrEP users relative to PrEP need in a population. PnR may be a useful proxy measure for PrEP coverage in settings where PrEP uptake and HIV incidence cannot be directly measured.

**Results:** In FY23, 1,342,379 people initiated PrEP, and a total of 1,275,334 people tested HIV-positive across the 25 PEPFAR countries. Overall country-level PnR ranged from 0.23 to 8.90. 10 (40%) countries had more HIV-positive tests than PrEP users (PnR <1). People 15-24 years old, female sex workers (FSW), and men who have sex with men (MSM) had the highest PnR. Conversely, individuals >35 years had the lowest PnR. Key population data showed lower PnR among transgender persons, people who inject drugs, and prison populations.

**Conclusions:** PrEP use relative to population need varied greatly by country and subpopulation across PEPFAR programs, suggesting a need for greater advocacy, inclusivity, accessibility and integrated prevention programming. PnR can be a useful indicator of population PrEP coverage and unmet need, and can inform effective, data-driven and person-centered prevention programs and policies.

Tailoring PrEP scale-up strategies by age, sex, key population and geography is crucial to achieving UNAIDS targets and ending the HIV/AIDS epidemic as a public health threat for all by 2030.

## EPC072

### Written on the skin: participants' perspectives on scarring, discolouration and implant site reactions experienced during a Phase I clinical trial for a subdermal HIV prevention implant in South Africa

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**Background:** To address the high proportion of new HIV acquisitions amongst adolescent girls and young women in South Africa, research into innovative HIV prevention technologies such as the tenofovir alafenamide (TAF) implant has been undertaken.

This study sought to understand the experiences of trial participants after exiting a Phase 1 clinical trial for a sub-dermal TAF implant, to highlight considerations for future innovations.

**Methods:** Qualitative research conducted in Durban, South Africa in 2023 included interviews with 29 study participants (all Black, African, females, with median age 26 (21.5-29.5) years), 18 of whom also participated in focus group discussions. Interviews and discussions were recorded and transcribed, and data was coded with the use of NVivo software for thematic analysis.

**Results:** Participants appreciated the implant's lack of visibility after insertion, maintaining a sense of privacy and avoiding the need to explain it to others. Bandages and implant site reactions (ISRs) did, however, draw unwanted attention to the implant site, causing a level of social discomfort.

In some instances, ISRs and the implant removal process left longer-lasting and more severe skin changes. Participants' perceptions of these were influenced by concerns about their appearance, social stigma, and associations between scars and surviving violence. Mild skin changes were deemed acceptable by 95% of women, while severe scarring and discolouration caused concerns about attracting negative attention and had lower acceptability (22%). Few women expressed concerns about their own scars, considering these minor and comparable to a regular bump or scratch. However, visible scars which might be mistaken for a contraceptive implant and lead to unwanted questions or judgements, caused concern.



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Despite these concerns, 61% of participants preferred the implant as an HIV prevention method over injectable HIV PrEP, due to its long-acting nature, reducing clinic visits and ensuring adherence.

**Conclusions:** Despite concerns regarding changes to the skin, the positive reaction from participants for this type of technology suggests that there would likely be high uptake of a sub-dermal implant should it be effective in preventing HIV.

Continued research with an improved formulation should consider how best to minimise the severity of ISRs and visible skin changes.

## EPC073

### Actions To Equitably Expand PrEP in a Municipal Healthcare System

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**Background:** NYC Health and Hospitals (H+H) is the largest municipal healthcare system in the United States and provides comprehensive primary and specialty care to all New Yorker's regardless of ability to pay or immigration status. As such, H+H is the healthcare provider for many of New York's most marginalized populations.

We sought to expand PrEP services across the H+H system to meet community needs and reduce inequity in access to high quality PrEP services.

**Description:** Data tools and technical assistance/trainings to support clinical teams were developed and implemented in 2022 to improve identification of individuals most likely to benefit from PrEP and assist clinicians in providing PrEP. These include electronic medical record (EMR) order sets; a metric to identify individual PrEP eligibility based on recent STI diagnoses, and STI and HIV testing patterns; and a series of technical assistance/training supports to improve utilization of tools and build clinical skills and understanding of PrEP.

We assessed the impact of our efforts by comparing PrEP reach, defined as the proportion of individuals identified as PrEP eligible who are actively on PrEP, during the pre-intervention period (4/1/22-9/1/22) compared to the post intervention period after tools and resources were distributed (4/1/23-9/1/23).

**Lessons learned:** Implementation of tools and technical assistance/training led to an overall increase in PrEP reach (Table 1) and across most races. Cisgender women had a significant increase in PrEP reach, indicating the potential for PrEP expansion efforts within Women's Health clinics. People with straight or bisexual sexual orientation had a significant increase in PrEP reach as well, however a limitation of these data is the high frequency of missing data for gender identity and sexual orientation.

	PrEP reach* Pre- intervention	PrEP reach* Post- intervention	P value
Overall	5%	8.2%	<.0001
Race/Ethnicity			
Asian/Native Hawaiian/Pacific Islander	10.8%	21.4%	<.0001
Black/AA	3.2%	5.2%	<.0001
Hispanic	4.8%	7.6%	<.0001
Native American/Alaskan	0.0%	7.4%	.05
White	22.6%	34.4%	<.0001
Two or more races	13.8%	15.2%	.837
Gender Identity			
Cis female	1.3%	2.0%	.0007
Cis male	54.2%	53.9%	.904
Trans female	36.4%	61.9%	.098
Trans male	40%	11.1%	.224
Something else	41.2%	45.5%	.725
Sexual Orientation			
Lesbian/Gay/Queer	69%	75.8%	.067
Bisexual	16.3%	26.9%	.003
Straight	2.3%	3.4%	.0002
Something else	9.4%	14.4%	.285
Choose not to disclose	13.2%	16.8%	.334

\*PrEP reach is calculated as PrEP active/PrEP eligible.

Table 1: Change in PrEP Reach After Support Tool Implementation.

**Conclusions/Next steps:** EMR-imbedded data tools and technical assistance/training, can result in large scale increases in PrEP services across diverse populations. Future work is needed to understand ongoing disparities in PrEP reach as well as facilitators and barriers to PrEP retention.

## EPC074

### TelePrEP experience in Brazil: a municipal public-health service for HIV Pre-Exposure Prophylaxis (PrEP) using telemedicine in the city of Florianópolis, Santa Catarina

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**Background:** Florianopolis, the capital of the state and Santa Catarina, an island with a population of 537.213 people recorded 9.7 deaths related with AIDS for every 100,000 inhabitants last year – a number higher than the national rate and an AIDS detection rate of 49.1 per 100 thousand inhabitants, in need of new strategies to prevent and combat HIV.

**Description:** The TelePrEP program works with 3 prescriber physicians who make medical appointments through a messaging app and in some cases video calls with the clients, they answer a series of questions for assessing risk for HIV, such as histories of sexual behaviour and drug use mainly with the use of a structured form and complementary messages shared for any doubts elicited.

After this, the client can pass to a scheduled appointment for rapid HIV test, STI tests and other PrEP-related testing with the nurse team or an even more convenient option recently implemented, called HOME PrEP, where it is possible to make a self-HIV Test (supplied in all public health clinics in the city, delivered together with the PrEP for the



next appointment and also possible to request home delivery by mail) and share a picture or video of the result via app, the doctors then prescribe the PrEP and its only necessary to visit for specimen collection for the tests and to withdraw the PrEP, during the opening hours of dispensing pharmacies without the need for an appointment.

**Lessons learned:** Offering PrEP through telemedicine, TelePrEP, is an incipient and evolving care option with the potential to improve access, convenience, and adherence for some PrEP users. It also poses numerous challenges, such as obtaining specimens for routine HIV, STI, and other PrEP-related testing, few dispensing pharmacies and specimen collection places, some PrEP users do not have smartphones, or lack reliable internet connections.

**Conclusions/Next steps:** TelePrEP may increase PrEP access for people who live far away from main clinics that offer PrEP or who otherwise face transportation or schedule difficulties that make in-person appointments impossible or inconvenient.

It Could also help to overcome stigma and fears about confidentiality that hat keep some people from seeking PrEP care face-to-face.

## EPC075

### Multiple choices for HIV testing can lead to high uptake of PrEP: an example from a key population-led clinic in Viet Nam

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**Background:** The government of Vietnam aims to achieve the goal of ending AIDS by 2030. Scale-up HIV testing and linking to prevention and treatment services is the way to reach this goal.

We supported a key population-led clinic in Nghe An province to provide multiple choices for HIV testing and linking clients to PrEP and ART services.

**Methods:** In 2023, a clinic led by MSM in Nghe An was supported to provide various testing approaches including web-based HIV self-test (HIVST) together with condoms, lubricants, and needle syringes on demand.

In addition, social network-based testing for HIV and syphilis was implemented with a focus on high risk MSM was carried out. Clients with an HIV-positive result or clients with an HIV-negative result reporting ongoing risks were provided HIVST to give to their partners.

Basic data on demographic from national testing consent form and outcomes of service linkage was collected.

**Results:** From Jan to Dec 2023, 6532 clients accessed HIV testing from either virtual platform, social network-based testing or secondary HIVST distribution. Of 6380 HIV-negative clients, 1055 (16.5%) initiated PrEP. Of 154/6380 (2.4%) clients had HIV reactive, 152 (98.7) confirmed HIV positive and 151/152 (99.3%) initiated ART (Table 1). In addition, social network-based testing also provided syphilis testing services for 552 clients. Of 85 (15.4%) clients who had syphilis positive, 73 confirmed active syphilis (RPR positive) and all received syphilis treatment (Table 2). Through the website, 1920 condoms, 1560 sachets of lubricants and 127 needles and syringes were distributed to clients with or without HIVST based on their requests.

HIV testing approach	Testing uptake	HIV negative n (%)	PrEP uptake among HIV negative clients n (%)	HIV reactive n (%)	HIV positive among reactive clients n (%)	ART uptake n (%)
Web-based HIVST distribution	5570	5477 (98.3)	735 (13.4)	95 (1.7)	93 (97.9)	93 (100)
Social network-based HIV testing	688	659 (95.8)	243 (36.9)	29 (4.2)	29 (100)	29 (100)
Chemsex	290	274 (94.5)	115 (42.0)	16 (5.5)	16 (100)	16 (100)
Camping	217	209 (96.3)	74 (5.4)	8 (3.7)	8 (100)	8 (100)
Sugar daddy-sugar baby	181	176 (97.2)	54 (30.7)	5 (2.8)	5 (100)	5 (100)
Secondary HIVST distribution to sexual partners	274	244 (89.1)	77 (31.6)	30 (10.9)	30 (100)	29 (96.7)
TOTAL	6532	6380 (97.7)	1055 (16.5)	154 (2.4)	152 (98.7)	151 (99.3)

Table 1. Results of multiple HIV testing approaches and linkage to PrEP and ART

**Conclusions:** Key populations benefit from having access to multiple testing approaches which increase access to HIV prevention and treatment, as well as integrated services. This model can be replicated by sharing experiences with other community-based and key population-led testing for further scale-up.



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## EPC076

### Association between frailty and low sexual function among older adults living with HIV in China: a multi-centre cross-sectional study in China

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**Background:** The expanding aging population increases the importance of understanding frailty and related impacts on health. Our objectives were to examine the sexual function and its association between frailty and sexual function among older adults aged 50+ living with HIV (OALHIV).

**Methods:** A multi-centre cross-sectional study (the sexual well-being [SWELL]) was conducted between September 2021 and July 2022. We enrolled OALHIV from specialized infectious disease hospitals providing HIV care in four cities in China. Data were collected through an investigator-administered questionnaire about demographic characteristics, health characteristics (general health and specific health), frailty status (assessed using the 5-item FRAIL scale), and sexual function status (measured by a validated scale [the Natsal-SF]).

Logistic regression was used to assess correlates of lower sexual function (defined as the highest quintile of distribution of Natsal-SF scores).

**Results:** Overall, 239 sexually active OALHIV (40 women and 199 men, mean age: 57.6±7.2 years) were included in the present analyses. The majority were living in urban areas (66.1%), employed (62.8%), satisfied with their life (70.3%) and having sexual needs (89.5%). 53 (22.2%) participants had frailty.

About two-fifths (37.7%) reported at least one sexual difficulty lasting 3 months or more in the past year (frail group: 50.9% vs. non-frail group: 33.9%,  $P=0.036$ ). Lack of interest in having sex was the most commonly reported sexual response problem (27.2%).

Approximately three-quarters (70.3%) expressed dissatisfaction with their sex life. 49 participants were categorised as having low sexual function.

Participants dissatisfied with their life ( $aOR$  2.33, 95% CI 1.03-5.24) were more likely to have low sexual function. Frailty (3.03, 1.22-7.53) was associated with low sexual function.

**Conclusions:** Frailty was associated with poor sexual function among sexually active OALHIV. OALHIV with frailty should be screened for sexual function problems. More efforts should be made to integrate sexual health services into geriatric services, ensuring comprehensive care that addresses their specific sexual concerns.

## EPC077

### Campus Guardians: gender desk initiative to address HIV and GBV at the University of Nairobi

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**Background:** In Kenya, young individuals in Higher and Tertiary Education Institutions (HTEI) face a multitude of challenges, ranging from Gender-Based Violence (GBV), HIV transmission, and unplanned pregnancies, mental health issues and substance abuse (UNESCO 2022).

Regrettably, the existing infrastructure lacks sufficient safe spaces where these young people can access confidential support free from judgment.

**Description:** To address incidences of GBV and HIV at HTEIs, UNESCO with the University of Nairobi (UoN) established a gender desk in December 2022. The gender desk is a central place in the campus where students can receive information on HIV and GBV, report GBV cases, access health services, be linked to legal, sheltering and campus services in a confidential manner. Health workers and non-academic personnel were trained to foster a safer and more inclusive environment.

**Lessons learned:** By the end of 2023, the gender desk at UoN has been instrumental to achieve the following:

- Empowered 14,700 students with knowledge about GBV, including crucial aspects like sexual harassment and HIV vulnerability.
- Connected over 84 GBV survivors with health services, ensuring they have the resources they need to stay healthy. Facilitated HIV testing for 1,634 students, promoting early detection and treatment.
- Forged powerful partnerships among University, UN agencies, CSOs, and key government departments. This collaborative effort significantly strengthened support systems for those affected by GBV and HIV, ensuring they have access to the help they need.

The gender desk has become a vital resource for students, offering a safe and confidential space to access support services and report incidents GBV. The UoN's unwavering commitment, demonstrated by its allocation of dedicated personnel and resources, has solidified the desk's institutionalization and ensured its long-term sustainability.

**Conclusions/Next steps:** The model underscores the imperative of a one-stop resource hub, empowering young people to access comprehensive array of services within a secure environment. The next phase involves scaling the



model to five campuses to benefit over 20,000 students. This strategic expansion aims to enhance its transformative impact, fostering a safe and supportive academic environment for all young people.

## EPC078

### How many men who have sex with men (MSM) are there in Bhutan?

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**Background:** Globally, men who have sex with men (MSM) bear a burden of HIV that is nearly 20 times that of the general population. In some parts of the world, including Asia, HIV prevalence among MSM is rising. Despite this, few countries have rigorous estimates of the number of MSM. Size estimation of MSM populations is an important tool for effectively allocating resources and monitoring HIV prevention, care, support, and treatment programs.

**Methods:** In our January-June 2020 Bhutan study, we estimated the MSM population using a hybrid venue- and peer-referral-based survey in 9 districts. Employing service multiplier data from the MSM community-based organization (CBO), unique object multiplier, and wisdom-of-the-crowd methods, Bayesian analysis synthesized the final estimate. For national extrapolation, we used linear regression, with licensed alcohol outlet density as the proxy indicator, showing the highest correlation to MSM population size (highest R<sup>2</sup>). This choice aligns with urban areas and entertainment hubs hosting more alcohol outlets, enhancing accuracy in predicting the MSM population size across all 20 districts.

**Results:** A total of 273 MSM aged 18 and older were included. The survey proportion for CBO membership and the CBO member count as the service multiplier was estimated at 1,769 (95% CI 669-2,86) MSM. The survey proportion receiving the unique object and number disrupted as the count estimated 1,283 (95% CI 852-1,714) MSM. The median wisdom-of-the-crowd response was 1,313 (IQR 552-2,074). Bayesian synthesis arrived at 1,463 MSM (credible interval 1,006-2,030) in the 9 study districts. Extrapolation yielded a national estimate of 1,726 MSM.

**Conclusions:** Our estimate of 1,726 MSM in Bhutan represents 1.58% of urban men aged 15 and older, aligning with regional trends. This figure is pivotal, serving as a benchmark for HIV prevention initiatives. It guides efforts to achieve a 90% testing rate and peer education

for MSM, vital steps towards ending the AIDS epidemic by 2030. However, limitations exist, as the study primarily focuses on urban areas, potentially overlooking isolated rural members.

Challenges arose due to the absence of district-level MSM estimates, urging consideration of alternative methods for a more comprehensive distribution in future studies, such as Bayesian synthesis or anchored multiplier methods.

## EPC079

### Factors associated with high uptake of sexual reproductive health rights services among adolescent girls and young women to reduce vulnerability to HIV: lessons from DREAMS program in Zimbabwe, 2023

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**Background:** Eastern and southern Africa accounts for two-thirds of new HIV acquisitions among 25-24-year-old adolescent girls and young women (AGYW). Among the key drivers of vulnerability to HIV are gender-based violence, low levels of education, and low uptake of sexual reproductive health and rights (SRHR). Zimbabwe among other African countries is implementing the Determined, Resilient, Empowered, AIDS-free, Mentored and Safe (DREAMS) program to reduce HIV incidence among AGYW. The program refers and promote uptake of SRHR services among AGYW. Between October 2022 and September 2023, 91% (21,129/ 23,277) vulnerable AGYW referred for SRHR services accessed the services.

We assessed factors associated with high uptake of SRHR services among AGYW referred through the DREAMS program.

**Methods:** We conducted a cross sectional study among AGYW aged 9-19 years enrolled in the DREAMS program from the 1<sup>st</sup> of October 2022 to the 30<sup>th</sup> of September 2023. Data were collected from randomly selected AGYW using structured questionnaires within Kobo Collect; study was conducted across all 9 Zimbabwe Health Interventions (ZHI)-supported high HIV burdened districts. Data were analysed using STATA generating descriptive statis-



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tics and measures of association. Study received ethics approval from Medical Research Council of Zimbabwe (MRCZ/A/2933).

**Results:** A total of 2,143 AGYW were interviewed of which 32.1% were aged 15-19 years, 3.8% were married, and 74% were in-school. Nearly 92% (596/648) AGYW who were referred for SRHR accessed the services, with 93% (454/488) of AGYW in-school and all the married (22) AGYW having accessed SRHR services. AGYW who were out of school were less likely to access SRHR services than those in-school [COR= 0.589; 95% CI (0.40; 0.87)]. Also, AGYW who were single/widowed were less likely to access SRHR services than those who were married [COR= 0.53; 95% CI (0.30; 0.93)].

**Conclusions:** SRHR service uptake was high among eligible AGYW, however those out of school and either single (never married) or widowed were less likely to receive SRHR services they were referred for. We recommend targeted interventions for out-of-school and single/widowed AGYW to match their counterparts.

## EPC080

**Patterns of chemsex substance use and its association with sexual risk behaviors among men who have sex with men in Thailand: a latent class analysis**

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**Background:** Sexualized substance use or chemsex may contribute to the HIV epidemic among MSM in Thailand. Specific patterns of chemsex usage may be associated with differing HIV/STI transmission risks.

**Methods:** We examined typologies and correlates of sexualized substance use among a sample of high-risk MSM (n=532) who have attended a private sex party or circuit party in the past 3 years using latent class analysis.

**Results:** We identified a 3-class model as best fitting model, which included:

1. "Non-chemsex users", who had never engaged in chemsex in the past 6 months,
2. "Variety chemsex users", who had high level of sexualized alcohol use and a wide range of other substances before or during sex in the past 6 months,
3. "Ice chemsex users", who predominately use crystal methamphetamine, amyl nitrite and erectile dysfunctional drugs before or during sex in the past 6 months. Compared to "non-chemsex users", "ice chemsex users" were more likely to be HIV positive, more likely to have 6 or more sexual partners in the past 6 months, less likely to have consistent condom use at last anal intercourse and more likely to have provided sex work. Relative to "non-chemsex users", "variety chemsex users" were more likely to not know their HIV status and reported more frequent online sex seeking behaviors.

**Conclusions:** These subgroups of Thai MSM have distinct substance use patterns and HIV-related risk profiles, which provides implication for tailored HIV prevention in this subpopulation.

## EPC081

**Female sex workers and sexually exploited minors' population size estimation using privatized network sampling, Rwanda, 2023**

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**Background:** Female sex workers (FSW) are at increased risk of HIV and other STI. In addition, the burden of HIV infection among this group is much higher when compared to adult females in the general population. Estimating the number of FSW helps HIV/STI prevention through program design, planning, and implementation in Rwanda.

**Methods:** Data were collected from May 8<sup>th</sup> to June 24<sup>th</sup>, 2023, across 10 study sites countywide. Privatized network sampling (PNS) was used, which is a population size estimation method that uses the network information collected within a bio-behavioral survey (BBS) that used respondent-driven sampling (RDS). To estimate the FSW and sexually exploited minors' population size, three PNS estimators were used: Cross-Sample, Cross-Alter, and Cross-Network.

**Results:** The national-level FSW population size was estimated at 98,587 (95% CI: 82,978 – 114,196), corresponding to 2.3% of the total adult female population aged 15 years and above in Rwanda. We estimated that in the City of Kigali, 5.3%, in the West Province, 2.2%, in the East and South province, 1.7% each, and in the North province 1.6% were FSW as % of adult female population 15 years of age and older who were living in Kigali and these Provinces. We estimated that in the City of Kigali, 5.3%, in the West Province, 2.2%, in the East and South province, 1.7% each, and in the North province 1.6% were FSW as % of adult female population 15 years of age and older who were living in Kigali and these Provinces.

**Conclusions:** This was the first time that PNS was implemented as a PSE method in Rwanda, adding to the emerging tools that we have in the hard-to-reach PSE field. The PSE provides fundamental information to design, plan, and implement programs for FSW at the provincial level in Rwanda. Furthermore, these estimates will help to generate positive policy changes and to advocate for resources that will help in the effort to achieve a sustained HIV epidemic control in the country.

## EPC082

### Prioritizing high-risk sub-Saharan African adolescent girls and young women for prevention interventions using a Bayesian spatial model

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**Background:** Adolescent girls and young women (AGYW) remain at high risk of acquiring HIV compared to male counterparts in sub-Saharan Africa (SSA). The President's Emergency Plan for AIDS Relief (PEPFAR) funds programs focused on reducing HIV acquisition among AGYW in SSA. However, the challenge of identifying AGYW most vulnerable to HIV acquisition remains. Our objective was to develop a model that predicts the probability of acquiring HIV based on individual-level characteristics, demographic factors, and the severity of the local epidemic as measured by population viral load.

**Methods:** We developed a novel multi-level Bayesian joint mixed-effects spatial model for HIV prevalence among AGYW and district-level population HIV viral load (PVL) in 13 SSA countries using data from Population HIV Impact Assessment surveys. Probabilities of HIV acquisition among individual AGYW were estimated from individual behavioral and demographic factors, area-level PVL, country-level random effects, and spatially correlated area-level random effects. A

rea-level PVL was jointly estimated with error from observations of individual viral load. Associations were presented as adjusted odds ratios (aORs) and Bayesian Pr(0.95) credible intervals (CIs).

**Results:** District-level PVL estimates ranged from 0.00–0.55 log<sub>10</sub>(copies/ml + 1). District-level PVL was, by far, the most important predictor of HIV positivity (aOR=72.3, CI: 44.6–125.1 per 0.5 unit change), followed by HIV-positive partner status (aOR=18.7, CI:14.7–23.8). Older age (20–24 versus 15–19) incurred higher risks if there was no employment during the past year regardless of whether sexual debut was delayed past age 16 (aOR=2.7, CI:2.10–3.4) or whether debut occurred at age 16 or younger (aOR=3.8, CI: 2.9–4.9). Other important risk factors included history of pregnancy with no current partner, transactional sex, and educational attainment. The cross-validated receiver-operating characteristic curve for classification of elevated risk had an area of 0.82 (CI: 0.81–0.83) across all countries, enabling predictive classification with sensitivity ~70–90% and corresponding specificity range of ~78–50%.

**Conclusions:** The model enables prioritization of AGYW for enrollment in HIV prevention services based on predicted HIV acquisition risk, with useful levels of sensitivity and specificity across a broad geographic range in SSA.

## EPC083

### Elimination of Mother to Child Transmission of HIV, syphilis and hepatitis B: progress in the Middle East and North Africa/Eastern Mediterranean region

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**Background:** In the Middle East and North Africa (MENA)/ Eastern Mediterranean (EM) region, the coverage of prevention of mother-to-child transmission (PMTCT) interventions is low. Only Oman has been validated for the elimination of MTCT of HIV and syphilis (2022).

We conducted a regional assessment of progress towards achieving elimination targets and key challenges to inform policy decisions and accelerate progress.

**Methods:** The assessment (January – November 2023) included a desk review of national policies and strategies, key informant interviews and review of process and impact indicators reported in GAM.

We reported pooled summary statistics for the region and compared with WHO criteria for validation of elimination of mother to child transmission of HIV, syphilis and hepatitis B virus.

**Results:** Despite low national HIV prevalence, the access of pregnant women (PW) to PMTCT services is still challenging. Except for Oman, the vertical transmission rate of HIV in the region is high and estimated at 32%. Data from 23 countries showed that efforts towards triple EMTCT of HIV, syphilis and hepatitis B remains slow except for few countries. Lack of political commitment coupled with low community engagement partly explain the delay in progress. Table 1 summarizes the key data on process and impact indicators.

	Target achieved	Close to achieving targets	Far from achieving targets	No reported data
Targets for indicators	≥95%	80%-94.9%	<80%	
ANC-1 coverage	11 (47.8%)*	6 (26.1%)	6 (26.1%)	0 (0.0%)
HIV testing among PW	1 (4.3%)	0 (0.0%)	10 (43.5%)	12 (52.2%)
ART among PW	2 (8.7%)	0 (0.0%)	12 (52.2%)	9 (39.1%)
Syphilis testing among PW	2 (8.7%)	0 (0.0%)	11 (47.8%)	10 (43.5%)
Adequate treatment of syphilis seropositive PW	5 (21.7%)	2 (8.6%)	1 (4.3%)	15 (65.2%)
Targets for indicators	≥90%	80%-89.9%	<80%	
HepB testing among PW	3/3 (13.1%)	0 (0.0%)	0 (0.0%)	20 (86.9%)
HepB-BD vaccine coverage	10 (43.5%)	1 (4.3%)	4 (17.4%)	8 (34.8%)

Table 1: Number of countries meeting targets for process and impact indicators (WHO criteria for EMTCT of HIV, Syphilis and Hepatitis).

\* The numbers in brackets represent the percentages of countries achieving the corresponding targets.



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**Conclusions:** The regional progress is off-track from achieving EMTCT of HIV, syphilis, and Hepatitis B with only 5 countries that have achieved or close to achieving all targets. Low service coverage, weak surveillance systems, lack of community and private sector engagement pose consistent challenges in achieving and validating progress. Concerted efforts and strong political commitment are urgently needed to accelerate progress towards triple elimination in the region.

## EPC084

### HIV prevalence and barriers to testing among 0-14 year old children in Nigeria: a population-based survey

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**Background:** Early initiation of antiretroviral therapy in infants and children living with HIV is life-saving and mitigates long-term adverse outcomes. Thus, it is important to continuously evaluate the prevalence of HIV and barriers to timely testing in this population.

**Methods:** This study utilized population-based cross-sectional data from the 2018 Nigeria National HIV/AIDS Indicator and Impact Survey, which was conducted across all 6 geopolitical regions. Weighted frequency and percentages were employed to describe HIV prevalence and barriers to testing among 0-14-year-olds. Bivariate and multivariable analysis was performed with statistical significance set at 5%.

**Results:** Overall HIV prevalence among children was 0.1%. Disaggregation showed that prevalence among children under 5, 5-10 and 10-14 years was 0.1%, 0.2% and 0.2% respectively. Pediatric HIV prevalence was highest in the South-South and North-Central regions (0.2% respectively). A total of 139,138 (96.4% of children surveyed) had never been HIV-tested for HIV prior to the survey.

The most reported barrier to HIV testing among never-tested children was "mother's belief that they were at low risk/test was unnecessary" (43.6%). Other reasons included "distance to health facility" (5.5%), "high test costs" (4.9%), high transportation costs (3.9%), and religious objection (1.8%). Among previously never-tested children found to be HIV-positive, the most reported barrier to testing was "low risk/the feeling that the test was unnecessary" (39.1%), and "unsure of test location" (20.2%). We

also found that 1.5% of surveyed women were HIV-positive, and 6.4% of HIV-positive mothers had HIV-positive children; the odds of having an HIV-positive child was higher among HIV-positive mothers as opposed to HIV-negative mothers (=843.28;  $p < 0.001$ ).

**Conclusions:** HIV prevalence among Nigeria children is relatively low, however, this and the vertical transmission rate needs to approach zero to achieve the WHO target of an AIDS-free generation. Given that the vast majority (~97%) of children had never been tested, there are potential missed opportunities for early detection and treatment of HIV. Addressing the testing barriers and misconceptions through community health education, awareness campaigns and affordable/free/more accessible tests could increase uptake of HIV testing and overcome these barriers.

## EPC085

### CDC-funded HIV testing services outcomes among women of reproductive age in the United States, 2019-2022

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**Background:** Women comprised 18% of new HIV diagnoses in 2021 in the United States, with the greatest proportion among women of reproductive age (WRA). We examined newly diagnosed HIV positivity and linkage to HIV medical care among WRA receiving CDC-funded HIV testing services in the United States.

**Methods:** 2019-2022 HIV test-level data from the National HIV Prevention Program Monitoring & Evaluation system among WRA (aged 15-44 years) were analyzed. Pregnancy status was available for WRA with positive HIV test results. Bivariable associations between sociodemographic characteristics and pregnancy status were analyzed using Chi-Square. Multivariable robust Poisson models were used to assess the associations between sociodemographic characteristics with newly diagnosed HIV positivity. Linkage to HIV medical care within 30 days was analyzed among WRA with newly diagnosed HIV using the same approach, including pregnancy status as an independent variable.

**Results:** Of the 2,216,978 CDC-funded HIV tests conducted among WRA, 2,393 (0.11%) were positive for new HIV infection. HIV positivity was highest within each respective characteristic among WRA who were aged 40-44 years (0.18%; all other age groups with adjusted prevalence ratios [aPRs] < 1,  $p < 0.05$ ); Black/African American (0.15%; aPR=1.66) versus White (0.09%); resided in the US Dependent Areas (0.24%; aPR=3.04) versus South (0.11%); tested in non-healthcare settings (0.16%; aPR=1.59) ver-



sus healthcare settings (0.09%); and reported injection drug use (0.33%; aPR: 1.96) versus reported heterosexual contact only (0.16%) (all  $p < 0.001$ ). Age was the only socio-demographic characteristic significantly associated with pregnancy status ( $p < 0.05$ ), with the highest prevalence among 20-34 years.

Pregnancy status was not associated with linkage to HIV medical care in multivariable models. Linkage to HIV medical care was 73.1% overall. Linkage was highest for aged 15-19 years (86.1%; aPR=1.18) versus aged 40-44 years (70.2%) and resided in the Northeast (82.2%; aPR=1.16) versus South (70.9%); and lowest for WRA reporting injection drug use (61.9%; aPR=0.83) versus those reporting heterosexual contact only (75.3%) (all  $p < 0.05$ ).

**Conclusions:** Among WRA receiving CDC-funded HIV tests, newly diagnosed HIV positivity was higher among WRA reporting injection drug use whereas linkage to HIV medical care was lower among these WRA. HIV prevention efforts could be expanded to ensure WRA who use injection drugs are reached.

## EPC086

### Using a telehealth platform to optimize HIV testing prioritization through virtual screening and risk assessment

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**Background:** Uganda has made significant progress towards attaining the 95-95-95 targets. However, identifying and testing those with the highest risk or with potentially the highest positivity yield still remains a challenge and innovative approaches are being sought to mitigate the shortfall. We share lessons from telehealth-enabled risk assessment and screening pilot.

**Description:** Implemented in the Uganda USAID Social Behavioral Change Activity, the initiative utilizes digital platforms to boost HIV prevention in Uganda. A 24/7 Telehealth Centre operates a toll-free hotline and SMS platform, disseminating health messages and efficiently referring beneficiaries to testing facilities. Virtual screening during client-health worker interactions identifies high-risk individuals, leading to referrals for comprehensive HIV testing. Periodic follow-up calls ensure service uptake and linkage to care for those testing positive.

**Lessons learned:** In our January 2021 analysis of 15,000 calls and 10,000 SMS texts within the USAID-funded Social Behavioral Change Activity's tele health center, we focused on user engagement patterns to gauge the telehealth center's effectiveness in HIV testing and care. With 75% calls and 25% SMS texts, we observed communication preferences, influencing the center's approach to provide accessible channels. Gender representation, with 60% males and 40% females (median age: 28, 18-45), informed

tailored telehealth services. We identified risk groups, including 15% men who have sex with men, 20% commercial sex workers, and 10% adolescents.

The study highlighted the call center's efficiency in directing individuals for testing, underlining telehealth's crucial role in facilitating follow-ups for potential HIV cases. Insights from individuals initiated on treatment and those sharing results emphasized trust and effective communication in the telehealth process.

**Conclusions/Next steps:** Telehealth and related digital tools can be valuable platforms for screening and risk stratification for optimal HIV testing and linkage to care.

## EPC087

### Prevalence and factors associated with late diagnosis of people living with HIV in Hunan, China 2018-2021

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**Background:** The proportion of late HIV diagnosis has remained high worldwide. People living with HIV (PLWH) who were diagnosed late experienced poorer quality of life, higher morbidity and mortality rates, and higher costs of HIV care than those who were not diagnosed late. In addition, not knowing their HIV status increased the risk of HIV transmission. However, reasons for late HIV diagnosis are largely unknown, and relevant research is limited, especially in China.

This study aims to investigate the prevalence of late HIV diagnosis and identify associated factors among PLWH in Hunan, China.

**Methods:** A consecutive cross-sectional study was conducted from 2018 to 2021 in Hunan, China. We collected socio-demographic, epidemiological, and immunological information from the HIV/AIDS Comprehensive Response Information Management System of China. Late HIV diagnosis was defined as HIV diagnosis with a CD4 count  $< 350$  cells/ $\mu$ L or an AIDS-defining event. The prevalence of late HIV diagnosis with various characteristics was calculated. A chi-squared test and multivariable logistic regression analysis were used to identify risk factors for late HIV diagnosis.

**Results:** A total of 22504 PLWH were included. 14988 were classified as late HIV diagnosis, with a high proportion of 66.6% and much higher in PLWH aged 50 years and above (71.2%). PLWH aged 50 and above had a greater risk of getting a late HIV diagnosis compared to those aged 25 and under (odds ratio (OR): 2.246; 95% confidence interval (CI): 1.917-2.631).



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This study revealed that PLWH registered in western Hunan (OR = 1.475, 95% CI: 1.306-1.666), transferred from health facilities (OR=1.331, 95% CI: 1.246-1.420), and acquired HIV through heterosexual sexually transmitted (OR=1.518, 95% CI: 1.127-2.045) were more likely to experience late diagnosis ( $P<0.05$ ).

**Conclusions:** Late diagnosis of PLWH remains a severe issue in Hunan, China, especially in the elderly population. Targeted strategies should be promptly instituted to promote HIV test and decrease late HIV diagnosis.

## EPC088

### Household-based support factors associated with viral load suppression among adolescents living with HIV in western Kenya

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**Background:** Although extensive efforts have been put in place to achieve the global target of 95% viral suppression (VS) rate among adolescents living with HIV (ALHIV), the VS rate among adolescents is generally lower compared to younger children and adults. Achieving VS targets is necessary to ensure zero HIV transmission, reduce the risk of opportunistic infections, drug resistance and AIDS. To ensure Antiretroviral Therapy (ART) adherence among adolescents, various support strategies have been implemented. Their success depends on how successful they are implemented. Adolescents majorly rely on caregivers, hence, there is a need to assess the components of household support systems and what elements can be attributable to VS.

**Methods:** Using a cross-sectional design with a quantitative approach, data was collected from 263 (10-19-year-old) adolescents during their routine clinic visits at Academic Model Providing Access to Healthcare (AMPATH) based Rafiki Center and Module 4 clinics. Respondents were identified using systematic random sampling technique. A structured questionnaire was used to assess the demographic and household factors. The viral load data was obtained from Electronic medical records. Viral suppression was defined as having a viral load of  $<200$  copies/ml of blood.

**Results:** Of the 263 adolescents, 85.6% ( $n=225$ ) were virally suppressed. Older participants (AOR = 0.62; 95% CI = 0.50-0.78;  $p < 0.001$ ), living with single parents (AOR = 0.30; 95% CI = 0.11-0.81;  $p = 0.017$ ) or guardians (AOR = 0.29; 95% CI = 0.11-0.81;  $p = 0.018$ ) had lower odds of viral suppression. Participants who talked freely with caregivers about HIV (AOR=3.53, 95%CI=1.40-8.92,  $p$ -value=0.008), who

got reminders from their caregivers to take medication (AOR=2.30, 95%CI=1.20-3.38,  $p$ -value=0.032), whose family were aware of their HIV status (AOR=1.67, 95%CI=1.19-4.21,  $P$ -value=0.048), who got financial support to get to the facility (AOR 1.97, 95%CI=1.26-5.03,  $P$ -value=0.039) and who joined a social support group (AOR=3.04, 95%CI=1.09-8.50,  $p$ -value=0.34) were more likely to be virally suppressed.

**Conclusions:** The findings highlight stable living family relationships, communication among family members and social support as potential household interventions for improving VS. Addressing the highlighted interventions is essential to meeting the 95% VS goal by 2030. Further studies should explore the identified factors for programmatic interventions.

## EPC089

### Validation of PoZQoL scale in Turkish population living with HIV: a cross-cultural adaptation study

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**Background:** The increasing number of people living with HIV requires a simple and easy- to-use quality of life (QoL) scale for people living with HIV (PLWH). This study aims to adapt the PozQoL scale to Turkish and assess its reliability and validity for the PLWH population in Turkey.

**Methods:** Translation-back translation methodology was employed, and face-to-face interviews were conducted with 130 PLWH using the PozQoL, sociodemographic, and clinical data questionnaire. Exploratory Factor Analysis (EFA) and Confirmatory Factor Analysis (CFA) were used to identify the underlying factor structure and examine the validity of the measurement model, respectively. Cronbach's alpha and intraclass correlation coefficients (ICCs) were used to assess internal consistency and test-retest reliability, respectively.

**Results:** The study group consisted of 119 (91.5%) male subjects, of whom 94 (72.3%) had a secondary school education or less and ranged in age from 20 to 76 years (mean age  $40.2 \pm 12.2$  years). EFA revealed four factors with an eigenvalue of 0.88, explaining 62.1% of the cumulative variance. The loading weights, obtained with the EFA, are shown in Table 1.

CFA indicated that the four-factor solution achieved good levels of fit. The total Cronbach's alpha was 0.81, indicating high internal consistency. Cronbach's alpha values ranged from 0.39 to 0.74 (Table 2). The ICC for the total score was 0.92 (95% confidence interval [CI] = 0.90-0.94;  $p<0.05$ ), demonstrating high test-retest reliability. All

items had positive and significant correlations with their respective scales, indicating good internal consistency (Table 3). The correlations ranged from 0.55 to 0.85, indicating strong associations between the items and their corresponding subdimensions.

Table 1. Factor structure of the Turkish version of the PoZQoL

Item	Subdimension	Item 1	Item 2	Item 3	Item 4
Item 9	75				
Item 10	72				
Item 11	71				
Item 12	42				
Item 6	47				
Item 13	81				
Item 1	71				
Item 3	70				
Item 8	67				
Item 7	76				
Item 2	58				
Item 5	76				
Item 4	70				

Table 2. Reliability analysis of the Turkish version of the PoZQoL

Construct's alpha	Item 1	Item 2	Item 3	Item 4
Health	0.75	0.82	<0.001	
Psychological	0.76	0.84	<0.001	
Social	0.78	0.89	<0.001	
Functional	0.63	0.81	<0.001	
TOTAL	0.80	0.81	<0.001	

\*p < .05, \*\*p < .01, \*\*\*p < .001. Correlation is significant at the 0.001 level.

Table 3. Item-subdimension correlations of the Turkish version of the PoZQoL

Item	Health	Psychological	Social	Functional
Item 1	0.75	0.75	0.75	0.75
Item 2	0.76	0.76	0.76	0.76
Item 3	0.78	0.78	0.78	0.78
Item 4	0.70	0.70	0.70	0.70
Item 5	0.76	0.76	0.76	0.76
Item 6	0.47	0.47	0.47	0.47
Item 7	0.76	0.76	0.76	0.76
Item 8	0.67	0.67	0.67	0.67
Item 9	0.75	0.75	0.75	0.75
Item 10	0.72	0.72	0.72	0.72
Item 11	0.71	0.71	0.71	0.71
Item 12	0.42	0.42	0.42	0.42
Item 13	0.81	0.81	0.81	0.81

**Conclusions:** PoZQoL was found to be a valid and reliable tool to assess the health quality of PLWH in Turkey. This scale can be used in the assessment of QoL of PLWH in our country and in studies to be conducted in this population.

## EPC090

### Utilizing existing HIV/STI outreach to reduce disparities in Mpox vaccination

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**Background:** Communities disproportionately affected by HIV are more susceptible to Mpox. As Mpox cases increased in Bexar County, the San Antonio AIDS Foundation (SAAF) began incorporating Mpox vaccination into existing HIV/STI outreach events. SAAF's strategy focused on fighting stigma and addressing barriers to accessing Mpox prevention.

While communities of color, men who have sex with men (MSM), and individuals experiencing homelessness are disproportionately affected by Mpox, only 15% of Texans who could benefit from vaccination received at least one dose.

First-come first-served models favor individuals with resources such as transportation and paid work leave, contributing to disparities in vaccination rates. To increase equity, SAAF began providing free Mpox vaccination during HIV testing outreach events, providing dual services from our mobile testing van.

**Description:** From February through July 2023, SAAF hosted 17 vaccination events, which were held at homeless shelters, recovery residencies, and LGBTQ spaces. Public health messaging was shared in English and Spanish, allowing staff to address misinformation about vaccine efficacy and safety.

To encourage participants to receive their second dose, whenever available, the mobile van would return to the

same location 4 weeks following the previous event, following the CDC recommendation. All clients were also given the option to book an appointment at SAAF.

**Lessons learned:** Over five months, 176 Mpox doses were administered. Of these, 53.9% are homeless, 51.7% are Hispanic, 20.5% are Black, and 21% identify as MSM.

The largest barrier faced during the project involves the reliability of clients returning for their second dose. Due to the transient nature of many participants, only 11.93% of clients reappeared for their second dose (8.52273% returned to an event location, and 3.4091% booked an appointment).

Best practices include contacting clients in advance to share information about upcoming opportunities to receive their second dose, along with posting ample signage at the homeless shelters since many of those clients do not have cell phone or email access.

**Conclusions/Next steps:** Mobile clinics from a trusted source created equitable access to Mpox vaccines, especially for vulnerable populations. This strategy was well received by the community and is successful at maximizing vaccine uptake, improving community health.

## EPC091

### Impact of CD4 and viral load on risk of COVID-19 in-hospital mortality in people living with HIV

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**Background:** There is limited data on correlates of COVID-19 mortality among people living with HIV (PLHIV). We investigated the impact of viral non-suppression and immunosuppression on in-hospital COVID-19 mortality among PLHIV.

**Methods:** We analyzed individual-level data from the WHO Global Clinical Platform <https://www.who.int/teams/health-care-readiness/covid-19/data-platform>) comprising 774,761 hospitalized children and adolescents (0-18 years) and adults from 59 countries. We used Cox regression to evaluate associations between in-hospital mortality and HIV co-infection stratified by CD4 and viral load (VL) as a composite variable (see Table). Models were adjusted for demographic factors, comorbidities, COVID-19 severity at admission, SARS-CoV-2 variants.

**Results:** Compared to HIV negative population, mortality risk was significantly higher among PLHIV with CD4 <200 cells/mL and VL ≥1000 cps/ml (aHR 2.82, 95%CI 2.47-3.22) or VL <1000 cps/ml (aHR 2.19, 95%CI 1.95-2.45), in those with CD4 ≥200 cells/mL and VL ≥1000 cps/ml (aHR 1.48, 95%CI 1.12-1.97) or VL <1000 cps/ml (aHR 1.30, 95%CI 1.20-1.42) (Table). Compared with immunocompromised PLHIV despite viral suppression (with CD4<200 cells/mL and VL<1000cps/



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ml), the risk of in-hospital death was 39% lower (aHR 0.61, 95%CI 0.53-0.71) among those with CD4  $\geq$ 200 cells/mL and VL <1000cps/ml and 42% lower among those with CD4  $\geq$ 200 cells/mL and VL  $\geq$ 1000cps/ml. There was a tendency towards higher risk of death among those with lower CD4 cell counts and unsuppressed viremia (aHR 1.10, 95%CI 0.92-1.31) (Table).

**Conclusions:** PLHIV with low CD4 counts had a comparatively higher risk of in-hospital death, with the risk being highest among those with viral non-suppression. This observation highlights the need to fast track rapid treatment initiation, provide support for treatment adherence to ensure viral suppression and immune recovery as well as prioritizing PLHIV for COVID-19 immune booster vaccines as recommended by WHO.

Characteristic	N	Deaths n(%)	aHR (95%CI)	P-value
HIV negative	593942	112953 (19)	1.0	
PLHIV VL $\geq$ 1000 cps/ml + CD4 <200 cells/mL	1894	539 (28)	2.82 (2.47-3.22)	<0.001
PLHIV VL <1000 cps/ml + CD4 <200 cells/mL	2045	636 (31)	2.19 (1.95-2.45)	<0.001
PLHIV VL $\geq$ 1000 cps/ml + CD4 $\geq$ 200 cells/mL	693	121 (17)	1.48 (1.12-1.97)	0.006
PLHIV VL <1000 cps/ml + CD4 $\geq$ 200 cells/mL	5426	1099 (20)	1.30 (1.20-1.42)	<0.001
PLHIV				
PLHIV VL <1000 cps/ml + CD4 <200 cells/mL	2045	636 (31)	1.0	
PLHIV VL <1000 cps/ml + CD4 <200 cells/mL	1894	539 (28)	1.10 (0.92-1.31)	0.3
PLHIV VL $\geq$ 1000 cps/ml + CD4 $\geq$ 200 cells/mL	693	121 (17)	0.58 (0.43-0.78)	<0.001
PLHIV VL <1000 cps/ml + CD4 $\geq$ 200 cells/mL	5426	1099 (20)	0.61 (0.53-0.70)	<0.001

*Table: Risk of in-hospital death among people living with HIV (PLHIV) infected with COVID-19 by viral load and CD4 counts*

Models were adjusted for age, sex, SARS CoV-2 variants, COVID-19 severity and comorbidities including asplenia, asthma, chronic cardiac disease, chronic kidney disease, chronic liver disease, neurological disorder, pulmonary disease, current smoking, diabetes, hypertension, cancers, obesity and tuberculosis.

## EPC092

### SARS-CoV-2 seroprevalence and anti-S IgG concentration in adolescents according to HIV status in Lomé (Togo) in 2022

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**Background:** There is limited data on the circulation of SARS-CoV-2 among adolescents living with HIV in Africa. The aim of this study was to estimate seroprevalence and compare anti-S IgG SARS-CoV-2 antibody concentrations among adolescents in Lomé according to HIV serostatus.

**Methods:** A cross-sectional study was conducted between August and November 2022 in three pediatric wards. A standardized questionnaire was administered. A blood sample was collected and plasma aliquots were sent to the virology laboratory at Hôpital Bichat-Claude Bernard (Paris, France). Qualitative and quantitative testing for SARS-CoV-2 anti-S and anti-N immunoglobulin G (IgG) was performed using the Alinity SARS-CoV-2 IgG commercial kit (CLIA, Abbott, IL, USA). Natural log-transformed linear regression was used to compare anti-S antibody concentrations according to HIV serostatus.

**Results:** A total of 634 adolescents (47.7% girls) with a median age of 13 years (interquartile range, IQR: 7-18 years) were included. Adolescents living with HIV (ALWHIV) accounted for 41.6% (n=262) and had a median duration of antiretroviral therapy of 8.0 years (IQR: 4.9-11.4); 85.6% initiated dolutegravir-based therapy (n=231) and 61.0% had an HIV viral load < 50 copies/mL. Among adolescents, 22.2% reported being vaccinated against COVID-19 and (12.9% in ALWHIV vs 37.1% in HIV-negative subjects, p=0.001). Seroprevalence for anti-S IgG was 88.0% (IC95%: 85.2 - 90.4) and for anti-N IgG 46.1% (IC95%: 42.1 - 50.0). There was no difference in the prevalence of these antibodies according to HIV serostatus (Anti-S: 87.5 vs 88.4%, p=0.737; Anti-N: 43.6% vs 47.8%, p=0.287). Among anti-S-positive adolescents, median anti-S antibody concentration was similar according to HIV status (766 AU/mL (191-1,959) vs 844 (203-2,422), p=0.417). The relative mean was 39% (95% CI -15 -64; p=0.002) lower in HIV-positive than in HIV-negative adolescents (after adjustment for age and gender).

**Conclusions:** Eight out of ten percent of the adolescents had anti-SARS-CoV-2 antibodies. In anti-S-positive in HIV positive adolescents, lower IgG concentrations may reflect a lesser serological response to infection, supporting the promotion of COVID-19 vaccination in this population.

## EPC093

### Investigation of multimorbidity based on self-reported chronic conditions among Chinese men who have sex with men: a network analysis approach

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**Background:** Men who have sex with men (MSM), at high risk of HIV/AIDS transmission, typically tend to be young. Once infected with HIV, they become vulnerable to various diseases. Multimorbidity (the co-existence chronic of two or more conditions) is a global challenge, increasingly prevalent in younger populations. It is associated with reduced functioning and quality of life, as well as increased healthcare utilization.

We aim to investigate multimorbidity networks in MSM to optimize HIV and chronic disease care services.

**Methods:** We conducted a cross-sectional study to investigate the multimorbidity network among Chinese MSM (n=888) based on 17 self-reported chronic diseases. These data were collected by six local LGBT community-based organizations (CBOs) through WENJUANXING from March to April 2022.

We compared characteristics and sexual-related factors between MSM with and without chronic conditions using Mann-Whitney U test and chi-square ( $\chi^2$ ) test. Social network analysis (SNA) and the fast greedy algorithm were employed to depict multimorbidity patterns and predict clusters of the 17 chronic diseases.

**Results:** A total of 351 individuals had at least one chronic condition, and they were older than the 537 healthy participants (median age: 28 vs. 25 years,  $P<0.001$ ) with lower PrEP uptake (15.2% vs. 20.8%,  $P<0.001$ ).

Obesity, hypertension, diabetes, and liver disease serve as central nodes in the multimorbidity network, showing more combination with other chronic diseases, with high degree values (e.g. obesity: 16, hypertension: 14) and eigenvector centrality scores (e.g. obesity: 0.586, hypertension: 0.476).

For the coexisting chronic conditions edge, the obesity and hypertension edges show the highest weight in both the overall network (edge betweenness=0) and other subnetworks. Comparing those who have never taken PrEP (n=701) with the 160 MSM confirmed PrEP usage, the latter group, experiencing more multimorbidity (e.g.,

obesity, hypertension, diabetes, liver disease, and thyroid conditions). In the cluster analysis, self-reported chronic conditions were grouped into three clusters.

**Conclusions:** Based on self-reported chronic diseases online, obesity and hypertension appear to be more prevalent among Chinese MSM. We need to pay more attention to preventing multimorbidity, especially among those with PrEP uptake, including conditions such as obesity, hypertension, diabetes, liver disease, and thyroid disease.

## EPC094

### Exposure to Covid-19 related stressors and their correlation with pandemic-related distress and growth in people with HIV in Nouvelle Aquitaine, France (ANRS CO3 AQUIVIH-NA QuAliCOV Study)

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**Background:** People with HIV (PWH) were at risk of severe COVID-19 and poorer health outcomes due to their HIV and other risk factors for severe COVID-19, underlying psycho-social characteristics, disruptions in care. Adopting a syndemic perspective, we investigated PWH's exposure to pandemic-related stressors and analyzed their correlation with pandemic-related distress and personal growth.

**Methods:** PWH enrolled in the ANRS CO3 AQUIVIH-NA cohort's QuAliV study (Nouvelle Aquitaine, France) completed an adapted CAIR Lab Pandemic Impact Questionnaire (C-PIQ), encompassing stressors (e.g., 'became ill with coronavirus'), distress (e.g., 'how stressful have changes in social contacts been?'), and personal growth (e.g., 'strengthened relationships with others') between 9/2021 and 3/2022. We described cumulative stressor exposure



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(score 1-15) and explored variation by PWH's characteristics (demographic, HIV-related, risk-factors, psycho-social vulnerability/resilience). We assessed whether stressors and/or characteristics were associated with distress (score 0-23, higher = greater distress) and growth (score 0-20, higher = greater growth) using linear and zero-inflated Poisson regression respectively. We presented stratified (age) and adjusted analyses (depression, HIV-related stigma).

**Results:** Participants' (N=374) characteristics were similar to those in care. However, fewer were foreign-born. 76.2% were men, aged 58. 99.2% were on ART, 95.7% had achieved viral suppression, 71.1% had at least one risk factor for severe COVID-19, 25.8% reported moderate-severe depression, and 29.6% reported difficulties meeting basic needs in years preceding the pandemic. Exposure to stressors was significantly higher in those <60 and the psycho-socially vulnerable (depressed, stigma, socially-isolated). Each additional stressor correlated with a 0.8-point increase (95% C.I. 0.6-1.0,  $p<0.001$ ) in distress scores and a 0.1-point increase (95% C.I. 0.04-0.08,  $p<0.001$ ) in growth scores.

Results were similar for growth after stratification by age and for distress after stratification by age and adjustment for depression, HIV-related stigma. While not associated with stressors, PWH's vulnerability as opposed to their risk factors for severe COVID-19 was associated with greater distress while the contrary was true for growth.

**Conclusions:** Exposure to stressors was strongly correlated with distress but also growth. Independent of exposure to stressors, PWH's social vulnerability/resilience were associated with distress/growth respectively as opposed to other characteristics (e.g., risk factors), similar to the general population.

## EPC095

Patterns and influences of comorbidities in HIV: insights from a population-based study in Luzhou City, China, 2001-2022

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**Background:** Managing people living with HIV (PLWH) who present with multiple comorbidities is increasingly challenging. This study aims to understand comorbidity patterns in PLWH, examine differences in comorbidities among various subgroups, explore the factors influencing HIV comorbidity, and provide a scientific basis for the health management, diagnosis, and treatment of PLWH in complex contexts.

**Methods:** We analyzed data from 13,884 newly reported HIV/AIDS cases residing in Luzhou City by the end of 2022, obtained from the "China AIDS Integrated Prevention and Control Information System." Disease information was organized according to the ICD-11 code, including 36 secondary diseases classified into 21 diagnostic groups.

We employed a systematic clustering method to analyze comorbidity patterns in PLWH, determining the core comorbidity cluster through central analysis. Time-series clustering was used to describe the progression trends of comorbidities based on their onset time, and a multivariate logistic regression model analyzed the factors influencing comorbidities in PLWH.

**Results:** The 21 diagnostic groups were systematically clustered into four comorbidity clusters: Cardiac Disorders and Inflammatory Disease (3 diagnostic groups), Metabolic Disorder and Lung Disease (5 diagnostic groups), contagious Diseases and Metabolic Disease (9 diagnostic groups, the core comorbidity cluster), and Chronic Disease (4 diagnostic groups). Additionally, PLWH under 50 years of age, females, and individuals with homoexual behavior exhibited a comorbidity pattern of „Tumors and Sexually Transmitted Diseases." Time-series clustering algorithm results indicate that the two clusters (21 diagnostic groups) showed an overall upward trend before 2019, with a turning point occurring in that year. The first cluster (9 diagnostic groups including viral hepatitis, tuberculosis, and sexually transmitted diseases) experienced significant fluctuations during the COVID-19 pandemic. Influencing factors for the development of comorbidities in PLWH include gender, age, marital status, ethnicity, education level, route of transmission, WHO clinical staging, and initial CD4 counts.

**Conclusions:** It is vital to strengthen comprehensive management for PLWH with the comorbidity pattern of „Lung Disease combined with Metabolic Disorders," particularly in individuals under 50, females, and those with homoexual behavior, who present with „Tumors and Sexually Transmitted Diseases." Effective disease prevention and risk factor monitoring are essential components of this management approach.

## EPC096

A comparison of two recent infection testing algorithms using HIV-1 viral load or CD4 cell count to identify potential misclassification of false recent infections in Thailand, 2020-2022

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**Background:** A rapid test for recent HIV-1 infection (RTRI) combined with HIV-1 viral load (VL) as part of a recent infection testing algorithm (RITA) is a recommended approach to reduce false-recent misclassification among antiretroviral treatment (ART) experienced individuals. Immune changes associated with advanced HIV-disease, that correlate with low CD4 count, can also impact RTRI results and cause misclassification. We constructed two RITA algorithms (baseline VL or CD4) and compared misclassification of each algorithm to improve recent infection surveillance in Thailand.

**Methods:** Newly diagnosed HIV-1 positive individuals aged ≥13 years seen at 21 sites in 3 provinces between October 2020 and September 2022 were enrolled in recent infection surveillance and tested with RTRI after informed consent. We used National HIV Program data to exclude individuals with prior HIV diagnosis and ART history. Specimens with VL <1,000 copies/ml or CD4 <200 cells/mm<sup>3</sup> were defined as misclassified potentially as recent infection.

**Results:** Of 1,442 new diagnoses tested with RTRIs, 136 (9.4%) were RTRI recent cases. Of the 136, 133 (97.8%) had baseline VL, 99 (72.8%) had baseline CD4, and 96 (70.6%) had both baseline VL and CD4. Women had higher proportion of RTRI, RTRI-VL RITA, and RTRI-CD4 RITA recent infections (11.0%, 9.5%, and 5.7%, respectively). Men who have sex with men had the highest proportion of recent RTRI-VL RITA (8.5%) and RTRI-CD4 RITA (4.6%) after excluding other population groups with small numbers. Comparing RTRI-VL RITA and RTRI-CD4 RITA recent results (see Table), 30/86 (34.9%) may be misclassified by RTRI-VL RITA due to low CD4 (<200) while 9/65 (13.8%) may be misclassified as recent by RTRI-CD4 RITA due to low VL (<1,000).

**Conclusions:** Routine baseline CD4 as part of RITA combined with case surveillance can improve the accuracy of recent infection surveillance in Thailand. Using RTRI-VL RITA ≥1,000 alone in Thailand (high proportion of late diagnoses with advanced HIV disease) may result in higher false recent infection classification.

RTRI-CD4 RITA	RTRI-VL RITA		
	Recent ≥1,000	Long Term <1,000	Total
Recent ≥200	56	9	65
Long Term <200	30	1	31
Total	86	10	96

Table: Comparison of recent infection reclassification by RTRI-VL RITA and RTRI-CD4 RITA among newly diagnosed PLHIV in 3 provinces in Thailand, 2020-2022.

## EPC097

Improving GBV data quality to monitor PEP completion in GBV clients

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**Background:** HIV and gender-based violence (GBV) are syndemic. Addressing GBV is essential to controlling the global HIV epidemic. GBV is underreported globally, including in Malawi where adolescent girls, women, and key populations experience high rates of GBV. Improved GBV data quality is crucial to measuring the impact of GBV on HIV services, including HIV post-exposure prophylaxis (PEP), and ensuring survivors receive care to achieve optimal HIV outcomes.

It is critical to identify gaps within PEP service delivery to provide appropriate support to prevent HIV seroconversion for survivors. The United States President's Emergency Plan for AIDS Relief (PEPFAR), through USAID, measures delivery of the World Health Organization's (WHO) minimum package of post-GBV clinical care services, including HIV testing and PEP, through the GEND\_GBV indicator.

**Description:** USAID conducted a GEND\_GBV data quality assessment (DQA) to identify issues in data collection through quantitative and qualitative methods at eight sites across Malawi. The DQA recounted totals for fiscal year 2022, quarters two and four, for GEND\_GBV, including PEP completion, and to assess consistency, compare results, and identify gaps in PEP service delivery. The DQA compared reported and recounted results with a verification factor (VF) to assess quality.

**Lessons learned:** The quantitative analysis found between quarters two and four, six sites improved data quality and one remained consistent. The DQA team was unable to recount the quarter four results for one site. Qualitatively, the DQA revealed that while overall staff had a thorough understanding of the GEND\_GBV indicator, inconsistent data collection practices specific to each site led to issues with reporting, especially for PEP comple-



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tion. Key recommendations included improving PEP cascade documentation and follow up to ensure eligibility, initiation, and completion are correctly captured; standardizing data collection tools; and clear documentation of the minimum package availability at site.

**Conclusions/Next steps:** This DQA found that facilities need to implement processes to improve documentation of PEP services to accurately monitor PEP completion and support HIV prevention efforts for GBV survivors. Subsequent DQAs will be held in PEPFAR-supported countries to improve GBV and PEP data quality for this population.

## EPC209

Integration of key population-friendly HIV prevention services in public health facilities: results from a sub-county hospital in Kitui County, Kenya

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**Background:** Key populations (KP), including female sex workers (FSWs) and men who have sex with men (MSM) contribute significantly to new HIV infections in Kenya. Stigma, discrimination, and hostility hinder their access to health services underscoring the need for tailored KP-friendly services. Integrating these services into public health facilities is recommended, but a persistent „know-do“ gap hampers effective integration. This study described integration of KP-friendly health services at Ikutha Sub-County Hospital, Kitui County, Kenya.

**Description:** Collaborative efforts involved program staff working with KP peer leaders, hospital staff, and the sub-county health management team members. Strategies included training hospital staff in KP-friendly service provision, identifying a hospital focal staff for integration, monthly microplanning with peer leaders, and conducting peer-led integrated community outreaches with linked referrals to the hospital. Data analysis focused on the proportion of the net-enrolled KPs reached (provided HIV prevention/ treatment services) and retained (contacted within the last three months), comparing pre-integration (Oct 2021 to Sep 2022) and post-integration (Oct 2022 to Sep 2023) periods. Paired t-test statistics was applied to assess primary outcomes associations with age and KP typology, with significance set at  $p < 0.05$

**Lessons learned:** Post-integration, 809 KPs (442 FSWs and 367 MSM) were enrolled compared to the 484 (309 FSWs and 175 MSM) pre-integration. The proportion of net-en-

rolled KPs reached, increased significantly among FSWs from 29% to 45% ( $t = -110$ ), while MSM showed an insignificant marginal drop from 41.9% to 41.4% ( $t = 1.06$ ). Retention significantly increased from 12% to 58% ( $t = -68.5$ ) among FSWs, and from 26% to 50% ( $t = -19.41$ ) among MSM. Age had no significant association with reach and retention.

**Conclusions/Next steps:** Collaborative efforts, guided by a peer-led model, successfully increased reach and retention in HIV prevention services for FSWs and MSM. The findings advocate for integrating KP-friendly services in public health facilities, ensuring sustainability amid evolving health resource constraints. This approach addresses the "know-do" gap and sets a precedent for inclusive and sustainable HIV prevention strategies.

## EPC220

Factors affecting viral suppression or rebound among persons living with HIV and on antiretroviral therapy in Ghana

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**Background:** Regular viral load testing for people living with HIV (PLWH) is key to attaining the UNAIDS' fast track 95:95:95 strategy to end the HIV epidemic by 2030. However, viral load testing is sporadic in routine HIV care in most resource-limited settings, including Ghana. We investigated factors affecting viral suppression or rebound among PLWH in Ghana.

**Methods:** This study analyzed data from a hospital-based cohort study focused on HIV cure research. The cohort study was conducted at three hospitals in the Greater Accra region of Ghana. Demographic characteristics were captured from participants' folders and CD4+ T cell count and viral loads were measured from blood samples collected at baseline, 6 months, and 18 months.

**Results:** The study participants were predominantly female (68%), and had a median age of 45 (IQR: 21 – 76 years), with 52% on ART for more than 6 years and 74%


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on dolutegravir-based regimens. Viral load was <50 copies/ml in 74% at baseline and 88% at 18 months with 80% having CD4+ T cell count >350 cells/ $\mu$ l. Age group [<40 vs >40 years] (OR 2.35, 95% CI: 1.21-4.58, p-value=0.012), CD4+ T cell count [>350 vs <350 cells/ $\mu$ l] (OR 4.35, 95% CI: 2.32-8.18, p-value<0.001) and ART regimen [NVP based vs DTG based] (OR 7.0, 95% CI: 1.15-42.57, p-value=0.034) were associated with viral suppression of <50 copies/ml.

However, the overall viral rebound rate was estimated at 13.6 per 1,000 person-months (95% CI 10.5 – 17.7) with the rates decreasing with time. Educational level up to Junior High School (p=0.011) was significantly associated with viral rebound.

**Conclusions:** Measuring viral loads at 3-time points within 2 years was peculiar to our study and may explain the high viral suppression observed. The viral rebound was linked to low education levels, which calls for targeted education of PLWH with JHS level education or less. Regular viral load monitoring and implementation of measures against viral rebound particularly among PLWH with lower education up to JHS level will push Ghana towards attaining the third '95 of the UNAIDS ambitious 95:95:95 target by 2030.

## EPC226

Overcoming HIV self-testing hurdles: insights from sub-Saharan Africa's self-testing adoption among at-risk populations

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**Background:** With a high HIV burden in Sub-Saharan Africa, expanding access to testing remains pivotal. HIV self-testing (HIVST) offers a discreet alternative, yet uptake among vulnerable populations is not well understood. This study assesses factors influencing HIVST use to inform targeted interventions.

**Methods:** A retrospective analysis of Demographic Health Surveys (2009-2019) spanning 24 SSA countries, involving 594,639 participants aged 15-49, was undertaken. The association between HIVST uptake and socio-demographic, socio-economic, and behavioural attributes was examined. Logistic regression models evaluated the influence of these factors on self-testing behaviours.

**Results:** From the analysis involving 594,639 individuals, 2.5% (9955.56) reported using HIVST. The likelihood of using HIVST was significantly higher in urban areas (Urban: 3.7%, Rural: 1.7%;  $\mu$ 2=1534.50, p<0.001) and among those with prior HIV testing experience (aOR=3.33, CI: 3.08-3.60; p<0.001). Education played a key role, with a higher

likelihood of engaging in HIVST among those with higher education (aOR=7.36, CI: 6.62-8.18; p=0.001). Economic status also influenced HIVST uptake, with the richest individuals being significantly more likely to use HIVST compared to the poorest (aOR=3.28, CI: 2.95-3.65; P<0.001). Individuals who have heard of STIs have significantly higher adjusted odds of using HIVST kits (aOR=33.43; 95% CI: 11.03-101.24; p<0.001) compared to those who have not heard.

Prior HIV testing experience (aOR =3.33, CI: 3.08-3.60; P<0.001) and knowledge of testing locations (aOR =1.52, CI: 1.33-1.72; P<0.001) significantly increase the likelihood of HIVST uptake. Contrarily, holding misconceptions about HIV transmission, such as believing it can be spread by sharing food (aOR=0.39, CI: 0.18-0.87; P=0.022) or through mosquito bites (aOR=0.68, CI: 0.48-0.98; P=0.036), was associated with lower usage of HIVST.

The stigma associated with HIV, particularly the fear of societal response following a positive diagnosis, emerged as a significant barrier, notably reducing self-testing odds (aOR=0.49, CI: 0.41-0.59; P<0.001). The study also underlined employment status as a determinant; those working for someone else were more likely to utilize HIVST (aOR=1.37, CI: 1.23-1.52; P<0.001) than self-employed counterparts.

**Conclusions:** These findings suggest that interventions aimed at increasing HIVST uptake should focus on enhancing education, addressing misconceptions, and mitigating stigma, while also considering the impacts of urbanization and economic status.

## EPC227

Assessing PrEP influence on HIV incidence in Brazil: a straightforward indicator for strategic public health policymaking

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**Background:** Since 2018, Brazil has expanded its free-of-charge HIV Pre-Exposure Prophylaxis (PrEP) program nationwide, with 143,840 individuals enrolled until December 2023. To assess its impact and to identify further expansion targets, an indicator was created to measure influence of PrEP use on HIV incidence.

**Methods:** The indicator was calculated by dividing the number of individuals on PrEP on June 2023, by the number of newly identified people living with HIV linked to healthcare services between January to June 2023. Each city in Brazil with more than 50,000 inhabitants was classified into one of five groups according to the PrEP:HIV ratio: Group 0: Ratio < 1  
Group 1: Ratio  $\geq 1$  and < 2  
Group 2: Ratio  $\geq 2$  and < 3





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Group 3: Ratio  $\geq 3$  and  $< 4$

Group 4: Ratio  $\geq 4$

The monthly growth rate of known new HIV cases between January 2019 and December 2022 for each group was calculated using the Generalized Least Squares with Autoregressive Errors (GLSAR) model, adjusted for the Durbin-Watson test result closest to 2, with the rho value ranging from 0 to 5.

**Results:** Considering the confidence interval (95%CI), cities with PrEP:HIV ratio above 3 have shown negative monthly growth rate of new HIV cases, indicating a declining HIV incidence during this period (Figure 1).

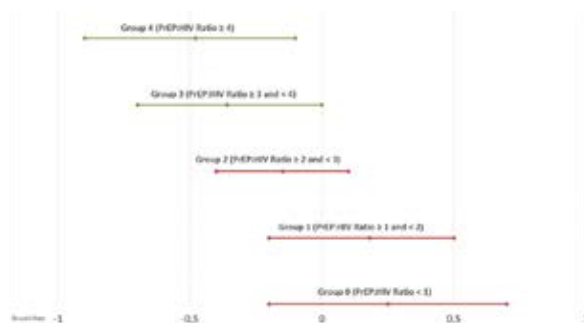


Figure 1. Monthly growth rate of known new HIV cases writing PrEP:HIV ratio groups, Brazil, 2019-2023. Green and red lines represent the Confidence Interval (95%CI) of each group.

**Conclusions:** The correlation between higher PrEP:HIV ratio and decreased HIV incidence, while not proving causality, suggests that extensive PrEP use in cities is a proxy of an effective implementation of combination HIV prevention.

Therefore, a PrEP:HIV ratio over 3:1 indicates an effective HIV care and prevention network, leading to lower HIV incidence rates.

Updated biannually, this indicator is a straightforward yet robust tool to monitor HIV case trends and to assess PrEP's impact and reach, thereby informing policy decisions and resource allocation. Moreover, it will allow to guide a nationwide large-scale PrEP offer.

## EPC228

USAID CHEKUP I partnership with public health sector for community-based delivery of PrEP to adolescent girls and young women in the DREAMS program: opportunities and challenges

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**Background:** In Zambia, 38% of new HIV cases occur among young people, with females representing 78% and males 22%. Although pre-exposure prophylaxis (PrEP) is effective, adolescent girls and young women (AGYW) encounter barriers to access. We explore the impact of community-based PrEP delivery to enhance AGYW access.

**Description:** USAID's Controlling HIV Epidemic for Key and Underserved Populations (CHEKUP) I implements the Determined, Resilient, Empowered, AIDS-free, Mentored, Safe (DREAMS) program in 37 communities across seven districts in Zambia. DREAMS center nurses conduct PrEP sensitizations during social asset-building activities, expand HIV testing through DREAMS and outreach, and offer differentiated service delivery. Biomedical commodities are sourced from the Zambian Ministry of Health. HIV-positive AGYW are referred for antiretroviral therapy (ART), while HIV-negative AGYW initiate PrEP within DREAMS centers post-screening.

**Lessons learned:** Community-based PrEP delivery enhances AGYW access. From October 2022 to September 2023, 115,411 AGYW were reached, with 10,169 at-risk AGYW tested for HIV, and 4,388 (43.2%) initiated PrEP. The remaining 5,781 (56.8%) were either HIV-positive (7.2%) or excluded due to lower risk factors (49.6%). Notably, 79.7% were aged 20-24, showing effectiveness in reaching this older vulnerable group. While PrEP initiation was high at 93.6%, continuation at subsequent refills declined to 52.7% at the second refill and 26% at the third. Anxieties, disclosure concerns, and stigma hindered sustained uptake. Sero-conversion was low at 0.1%, highlighting DREAMS' efficacy in reducing HIV risk.

**Conclusions/Next steps:** Community-based delivery of PrEP effectively enhances uptake among population groups that may not readily access conventional government health facilities for PrEP services. Sensitization on PrEP benefits, adherence support, and family communication are critical for sustained access. Injectable PrEP introduction may alleviate stigma and reduce the pill burden.

## EPD098

Enhancing uptake of HIV and sexual reproductive health services by adolescent girls and young women in rural areas using the "stop the bus" strategy: lessons from Matobo District, Zimbabwe, 2023

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**Background:** Zimbabwe Health Interventions (ZHI) is implementing the Determined, Resilient, Empowered, AIDS free, Mentored and Safe (DREAMS) program to reduce new HIV infections among adolescent girls and young women (AGYW) in 9 high HIV burdened districts of Zimbabwe. Accessing comprehensive HIV prevention and sexual reproductive health and rights (SRHR) services reduces risk of HIV among AGYW.

We document lessons from the "Stop the Bus" campaign strategy implemented in Matobo district in 2023.

**Description:** ZHI and a consortium of partners implemented the "Stop the Bus" campaign targeting high volume, HIV transmission hot-spot areas with combination HIV prevention and SRHR services to 15-24-year-old AGYW. The campaign was conducted from October 2022 to September 2023 in ward 2 and involved implementing partners that include ZHI, Population Solutions for Health (PSH) and Musasa, working with village health workers (VHW) from the Ministry of Health and Child Care (MOHCC). Services offered included HIV pre-exposure prophylaxis (PrEP), HIV Testing Services (HTS), family planning, sexually transmitted infection (STI) screening and treatment and post gender-based violence (GBV) services at one-stop shop. Data were collected using paper tools and captured into the web based DHIS2 program database. HIV prevention and SRHR service uptake in ward 2 was compared with ward 14 where the intervention was not implemented.

**Lessons learned:** Out of the 347 AGYW reached with the DREAMS primary package in ward 2, 291 (84%) received HIV prevention and SRHR services through the "stop the bus" strategy whilst, in Ward 14, only 24% (87/362) accessed services. In ward 2, 149 AGYW accessed FP, 48 received HTS, 20 PrEP, 48 STI services whilst 26 received psycho-social support. The program learnt that AGYW prefer "stop the bus" to access combination HIV prevention and SRHR services. Effective collaboration with MOHCC strengthened mobilization of AGYW to access SRHR services.

**Conclusions/Next steps:** The stop the bus strategy increased access to and uptake of HIV prevention and SRHR services by AGYW in ward 2 of Matobo district. We recommend roll out of the strategy to all wards including hard-to-reach ones, and improved collaboration between implementing partners for effective HIV prevention and SRHR service provision.

## EPD099

Young and positive: how young people in Australia make sense of their HIV diagnosis using a multidimensional theoretical approach

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**Background:** The scientific, political and community response to HIV has changed significantly over the last 40 years of the pandemic and, with it, the lived experience of people with HIV in Australia. Young people diagnosed with HIV today receive their diagnosis in a very different context than those diagnosed in previous generations. However, very little research has explored how young people with HIV in Australia feel make sense of their diagnosis, and how this in turn impacts engagement in HIV treatment and care; this is a missed opportunity to ensure they are being meaningfully recognised and supported.

**Methods:** This analysis draws from the Young + Positive study, the first national study in Australia documenting perspectives of young people (18-29) living with HIV. Guided by GIPA and MIPA principles, a steering committee, including young individuals with HIV, advised on methodology, tools, and analysis. Utilising a convergent parallel mixed-method design grounded in a multidimensional theoretical approach, survey data (n=60) and qualitative interviews (n=25) were collected between 2018 and 2019. The data were analysed to explore how young people understand their HIV diagnosis, and how this impacted their engagement patterns with HIV treatment and care.

**Results:** Participants identified mainly as male (93.3%), LGBTIQ+ (79.7%) and Australian born (64.2%). Findings confirmed that despite having no living memory of the 'AIDS-crisis' in Australia, most interviewees typically made sense of their HIV diagnosis by locating themselves in the broader social, cultural, temporal and geographic context of the Australian HIV epidemic.

This process of inner and outer world location revealed intergenerational tensions, resulting in many struggling to find a sense of belonging within the Australian 'HIV community' and subsequent HIV services or community spaces.



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**Conclusions:** These findings reveal how young people navigate places and spaces of potential belonging (or not belonging) in existing HIV services and community settings. The extent to which young people felt a sense of belonging was an important consideration as it impacted their engagement with HIV treatment and care.

## EPD100

Acceptability of online peer support groups as a strategy to improve antiretroviral therapy adherence among young people living with HIV: a qualitative study from Kampala Uganda

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**Background:** Peer support groups are central to antiretroviral therapy (ART) adherence among young people living with HIV (YPLHIV). However, in Uganda and elsewhere in Sub-Saharan Africa, peer support activities occur face-to-face and thus have structural limitations and may not be readily available when young people need them. Online peer support has the potential to help YPLHIV access regular psychosocial support without significant effort or cost. Acceptability is key to the successful design, implementation, and evaluation of virtual peer support. We assessed the acceptability of WhatsApp-based peer support groups as a strategy to improve ART adherence among Ugandan YPLHIV.

**Methods:** We conducted a formative qualitative study in three Health Centre IVs in Kampala Uganda, between July and August 2022. We held four focus group discussions with twenty-seven YPLHIV seeking services at the study facilities. We also conducted six key informant interviews with health providers attached to adolescent HIV care clinics. The data was analyzed using thematic analysis guided by the acceptability framework to understand socio-cultural beliefs and perceptions towards utilizing WhatsApp-based peer support groups for HIV care.

**Results:** Overall, peer support groups on WhatsApp were acceptable for use among YPLHIV. The young people regarded them as convenient because they saved time and were more cost-effective compared to the transport costs of in-person meetings. Health providers revealed that virtual peer support groups could reduce the stigma associated with community follow-up for non-adhering

young people and empower YPLHIV to overcome stigma. Both the young people and health providers agreed that online peer support would provide accessible emotional support which could improve their psychosocial well-being and enhance adherence to ART.

However, participants raised concerns about privacy, the cost of data, and smartphones, especially for younger adolescents.

**Conclusions:** Online peer support groups are acceptable to Ugandan YPLHIV and hold promise in enhancing psychosocial support and improving treatment adherence in this sub-population. There is a need for research to evaluate the feasibility and effectiveness of this peer support model in Uganda. In implementing online support groups, due consideration should be given to the development of open-source software tools with high privacy standards.

## EPD101

Acceptance and commitment therapy for hope, psychological flexibility, depression and quality of life among people living with HIV/AIDS: a randomized controlled trial

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**Background:** HIV and mental health problems are a global syndemic. People living with HIV/AIDS are vulnerable to mental health problems. Mental health problems adversely impact HIV treatment outcomes and lower their quality of life. However, the significant mental health problems among people vulnerable to acquiring or living with HIV have not been fully addressed. Therefore, integrating HIV and mental health interventions to address this global syndemic among PLWHA is urgently needed, as noted by the journal *Lancet HIV* in June 2022.

The purpose of this study was to investigate the effectiveness of acceptance and commitment therapy for hope, psychological flexibility, depression and quality of life among PLWHA.

**Methods:** Seventy HIV-infected patients with mild to moderate depressive symptoms were recruited from Designated AIDS Hospital in Changsha and randomly assigned to intervention groups (7 sessions) or control groups (7 sessions). The control group had access to 7 sessions of one-on-one conventional health education about HIV; those in the intervention group were provided with 7 sessions of psychological counseling based on Acceptance and Commitment.

**Results:** Mean age was 26 years; 73.5% attended college; 95.6% were single. The analysis population who completed the follow-up questionnaire included 34 (97%, 34/35) in the intervention and 34 (97%, 34/35) in the control group. The time effect on depression scores among patients in

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both groups was significant ( $F=233.625$ ,  $P<0.001$ ); the group effect was not significant ( $F=1.238$ ,  $P=0.274$ ); but the interaction effect of time and group was significant ( $F=67.710$ ,  $P<0.001$ ). For the quality of life among patients in both groups, the time effect on psychological function scores was significant ( $F=23.228$ ,  $P<0.001$ ); so was the group effect ( $F=12.564$ ,  $P<0.001$ ); and the interaction effect of time and group ( $F=16.755$ ,  $P<0.001$ ). The time effect on AAQ-II scores among patients in both groups was significant ( $F=1766.113$ ,  $P<0.001$ ); the group effect was not significant ( $F=3.440$ ,  $P=0.073$ ); but the interaction effect of time and group was significant ( $F=1037.737$ ,  $P<0.001$ ).

**Conclusions:** Acceptance and commitment therapy may be an appropriate psychological intervention for reducing the symptoms of PLWHA with depression symptoms and helping them to improve psychological flexibility, hope level and quality of life.

## EPD102

### Emotional and behavioral health among adolescents living with HIV in seven cities in Indonesia

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**Background:** Adolescents everywhere face various psychosocial and behavioral challenges as they move through the developmental stages of human maturation toward adulthood. Living with HIV can introduce additional challenges to an already complex developmental process. Yet, HIV studies focusing on emotional and behavioral health among adolescents living with HIV (ALWH) are sparse along with a notable absence of culturally adapted, context-specific recommendations for such youth in low middle-income countries including Indonesia. This study investigates the emotional and behavioral health of ALWH in Indonesia as measured by self-reported emotional and behavioral problems and symptoms of depression and general anxiety.

**Methods:** This cross-sectional study enrolled 143 ALWH ages 13-18 living with HIV in seven cities in Indonesia who have been told about their HIV serostatus from February to May 2023. The youth were referred by local HIV nongovernment organizations in each city. The youth's self-reported emotional and behavioral health was measured through face-to-face interviews using the Strength Difficulties Questionnaire (SDQ), Patient Health Questionnaire (PHQ)-9, and Generalized Anxiety Disorder (GAD)-7.

**Results:** Participants' averaged 15.9 years of age. Slightly more than half were girls (55.94%). Of the 143 participants, somewhat more than half (55%) reported experiencing

a high degree of emotional and behavioral problems in the past six months, and slightly less than half (45.5%) reported symptoms of moderate to severe depression and slightly more than a third (38%) reported experiencing moderate to severe general anxiety in the past two weeks. Girls reported greater emotional and behavioral problems, symptoms of depression, and general anxiety than boys.

Multivariate analyses showed an association between one or more of these 3 outcomes and gender, means of HIV acquisition, perception of illness, boy/girlfriend relationships, ARV utilization, and main caregiver.

**Conclusions:** As possibly the first research to examine the psychosocial health of ALWH in Indonesia, the study's results point to the importance of developing and offering mental health support and culturally tailored services for ALWH. HIV programs for ALWH could include strategies that help them in identifying and adopting effective coping methods, resilience in overcoming the possible adversities of illness, and feelings of empowered in successfully confronting the challenges of living with HIV.

## EPD103

### Community led model for optimal Advance HIV disease diagnosis, treatment and care in the United Republic of Tanzania

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**Background:** In Tanzania, where 4.4% of the population is living with HIV, the impact of Advanced HIV Disease (AHD) remains severe. In 2021, 29,000 deaths were reported due to AIDS-related complications, with 3.7% of attendees in rural Care and Treatment Centers having Cryptococcal Meningitis, highlighting the prevalence of AHD. Tuberculosis continues to be a leading cause of death among People Living with HIV (PLHIV) in both rural and urban areas. In 2021-2022, African Community Advisory Board (AFROCAB) Treatment Access Partnership, in collaboration with the Clinton Health Access Initiative, spearheaded a community-led initiative to address AHD in Tanzania.

**Methods:** The project employed a multi-faceted approach:

1. Survey Questionnaire: An initial online and physical survey identified community gaps regarding AHD, informing the subsequent project implementation.
2. Formal and Non-formal Training: PLHIV networks, clusters, and peer educators underwent formal training sessions, followed by non-formal cluster training conducted by these individuals. Specific handouts, guided them in disseminating knowledge within their communities.

**Results:** The results underscored a critical lack of awareness, with 84% and 72% of participants from physical and online surveys, respectively, being unaware of AHD. Of the 2,305 PLHIV reached, 23.8% were supported, linked,





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and tested for CD4 levels, leading to the identification of 12.02% of AHD cases. Notably, those diagnosed and supported adhered to treatment, emphasizing the project's impact.

**Conclusions:** In conclusion, sustained and expanded community engagement is crucial for AHD awareness. Various communication channels, including community meetings and social media, should be leveraged. Technology integration, such as user-friendly digital resources, can broaden the reach. Advocacy efforts for policy changes supporting community-led models and increased CD4 accessibility are imperative.

The aim is to ensure that individuals living with HIV can easily access testing services, enabling early identification and prevention of AHD cases. The project's success calls for ongoing initiatives to foster shared responsibility and empower communities in addressing AHD comprehensively.

## EPD104

Enhancing digital literacy for health: peer-led solutions for PLHIV in Queensland, Australia

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**Background:** Research demonstrates that people living with HIV (PLHIV) in Queensland, Australia living in rural and remote locations faced challenges during the digital shift prompted by COVID-19 and experienced higher rates of social isolation. Digital Health Connect (DHC) aimed to enhance digital competency among PLHIV in regional localities. DHC focused on improving access to reliable health information, active participation in healthcare services, and confidence in using online platforms.

**Description:** The Peer Navigation (PN) team at Queensland Positive People (QPP) led nine interactive workshops over six months for PLHIV. These aimed to address specific challenges like communication with healthcare providers, navigating online access, and online safety. The co-designed content, guided by PN insights, addressed gaps in digital skills identified during casework with PLHIV.

**Lessons learned:** Participant feedback emphasised the need for safe spaces where PLHIV could address digital barriers collaboratively. Ensuring safety around sexual and gender identity and HIV status improved the learning environment, fostering personal connections. Consequently, the program not only increased digital platform confidence but also heightened social connections, reducing social isolation. The participatory, peer-led approach effectively built a supportive community, resulting in tangible skill improvements in several domains: operation skills increased from a mean of 3.00 to 3.94, internet skills from 3.16 to 4.00, program skills from 2.21 to 3.63, document skills from 1.76 to 3.67, online safety skills from 2.37 to 3.94, and online health record skills from 2.11 to 3.75

Logistical insights from workshop delivery emphasised the need for careful selection of location due to participant dispersion, acknowledgment of resource-intensive travel costs, and a reliance on personal networks for project promotion and phone calls for intake.

**Conclusions/Next steps:** Data from DHC workshops highlighted the efficacy of peer-led strategies in enhancing digital literacy among specific PLHIV populations. DHC's success lay in its participatory design grounded in PN's real-world experiences. The integration of practical digital skills seamlessly improved participants' lives, increasing engagement with online health services and social networks. This success had broader implications for quality-of-life outcomes, emphasising the need for tailored, peer-driven interventions globally. DHC could inform the development of similar programs, addressing distinct challenges faced by PLHIV in the digital era.

## EPD105

Exploring the influence of intersectional stigma on ART adherence for selected young key populations in Malawi, Zambia, and Zimbabwe: findings from a mixed methods study

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**Background:** Across southern Africa, young (18-24 years) men who have sex with men (MSM) and transgender women have become priorities for HIV programming, especially those living with HIV. Reaching them takes place in contexts where stigma and discrimination remain daily risks. Little region-specific data is available about the influence of stigma on their adherence to anti-retroviral treatment (ART) and only emergent consideration of concepts of minority stress and intersectional stigma in these endeavours.

**Methods:** The study followed a mixed-methods design with simultaneous collection of quantitative and qualitative data. Participants were young MSM or transgender women self-disclosed as living with HIV and on ART. Research assistants guided participants to complete questionnaires and conducted audio-recorded interviews. Qualitative data was analysed using thematic analysis and quantitative data was analysed using descriptive statistics, and bivariate and multivariate regression analysis with missed ART doses as the dependent variable. A dialogic approach to triangulation was employed to build complementary, reflexive links between the two types of data.

**Results:** There were 158 participants with a mean age of 22 years. On gender identity, 40% were transgender or female, although assigned male at birth. Half (52%) were on ART for two years or less (since 2019) at the time of data collection. Between 36% (Malawi and Zimbabwe) and


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50% (Zambia) had missed ART doses, 47% within the past month. Missing doses occurred for stigma-related reasons, including not taking ART in situations where there was the risk of being seen, or due to mental-health-related factors. Intersectional stigmas were potent influences on the participants, although with variations across countries (stigma was less in Malawi), groups (stigma was greater for transgender women). Participants had become adept at mitigating stigma through various strategies for disclosure and concealment to anticipate or avoid its influence. Such efforts had consequences, including mental health burdens (depression, anxiety and thoughts of suicide) as well as frequent reliance on alcohol consumption as a coping mechanism.

**Conclusions:** Achieving long-term ART adherence for young MSM and transgender women requires additional efforts. While addressing problematic laws linked to sexual and gender diversity remains necessary, seeking to address intersectional stigma offers more proximate opportunities.

## EPD106

Does partner HIV disclosure enhance the family function for married HIV positive MSM? A secondary data analysis from a cross-sectional study in China

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**Background:** Partner HIV disclosure has been advocated by World Health Organization due to its potential benefits for individuals and public health. However, it is challenging for married men who have sex with men (MSM) to disclose HIV status to their spouses, due to afraid of affecting their family function. How the partner HIV disclosure would affect family function was unknown among Chinese HIV positive MSM, which led to unclear guidance on how to instruct partner HIV disclosure for this vulnerable population.

**Methods:** We did a secondary data analysis using data from a cross-sectional study conducted among HIV positive MSM in three cities of a province in China from December 2019 to May 2020. Analysis of variance, t-test and Pearson correlation analysis were conducted to explore the differences and relationships of family function scores in different characteristics. We performed the hierarchical logistic regression to examine the impact of HIV disclosure on family function, including family cohesion and family adaptability.

**Results:** Of the 309 participants, only 31.1% reported disclosing HIV status to their spouses. Those who disclosed HIV status to spouse had averagely higher scores of fam-

ily cohesion (63.31±10.15 vs 56.49±11.08,  $p<0.001$ ) and family adaptability (48.81±7.93 vs 42.80±9.02,  $p<0.001$ ), compared to those who did not. There were significant differences in family cohesion by age, province, monthly income, main source of family income, whether having children, sexual orientation, whether disclosing sexual orientation to spouse and extramarital homosexual behaviors (all  $p<0.05$ ).

There were significant differences in family adaptability by province, main source of family income, time period of getting married, whether having children, sexual orientation, whether disclosing sexual orientation to spouse, whether receiving ART and extramarital homosexual behaviors (all  $p<0.05$ ).

After controlling for other variables, the logistic regression analysis showed that whether disclosing HIV status to spouse explained an additional 2.3% of the total variance in predicting family cohesion and 3.3% in family adaptability (both  $p<0.001$ ).

**Conclusions:** Disclosing HIV status to spouse could enhance family function for married HIV positive MSM. Appropriate disclosing strategies and encouragement should be advocated for HIV positive MSM in VCT clinics and designated hospitals in China.

## EPD107

Improving HIV viral suppression among children and adolescents using directly observed therapy in Mubende region, Uganda

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**Background:** Antiretroviral therapy (ART) is key for people living with HIV (PLHIV) for attainment of viral suppression (VS) and a good quality of life. However, the VS rates for children and adolescents living with HIV (C/ALHIV) are less than those of adults due to dependency on caregivers for adherence support, peer pressure, self and community-inflicted stigma, and busy school schedules. Directly Observed Therapy (DOTs) is one of the ways to ensure that clients take all their drugs as prescribed by health workers.

**Description:** During June 2022-February 2023, the CAG-DOTs model was implemented in five selected facilities with more than five non-suppressed C/ALHIV <15years. These included Mityana Hospital, Kiganda H/C IV,







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Mubende Regional Referral Hospital, Kiboga Hospital and St Mary's Kasaala HC IV in Mityana, Kasanda, Mubende, Kiboga and Luwero districts. We identified caregivers of C/ALHIV who were virally suppressed and trained them to work as CAGDOTs "mentors".

CAGDOTs mentors were attached to households with non-suppressed C/ALHIV to share information and enrol clients in the program. CAGDOTs supported the households with daily DOTs, treatment literacy, assessment and management of adherence barriers, and psychosocial support.

**Lessons learned:** Overall, 74 C/ALHIV were enrolled on CAGDOTs. Of these, 49 (66%) were ages 1-10 years and 25 (34%) were 11-15 years. Sixty-three (85%) C/ALHIV were on dolutegravir (DTG) based ART regimens and of these, 60 (95%) re-suppressed.

The remaining 11 (15%) were on protease inhibitor, 9 (81.8%) of whom re-suppressed. Thirty-nine (53%) C/ALHIV had been on ART for  $\geq 5$  years and 17 (23%) had received multi-month ART refills of  $\geq 3$  months. After nine months of DOTs implementation, 58 (78%) C/ALHIV had VL results and of these, 53 (91% 95%CI: 81%-97%) achieved viral re-suppression ( $p < 0.001$ ).

Participants on the DOTs intervention for  $\geq 61$  days seemed to be associated with lower risk of viral non-suppression (Odds Ratio (OR)=0.15; 95%CI: 0.02-1.01;  $p$ -value=0.05) than those with a duration of  $\leq 60$  days.

**Conclusions/Next steps:** The CAGDOTs model achieved a high viral re-suppression rate for C/ALHIV on both DTG and protease inhibitors ART- based regimens, and among C/ALHIV exposed to the intervention longer than 60 days. Scaling up this model could further accelerate HIV epidemic control.

## EPD108

### Feasibility and acceptability of integrating chemsex intervention into existing HIV services: an implementation study of a 4-month piloted harm reduction intervention

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**Background:** The United Nations has recognized the importance of contextually developing and integrating sexualised drug use (chemsex) risk reduction intervention into HIV-related responses. In response to emerging chemsex practices among men who have sex with men (MSM) and transwomen, as well as limited resources availability in the current HIV response, our study aimed to assess the feasibility and acceptability of integrating

harm reduction chemsex interventions into existing HIV services provided by civil society organisations (CSOs) and HIV clinics that formally appointed by Indonesian Ministry of Health.

**Methods:** The chemsex intervention included chemsex training, online and offline educational materials, chemsex and mental health screening tools, and referral pathways, that were intended to be integrated into the existing HIV service flows. The integrated intervention was piloted for four months in 3 CSOs and 23 clinics across three major cities in Indonesia. We used mixed-methods to assess intervention implementation using the Reach, Effectiveness, Adoption, Implementation and Maintenance framework. The feasibility was measured from implementers, and the acceptability was sourced from beneficiaries. Data was analysed using descriptive analysis for quantitative and thematic analysis for qualitative.

**Results:** In total, the intervention reached 2746 beneficiaries (53% from clinics, 47% from CSOs), was considered qualitatively effective to increase knowledge of safe sex and drugs, encouraged behavioural changes (average 3.9/5), and willingness to access health services (average 4.1/5). The CSOs and clinic staff found the intervention was easily adopted and implemented under current HIV service flows; hence, it has the potential to be continued and expanded in the future.

The beneficiaries found the intervention highly acceptable by:

1. Developing a culturally sensitive approach according to chemsex users' characteristics;
2. Screening materials that met the need;
3. Usefulness – as marked by 80% beneficiaries shared the intervention-related information to peers; and,
4. All intervention components were aligned with needs.

**Conclusions:** Our results demonstrate that integrating the chemsex intervention model for MSM and transwomen into the existing HIV services in Indonesia via CSOs and HIV clinics was deemed feasible and acceptable. In order to ensure the sustainability and acceptability of chemsex intervention within the context of the HIV response, support from national policies is required.

## EPD109

### Leveraging digital technologies to improve the experience and satisfaction of clients on antiretroviral therapy: insights from a Telehealth medical call center in Uganda

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**Background:** Uganda has 1.4 million persons living with HIV/AIDS, 93% aged above 15 years. Challenges experienced by people living with HIV/AIDS include distant health facilities, long queues and waiting times at health facilities, and limited access to comprehensive medical consults, among others.

With digital technologies taking center stage in the health sector, we share insights on how a private telehealth company uses a call center to improve clients' experience on antiretroviral therapy (ART) in Uganda.

**Description:** The Medical Concierge Group (TMCG), a digital health partner on the USAID-funded Social Behavioural Change Activity (2020-2024), implemented a Quality Assurance system (QA) to track client experience, including turnaround time for service access and quality of care. The QA system further supports scheduling follow-up calls to healthcare clients and call interaction assessments for providers based on a preset checklist that fosters continuous medical education for providers. The turnaround time (TAT) target is <20 minutes, while the QA service level target is >85%.

**Lessons learned:** In total, 6,237 individuals living with HIV/AIDS contacted TMCG's Telehealth center over the 12-month period, 70% being male; 35% individuals contacted the call center more than two times in the year. The average turnaround time between the initiation of a request by a client and being called back by a Telehealth provider was 21 minutes and 12 seconds.

The service quality performance over the period was 84%, and the Data accuracy rating among the Telehealth providers was 85%. A total of 11,796 encounters were registered, with primary reasons for contact being general healthcare inquiries (55%), family planning (8%), HIV/ART (8%), medical male circumcision (7%), Sexual & Reproductive Health (6%), Maternal & Child Health (4%) and PrEP (2%) among others.

**Conclusions/Next steps:** The Telehealth center facilitated real-time resolution of clients' inquiries remotely. In addition, the ability to track providers' service delivery quality helped address gaps early and avoided unforeseen complications.

## EPD110

### Integrated peer-driven advocacy for HIV prevention in tertiary institutions

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**Background:** Adolescent girls and young women (AGYW) aged 15–24 years, experience higher HIV incidence (0.54%) compared to their male (0.20%) counterparts in Zimbabwe. Although these young people, particularly AGYW are at high risk of HIV, they have limited access to services and information. This has the potential to increase the number of new HIV cases given that tertiary institutions have a large pool of adolescents and young people at high risk of HIV, STIs and unintended pregnancy.

To this end, Pangaea Zimbabwe implemented a peer led intervention in seven tertiary institutions with the aim to expand access to HIV prevention options among AGYW in tertiary institutions

**Description:** In 2022 and 2023, 35 prevention champions in seven tertiary institutions (5 per institution) were purposively sampled targeting those within provinces with higher incidence and representing most provinces with high HIV incidence in Zimbabwe. The Hive model assumes that peers act as catalysts for change since they have a lived understanding of situations faced. Two institutions were purposively assigned to the HIVE method. Five prevention champions mobilized and introduced new beneficiaries (24 AGYW) and cascaded SRH and HIV prevention knowledge. In the remaining five institutions, champions disseminated information to their peers using already existing college structures. Increased HIV prevention awareness and access was assessed by an increase in prevention options offered in the institution.

**Lessons learned:** From March to November 2023 the champions reported that 911 AGYW were reached with information and 325 were initiated on oral PrEP (pre-exposure prophylaxis). Oral PrEP services increased from 2/7 tertiary institutions in 2022 to 5/7 tertiary institutions. Champions installed local-level (institution-based) structures for HIV prevention advocacy. Some formed committees to train students whilst some elected intermediaries who collected HIV prevention supplies on behalf of others.

**Conclusions/Next steps:** Peer driven initiatives pinpoint the root causes of limited use of HIV prevention methods in tertiary institutions. They also have an impact of increasing awareness, knowledge and destigmatization. Tertiary institutions play a vital role as providers of PrEP services and in offering youth-friendly services. Hence this should be built upon to improve tertiary institution HIV prevention service delivery.



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## EPD111

### Training and incentive-driven approach for community 'médiatrices' supporting women living with HIV in Niger

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**Background:** The Nigerien context is challenging for the estimated 20,000 women living with HIV (WLHIV). Niger's religious and cultural environment limits male-female interaction, including in healthcare. WLHIV experience discrimination from their communities and even health workers, which discourages HIV testing, care-seeking, and treatment adherence.

Niger's community 'médiatrices', or mediators, are essential to fighting HIV/AIDS, with their innovative, contextualized approach to reaching WLHIV. Nigerien NGO SongES, with international partners Palladium, Instiglio, and the Global Fund, supports médiatrices through training, supportive supervision, and performance management.

**Description:** Médiatrices are women chosen by their communities based on their leadership, age, and status in the community. These characteristics allow médiatrices to engage with WLHIV with no special authorization. Partnering with health centers, médiatrices refer and accompany women to health facilities, organize educational events, conduct household visits, seek out WLHIV lost to follow-up, and more.

To optimize médiatrices' impact, SongES, Palladium, and Instiglio developed and implemented a comprehensive training curriculum and clear performance standards linked to médiatrices' remuneration.

**Lessons learned:** Through their work, médiatrices effectively demystify HIV and reduce stigmatization. Through education and awareness-raising, médiatrices help their communities to better understand HIV—including transmission, prevention, and treatment—and, importantly, recognize that HIV is not fatal. Médiatrices are the epicenter of community mobilization and demand creation. One médiatrice reported women's "stronger comprehension of the [health] themes we cover, which gives us... a feeling of pride that we're contributing significantly in women's lives."

**Conclusions/Next steps:** Thanks to médiatrices' support, between December 2022 and October 2023, 9,570 pregnant women not receiving prenatal care were identified, referred, and treated at health centers. Médiatrices also referred 3,133 women who had given birth at home for treatment and reengaged 4,134 pregnant women previously lost to follow-up.

Providing clear performance metrics tied to remuneration allowed médiatrices to track and target lifesaving services for women who may not otherwise have received care. Médiatrices' unique approach is ideally suited to

communities, especially in rural areas, where traditional health approaches can overlook WLHIV. As SongES continues its strong support, médiatrices could reach even more WLHIV with engagement from Nigerien health stakeholders to support and recruit additional médiatrices.

## EPD112

### Exploring association between intoxication and contraception choices among female students at public colleges in Zambia

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**Background:** High alcohol consumption among young Zambians, particularly heavy episodic drinking prevalent in 62.9% of 15-19 year old drinkers, raises concern about potential sexual health risks (WHO, 2018). Worryingly, young people (15-25years) fuel over 40% of new HIV acquisition annually, with girls disproportionately affected (UNAIDS 2022).

This increased vulnerability to sexual health risks necessitates investigating whether intoxication influences female students' choices about contraception and whether such choices are associated with a higher risk of STIs, including new HIV acquisition.

**Methods:** A descriptive cross-sectional quantitative study methodology was employed. The target sample was 215 female students, 15 to 25 years from Northern Technical College in Ndola, Zambia. The female students were selected randomly from a population of 286 residing on campus.

The data was collected through questionnaires administered using Kobo toolbox and hard copies. Data was analysed using SPSS. Associations were established using the Chi-square test at the 5% significance level.

**Results:** Almost half (49.04%) of the participants had taken alcohol or recreational drugs in the six months preceding the study. Notably, 68 percent (n=75) of participants who reported alcohol abuse also utilised emergency contraceptives resulting from risky sexual behaviour.

In contrast, 72 percent (n=71) of those who did not consume alcohol did not use emergency contraception. An association between engaging in sexual activity under the influence of substances and a history of STI diagnosis showing risky behaviour was also established (p = .015).

**Conclusions:** There's a strong association between consuming alcohol and utilizing emergency contraceptive methods. This indicates risky sexual behaviour under the influence of alcohol or drug consumption.

This research shows the importance of incorporating substance abuse in sexual and reproductive health programming. Increased awareness, education, and interventions

targeting both substance use, and safe sexual practices will contribute positively to reducing new HIV and STIs incidences valuable to address these concerns.

## EPD113

### Impact of HIV transmission knowledge and stigma awareness on discriminatory attitudes among women (15-49) in Southern African Countries: a trend analysis of demographic and health surveys of two decades

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**Background:** Stigma poses negative effects on the health outcomes of people living with HIV/AIDS (PLWHIV), including sub-optimal medication adherence, lower visit adherence, higher depression, and overall lower quality of life. This study aims to investigate the impact of knowledge of HIV transmission and HIV stigma awareness on discriminatory attitudes among women (aged 15-49) in Southern African Countries.

**Methods:** We have used the Demographic and Health Surveys (DHS) that were conducted in Southern African Countries and published between 2013 to 2023. Three discriminatory attitude questions were computer to obtain the outcome variable (discriminatory attitude towards PLWHIV). Independent variables included in the model were knowledge of HIV transmission, HIV stigma awareness, and sociodemographic characteristics. DHS of countries that did not report these key independent variables were excluded. Five DHS of five countries (Eswatini 2006-2007, Lesotho 2009, Namibia 2006, Zambia 2007 and Zimbabwe 2005-2006) were included in the final analysis. A total sample of 38,467 women were used for the final analysis. The data were analyzed using a chi-squared test and bivariate logistic regression.

**Results:** The prevalence of discriminatory attitudes towards PLWHIV in the 5 Southern African Countries ranged from 33.7% in Eswatini to 57.2% in Zimbabwe. In the regression analysis, respondents who were youths, were never married, had no formal education, were living in rural areas, and from the poor/poorest wealth quintile had higher odds of exhibiting discriminatory attitudes towards PLWHIV. Knowing people who have been stigmatized before (denied healthcare services, access to social events, or verbally abused because of AIDS) was not a significant predictor of discrimination in any of the countries. However, those who believed that HIV can be transmitted by sharing food were more likely to exhibit discriminatory

attitudes towards PLWHIV in Zimbabwe (aOR: 3.42, CI:2.92-4.01), Zambia (aOR:3.46, CI: 2.93-4.09), Lesotho (aOR:4.56, CI:3.97-5.24), Eswani (aOR: 2.82, CI:2.36-3.40), and Namibia (aOR: 2.07, CI: 1.80-2.38).

**Conclusions:** Poor understanding of the patterns of HIV transmission led to higher odds of exhibiting discriminatory behaviours.

Efforts to increase understanding of the consequences of stigma and patterns of HIV transmission will likely be effective in reducing the rate of stigmatization towards PLWHIV in Southern African countries.

## EPD114

### Prevalence and correlates of HIV-related stigma among people living with and without HIV in Lesotho

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**Background:** HIV-related stigma is a notable barrier to HIV prevention, testing, and treatment. HIV-related stigma in Lesotho, a high HIV prevalence country, has rarely been characterized in the general population using a nationally representative sample.

We assessed the prevalence and socio-demographic correlates of self-reported HIV-related stigma and discriminatory attitudes among people living with HIV (PLWH) and people not living with HIV (PNLWH) in Lesotho.

**Methods:** We used the Lesotho Population-based HIV Impact Assessment, a cross-sectional, household-based survey that used two-stage sampling to collect nationally representative data from adults aged ≥15 years. Between 2015-2017, data from interviews, home-based HIV testing, and laboratory testing were collected. Questions from the HIV/AIDS knowledge and attitudes module were used to characterize self-reported HIV-related stigma into five categories.

Logistic regression was used to determine socio-demographic factors associated with HIV-related stigma in PLWH and PNLWH aged 15-59 years.

**Results:** Of 3,199 PLWH, 36.7% (95% CI: 35.0-38.4) reported internal stigma, 40.9% (95% CI: 39.0-42.8) reported associated stigma, and 6.63% (95% CI: 5.63-7.79) reported received and institutional stigma. Of 8,483 PNLWH, 43.2% (95% CI: 41.9-44.4) reported stigmatizing attitudes, and 9.93% (95% CI: 9.24-10.7) reported discriminatory behavior towards PLWH. PLWH in higher wealth quintiles had significantly higher adjusted odds of internal stigma (Table 1).



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Older PLWH had significantly higher adjusted odds of received and institutional stigma. Of PNLWH, men, young people, those with lower education, and those in the lowest wealth quintile had significantly higher adjusted odds of discriminatory behavior towards PLWH.

Variable (Reference)	PLWH			PNLWH	
	Internal stigma Adjusted Odds Ratio (95% CI)	Associated stigma Adjusted Odds Ratio (95% CI)	Received and Institutional Stigma Adjusted Odds Ratio (95% CI)	Discriminatory behavior towards PLWH Adjusted Odds Ratio (95% CI)	Stigmatizing attitudes towards PLWH Adjusted Odds Ratio (95% CI)
Sex (Female)	0.81 (0.52-1.12)	1.05 (0.59-1.23)	1.07 (0.79-1.43)	1.43 (1.22-1.68)**	0.31 (0.53-1.21)
Age category (15-24 years)					
25-34 years	0.84 (0.63-1.11)	1.07 (0.62-1.4)	1.42 (0.94-2.14)	0.36 (0.46-0.88)**	1.02 (0.52-1.73)
45-54 years	0.83 (0.6-1.13)	1.03 (0.79-1.42)	1.87 (1.03-3.81)*	0.8 (0.46-0.77)**	0.96 (0.66-1.31)
55-64 years	0.89 (0.58-1.33)	1.06 (0.7-1.6)	2.21 (1.07-4.55)*	0.59 (0.45-0.84)**	1.03 (0.67-1.28)
Education (more)					
Primary	0.87 (0.7-1.08)	1.17 (0.86-1.6)	1.37 (0.7-2.69)	0.82 (0.45-0.86)**	0.99 (0.79-1.21)
Secondary or above	0.86 (0.67-1.09)	1.22 (0.89-1.66)	1.25 (0.62-2.51)	0.3 (0.21-0.44)**	1.02 (0.6-1.31)
Wealth Quintile (1)					
2	1.26 (0.98-1.6)	1.18 (0.82-1.52)	0.78 (0.46-1.33)	0.78 (0.63-0.98)**	0.88 (0.67-1.14)
3	1.19 (0.82-1.87)*	1.34 (0.81-1.94)	0.82 (0.51-1.47)	0.71 (0.53-0.95)**	1.12 (0.83-1.53)
4	1.87 (1.21-2.89)**	1.52 (1.06-1.76)	1.03 (0.62-1.63)	0.96 (0.64-1.15)	1.08 (0.82-1.3)
5	1.38 (1.04-1.84)*	1.11 (0.82-1.5)	0.93 (0.47-1.84)	0.7 (0.5-0.98)**	0.96 (0.61-1.18)
Urban Area Indicator (Urban)					
Rural	0.79 (0.58-1.05)	0.77 (0.54-1.08)	0.44 (0.19-1.01)	0.88 (0.64-1.23)	1.05 (0.67-1.27)
Rural	1.19 (0.95-1.48)	1.03 (0.82-1.22)	0.88 (0.55-1.38)	1.18 (0.81-1.48)	1.07 (0.69-1.21)
Gender (Male)					
Male	0.82 (0.78-1.18)	1.01 (0.77-1.32)	0.68 (0.34-1.38)	0.36 (0.7-1.31)	0.98 (0.83-1.17)
Male's Head	0.82 (0.78-1.18)	1.01 (0.77-1.32)	0.67 (0.31-1.38)	1.08 (0.76-1.48)	0.97 (0.79-1.19)
Female	1.63 (0.82-1.38)	0.87 (0.79-1.24)	0.74 (0.43-1.28)	1.03 (0.76-1.34)	1.07 (0.86-1.18)
Female	1.16 (0.81-1.48)	1.30 (1-1.87)	0.73 (0.49-1.09)	0.91 (0.66-1.27)	1.13 (0.84-1.53)
Outing	0.95 (0.7-1.28)	1.04 (0.8-1.34)	0.48 (0.29-0.81)*	0.96 (0.63-1.48)	1.15 (0.85-1.41)
Butch-Butch	1.45 (0.96-2.12)	1.37 (0.94-2.02)	1.08 (0.6-1.83)	1.04 (0.73-1.48)	1.14 (0.81-1.42)
Male-female	1.42 (0.95-2.11)	1.32 (0.88-1.92)	0.71 (0.38-1.27)	0.95 (0.66-1.32)	1.07 (0.83-1.32)
Gay/lesbian	1.34 (0.89-1.98)	1.18 (0.8-1.73)	1.49 (0.83-2.67)	1.21 (0.81-1.83)	1.08 (0.83-1.41)
Trans-Trans	1.12 (0.84-1.5)	1.13 (0.83-1.53)	1.13 (0.42-3.02)	0.75 (0.54-1.05)	0.87 (0.64-1.02)

Significance levels: \* p<0.05, \*\* p<0.01

Table 1. Adjusted odds ratio of socio-demographic correlates of different types of stigma among PLWH and PNLWH.

**Conclusions:** In this nationally representative sample of Lesotho, HIV-related stigma was highly prevalent. Prioritization of HIV education and awareness for men, young people and those from lower socioeconomic strata is paramount. HIV-related stigma reduction efforts in health services are required, particularly for those providing care for older PLWH. Support groups for PLWH is necessary to combat internal stigma across socioeconomic strata.

## EPD115

### Medicaid insurance expansion and its association with HIV outcomes in Nebraska, USA: an observational prospective cohort study

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**Background:** In Nebraska, the rate of HIV viral suppression as of 2018 was 66% (National HIV Strategy viral suppression target rate is 90%). The recent Medicaid expansion in October 2020 in Nebraska provided us with a great opportunity to study the impact of Medicaid enrollment on viral suppression (VS) and investigate changes in healthcare barriers, access, and utilization in people with HIV (PWH) who enroll into Medicaid.

**Methods:** PWH were recruited for a prospective observational cohort study that included healthcare clients 19 or older who enrolled in Medicaid between October 1, 2020, and December 31, 2021, and those who were eligible but did not enroll. We collected baseline demographic and clinical information and conducted chart reviews every three months to collect HIV viral load, and other

health-related variables. A questionnaire was administered at baseline and every three months up to one year to evaluate access and barriers to care. An Adherence Barrier Questionnaire (ABQ-HIV) was administered at baseline and at the end of the study.

**Results:** Diverse healthcare clients were included in the study, with 101 enrolled in Medicaid vs. 96 eligible but did not enroll (Table 1).

For enrollees, there was a statistically significant difference in the proportion of participants (58%) with VS<50 (HIV RNA <50 copies/mL) at baseline compared to 77% with VS<50 at the end of the study (p=0.0018). 58.4% of enrollees had VS<50 at baseline compared to 77.2% at follow-up. Statistical significance was still consistent when comparing VS<200 (HIV RNA <200 copies/mL) at baseline and follow-up (p<0.001).

Moreover, among respondents to the baseline and end-of-study surveys, results were statistically significant for feeling they could afford care (p<0.001), ease in scheduling visits with providers (p=0.053), having more routine checkups (p=0.0159), feeling it was less difficult to pay for medication (p=0.0374), reduction in rationalization of HIV medication (p=0.0016), ease of finding providers when they need care (p=0.0250), and increased median number of outpatient visits (p=0.0034).

**Conclusions:** Medicaid expansion led to the improvement of HIV outcomes (VS) post-enrollment compared to baseline. Barriers to healthcare (access and affordability) were eased, leading to increased healthcare utilization among participants who enrolled in Medicaid.

## EPD116

### Characteristics and sexual behaviour patterns of clients who discontinued PrEP in Kenya

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**Background:** The decision to initiate and continue oral pre-exposure prophylaxis (PrEP) is intricately linked to an individual's perceived susceptibility to HIV acquisition. We explored the characteristics and sexual behaviour patterns of individuals who opted to discontinue PrEP use.

**Methods:** Between 2020 and 2022, we administered a standardized phone survey to clients who discontinued PrEP at four large public HIV care clinics in Central Kenya. The survey assessed socio-demographic characteristics, reasons for discontinuation, risk perception and sexual behaviours. Log binomial method was used to assess demographic factors linked to early PrEP discontinuation, defined as use for less than three months.

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**Results:** Overall, 300 individuals discontinued PrEP; the median age was 35 (IQR 23-43) years. More than half of the individuals, 177/300 (59%), reported discontinuation of PrEP within the first three months of initiation. Out of the 300, 116 (65.5%) were female.

Primary reasons for discontinuation included reduced HIV risk perception (43.7%), separation and reduced risk (23.0%) and side effect concerns (8.7%).

Young adults (<30 years) were more likely to discontinue early than older adults (aRR=1.31, 95% CI: [1.09, 1.59]). Higher income was correlated with a lower likelihood of early PrEP discontinuation (aRR=0.76, 95% CI: [0.62, 0.94]).

Approximately one third, 57/177 (32.2%), of individuals reported having a sexual partner whose HIV status was unknown. Individuals whose last sexual partners were known to be living with HIV showed a lower likelihood of early PrEP discontinuation compared to those whose partners' HIV status was negative (aRR=0.60, 95% CI: [0.46, 0.78]).

**Conclusions:** There is a need for tailored support systems to sustain HIV prevention efforts beyond PrEP cessation, emphasizing the ongoing significance of comprehensive preventive strategies. Additionally, targeted supportive counselling for PrEP continuation among the younger population, who face a higher risk of incident HIV acquisition and those with fewer years of education, would be beneficial.

## EPD117

**Synergistic interaction between pay-it-forward incentives and recreational drug use on hepatitis B virus and hepatitis C virus testing among men who have sex with men in China**

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**Background:** Men who have sex with men (MSM) have a high risk of hepatitis B virus (HBV) and hepatitis C virus (HCV) infection, but testing rates remain low among them in China, especially those who are using recreational drugs. Pay-it-forward incentives effectively promote HBV and HCV testing by offering participants free testing and a chance to donate to support subsequent testing. This study aims to explore the interaction between pay-it-forward incentives and recreational drug use on HBV and HCV testing uptake among MSM in China.

**Methods:** We pooled data from two pay-it-forward studies (a randomized controlled trial and a quasi-experimental study) that aimed to promote dual HBV and HCV testing among MSM in Jiangsu, China. We explored factors associated with dual HBV and HCV testing uptake in the two study groups and examined the potential interaction between pay-it-forward incentives and recreational drug use on hepatitis testing uptake on multiplicative and additive scales.

**Results:** Overall, 511 MSM participated in these two studies, with 265 participants in the pay-it-forward incentives group and 246 participants in the standard-of-care group. The median age of participants was 29 years old (interquartile range [IQR], 25-39) in the pay-it-forward incentives group and 30 years old (IQR, 25-37) in the standard-of-care group. Among these participants, 59.3% in the pay-it-forward incentives group and 24.8% in the standard-of-care group received HBV and HCV testing, respectively. In the pay-it-forward incentives group, participants who used recreational drugs in the past 12 months (adjusted odds ratio [AOR]=1.83, 95% CI: 1.09-3.06) were more likely to receive HBV and HCV testing, compared with those who never used recreational drugs, whereas in the standard-of-care group, those who used recreational drugs were less likely to receive HCV testing (AOR=0.38, 95% CI: 0.18-0.78). There was a synergistic interaction on both the multiplicative (ratio of ORs = 4.83, 95%CI: 1.98-11.7) and additive scales (the relative excess risk due to interaction [RERI]=2.97, 95%CI: 0.56-5.38) of pay-it-forward incentives and recreational drug use behaviors on HBV and HCV test uptake among MSM.

**Conclusions:** Pay-it-forward incentives may be particularly useful in promoting hepatitis testing among MSM who use recreational drugs.

## EPD118

**Development of Community-Led Monitoring dashboard page for oral PrEP program in Indonesia**

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**Background:** Pre-exposure Prophylaxis is one of the HIV prevention program that is currently being rolled out in Indonesia. To improve the quality of PrEP service delivery, Community-Led Monitoring (CLM) has been carried out in collaboration with HIV community organizations. While CLM is a common concept for HIV program monitoring, a lot of the results are still presented through anecdotal reporting mechanism.





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In order to gather and present evidence-based data from the on-going program, an additional tool is needed to capture and report the result of CLM. Therefore, a dashboard page is also developed to display the data that has been collected.

**Description:** CLM was implemented by PrEP Focal Point in 21 cities and districts, initiated by GWL-INA as a representative community organization in Indonesia. The aim is to systemically and routinely collect and analyze data on PrEP delivery in health services and how the program had been rolled out in each city or district. The results were then used for program improvements based on community access for PrEP itself. Data collection was carried out every three months starting in 2023, using online questionnaires developed by RC3ID Universitas Padjadjaran. Data was captured through Google Form while the dashboard page was developed on LookerStudio platform. All CLM-related activities were funded by UNAIDS Indonesia.

**Lessons learned:** The purpose of CLM is to serve as surveillance and accountability mechanism for health services, therefore the results are seen from the point of view of community as the main beneficiary of PrEP. Through CLM, we can see how PrEP is being provided through access experience and find out points that need improvements. The dashboard page that presents the results of CLM can be used as the source of data for an evidence-based advocacy initiated by community-led organizations. With advocacy being carried out frequently, loops of rapid feedbacks and improvements are expected to reach the ideal PrEP service delivery.

**Conclusions/Next steps:** An accessible dashboard page that displays data from CLM is helpful to gather accountable results and serve an evidence-based advocacy. It can be used as an additional tool for community-led organizations to carry out CLM in more systematic manner.

## EPD119

Exploring the multidisciplinary approach to individuals living with HIV and chemsex: a case study of harm reduction therapeutic community in Taiwan

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**Background:** Recent surveys by the Taiwan Centers for Disease Control indicate a rising trend in sexualized drug use among MSM, with the prevalence reaching 18% over the past three years. The survey also revealed a higher HIV positivity rate among individuals who use substances (5.4% compared to 1.2%), suggesting a greater likelihood of being HIV-positive in this group. Given the expanding population of people engaging in chemsex, providing care for them is essential in responding to the HIV epidemic.

**Methods:** This study focuses on a harm reduction approach, encompassing more than just monitoring an individual's substance use. It considers the complex interplay of factors inherent in substance use disorders, including the social, environmental, and psychological contexts of everyone. Particularly in Taiwan, these individuals face multifaceted pressures. In traditional Chinese families, the focus on lineage can lead to less acceptance of LGBTQ+ individuals, adding to the societal stigma and internal conflict experienced by those living with HIV and substance use disorders. Backed by government funds, our harm reduction strategy for HIV and substance use disorders builds a multidisciplinary model.

The study utilized a therapeutic community setting to aid clients through structured daily routines, engaging in agricultural work, and learning various thematic subjects. Social workers and peer counselors facilitated the development of self-awareness about substance use and interpersonal relationships. This holistic approach focuses on comprehensive care, including physical, mental, social, and spiritual well-being, while emphasizing trauma care and relationship restoration. It employs both short and long-term recovery strategies, involving families.

**Results:** From 2019 to 2023, our program supported 529 individuals and their families, enhancing average family function by 1.6 points as per the APGAR assessment. Addiction severity, measured by the SDS, decreased by 2.8 points. Notably, 90% of individuals maintained contact with our services after leaving our therapeutic community.

This study outlines effective recovery strategies for substance use disorders, highlighting the success of localized harm reduction treatments for HIV and substance use.

**Conclusions:** Acknowledging the recovery challenges, our initiatives have reduced relapse severity and drug use disorder. Our collaborative, multidisciplinary methods have significantly contributed to mental health and established a harm reduction model in Chinese communities.

## EPD120

Differential appointment reminder strategies for unlettered patients in an under-resourced environment in Limpopo Province, South Africa

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**Background:** With the increased medical care needs for people living with HIV (PLWH) on antiretroviral therapy (ART) in recent years, achieving optimal appointment adherence is becoming the biggest challenge in an outpatient setting. Despite the strategies used to document the appointments, patients are still faced with the challenge of forgetting the dates scheduled for their next treatment refills and other medical follow-ups. Various

strategies were employed to remind patients about the next appointment dates, however, patients who cannot read and write, lack mobile phones, and in hard-to-reach communities are not covered by most of the reminder strategies.

Hence this study explored alternative reminder strategies suitable for illiterate patients in an under-resourced rural area of Limpopo Province.

**Methods:** Semi-structured interviews were conducted among twelve PLWH on antiretroviral therapy who missed two or more appointments in the period of 12 months. Data collected from October 2018 to January 2019 in the local languages used in Limpopo Province.

Interviews were audio-recorded and transcribed verbatim, coded for themes, and used a phenomenological deductive and inductive approach for thematic data analysis.

**Results:** Reminder strategies currently employed, forgetting the appointment date, failure to read what is written in a patient retain appointment cards, and no cancellation and rescheduling of new dates were identified as barriers affecting adherence to appointments. The finding of the study revealed many challenges and factors that contribute to the missing of appointments; however, not all will be applicable to resolve some factors or challenges.

**Conclusions:** Improving medical appointment keeping is a challenge because the strategies used for reminder is not feasible to all PLWH on antiretroviral therapy. Alternative strategies that would suit patients' special needs were suggested to facilitate appointment-keeping. Patients in an underprivileged setting were the ones mostly affected by the strategies set to be used to increase appointment keeping. Healthcare providers must acknowledge that patients should be treated differently according to the patients' situation when providing appointment dates. Patients' level of understanding is important and healthcare providers should explore an alternative strategy that will work best to remind the patient to honor the next appointment date.

## EPD121

Associations between community engagement and support from peers and family on willingness to participate in HIV prevention research: findings from a cross-sectional survey

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**Background:** Community engagement (CE) is critical to inform the delivery and uptake of existing and upcoming HIV prevention products. Little information exists on how communities are involved in HIV prevention research. Ac-

cordingly, we aimed to understand the nature of community engagement practices in relation to HIV biomedical/prevention research and how perceived benefits and expectations of CE are associated with willingness to participate in HIV prevention research.

**Methods:** Between November 2021 and September 2022, we conducted a self-administered online survey among 143 peer-driven sample of community representatives and a criterion-based sample of 35 researchers in India. Scales were used to measure willingness to participate in research, perceived benefits and expectations of community engagement, trust in research/researchers, and perceived support from family/peers. Among the community sample, we used multivariable linear regression to identify significant predictors of willingness to participate in HIV prevention research.

**Results:** The community participants' (n=143) mean age was 30.6 years (SD=8.2) and mean monthly income was INR 13764 (SD=15422). About half were women, 48% had a college degree, 41% were employed, and 58% were key populations. The researchers (n=35) had an average of 9.7 (SD 7.5) years of experience in HIV prevention research. Only 58% community participants agreed that they trust researchers and research institutions; 88% highlighted critical information need on study purpose, procedures, associated benefits, possible risks, and grievance redressal mechanism to improve informed decision-making. Among researchers, 77% reported difficulty in gaining the support of community leaders/gatekeepers for initiating research and 100% appreciated the need for researchers' capacity strengthening on CE and building trust. A multiple regression showed that community expectation of a reciprocal feedback-based CE (b=.13, 95% CI .09 to .18, p<.001) and perceived support of their peers/community (b=.22, 95% CI .04 to .30, p<.05) were positively associated with their willingness to participate in HIV prevention research.

**Conclusions:** The findings highlighted that fulfilling CE expectations and increasing support from peers/community will help improve the communities' participation in HIV prevention research. Steps need to be taken to strengthen researchers' capacities to meaningfully engage study communities and strengthen communities' (e.g., community advisory board) capacities to contribute more effectively to research planning and implementation.



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## EPD122

Voices from the past charting the way forward: examining the role of information in combatting HIV/AIDS

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**Background:** Despite the availability of simple and well-tolerated therapies, targets set by UNAIDS for combatting HIV/AIDS have not been fully met. To understand why, this study utilized oral history methodology to examine how information about the disease was disseminated in the past and what lessons can be learned from these experiences to improve current efforts to achieve those targets.

**Methods:** Interviews were conducted with 12 Flemish „experts by experience“ (individuals living with HIV or loved ones of HIV-positive people) and 7 Flemish „specialists“ (doctors, nurses, or professors with expertise in HIV/AIDS research like Peter Piot or Marie Laga). The aim of the study was to explore how information circulated among the formal network (governmental communication), the informal network (communication with loved ones, peers, and buddies), and the medical network (communication with medical staff) during the HIV/AIDS epidemic.

**Results:** The interviews revealed various problems from the past within these networks, including persistent ignorance, silences on the virus in waves, inadequate communication adapted to culture and target groups, and the importance of the informal network. The significance of emotions in communication beyond the correctness of information was also emphasized by the interviewees.

**Conclusions:** This study's results demonstrate that the circulation of information plays a crucial role in combatting HIV/AIDS. Although therapies have been a turning point in the disease's history, proper communication is necessary to implement them efficiently. Society has learned from past mistakes in communication since the early 1980s to some extent, but some of them still persist. By examining the past and engaging with individuals who have experienced the disease firsthand, lessons can be learned to improve current efforts.

The findings of this study suggest that current efforts to combat HIV/AIDS must keep prioritizing the involvement of informal networks and tailored communication strategies that promote the normalization of the virus, rather than its banalization. By building on these lessons from the past, more effective strategies for HIV/AIDS prevention and treatment can be developed to achieve the targets set by UNAIDS and improve the lives of those affected by the disease.

## EPD123

Using a community mobilization approach to eliminate harmful social norms that fuel HIV infection among adolescent girls and young women: lessons from Insiza district of Zimbabwe

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**Background:** Zimbabwe Health Interventions (ZHI) is implementing the Determined, Resilient, Empowered, AIDS free, Mentored and Safe (DREAMS) program to reduce HIV incidence among adolescent girls and young women (AGYW). There is growing focus on behavioural and structural interventions that facilitate achievement of HIV epidemic control.

The DREAMS program uses community mobilization approach to drive locally led community actions through community leader (traditional and religious) engagements to eliminate harmful social norms and negative behaviours that increase HIV infection risk.

**Description:** Results from the 2022 ZHI-commissioned gender equality and social inclusion (GESI) analysis showed that harmful norms exist in communities that increase HIV infection risk to AGYW, including child marriages, suboptimal parental communication, and support; other risk factors were artisanal mining, migration, and drug and substance use. The DREAMS program adopted transformative approaches for behaviour and norms change, including intensified community dialogues with diverse groups (traditional leaders, men, boys, girls, and women) to address challenges affecting AGYW and increasing their HIV infection risks.

Multiple platforms e.g., church gatherings, chief's council meetings, community gatherings and sensitization meetings were utilized to reflect on these challenges and through transformative dialogues communities identified and, prioritized issues and made commitments to act.

**Lessons learned:** Routine program monitoring has shown that community leaders were taking an active role in addressing identified risk behaviours in Insiza district. Community actions taken include identifying and banning selling of unlicensed alcohol and drug substances and night parties, instituting community by-laws, instituting local by-laws to prevent and stop child marriages, and targeted dialogues with young men at farming and mining sites and sports gatherings. Targeted dialogues and provision of HIV services within reach of young men at mining sites increases access to and uptake of services while promoting health seeking behaviours.



**Conclusions/Next steps:** Community mobilization through engagement of leaders was effective in reducing harmful social norms. We recommend continued engagement of traditional and religious leaders to address structural and behavioural challenges that increase HIV infection risk among AGYW. The DREAMS program should develop and implement interventions targeted at men and boys to address negative masculinity and norms which place them, and AGYW at HIV infection risk.

## EPD124

### Obstacles and hesitations in the use of HIV pre-exposure prophylaxis (PrEP) among gay adolescents in project PrEP 15-19, Brazil: pathways to overcome barriers

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**Background:** In Brazil, many gay adolescents are disproportionately affected by HIV infection. The integration of Pre-Exposure Prophylaxis (PrEP) into combined prevention initiatives is crucial for epidemic control and holds significance for this vulnerable population. Adolescence, marked by life cycle transitions and continuous learning, suggests a heightened susceptibility to adopting new behaviors, both in terms of increased vulnerability to sexually transmitted infections and openness to new prevention methods.

This study aims to comprehend the obstacles and hesitations surrounding PrEP utilization among gay adolescents, providing insights to overcome barriers to HIV prevention in this context.

**Methods:** Conducted within the theoretical and methodological framework of Interpretative Anthropology, this qualitative study engaged in eight in-depth interviews with gay men aged 15 to 19, supplemented by ethnographic follow-up. The participants, residents of Belo Horizonte, deliberately chose not to utilize Pre-Exposure Prophylaxis (PrEP) in the „PrEP 15-19 Study.“ This initiative constitutes a multicenter prospective PrEP demonstration cohort research project involving Brazilian adolescents. The study, officially titled „PrEP 15-19 Study,“ commenced with a minimum follow-up duration of three months, beginning in July 2020.

**Results:** The study's findings highlight hesitations and barriers related to health literacy, covering various aspects: a) Individual capacity, a.1) Informed decision-making, a.2) Knowledge acquisition, a.3) Navigation of the health system; b) Evaluation of health information; and c) Management of one's health and well-being. Adoles-

cents' individual capacity is characterized by insufficient knowledge acquisition in schools, among friends, or online, with limited consideration for health services as an option. However, they emphasize the positive service experience of the "PrEP 15-19" project.

Some narratives, after accessing combined prevention information, demonstrate a low perception of HIV risk, often associated with infrequent sexual activity or a stable partnership.

Family experiences act as barriers to health management, particularly inhibiting homoaffective sexual practices. Additionally, the requirement for parental consent for those under 18 poses a significant impediment.

**Conclusions:** This study underscores the importance of reflecting on health literacy in the context of HIV prevention among adolescents. It emphasizes the necessity of comprehensive health education, considering information quality, family context, and autonomy. Urgent measures include the release of PrEP for adolescents without parental consent.

## EPD125

### Determining post exposure prophylaxis (PeP) efficacy amongst survivors of sexual and gender based violence; lessons learnt from Zimbabwe

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**Background:** This study explores the uptake of Post-Exposure Prophylaxis (PeP) among survivors of sexual and gender-based violence (SGBV) in Zimbabwe, focusing on data gathered from four Family Support Clinics in 2023.

The importance of timely and comprehensive PeP administration to prevent HIV transmission in this vulnerable population underscores the need for a detailed analysis of uptake, default rates, and treatment outcomes.

**Description:** The research involved a retrospective analysis of PeP administration data for 1269 survivors of SGBV across the four Family Support Clinics. Key variables included the number of individuals receiving PeP, the incidence of defaulting from treatment, and subsequent seroconversions. Additionally, the study examined factors contributing to completion or discontinuation of PeP among survivors.

**Lessons learned:** In 2023, 1269 survivors received PeP, reflecting a significant commitment to addressing HIV prevention in the aftermath of SGBV. However, concerns arise from the 57 (4.5%) individuals who defaulted from treatment, indicating potential barriers to sustained care. Alarming, 8 seroconversions (0.6%) were observed, with 2 occurring among those who completed the PeP regimen. This prompts a critical examination of the efficacy of the current PeP protocols and the identification of factors contributing to treatment failure.



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**Conclusions/Next steps:** The findings emphasize the urgency of addressing barriers to PeP completion among survivors of SGBV. Understanding the reasons behind defaulting and seroconversions, especially in those who complete treatment, is crucial for refining clinical protocols and support systems. Recommendations include enhanced counseling services, improved follow-up mechanisms, and community-based interventions to address stigma and other psychosocial factors affecting PeP adherence. Strengthening the integration of HIV prevention within the broader context of survivor support is essential for achieving better outcomes and preventing new incidences among this vulnerable population.

## EPD126

### SIMBIHealth Project: women groups shaping HIV care in Nasarawa State

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**Background:** Rural communities in Nigeria often face unique challenges in accessing sexual and reproductive services - SRH (especially HIV) due to various factors. These communities tend to have limited healthcare infrastructure, inadequate resources, and a lack of healthcare professionals trained in providing comprehensive care. Additionally, socio-cultural norms and beliefs may contribute to barriers in seeking care and addressing women's health needs. Coalition-building plays a crucial role in addressing these challenges and improving outcomes in rural communities.

**Description:** SIMBIHealth Community Advocacy Project involved the selection of 10 women leaders from ten rural communities in Toto Local Government Area, Nasarawa State, Northern Nigeria. These women were trained extensively for two months on how to conduct sexual and reproductive health (especially HIV) outreaches within their local communities, dialoguing with leaders for program plus policy change and supporting them to create women's groups. Ten women groups have been created which are made up of ten to thirty-four members and have identified priority challenges which HIV being one of the common ones. They have conducted internal capacity building on HIV prevention and treatment among the group members, community wide sensitization campaigns along with advocacy visits to traditional, community, primary healthcare leaders across the ten communities and visited the local government area vice chairman on SRH priority area (including HIV/AIDS).

**Lessons learned:** Rural women when properly trained can serve as revolutionary champions of HIV care in their communities. The SIMBIHealth project didn't just train the women to be HIV Advocates/Champions but we also provided them with resources and opportunities to

train other women as advocates, and conduct community-wide sensitization campaigns we also linked them up to stakeholders that can help especially those that are influential in changing the narrative. This has been effective as these women have performed exceptionally in advocating and improving access to HIV prevention and treatment whether among their colleagues or health professionals, religious leaders, traditional leaders and many more.

**Conclusions/Next steps:** Findings from the SIMBIHealth Community Advocacy Project have shown that rural women are influential and fundamental channels if the HIV burden is to be reduced in rural communities in Nigeria and Africa.

## EPD127

### Influential factors affecting adherence & continuation of care among adolescent girls and young women (aged 10-24) receiving antiretroviral treatment in Abia State Nigeria

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**Background:** Adherence and retention in antiretroviral therapy (ART) are pivotal for effective HIV management, especially among Adolescent Girls and Young Women (AGYW) aged 10-24 in Abia State, Nigeria. AGYW face unique challenges in adhering to ART, due to stigma, limited family /social support, welfare programs, and pill-related issues. making it imperative to address these issues comprehensively. Recognizing adherence as a critical marker of quality care.

**Description:** This research project, conducted in Abia State, Nigeria, focuses on the influential factors affecting adherence and continuation of care among Adolescent Girls and Young Women (AGYW) aged 10-24 receiving antiretroviral treatment (ART). aiming to enhance overall HIV infection management in the region.

The study adopts a structured questionnaire, & focus group discussions are utilized to gather comprehensive data on the factors influencing adherence and continuation of care among AGYW.

**Lessons learned:** Findings reveal that socioeconomic factors, including income levels and access to education, significantly influence AGYW's adherence to antiretroviral treatment. Out of the the 200 participants included in the study, 139(69.5%) live in rural (village) areas, facing difficulties accessing the OSS facility for care.130(65%) haven't disclosed their HIV status, impacting adherence and retention. 153 adolescent girls and young women who missed doses, 117(58.5%) lack family support, which is essential for adherence, retention and care continuation. 91(59.5%) cited pill size as a reason, emphasizing the need for reduction. 86(56.2%) face transportation challenges.



60(39.2) was due to fear of disclosure. 42(27.5) believed they are healed. 44(28.8) was due stigma and discrimination, and 133(86.9%) was due to forgetfulness, affecting adherence and retention.

**Conclusions/Next steps:** Despite ongoing efforts to improve ART adherence among adolescent girls and young women in Abia State, Nigeria, persistent low rates pose a challenge to meeting UNAIDS 2030 targets. To enhance adherence, providing education, and garnering support from societal, familial, and healthcare realms are crucial. Encouraging research for smaller ART pill sizes, leveraging technology, such as mobile apps for medication reminders, fostering community-based peer support networks, can promote consistent adherence to HIV treatment, and expanding Outpatient Service and Support (OSS) facilities are recommended strategies. These efforts collectively aim to strengthen HIV care and contribute to global endeavors to combat HIV/AIDS.

## EPD128

**Influential factors affecting adherence and continuation of care among adolescent girls and young women (AGYW Aged 10-24) receiving antiretroviral treatment in Abia state, Nigeria**

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**Background:** Adolescent girls and young women (AGYW) aged (10-24) encounter obstacles in HIV care due to stigma, limited family and societal support, limited social welfare programs, limited social support, and pill-related issues (pill size). Tackling these challenges is paramount. Implementing targeted counseling, peer support networks, society and family support can significantly improve health outcomes, fostering adherence and continuity in HIV treatment for AGYW in Abia state.

**Methods:** The study employed a structured questionnaire and client record review to gather data on adherence and retention among adolescent girls and young women undergoing treatment for over six(6) months in Abia OSS(one stop shop) facility.

Adherence was determined through self-reported missed pills, pharmacy refill record and viral load test, and factors influencing it were examined.

**Results:** Of the 200 adolescent girls and young women clients aged (10-24) who participated in the study, 139(69.5%) live in rural (village) areas, facing difficulties accessing the OSS facility for care. 130(65%) haven't disclosed their HIV status, impacting adherence and retention. Of 153 adolescent girls and young women who missed doses, 117(58.5%) lack family support, which is essential for adherence, retention and care continuation. 91(59.5%)

cited pill size as a reason, emphasizing the need for reduction. 86(56.2%) face transportation challenges. 60(39.2) was due to fear of disclosure. 42(27.5) believed they are healed. 44(28.8) was due stigma and discrimination, and 133(86.9%) was due to forgetfulness, affecting adherence and retention.

**Conclusions:** Despite efforts on interventions to improve ART adherence and retention among adolescent girls and young women in Abia state Nigeria, rates remain low posing a challenge to achieving the UNAIDS 20230 targets.

Strategies to improve adherence should focus on addressing the negative influencing factors, and HIV program management should consider these variations, when designing programs, to improve client retention and adherence to treatment.

Awareness, education and support from Society, family, and treatment providers can improve adherence to ART among adolescent girls and young women. Also research to develop smaller ART pill size should be, ensuring easier ingestion for clients and promoting better adherence to HIV treatment.

mobile apps medication reminders and community based peer support networks, and more OSS facilities is highly recommended.

## EPD129

**Adverse social determinants of health predict reduced ART access and increased psychological distress among sexual and gender minority PLHIV in the COVID-19 pandemic: a 3-country explanatory mixed methods study**

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**Background:** Globally, sexual and gender minority (SGM) populations experience health disparities and adverse social determinants of health (SDOH) that exacerbated vulnerability to COVID-19 pandemic-related adversities. We explored pandemic-related disruptions in ART access and psychological distress among PLHIV in 3 countries.



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**Methods:** We used an explanatory sequential mixed methods design. A cross-sectional, web-based multi-platform survey was conducted with SGM PLHIV recruited through community-based organizations in Bangkok, Mumbai, and Toronto, with follow-up semi-structured online interviews, to explore COVID-19 pandemic-related changes in ART access and psychological distress. Survey items assessed pandemic-related access to ART, anxiety and depression, and SDOH (water insecurity, food insecurity, health insurance). Multivariable logistic (reduced ART access) and linear (depression and anxiety scores) regression analyses were conducted using R-4.3.2. Qualitative data were explored using thematic analysis in ATLAS.ti and integrated with survey findings.

**Results:** From March–November 2021, 57 PLHIV (mean age=35.5 years [SD 9.9]), from Bangkok (n=23, 40%), Mumbai (n=25, 44%), and Toronto (n=9, 16%) completed the survey. Fourteen (25%) identified as trans/gender diverse (TGD), 43 (75%) cisgender (largely [n=39] MSM). Overall, 25% (n=14) reported reduced ART access, 32% screened positive for clinically-significant anxiety and 25% clinically-significant depression.

In multivariable analyses, those without health insurance had 5-fold higher odds (aOR=4.96, 95% CI 1.20, 23.75; p=.03) and those reporting water insecurity 6-fold higher odds of reduced ART access (aOR=6.01, 95% CI 1.22, 34.96; p=.03), respectively. Chi-square analysis revealed more pervasive reduced ART access among TGD (42.8%) vs. cisgender people (16.2%, p=.04) (nonsignificant in multivariable analysis). Water insecurity was positively associated with anxiety ( $\beta=1.26$ ; 95% CI .17, 2.35; p=.02). COVID-19 stress scores were positively associated with anxiety ( $\beta=0.10$ ; 95% CI .03, .17; p=.004) and depression ( $\beta=0.10$ ; 95% CI .05, .16; p<.001).

Findings from qualitative interviews (May–December 2022) elucidated ART access challenges and pandemic-related psychological distress across sites, and experiences of water insecurity in Mumbai and Bangkok.

**Conclusions:** Substantial pandemic-related reductions in ART access among SGM PLHIV, especially TGD individuals, and pervasive pandemic impacts on psychological distress indicate the critical importance of targeted structural interventions to improve SDOH (affordable healthcare, water security) among PLHIV, LGBTQ+-affirmative psychosocial support, and ensuring inclusion of SGM PLHIV in future pandemic-preparedness efforts.

## EPD130

### 'Moral degradation': culture-based stigmatizing attitude towards condom use among the Chinese older adults: a qualitative study

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**Background:** Consistent condom use has been demonstrated to be an effective strategy for preventing sexually transmitted diseases. However, the rate of consistent condom use among older adults in China is notably low. Understanding older adults' psychological and culture-based barriers toward condom use would contribute to designing sensitive behavioral interventions for this HIV-vulnerable population.

We explored the attitudes towards condom use and the underlying reasons for its low use frequency among this population in China.

**Methods:** The interpretive phenomenology analysis was adopted to guide the data collection and data analysis. Participants aged 50 years or above who had engaged in sexual activities within the previous year were eligible for the study. Purposive sampling and snowball sampling methods were used in this study. The sample size was determined based on data saturation. Qualitative data were collected through 15 face-to-face in-depth interviews and 30 field observations among old adults.

**Results:** In total, 30 older adults reviewed the educational flyers on the square in one morning, and 9 were observed by our researchers, including 5 females and 4 males. Fifteen participants took part in our interviews including 13 males and 2 females. Through interpretive phenomenological analysis, three main themes emerged: perceived unnecessary to use condom, interactive stereotypes toward condom use, and stigmatized social norms towards condom use.

Theme 1 included two sub-themes: "Perceiving no need for contraception" and "Perceiving low HIV/STIs risk".

Theme 2 included four sub-themes: "Condom use-related topic was shameful", "Using condom meant distrust", "Using condom meant impaired sexual health", and "Using condom contradicted the traditional meaning of sex".

Theme 3 included two sub-themes: "Using condom was considered as moral degradation" and "Gender vulnerability in condom use".

**Conclusions:** These findings shed light on the complex barriers to condom use behaviors among older adults in China and emphasized the need for tailored interventions addressing misconceptions, promoting awareness, and reducing culture-rooted stereotypes and stigmas surrounding condom use.

## EPD131

### Perceptions of early marriage as a strategy for HIV risk prevention: a male perspective from former child labourers in informal mining in the Democratic Republic of Congo

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**Background:** There is a degree of consensus that early marriage exacerbates the risks of HIV acquisition in the literature. This position is generally supported by evidence of unequal power relations embedded in marriage between underage girls and older men. However, this position is disputed by relatively recent empirical evidence showing that the rate of HIV did not significantly correlate with the rate of early marriages in Sub-Saharan Africa where the two phenomena predominate.

This paper focuses on the nexus between HIV risk exposure and early marriage, not necessarily child marriage, among former child miners. It investigates the lived experiences and perceptions of those adult males who during their childhood worked in informal mining, which is considered a high-risk sector in the context of HIV.

**Methods:** The findings are based on nine focus group discussions conducted in two rural communities. In total, 89 male participants were selected purposively and allocated to groups by age categories and marital status. Each group comprised between six and 13 participants. The discussions were recorded, transcribed and analysed thematically using NVivo.

**Results:** The findings show that there were optimistic and pessimistic views about the relationship between HIV risks and early marriage. The optimistic view was pro-early marriage, perceived as a necessary measure to avoid HIV. This is because there was a requirement for pre-marriage testing and subsequent faithfulness in marriage which entailed that some participants felt safe from HIV risks as they married.

In contrast, the pessimistic view portrayed early marriage as an unsafe mode of prevention because the faithfulness of both marriage partners is not always a given especially when young partners are involved.

**Conclusions:** Whereas the pessimistic view underscores a more cautious approach underpinned by the lack of trust and confidence in both self and partner's ability to maintain faithfulness in marriage, the optimistic view is likely to promote early marriage and can unwittingly exacerbate the risk of HIV for marriage partners.

Therefore, HIV education is necessary for marriage partners, especially those located in high-risk and economically depressed settings.

## EPD132

### Concurrent psychoactive substance use among the clients of methadone maintenance treatment (MMT) in Bangladesh

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**Background:** Concurrent psychoactive substance use during methadone maintenance treatment (MMT) adversely affects the treatment outcome. This cross-sectional study evaluated the reasons and factors associated with concurrent substance use with methadone in Bangladesh.

**Methods:** People who inject drugs (PWID) receiving methadone (N = 402) for at least one year were enrolled in five MMT clinics in Dhaka between July 2019 and March 2021. Consented participants were selected through proportionate random sampling, and data was obtained through a semi-structured questionnaire. Random oral fluid samples were tested on the study site for methamphetamine, benzodiazepine, opioids, and cannabis.

**Results:** Of the 402 study participants, 90% reported at least one concurrent substance use along with methadone in the last six months. The most used substance was benzodiazepine (60.2%), followed by methamphetamine (55.2%) and cannabis (55%). Alcohol (14.1%) and opioids (6.7%) were also reported to be used concurrently with methadone. The major reason reported for using benzodiazepine was difficulty sleeping (74.3%) and feeling good or "getting high" (37.6%).

The reasons for using methamphetamine were to feel good or "get high" (65.5%, n = 121), to have work stamina (37.5%, n = 75), to have a good time with friends (27.5%, n = 55), when money was in hand (22.5%, n = 45), and to have good sex (10.5%, n = 33). The reasons for using cannabis were to feel good or get high (64.3%), induce sleep (20.6%) and to increase appetite (22.1%).

Multivariate analysis showed that age of starting any substance use, duration of MMT, and depression status were significantly associated with concurrent use of psychoactive substances among the MMT clients.

**Conclusions:** We found a high prevalence of benzodiazepine, methamphetamine, and cannabis use among the MMT clients. Younger age of starting substance use (20–24 years), longer duration of MMT (2–4 years and >4 years),



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and extremely severe depression were significantly associated with concurrent use of psychoactive substances among the MMT clients.

## EPD133

### Higher burden of depression among black sexual and gender minorities in Brazil: the role of discrimination

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**Background:** Depression, characterized by long-lasting symptoms such as loss of interest and pleasure in activities, has stressful situations as a risk factor. Black people and sexual and gender minorities (SGM) are frequent victims of stigma and discrimination which may lead to depression. We assessed factors associated with depression among SGM from Brazil.

**Methods:** Cross-sectional online study among SGM ≥18 years recruited on social media (Facebook/Instagram) and dating apps (Grindr/Hornet/Scruff) between November/2021 and January/2022. We measured the severity of depression symptoms using Patient Health Questionnaire (PHQ-9; scores range 0-27) and validated instruments to measure discrimination (8-item Explicit Discrimination Scale [EDS], scores range 0-24) and internalized homonegativity (7-item Internalized Homonegativity Scale [IHS], scores range 0-42); higher scores=higher discrimination/internalized homonegativity. We used linear regression models to quantify the association of discrimination and other factors with PHQ-9 scores, models were stratified by race (Black, Pardo and White).

**Results:** Of 6,459 participants, 58.0% were White, 26.1% Pardo, 12.2% Black. Median age was 36 years (IQR:29-44); 97.6% were cis-MSM, 22.5% had low income, and 25.4% were living with HIV. Mean scores of EDS and IHS were 3.5(SD3.8) and 10.3(SD8.2), respectively. Mean PHQ-9 score was higher for Black (9.6 SD7.5) and Pardo (9.3 SD7.2) than White SGM (8.4 SD7.0) ( $p<0.0001$ ). Higher EDS scores and younger age were associated with higher PHQ-9 scores regardless of race (Table).

	Black		Pardo		White	
	Estimate (SD)	p-value	Estimate (SD)	p-value	Estimate (SD)	p-value
Age (per year)	-0.18 (0.03)	<0.0001	-0.15 (0.02)	<0.0001	-0.17 (0.03)	<0.0001
Family monthly income (ref. high: >USD1450/month)						
Low (<=USD480/month)	0.98 (0.77)	0.20	2.00 (0.49)	<0.0001	1.37 (0.34)	<0.0001
Middle (<USD480-1450/month)	-0.08 (0.68)	0.90	0.49 (0.42)	0.24	0.81 (0.24)	0.00095
IHS	-0.00 (0.03)	0.97	0.06 (0.02)	0.0033	0.06 (0.01)	<0.0001
EDS	0.58 (0.06)	<0.0001	0.62 (0.043)	<0.0001	0.68 (0.03)	<0.0001

Models adjusted by gender, orientation, education, region, living in State capitals and HIV status

Table.

Lower income and higher IHS scores were associated with higher PHQ-9 scores for Pardo and White SGM, but not Black SGM.

**Conclusions:** Black and Pardo SGM had higher PHQ-9 scores than White SGM. Experiences of discrimination were associated with higher depression scores among Brazilian SGM. Age was inversely associated with depression scores, pointing to an increased burden of mental health related-issues among the youngest. Lack of association of lower income and internalized homonegativity with PHQ-9 scores only among Black SGM warrants further investigation.

## EPD134

### Structural drivers of HIV prevention and healthcare inequities among sexual and gender minority populations in the COVID-19 pandemic: a 3-country cross-sectional survey

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**Background:** The COVID-19 pandemic and efforts to control it exerted disparate impacts on sexual and gender minority populations. We examined pandemic-related impacts on access to HIV testing, condoms, and healthcare among LGBTQ+ individuals in three countries.

**Methods:** We conducted a cross-sectional, multiplatform web-based survey with the #SafeHandsSafeHearts cohort that recruited sexual and gender minority adults online through community-based organizations in Bangkok, Mumbai, and Toronto for a psychosocial eHealth intervention during the COVID-19 pandemic. We examined access to HIV testing, condoms, and general healthcare, along with structural drivers—discrimination in healthcare, health insurance and homelessness, sex work involvement, and demographics (age, education, gender/sexual self-identification). Our analytic sample included HIV-negative/unknown-status individuals. Multivariable logistic regression analyses were conducted using R-4.3.2.

**Results:** From March to November 2021, we enrolled 795 individuals (mean age=30.1 years [SD=8.0]) from Bangkok (42.4%), Mumbai (33.3%) and Toronto (24.3%). Over one-



third (36.0%) identified as trans/gender diverse (TGD) (22.3% trans women, 13.7% trans men), 31.9% cisgender gay/MSM and 32.1% cisgender lesbian/bisexual women. Overall, more than one-fourth (28.0%) reported reduced HIV testing access, 32.8% reduced access to condoms and 29.2% needing healthcare but unable to afford it. In multivariable analyses, those who experienced discrimination in healthcare had higher odds of reduced HIV testing access (aOR=1.11, 95% CI 1.00-1.22, p=.048) and inability to afford healthcare (aOR=1.29, 95% CI 1.19-1.40, p<.001). Those who experienced homelessness (aOR=1.81, 95% CI 1.19-2.76; p=.006) and who lacked health insurance (aOR=1.94, 95% CI 1.35-2.79; p<.001) had nearly twofold higher odds, respectively, of being unable to afford healthcare. Sex work involvement was associated with twofold higher odds of reduced HIV testing access (aOR=2.26, 95% CI 1.47-3.47, p<.001) and reduced condom access (aOR=1.92, 95% CI 1.26-2.87, p=.002). Gay/MSM and trans women had higher odds of reduced HIV testing access (ref. cisgender women).

**Conclusions:** We identified pervasive reductions in access to HIV prevention and healthcare during the pandemic among LGBTQ+ individuals from three countries. Inequities due to healthcare discrimination, lack of health insurance, homelessness, and sex work involvement rendered LGBTQ+ individuals significantly more vulnerable. Structural interventions and pandemic preparedness approaches tailored for the most marginalized LGBTQ+ populations are needed to protect those at greatest risk for HIV.

## EPD135

Assessing cisgender women's access to comprehensive HIV/PrEP education from reproductive health visits in Jacksonville, Florida, USA

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**Background:** Black cisgender women in the southern United States (US) have the highest HIV prevalence among US cisgender women. Despite many cisgender women routinely interacting with the healthcare system for reproductive needs, few are aware of HIV pre-exposure prophylaxis (PrEP). Although the Centers for Disease Control and Prevention recommend discussing PrEP with all sexually active people, gaps remain regarding how health providers implement this guidance during reproductive healthcare.

**Methods:** As part of a larger trial, this sub-study recruited and randomized HIV-negative clients presenting to a public reproductive health clinic in Jacksonville, Florida, to view an HIV prevention decision support tool (DST) before their visit or receive routine care. Participants and providers consented to have an audio-recorder in the room during clinical visits. We transcribed the recordings verbatim and coded transcripts deductively and inductively.

**Results:** Between 2021-2022, 26 visits were audiotaped. Participants self-identified as cisgender women (all), African American/Black (19 of 26; 73%), white (6 of 26; 23%), multi-racial (1 of 26, 4%), Hispanic/Latine (3 of 26; 11%), and had a median age of 33.5 (18-45) years. Most participants reported having sex in the last six months (21 of 26; 81%). Sixty-five percent of participants (17 of 26) viewed the DST pre-visit. A provider mentioned HIV prevention in visits with three non-DST participants, two of which also included the mention of PrEP. No clients initiated such conversations. During the two visits that mentioned PrEP, providers inquired about clients' awareness of PrEP and briefly described it but did not ascertain interest in PrEP. Overall, providers offered eight people HIV testing, 12 people testing for other sexually transmissible infections (STI), and five people condoms. In no visits did providers help clients assess their vulnerability to HIV.

**Conclusions:** A sample of audiotaped reproductive health visits at a public facility in the southern US demonstrated sparse information sharing about HIV prevention and PrEP, even as more than half of clients viewed an HIV prevention DST. Frequent HIV/STI testing revealed missed opportunities for HIV prevention conversations. Reproductive health providers need additional training on approaches to integrate comprehensive, personalized HIV and PrEP education into reproductive healthcare.

## EPD136

Sex talks and encounters: an evaluation of young people's encounter of HIV-AIDS in the rural communities of Negros Occidental

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**Background:** The cases of HIV-AIDS in the rural communities of Negros Occidental are deeply entrenched in the prevalence of child sexual abuse and exploitation. This has been identified as one of the prevalent factors influencing the health-seeking behaviors of young people with their sexual health. While modern communities get more access to information about HIV-AIDS, rural areas acquire it through traditional means, including 'word of mouth,' local newspapers, and radio stations. This study examined the social factors attributing to the perception of young people about HIV-AIDS and the structural gaps that influence the formation of these perceptions.



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**Methods:** The study employed a qualitative method through focused group discussions and key informant interviews with 60 participants from 10 key cities and municipalities in Negros Occidental. The data was complemented with existing literature and research about HIV-AIDS and sex education, alongside available public data on transmission in rural communities.

The data was analyzed using N'Vivo Software to generate word clouds and textual analysis based from the data derived from the participants. Thematic analyses was also conducted to generate general themes and concepts.

**Results:** The results showed that most young people acquired the perception of HIV-AIDS due to their exposure to stories and narratives from People Living with HIV and their caseworkers/barangay health workers. These include both online and offline mediums and the transmission brought about by instances of sexual abuse and exploitation, mostly in rural schools and educational institutions.

Lastly, it highlights how social environments empowered a culture of silence where sex-related topics, including abuse and HIV-AIDS are not discussed, making it prone to cultivate disinformation and stigma.

**Conclusions:** Young people in rural areas are prone to misinformed data on sex and HIV-AIDS, which increases their risk and susceptibility to acquiring the disease. Moreover, the study sought that the relationship between sexual abuse and HIV-AIDS transmission to be among the most primary factors that drive its plummeting. The study recommends examining social and behavioral lenses and frameworks with local health service delivery to identify patterns of health-seeking behaviors by young people in the context of rural communities and rural governing mechanisms.

## EPD137

### "Being different is a challenge" – Results from the first assessment among transgender people in Mozambique

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**Background:** Transgender individuals face an elevated risk of mental health issues and substance abuse, and are at heightened vulnerability to HIV infection. Globally, they encounter significant barriers to accessing healthcare due to pervasive stigma and discrimination. Mo-

zambique has one of the highest HIV burdens worldwide, however, there is limited information about the transgender population.

**Methods:** In 2022, we conducted a qualitative study utilizing key informant interviews (KII), focus group discussions (FGD), and semi-structured questionnaires to gather insights into gender identity, stigma, risky behaviors, and accessibility and utilization of healthcare and social services among transgender individuals across six Mozambican provinces. KII and FGD were conducted until responses reached saturation. Data analysis was based on the qualitative research principles of grounded theory.

**Results:** A total of 141 individuals (>18 years) participated in KIIs and FGDs, comprising 77 transgender males and 64 transgender females. Participants shared the following key findings:

1. Transgender individuals often grapple with self-doubt and challenges stemming from societal perceptions - *"A trans man...always raises these doubts, being different is a challenge."*
2. High levels of stigma and discrimination - *"They discriminated against us a lot, and we even ended up giving studying."*
3. High-risk behavior, comprising unprotected sex and alcohol-related risky sex practices - *"... We don't use condoms, neither lucid nor drunk..."*
4. Experiences of hostile and discriminatory conduct by healthcare professionals as a significant barrier to accessing healthcare services, including HIV treatment - *"Because of the stigma among key populations on ART, they end up not adhering to treatment services because of the lack of secrecy, confidentiality on the part of health professionals."*

**Conclusions:** Our study highlights the significant challenges faced by transgender individuals in Mozambique, including self-doubt, stigma, high-risk behaviors, and obstacles to accessing essential healthcare services like HIV treatment. Anti-discrimination laws, policies for transgender care, and healthcare provider training could remove these barriers and improve healthcare access for this marginalized population, ultimately enhancing their well-being and quality of life.

## EPD138

### The influence of housing status and food insecurity on a behavioral HIV/STI prevention intervention for Black women under community supervision in New York City: a moderation analysis

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**Background:** Black women in community supervision programs (CSPs) are disproportionately affected by HIV and other sexually transmitted infections (STIs). Empowering African-American Women on the Road to Health (E-WORTH), a 5-session culturally tailored group-based intervention, demonstrated effectiveness in reducing sexual risk behaviors and STI incidence among Black women in CSPs. Housing insecurity is high among those in CSPs, and homelessness is associated with higher rates of sexual risk behavior (resulting in higher rates of HIV & STIs). Individuals who are housing insecure also tend to be food insecure, but little is known of how these factors moderate effectiveness of risk reduction interventions. This secondary analysis aimed to assess the moderating effects of housing and food security on E-WORTH effectiveness in reducing sexual risk behaviors and cumulative incidence of STIs over a 12-month period.

**Methods:** We conducted a secondary analysis of data from the E-WORTH randomized control trial, conducted with a sample of 351 Black women in CSPs in New York City who use drugs and/or engage in binge drinking who reported engaging in HIV risk behaviors or testing positive for HIV. We examined the moderating effects of housing stability variables (housing status and housing independence) and food insecurity on reducing cumulative STI incidence and number of unprotected sex acts using fit mixed-effects negative binomial regression and logistic regression models that controlled for age, high school education, employment status, and marital status, and baseline measure of the outcomes (i.e., confirmed STI at baseline or counts of condomless sex, respectively).

**Results:** Findings indicate that the intervention effect on condomless sex was moderated by housing status, but not housing independence or food security. Compared to the control group, E-WORTH participants who were housing insecure had 63% fewer acts of condomless sex. Regression models with the outcome of prevalence of STIs and either moderator (housing instability or food insecurity) were not statistically significant.

**Conclusions:** Our findings highlight the importance of interventions designed for women in CSPs that account for upstream determinants of health and include ser-

vice linkages to basic needs provisions. Further research is needed to unpack the cumulative impacts of multiple experiences of poverty faced by this population.

## EPD139

### Often silenced and overlooked, a look into the exclusion of LBQ women and AFAB GNC folks in HIV/AIDS conversations

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**Background:** In the landscape of HIV/AIDS discourse, LBQ (Lesbian, Bisexual, and Queer) women and AFAB (Assigned Female at Birth) GNC (Gender Non-Conforming) individuals remain a marginalized and often ignored demographic. The NGLHRC's 2018 study in Kenya unveiled alarming statistics, indicating a higher prevalence of HIV among LBQ women compared to the general population. Shockingly, 36% of LBQ women reported facing physical violence from healthcare providers, with 70% experiencing discrimination or stigma. Such adversities deter LBQ women from seeking HIV services, reinforcing the misconception that they are at lower risk, and ultimately perpetuating their exclusion from mainstream HIV/AIDS programming.

**Description:** In response to these pressing issues, the Kisumu Feminists Society, in collaboration with LBQ women and AFAB GNC individuals, secured funding from the Global Fund for Women and Purposeful.Org. This initiative aimed to address sexual reproductive health rights and gender-based violence within the context of the Generation Equality Forums. Findings revealed that 8 out of 10 participants felt uncomfortable seeking HIV-related services due to pervasive stigma, discrimination, and the misguided belief that LBQ individuals were not susceptible to HIV/AIDS.

**Lessons learned:** The continual exclusion of LBQ individuals from HIV/AIDS conversations has led to the trivialization of their sexual and reproductive health rights (SRHR), fostering damaging myths. Among these misconceptions is the dangerous assumption that LBQ women are immune to STIs, perpetuating a false sense of safety. A poignant example emerged from our research, where a masculine-presenting lesbian woman seeking HIV testing faced ignorance from a healthcare provider fixated on her sexual orientation rather than providing the necessary services. This experience underscores the urgent need to challenge these misconceptions and enhance awareness among healthcare providers.

**Conclusions/Next steps:** A transformative shift in healthcare practices is needed, involving training for providers to ensure cultural sensitivity and inclusivity. Collaborative efforts with policymakers should result in the integration of LBQ individuals into national HIV/AIDS strategies, ac-



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knowledging their unique challenges. Additionally, community empowerment initiatives, led by LBQ individuals, are crucial in fostering awareness, education, and support networks.

The AIDS Conference 2024 has a platform to amplify these findings, fostering dialogue and catalyzing tangible steps towards inclusivity and effectiveness in combatting HIV/AIDS.

## EPD140

Multiple sexual partners increase vulnerability of adolescent girls and young women aged 15 to 24 years to other HIV infection risks; evidence from four provinces of Zimbabwe, 2023

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**Background:** Zimbabwe Health Interventions (ZHI) is implementing the Determined, Resilient, Empowered, AIDS-free, Mentored and Safe (DREAMS) program which seeks to reduce HIV incidence among adolescent girls and young women (AGYW) in 9 districts of Zimbabwe. The program uses a screening tool to assess the eligibility of AGYW for the program before they are enrolled and provided with required services.

It was not clear if having multiple sexual partners (MSP) as a primary vulnerability increased the chances and emergence of secondary HIV infection vulnerabilities among AGYW. We assessed the association of having MSP among AGYW with other key vulnerabilities.

**Methods:** We conducted a descriptive cross-sectional study where routine program data for all AGYW enrolled in the DREAMS program in Mashonaland Central, Midlands, Bulawayo, and Matabeleland South provinces for the period October 2022 to September 2023 were extracted from the DREAMS database. Prevalence analysis was conducted using SPSS version 23 and MS Excel generating proportions and measures of association between having multiple sexual partners and other HIV infection vulnerabilities. The assessment was covered by Medical Research Council of Zimbabwe approved non-research determination protocol (MRCZ/E/254).

**Results:** Data for 33,220 AGYW screened and enrolled in DREAMS were analysed of which 65% (21,593/33,220) were aged 15 to 19 years whilst 35% were aged 20-24 years. About 17% (5,496/33,220) reported having MSP. AGYW with

MSP were more likely to have STI symptoms than those without [COR=4.64, 95% CI (4.17-5.18)], more likely to report history of pregnancy [COR=1.17, 95% CI (1.051-1.30)], more likely to abuse alcohol [COR=3.69, 95% CI (3.38-4.05)], more likely to engage in transactional sex [COR=15.49, 95% CI (14.34-16.74)] and more likely to suffer from sexual violence [COR=1.98, 95% CI (1.66-2.38)]. MSP was significantly associated with STI symptoms, Alcohol abuse, history of pregnancy, transactional sex, and sexual violence.

**Conclusions:** Having multiple sexual partners increases the chances of AGYW having STI symptoms, experiencing sexual violence, pregnancy, engaging in transactional sex and alcohol which increase their HIV infection risk.

We recommend that the DREAMS program identify and address the root causes of MSP as that has the potential to address other HIV infection risks.

## EPD141

Uptake of post gender-based violence services among adolescent girls and young women across four high HIV burdened districts of Zimbabwe, October 2022 to September 2023

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**Background:** Gender-based violence (GBV) is a widespread concern in Sub-Saharan Africa, affecting the health and well-being of adolescent girls and young women (AGYW). The 2019 violence against children survey in Zimbabwe revealed that 26% of young people aged 18-24 years experienced childhood violence, and those who experienced violence were more likely to have HIV infection.

Additionally, GBV increases likelihood of developing mental health disorders. Zimbabwe Health Interventions (ZHI) is implementing the Determined, Resilient, Empowered, AIDS free, Mentored and Safe (DREAMS) program across


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high HIV burdened districts to reduce HIV incidence among AGYW. We assessed uptake of post-GBV services by AGYW.

**Methods:** A descriptive cross-sectional study was conducted where routine program data for all AGYW enrolled in the DREAMS program in Chipinge, Gweru, Makoni, and Mutare districts for the period October 2022 to September 2023 were extracted from the program DHIS2 database. Data were analyzed using STATA version 17 generating frequencies, proportions, and measures of central tendency, and spread. The assessment was covered by the Medical Research Council of Zimbabwe approved non research determination protocol (MRCZ/E/159).

**Results:** Data for 7,445 AGYW who experienced GBV were analyzed. About 53% (n= 4008) of those who received post GBV services were aged 20-24; median age (years) was 20 (IQR 23 -18). About 91% (6,762/7,445) experienced emotional and physical violence, and 9% (675/7,445) experienced sexual violence. Of those who experienced sexual violence, 84% (n=564) received rapid HIV tests, 97% (n = 656) STI screening and treatment, 89% (n=600) family planning, and 2% (n=16) psychosocial support (PSS). About 66% (n= 445) of AGYW who experienced sexual abuse were in the 15 - 19-year-age-group. Among those that experienced sexual violence, 5% (31/675) accessed post GBV services within 72 hours, and of these, 74% (n=23) received post exposure prophylaxis (PEP), and 29% (n=9) received emergency contraceptives.

**Conclusions:** There are significant gaps in post-GBV service uptake among adolescent girls and young women, particularly timely access to care, provision of PEP, emergency contraceptives, and psychosocial support. We recommend enhancing awareness and accessibility of immediate post-GBV care, tailoring services to different age groups, especially adolescent girls.

## EPD142

### Prevalence and factors associated with ever paying for sex among men in Zambia: an analysis of the 2018 Demographic and Health Survey

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**Background:** Zambia has one of the highest burdens of HIV globally, with a prevalence of 11% among adults aged 15-59. Men who pay for sex are considered a bridging population for HIV transmission yet little is known about the prevalence and characteristics of men who pay for sex. We examined the prevalence of and factors associated with paying for sex among men in Zambia.

**Methods:** Using the 2018 Zambia Demographic and Health Survey, we analyzed data from 10,324 men aged 15-59 who ever had sex. Our primary outcome was self-reporting ever paying for sex. Variables explored for their

association with this outcome included socio-demographic factors, sexual behaviors, and use of technology. Multivariable logistic regression, adjusted for survey design, was used for this analysis.

**Results:** Overall, 16.8% of men reported ever paying for sex. Paid sex was highest in Lusaka province (32.5%), among urban residents (20.1%), men aged 25-34 (39.9%), those with higher educational attainment (18.9%), skilled manual workers (22.5%), widowed, separated or divorced men (29.2%), and who reported >1 lifetime sexual partner (36.6%). In adjusted analyses, ever paying for sex was associated with residing in Lusaka (aOR=5.54, 95% CI: 3.75,8.17) relative to Central province, engaging in skilled (aOR=1.91, 95% CI: 1.45, 2.54) or unskilled manual occupations (aOR=1.71 95% CI:1.26, 2.33) compared to not working, being divorced/widowed or separated (aOR=2.23, 95% CI: 1.71, 2.92) compared to being married, and reporting more lifetime sexual partners (aOR=1.93, 95% CI: 1.55,2.40 for 6-10 partners compared to 1-5 partners) (Table).

Variables*	Total		Reported ever paying for sex		
	Men	N (Weighted %)	aOR	[95% CI]	p-value
<b>Total</b>	10324	1734 (16.8)			
<b>Age</b>					0.015
15-19	1347	221 (16.4)	Reference		
20-24	1767	311 (17.6)	1.15 [0.93 - 1.43]		
25-29	1586	282 (17.8)	1.41 [1.04 - 1.9]		
30-34	1949	249 (12.8)	1.53 [1.2 - 1.99]		
35-44	2364	401 (16.9)	1.34 [1.07 - 1.68]		
45+	1915	270 (14.0)	1.04 [0.82 - 1.3]		
<b>Region*</b>					<0.001
Central	1106	84 (7.5)	Reference		
Copperbelt	1133	77 (6.7)	0.72 [0.45 - 1.16]		
Eastern	1315	158 (12.1)	1.71 [1.13 - 2.6]		
Lusaka	1057	233 (22.1)	3.57 [2.31 - 5.53]		
Northern	1259	385 (30.5)	5.54 [3.75 - 8.17]		
Northern	867	97 (11.4)	1.6 [1.01 - 2.55]		
North-western	907	75 (7.3)	1.01 [0.61 - 1.67]		
Southern	810	235 (29.4)	5.41 [3.67 - 7.97]		
Western	1082	255 (23.2)	3.64 [2.47 - 5.38]		
Western	789	135 (17.4)	2.54 [1.59 - 4.05]		
<b>Education*</b>					0.264
No education	447	50 (11.4)	0.75 [0.52 - 1.09]		
Primary	4180	683 (16.3)	1.07 [0.91 - 1.25]		
Secondary	4761	837 (17.6)	Reference		
Higher	937	164 (17.6)	0.97 [0.74 - 1.27]		
<b>Residence*</b>					0.521
Urban	3680	685 (18.6)	Reference		
Rural	6645	1049 (15.8)	1.07 [0.87 - 1.32]		
<b>Occupation*</b>					<0.001
Not working	1357	197 (14.5)	Reference		
Agriculture	3312	487 (14.7)	1.47 [1.1 - 1.97]		
Domestic services	854	146 (17.2)	1.51 [1.12 - 2.04]		
Managerial/ clerical/sales	1508	254 (16.8)	1.25 [0.95 - 1.64]		
Skilled manual	1601	327 (20.4)	1.81 [1.44 - 2.29]		
Unskilled manual	1696	326 (19.2)	1.71 [1.26 - 2.33]		
<b>Marital status*</b>					<0.001
Married or cohabiting	6859	949 (13.9)	Reference		
Never in a union	3351	647 (19.3)	1.56 [1.21 - 2.03]		
Widowed/divorced or separated	505	138 (27.3)	2.23 [1.71 - 2.92]		
<b>Access to technology (internet)*</b>					0.280
Never	7851	1253 (16.1)	Reference		
Yes, in the last 12 months	2280	430 (18.9)	1 [0.79 - 1.25]		
Yes, before last 12 months	194	51 (26.4)	1.52 [0.89 - 2.60]		
<b>Number of lifetime sexual partners**</b>					<0.001
1-5	6830	802 (12.0)	Reference		
6-10	2063	492 (23.9)	1.93 [1.55 - 2.4]		
11-20	844	240 (28.4)	2.66 [2.05 - 3.45]		
21+	568	200 (35.6)	3.36 [2.65 - 4.26]		
<b>Sex partners in last 12 months (inc. Spouse)**</b>					<0.001
0	1054	111 (10.5)	Reference		
1	7497	1046 (14.0)	1.61 [1.22 - 2.13]		
2+	1774	577 (32.5)	3.89 [2.82 - 5.37]		

\*Adjusted OR for sociodemographic factors \*\*Adjusted OR for all factors  
† Variables such as wealth index, sexual activity and away from home were excluded from the table as they did not show any statistical significance

Table 1. Logistic regression analysis of men who ever paid for sex in Zambia.

**Conclusions:** Almost 20% of men aged 15 to 59 reported ever paying for sex in Zambia. Paid sex was associated with residing in Lusaka, marital status and occupation. Additional research and tailored interventions, particularly for previously married men engaged in skill and unskilled manual occupations, are crucial for understanding and addressing, respectively, the complexities of paid sex among men.





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## EPD143

Exploring HIV/STI perspectives among adolescents in Berlin's Precarious Milieus (Germany). A qualitative study on attitudes, stigma, and violence

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**Background:** Despite not being considered a vulnerable group for HIV infections in Germany, the attitudes of adolescents towards HIV and sexually transmitted infections (STIs) are relatively underexplored. However, as the emerging generation, they play a crucial role in combating stigmatization and discrimination.

**Methods:** Between 2015 and 2018, 16 interviews were conducted with adolescents from disadvantaged Berlin milieus to explore their sexual values and lifestyles. Participants were recruited through youth probation services and juvenile detention centers. Data analysis was performed using Grounded Theory and the Documentary Method. Two male cases were intensively analyzed in relation to HIV/STIs, as well as associated stigmatizing attitudes and behaviors.

**Results:** The study reveals that due to school dropouts, institutionalizations, and other biographical disruptions, adolescents are largely disconnected from HIV education. The two case analyses also demonstrate stigmatization and discrimination towards individuals with HIV and STIs. The interviewed boys report tendencies towards physical and psychological violence against girls they perceive as „sluts“ and assume may be living with HIV or have STIs after intercourse. It becomes evident that the some adolescents view girls as inferior, and there is a general lack of knowledge regarding HIV and STIs. The misogynistic attitudes and lack of awareness legitimize violence against girls and presumed HIV-positive or sexually promiscuous girls.

**Conclusions:** HIV/STI stigma and double standards are deeply rooted in precarious environments. HIV/STI prevention in Germany predominantly focuses on schools, leading to limited sexual education in such milieus. There is a need for a reorientation in prevention efforts that actively engage adolescents within their specific contexts.

## EPD144

It is not only HIV! The men who have sex with men (MSM) population who are using gay social applications are under threat

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**Background:** Marginalized men who have sex with men (MSM) populations in Indonesia are still struggling to find recognition and a place in society. However, believing that this group deserves to be treated unfairly is unwise. Beyond the risk of communicable diseases, MSM as key populations have experienced a range of undesirable situations. The purpose of this study is to investigate the unpleasant experiences of the MSM population whilst using social applications.

**Methods:** The qualitative phenomenological methodology was applied. Using a purposive sample technique, 22 MSM who used homosexual dating social apps in Padang, Indonesia, participated in semi-structured interviews in September until December 2023. They received semi-structured questions about their experiences whilst using the app. Thematic analysis was conducted using the Stevick Colaizzi Keen approach.

**Results:** Themes that depict the unfavorable experiences the MSM group had were highlighted by this investigation. Experiences of the MSM included being robbed, being threatened, being victims of physical violence, discrimination from within their own community, and being unwilling to disclose negative occurrences. These findings imply that in addition to stigma and the risk of obtaining transmissible diseases, the major MSM groups deal with a range of difficult life events. This group's psychological state will undoubtedly suffer from being exposed to a variety of unpleasant situations. Even worse, due to the confidentiality surrounding their sexual orientation, many are unable to report or seek protection for the threats, assaults, and negative encounters they have endured. In order to evade societal scrutiny, they feel they must keep quiet about these dreadful occurrences, which amplifies their fears even further. MSM should be entitled to social protection, safety, and legal rights even if they are subjected to criminalization by others. The claims that „the impact is not too big“ and „the incidents are too few“ are rhetorical and hypocritical of those who choose to ignore the fact that everyone should be concerned about these unfortunate events and must lend their hand to it.

**Conclusions:** It is critical to view this group from a broad humanistic perspective in order to prevent stigmatizing actions against them from defending the morality of their bad experiences.



## EPD145

## Mitigating HIV transmission risks from young/teen mothers to children: lessons from the Let Girls Shine programme for underprivileged Adolescent Girls and Young Women (AGYW)

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**Background:** Let Girls Shine program is a comprehensive initiative focused on empowering underprivileged AGYW in the areas of gender equality, HIV prevention, and education. The programme addresses the unique challenges faced by this demographic, including issues related to early pregnancies, child marriages, and the heightened risk of HIV transmission.

The primary purpose is to create a supportive environment that fosters the well-being of AGYW while promoting gender-sensitive HIV prevention strategies.

**Description:** Implemented between 2021 and 2023, the Let Girls Shine programme operates in semi urban localities of Blantyre City commonly referred to as "the ghetto", where AGYW face increased vulnerabilities. The programme structure includes a combination of educational sessions, health interventions, and community engagement activities. Key populations served are young/teen mothers. Activities encompass antenatal care, educational workshops, and support services aimed at reducing the risk of HIV transmission.

**Lessons learned:** Several critical findings emerged.

Firstly, the lack of a structured system to retest children after their initial negative HIV status during birth poses a significant risk. Expressive breastfeeding, extending up to 24 months, leads to undetected transmission when mothers contract HIV post-childbirth.

Secondly, societal stigma and fear of judgment often deter mothers living with HIV from providing necessary medication to their children living with HIV, exacerbating transmission risks.

Lastly, the programme uncovered instances where mothers living with HIV, fearing abandonment by their partners, discontinued medication, leading to an increase in viral load and subsequent transmission to their children. These lessons highlight the need for improved testing protocols, destigmatization efforts, and tailored interventions addressing the unique challenges faced by young/teen mothers within the context of HIV prevention.

**Conclusions/Next steps:** The significance of these findings extends to the broader field of HIV prevention, treatment, and care. Implementing targeted interventions based on the lessons learned from the Let Girls Shine programme is crucial to reducing mother-to-child transmission rates.

Future implications involve refining programme strategies, strengthening healthcare systems, and advocating for policy changes to address the complex socio-cultural

factors influencing HIV prevention. By sharing these insights, we aim to contribute to the development of more effective, culturally sensitive approaches in the ongoing global efforts to combat HIV and AIDS.

## EPD146

## Mapping, population size estimation and characteristics of venue-based female sex workers in Iran

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**Background:** Female Sex Workers (FSW) are one of key populations affected by HIV. This study aimed to estimate the population size of FSW, mapping the geographical locations of venues and determine the characteristics of venue-based FSW in Iran.

**Methods:** This cross-sectional research conducted among venue-based FSW in three large cities representing different geographical regions of Iran (Tehran, Shiraz, and Abadan) from 22 June 2019 to 19 March 2020. Women 15 years and older who had history of sex (vaginal, anal or oral intercourse) with more than one man in exchange of money, drugs, services, or etc. in the last 12 months were eligible and recruited to the study through venues. The number of FSW in each city estimated through four different size estimation methods including FSW opinions, secondary key informants' opinions, observations of study teams and service multiplier method. demographic, sexual, drug and alcohol, and HIV testing data of participants were collected in each venue.

**Results:** The total estimation of FSW (uncertainly limit) in Abadan, Shiraz and some selected districts in Tehran was 317 (173-435), 415 (324-687) and 503 (455-577), respectively. We interviewed with 633 FSW. The median (Interquartile Range) age of sexual contact among them were 17 (15-19). The prevalence of non-injection and injection drug use in the last three months was 34.6% (Confidence Interval (CI) 95%: 30.8-38.4) and 30.0% (CI 95%: 6.7-65.2), respectively. The lifetime history of HIV testing 90.3% (N=558) and the prevalence of self-reported HIV infection was 3.0% (95% CI:1.5-4.4) among who ever tested for HIV.

**Conclusions:** Estimating the population size of FSW in three selected cities in Iran with different social and cultural context revealed a considerable proportion of FSW in these cities. Due to prevalence of high-risk behaviors among FSW, by providing harm reduction services near to venues and enhancing HIV prevention programs, may control the HIV among them and their partners.



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## EPD147

Leveraging digital innovation and community engagement for health promotion among vulnerable populations

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**Background:** Since its establishment in 1986, Stop Sida has dedicated itself to promoting sexual health among the LGBTI+ community, women, trans individuals, and male sex workers, with a strong emphasis on community engagement, inclusivity, and digital innovation. Recognizing the specific challenges faced by the LGBTI+ community in Spain, particularly in accessing health services like HIV/AIDS testing and treatment, Stop Sida initiated the „Innovació Democràtica i Digitalització” (IDD) project. This initiative aims to harness digital empowerment as a key tool for enhancing health outcomes and encouraging political participation within these communities.

**Description:** IDD focuses on empowering the LGBTI+ community through digital tools. It aims to enhance participation in community and political activities, particularly for more vulnerable subgroups such as trans individuals, sex workers, and people with HIV.

IDD leverages digital tools to facilitate access to HIV/AIDS-related information and services. It includes training in digital skills, development of digital resources, and digital platforms for community engagement and political advocacy. This approach aims to bridge the digital divide and enable the LGBTI+ community, especially the most vulnerable subgroups, to better navigate health systems and advocate for their rights.

**Lessons learned:** Preliminary results from the project indicate a significant increase in digital autonomy among participants, along with improved access to sexual health resources. This has fostered greater engagement in both political and community spheres. The innovative use of digital strategies has not only broadened the project's reach geographically but has also proven effective in engaging and empowering the LGBTI+ community, contributing to heightened awareness and advocacy in health-related and political domains. These developments underscore the effectiveness of digital tools in supporting marginalized groups.

**Conclusions/Next steps:** The next phase of Innovació Democràtica i Digitalització (IDD) will advance digital empowerment for the LGBTI+ community, specifically in the context of HIV/AIDS. This includes expanding digital training and developing more tailored digital resources to enhance the community's capacity in health advocacy and political participation. These efforts demonstrate the significant role of digital tools in promoting health and advocacy, focusing on integrating community feedback for continued improvement and empowerment of vulnerable populations.”

## EPD148

Cultivating connections: a triple “i” approach to multilingualism and cultural awareness in India's HIV care landscape

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**Background:** Within the framework of delivering comprehensive HIV care, the significance of multilingualism and multiculturalism becomes evident, especially in a country like India, characterized by a historical backdrop of criminalization, pathologization, and marginalization of key populations. The vast landscape of Indian multilingualism encompasses a multitude of 1620 mother tongues streamlined into 200 languages and diverse cultures.

**Description:** Existing models of comprehensive HIV care lack sufficient consideration for the intricacies of multilingual interactions within heterogeneous communities. Our proposed triple „i” model addresses diverse HIV care needs by recognizing that successful projects demand linguistic knowledge and an understanding of multicultural communities. The model's three parameters—Information, Investigation, and Interpersonal Engagement—focus on essential knowledge through experience sharing, critical and self-directed approach to information, and group dynamics respectively.

**Lessons learned:** By December 2023, 148 outreach workers in 25 Indian states through GFATM-funded One Stop Centres have successfully established connections with culturally diverse and multilingual individuals such as ice-cream vendors, dhaba-persons, Hijra Gurus, alcohol vendors, rag-pickers, and transport contractors. Multi-lingual Information, Education, and Communication (IEC) materials were developed, and assistance from multi-lingual counsellors was sought through the NACO digital app and AIDS national helpline, supporting HIV care for mobile migratory drug users, transgender persons and bridge populations through effective linguistic and cultural expressions. Within this setting, communities felt empowered to embrace risks and freely express themselves, regardless of their language proficiency and cultural background.

**Conclusions/Next steps:** By introducing cross-cultural learning in HIV care module to outreach workers in 25 states, we can employ problem-based learning methodology over 12 sessions for an investigative approach to inter-cultural learning. There are challenges in transitioning from information and investigation to on-ground interpersonal engagement, but the triple „i” integration can be proved effective, with a high response rate of 96% (mean:25.2, SD:3.1).

Over time, expected communication barriers will diminish, reflected through rising response ratings for active participation in interpersonal engagement. The model's



success in linguistic-cultural aspects of HIV care result from introducing knowledge acumen, investigative process, and group process simultaneously. Our experience highlights the need for volunteers like inter-region migratory vendors, rag-pickers and transport-contractors with diverse cultural and linguistic proficiencies in future HIV care projects.

## EPD211

### Enhancing HIV case identification through strategic risk network referral among key and vulnerable populations

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**Background:** Despite the deployment of several HIV testing modalities to attain the UNAIDS goal of 95-95-95 by 2025, Tanzania lags in case identification, with the first 95% at 82.7%. PEPFAR and USAID-funded EpiC project is collaborating with the Ministry of Health in incorporating Risk Network Referral (RNR) with other HIV testing modalities for key and vulnerable populations (KVP). We described our experiences using RNR to improve case identification among KVP.

**Description:** RNR implemented in Mtwara, Tanzania, from October 2022 to September 2023, giving people living with HIV (PLHIV) options to refer their social networks for HIV testing (HTS) and prevention services. Trained HCWs offer PLHIV additional, self-guided options to informally refer for HTS services their friends and acquaintances who have similar risk behaviors. Using coupon-based referrals, PLHIV do not name contacts to make referrals, rather serve as informants to reach their social networks. Individuals' service data were recorded in National and project-based registers. We analyzed the HIV case identification rate when RNR was used and compared it with outcomes of index and mobile outreach testing during the same period and determined statistical significance using the Chi-squared test.

**Lessons learned:** 254 individuals were identified as HIV positive from all testing approaches, of whom 137 (25 Female sex workers [FSW], 21 Adolescent girls and young women [AGYW], 54 other adult women at risk [ADWR], and 37 other adult men at risk [ADMR]) accepted to refer 567

social contacts for testing. 93% of contacts (526/567) were reached and tested, with an HIV case finding rate of 12% (63/526) compared to 14% (75/539) from index testing, and 1% (101/8744) during mobile outreach,  $p < 0.001$ . Among contacts tested, 87 were FSW with a case finding rate of 11% and 46 AGYW with 7% case finding. The table below shows age and population case finding among social contacts reached.

OUTCOMES	FSW <25yrs	FSW ≥25 yrs.	AGYW <25yrs	ADMR <25yrs	ADMR ≥25 yrs.	ADWR <25yrs	ADWR ≥25 yrs.
Tested positive	0	10	3	1	18	2	29
Tested negative	14	63	43	9	133	20	181
HIV-case finding (%)	0%	14%	7%	10%	12%	9%	14%

**Conclusions/Next steps:** RNR is an effective approach to identifying previously undetected cases. This approach complements index testing as it goes beyond sexual partners to maximize HIV testing coverage.

## EPD213

### Alcohol, cocaine/crack, marijuana use among transgender women living with HIV in Goiás, Central Brazil: findings from a respondent-driven sampling survey

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**Background:** Substance use constitutes a major public health issue. Studies have demonstrated a heightened prevalence of alcohol, cocaine, and cannabis consumption among transgender women (TGW). Additionally, some evidence has indicated an association between substance use and non-adherence to antiretroviral treatment. Therefore, the objective of this study was to delineate the prevalence and consumption patterns of alcohol, cannabis, and cocaine/crack among TGW in Central Brazil.

**Methods:** This cross-sectional study was conducted between April 2018 and November 2019 among TGW in Goiás, Central Brazil. This study was conducted in three cities: Goiânia (population: 1,437,366; Human Development Index [HDI]: 0.799), Itumbiara (population: 107,970; HDI: 0.752), and Jataí (population: 105,729; HDI: 0.757) Participants were recruited using a respondent-driven sampling method and underwent face-to-face interviews regarding substance use. The Alcohol Smoking and Substance Involvement Screening Test were utilized to evaluate substance use. The positivity for HIV was identified through a rapid test. Prevalence was estimated with a 95% confidence interval.



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**Results:** A total of 440 transgender women participated in the study, with a median age of 25 years (interquartile range: 20.5–29.5 years). The majority of participants were single (85.5%) and had engaged in sex work during their lifetime (58.6%). Among TGW living with HIV, our findings revealed high prevalences of alcohol use (73.7%), cannabis use (51.6%), and cocaine/crack use (27.2%) over their lifetime.

Our results also demonstrated that harmful substance use is prevalent among TGW living with HIV. Additionally, 35% of participants reported using both drugs.

**Conclusions:** Our study identified a high frequency and significant overlap in the use of alcohol, cannabis, and cocaine/crack among TGW residing in three cities along a drug-trafficking route in Central Brazil. This suggests that drug use is associated with the vulnerabilities experienced by this population.

Consequently, multi-level interventions and resources are imperative to enhance treatment availability and access to health services, underscoring the urgent need for health policies addressing drug disorders in this socially marginalized group.

## EPD214

Enforcement of Harm Reduction: prevention, health care, and treatment services for women who use drugs in Nepal

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**Background:** Nepal is a strongly male-dominated country and has a limited harm reduction (HR) services program for Women who use Drugs (WWUD). In this context, Nepal successfully got the harm reduction(HR) project funded by ViiV Healthcare UK-based pharmaceutical company.

Recovering Nepal (RN) started the HR services in four districts of Nepal including (Chitwan, Hetauda, Rupandehi, and Banke) for WWUDs.

**Description:** RN implemented gender-specific HR services; Needle Syringe Exchange Program customized for WWUD. In coordination with the government, NCASC (National Center for AIDS & STDs Control) for HR commodities. In 26 months, we have been able to identify new WWUDs in 4 districts of Nepal and have provided services to 992 WWUDs till December 2023.

The project also includes the SRHR, HIV/AIDS awareness program among beneficiaries, School/College awareness program in regards to HIV and drugs, Community-based harm reduction program, Focus Group Discussion with the service provider as well as receiver, Referral services, Drug treatment support, Documentation of violence. Besides HR services, we have also conducted surveys among our clients.

**Lessons learned:** From the results of the survey that we took at the end of the year 2023, we came across more WWUDs and more vulnerable yet marginalized communities & and neglected even from the national HIV/AIDS program. There is an urgency for BCC, IEC on HIV, enlargement of existing HR services geographically.

A survey among 992 WWUDs in 4 districts that we work for showed that 90% requested the sustainability of existing HR services, and 10% requested gender-sensitive services with additional services like legal action against all forms of violence, child custody, and citizenship issues.

Among those 85%- 25% showed harassment from police, 25% stigma and discrimination in hospital settings, and 5% demanded women-friendly services and requested free rehabilitation services.

**Conclusions/Next steps:** The project outcome showed an immediate call to scale up gender-sensitive HR services as the project is women's specific. PHC services were provided by ViiV (Positive Action Grant) in 5 districts of Nepal from April 2023 which was a great outcome of the project. The national consultation was also proposed to Global Fund: Save the Children (PR) to scale up gender-friendly HR services for WWUDs.

## EPD217

Eclipse of silence: exposing the hidden epidemic of abuse & stigma among girl child living with HIV in IDP camps in Northeastern Nigeria

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**Background:** According to report by Displacement Tracking Matrix Round, 2,388,703 persons are living in IDPs in camps and camp-like settings in Borno, Adamawa, and Yobe (BAY) states. Amidst the turmoil of displacement, girls child are faced with forced marriage, physical assault, rape, survival sex, sexual assault and denial of resources.

**Methods:** This study employed a mixed-methods approach using surveys, and focus group discussion to assess the prevalence, nature, and consequences of Abuse and Stigma among participants in Northeastern.

A Multi-stage cluster sampling method was used to select 4,554 girl children aged 10–24 living with HIV from 6 IDP camps in Borno, Adamawa and Yobe state. Data analysis involved were descriptive, qualitative methodology and quantitative methodology.



**Results:** The study revealed that a majority of the participating girls, aged 15-24, across all North-East states were affected. Notably, approximately one-third (8.5%) experienced sexual violence, while (4.3%) reported physical violence. Almost 35% faced emotional violence, and roughly half were subjected to harmful traditional practices, along with denial of resources (30%). Borno State notably had higher instances of sexual and emotional violence (16.5%), while the prevalence of physical violence varied among states, with Borno and Yobe experiencing over a quarter of reported cases, whereas Adamawa and Gombe had around a ten percentage.

**Conclusions:** The study emphasizes how important it is to have a variety of interventions in place to fight stigma and abuse directed towards girls in IDP camps who are HIV positive. By establishing inclusive environments, stigma's negative effects are lessened, people's rights are upheld, and discrimination is prevented.

To safeguard and empower these vulnerable girls, as well as to provide equal access regardless of HIV status, immediate action encompassing education, community awareness, and healthcare training is imperative.

## Track E: Implementation science, economics, systems and synergies

### EPE149

#### Finding the undiagnosed: a largescale Index Testing Services program implementation experience from a High Burden Province in India

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**Background:** Index testing services (ITS) is an effective case-finding strategy that prioritizes the exposed contacts of PLHIV for testing. In collaboration with APSACS, we present data from a large ITS program from Andhra Pradesh, India.

**Description:** We describe index testing uptake, acceptance, and positivity. We analyzed ITS program data from September 2020- 2023. We calculated the proportion of newly diagnosed PLHIV by testing modality and plotted scale-up of facilities and HIV testing through ITS over 12 program quarters [Fig1].

**Lessons learned:** We offered ITS to 74,046 index clients; 38,606 (52%) men; 27,033 (36.5%) aged 35 to 44 years; 69,213 (93%) general clients; 4,585 (6%) Key populations; and 248 (0.33%) biological children. 65,762 (89%) accepted ITS with acceptance higher among men (52%). Of the 108,352 contacts elicited (1.6 elicitation ration), 83,247 (81%) tested for HIV (men 51%); 18,573 (22%) were newly diagnosed (men 51%); and 17,491 (94%) were initiated on ART. The number of persons tested using ITS increased by fivefold from 1,668 in 2021 Q1 to 8,473 in Q4 2023 and the number of positives identified more than tripled from 484 in 2021 Q1 to 1,792 in Q4 2023. ITS was responsible for 40% (18,573/46,830) of all tests reported among HIV testing modalities and the number of facilities implementing ITS nearly tripled from 96 to 284. Of those reached through partner elicitation, 79,158 (73%) were other sexual partners; 20,431 (19%) were spouses; and 8,550 (8%) were biological children.

**Conclusions/Next steps:** Volume and efficiency of index testing increased with scale-up of ITS. We reached as many men as women, and other sexual partners suggesting ITS is an efficient method for identifying HIV-positive men, and other sexual partners who might be missed with other approaches. Scaling-up ITS with fidelity may increase the number of new HIV-positive persons who know their status thereby fast tracking UNAIDS 2030 goals.



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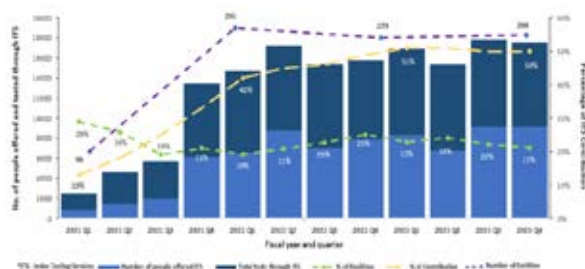


Figure 1. Number of people offered and tested for HIV through index testing services, October 2020 to September 2023, Andhra Pradesh, India.

## EPE150

### HIV self-test distribution by people living with HIV to catalyze testing and linkage in Central Kenya

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**Background:** HIV-negative people with known partners living with HIV (PLHIV) are a target population for testing and may benefit from innovative testing strategies, such as HIV self-testing (HIVST). We explored the impact of secondary distribution of HIVST kits by PLHIV enrolled in HIV care to catalyze testing of their sexual partners.

**Methods:** A prospective interventional study was conducted at four Kenyan HIV care clinics between August 2020 – November 2022, deploying two strategies to reach partners of PLHIV with testing: a standard-of-care (SOC) phase where PLHIV invited their partner to the clinic for an HIV test conducted by a counselor and a subsequent phase where PLHIV distributed HIVST kits to their partners for them to test themselves. Interviewer-administered surveys were conducted with partners to capture whether they completed HIV testing and were linked to any follow-on care (HIV treatment or prevention). Linkage to care was confirmed through clinic records. Multivariable log-binomial regression was used to compare the proportion of partners who tested and linked to care across study phases.

**Results:** 345 PLHIV (178 SOC and 167 HIVST phase) and 274 (79.4%) of their sexual partners (135 SOC and 139 HIVST phase) were enrolled. PLHIV enrolled during the HIVST phase included a greater proportion of men (81.3% vs. 57%) and more frequent condom use (10.1% vs. 19.3%) than those in the SOC phase.

Overall, relationship duration  $\geq 6$  months was 96.4% and similar across phases. Partners were more likely to test (98% vs. 80%, PR=1.23, 95% CI [1.13 – 1.34]) and were more likely to link to care (71.9% vs. 49.6%, PR=1.45, 95% CI [1.18 – 1.76]) during the HIVST phase than the SOC phase. 27.5% of partners had a reactive HIV result (47.4% testing in SOC and 52.6% in HIVST phase). Our linkage results were similar when we limited to the subset of partners testing HIV-positive.

**Conclusions:** Secondary delivery of HIVST to partners by PLHIV increased the frequency of HIV testing and linkage to care. This strategy warrants further investigation to determine its potential for widespread scale-up.

## EPE151

### Digital intervention engagement mediates the relationship between intrapersonal measures and pre-exposure prophylaxis adherence: a secondary analysis of a randomized controlled trial of sexual and gender minority youth on pre-exposure prophylaxis

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**Background:** Digital health interventions (DHIs) for Pre-Exposure Prophylaxis (PrEP) in young sexual and gender minority men who have sex with men (YSGMMSM) show promise for reducing HIV burden. Effectively engaging (engagement sufficient to solicit PrEP adherence) YSGMMSM is an ongoing challenge.

**Methods:** This secondary analysis of the P3 (Prepared, Protected, emPOWERed: a digital PrEP adherence intervention) randomized controlled trial (RCT) utilized causal mediation to quantify whether and to what extent baseline survey measures of phone and phone app usage, mental health, and sociodemographics were related to effective engagement for PrEP adherence in YSGMMSM. Of 246 YSGMMSM participants aged 16-24 in the primary RCT, 140 participants were eligible for the present analysis (retained at follow-up, received DHI condition, complete trial data). Participants earned and lost US currency for daily usage/non-usage of P3; dollars accrued by 3 months was used to measure engagement. PrEP non-adherence was measured via blood serum levels consistent with  $\leq 4$  doses weekly at 3-month follow-up. Logistic regression was used in a causal mediation approach to estimate the total effects of baseline survey measures, represented as non-adherence odds ratios (NAR), and direct and indirect effects mediated by engagement.

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**Results:** Engagement was strongly related to the outcome: for every \$1 earned above the mean (\$96), participants had 1.6% (NAR=0.984, 95% CI=0.97,0.99) lower odds of PrEP non-adherence. Frequently using phone apps to track health information was associated with a 71% (NAR=0.29, 95% CI=0.06,0.96) lower odds of PrEP non-adherence.

This was overwhelmingly a direct effect, not mediated by engagement, with a percent mediated (PM) of 1%. Participants with depressive symptoms and anxious symptoms had 3.4 (NAR=3.42, CI=0.95,12.00) and 3.5 (NAR=3.51, CI=1.06,11.55) higher odds of non-adherence to PrEP at 3 months, respectively. Anxious symptoms largely operated through P3 engagement (PM=51%).

**Conclusions:** P3 engagement was strongly related to lower odds of PrEP non-adherence. Several measures were related to effective engagement which suggests that PrEP adherence DHIs for YSGMMSM should tailor intervention content to emphasize engagement facilitators and abate engagement barriers. Evaluating effective engagement in DHIs with causal mediation approaches provides a clarifying and mechanistic view of how DHIs impact health behavior.

## EPE152

Accelerating ending the HIV epidemic with artificial intelligence and automation: a systematic review of HIV pre-exposure prophylaxis interventions

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**Background:** In November 2022, OpenAI released the Chat Generative Pre-trained Transformer (ChatGPT) an artificial intelligence (AI) chatbot. Such AI and digital technology have rapidly been adopted and grown in medical care, especially during the COVID-19 pandemic. Use of AI and automation can be unlimited, but our knowledge and utilization as it relates to HIV Pre-exposure prophylaxis (PrEP) care are still limited.

In this systematic review, we explored:

1. Characteristics of studies aimed to promote PrEP care with the use of AI/automation identified by the research team,
2. How AI/automation is used in these PrEP studies, and;
3. How AI/automation can be used in PrEP interventions to improve PrEP use and/or persistence.

**Methods:** We queried the CDC HIV/AIDS Prevention Research Synthesis (PRS) database of HIV prevention literature (automated and manual searches), RePORTER, clinicalTrials.gov, and International Standard Randomized Controlled Trial Number registry. Studies published or registered in English between 2012 and 2023 and report-

ed using generative and non-generative AI in PrEP interventions were eligible. Trained coders identified eligible citations, abstracted intervention characteristics, and assessed risk of bias with using either the Cochrane Risk-of-Bias Tool for randomized trials or an adapted Newcastle-Ottawa Quality Assessment scale.

**Results:** Among 12 eligible interventions, we identified four types of AI/automation: chatbot (AI-based or non-AI-based) (n=8), machine learning (n=1), natural language processing (n=1) and other types of AI (n=2).

Currently available intervention studies showed AI/automation interventions were acceptable and feasible for patients and providers in PrEP care while improving PrEP-related outcomes (i.e., knowledge, uptake, adherence, discussion with providers).

These interventions have utilized AI/automation to reduce providers' workload (e.g., education of patients and providers) and help non-HIV specialists prescribe PrEP with AI-generated clinical decision-support.

**Conclusions:** AI/automation has high potential to improve PrEP access and uptake although patient acceptability and feasibility of using AI technologies in resource-limited settings or potential for clinical misdiagnoses can still be a problem.

Despite limitations of included studies (e.g., small sample sizes and less rigorous study designs), our review suggests that by taking advantage of technology and using aspects of AI/automation appropriately we may accelerate PrEP use to reduce HIV infection and then end HIV.

## EPE153

Preference and retention of daily and event-driven pre-exposure prophylaxis for HIV prevention: a prospective cohort in Can Tho city, Viet Nam

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**Background:** Pre-exposure prophylaxis (PrEP) was introduced in Viet Nam in 2017, but data on oral PrEP preference and retention beyond 3-months are limited.

We aimed to evaluate PrEP preferences, factors influencing PrEP choice, and barriers to PrEP access and retention.

**Methods:** This prospective cohort study was conducted in Can Tho city, Viet Nam. Participants who were eligible for PrEP and provided informed consent were interviewed at baseline on demographic information, willingness to







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pay, reasons for choosing their PrEP regimen and the anticipated difficulties in taking PrEP and followed-up at 3 months, 6 months and 12 months after PrEP initiation.

**Results:** Between May 2020 and April 2021, 926 individuals at substantial risk for HIV were enrolled for PrEP. Of whom 673 (72.7%) choose daily PrEP and 253 (27.3%) choose event-driven PrEP (ED-PrEP). Majority of participants were men (92.7%), only 0.5% were transgender women. Median age was 24 years and 84.7% participants reported as exclusively homosexual. The three most common reasons for choosing daily PrEP were PrEP effectiveness (24.3%), having more frequent sex (15%) and easy to adhere, and for choosing ED-PrEP were PrEP effectiveness (22.7%), convenience (18.0%) and ease to adhere (12.0%).

Only 7.8% of PrEP users indicated their unwillingness to pay for PrEP and 76.4% would be willing to pay if PrEP were less than US \$15 per month. The proportion of retention at 12 months was 43.1% and 99.2% in daily PrEP and ED-PrEP users, respectively.

Factors that independently associated with daily PrEP retention were having less frequency of sex ( $\leq 2$  times per week) ( $P=0.003$ ), having sex without condom with people who were at risk of HIV within the past 6 months ( $P=0.01$ ), used PrEP within the past 6 months ( $p=0.001$ ), anticipated barrier to PrEP ( $P=0.034$ ).

**Conclusions:** ED-PrEP was preferred by more than a quarter of 23.5% of the participants and factors that influence their choices were PrEP effectiveness, convenience and easy to adhere. High retention rate was reported by ED-PrEP users. Factors associated with retention of daily PrEP suggested further research to understand and address the barriers to daily PrEP retention to inform national PrEP programme implementation in Viet Nam.

## EPE154

### Heterogeneity in women's preferences for the delivery of HIV prevention services during pregnancy

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**Background:** Community pharmacies might create opportunities for pregnant women to access HIV prevention services earlier and more consistently, but their role in HIV prevention during pregnancy – a high-risk period for HIV acquisition – is relatively unexplored.

We evaluated whether women of childbearing age have different preferences for accessing HIV prevention services during pregnancy in Western Kenya.

**Methods:** We conducted a face-to-face discrete choice experiment survey among women aged 15 to 44 years in Homa Bay, Kisumu, and Siaya counties in Kenya. The survey evaluated preferences for HIV prevention services described by seven attributes: service location, travel time, type of HIV test, availability of STI testing, partner HIV testing, and PrEP services. Participants answered a series of 12 choice questions. Each question asked them to select one of two different service options or opt-out ("no services"). We used a latent class model with effects-coded attribute levels to explore preference heterogeneity.

**Results:** Overall, 302 participants completed the survey; the median age was 23 years (IQR: 19–29); 48% were married, 42% were employed, and 69% had been pregnant before. The latent class analysis identified five groups of participants, each with unique preferences. The price-sensitive group (15%) preferred low-cost services and blood-based self-tests over provider-assisted tests.

The pharmacy-seeking group (16%) valued accessing services in community pharmacies with private rooms over clinics and had a strong preference for STI testing availability. The partner-testing group (23%) cared more about the availability of partner HIV testing than the other groups. The closer-the-better group (15%) preferred shorter travel times and cared less about STI testing availability.

The all-about-PrEP group (31%) preferred PrEP availability and accessing services in clinics. No participants preferred the "no services" option.

**Conclusions:** Women in this study exhibited a strong desire for HIV prevention services during pregnancy but had different preferences for accessing these services, revealing the limitations of a one-size-fits-all approach. Service design could benefit from tailored messaging and strategies to diverse groups, including those who are more price-sensitive, prefer pharmacy access, and have varying preferences for HIV test type, emphasizing the importance of each service (PrEP, STI testing, and partner testing) in HIV prevention.

## EPE155

### Key influences on decisions to discontinue and restart PrEP among women of reproductive age attending family planning clinics in Kenya

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**Background:** Oral pre-exposure prophylaxis (PrEP) delivery is gradually scaling up in Africa with notably high initial uptake. However, there remains inconsistent utilization of PrEP among adolescent girls and young women, a priority population for prevention due to their disproportionately high HIV risk.

Understanding influences on women's PrEP utilization, including discontinuation and restart, may provide insights to improve PrEP services.

**Methods:** From September–November 2023, we conducted semi-structured individual interviews (IDIs) with women without HIV participating in a cluster-randomized trial to integrate PrEP delivery in public family planning clinics (FP clinics) in Kisumu, Kenya. Trained social scientists conducted, audio recorded, translated, and transcribed IDIs. We conducted a thematic analysis of IDI summaries and a subset of complete transcripts to identify experiences, influences on decisions and characteristics of women who discontinued and those who restarted PrEP.

**Results:** Thirty-two women – 10 adolescents and 6 adult women who discontinued PrEP, and 10 adolescents and 6 adult women who restarted PrEP – were interviewed. Their median age was 24 (range 20–38) years, 56% were married, and many had used PrEP for 3–6 months.

Almost all women shared that their initial decision to use PrEP was influenced by perceived high risk for HIV, intricate partner dynamics (violence, long-distance relationships, multiple partners), and enhanced by provider counseling. Women who discontinued PrEP cited primary reasons of feeling less at risk, concern about pill burden and size, partner influence, stigma, and side effects.

While women and girls converged on feeling reduced risk for HIV as a primary influence to discontinue, and in most cases due to partner dynamics, adolescents reported this more than adults. Similarly, restarting PrEP was strongly prompted by perceived increase in HIV risk and change in partner dynamics (return of a partner, change in relationship, additional partners).

Women preferred PrEP delivery integrated into FP clinics because it reduced stigma and created a single location for accessing HIV and pregnancy prevention services.

**Conclusions:** PrEP discontinuation and restart among women reflects dynamic partner relationships and weighing of individual perceived HIV risk. Clear counseling on HIV risk will be critical to ensure PrEP is used effectively to prevent new transmission among this key population.

## EPE156

### Systematic review of PrEP interventions in Africa 2010 – 2023: barriers and facilitators affecting uptake and adherence

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**Background:** Despite having the highest global burden of HIV/AIDS, coverage of PrEP in Africa is vastly below the continent's needs. However, interventions to improve PrEP uptake and adherence in Africa have had varying degrees of success. We systematically reviewed the scientific literature to highlight the barriers and facilitators influencing the efficacy of interventions to improve PrEP uptake and adherence.

**Methods:** The systematic review followed the PRISMA guidelines, and a search for peer-reviewed literature was carried out in PubMed, Cochrane Library, Google Scholar and EMBASE for studies published from January 2010 – December 2023. Eligible studies for inclusion were interventional studies targeted at improving PrEP uptake or adherence and carried out in Africa.

**Results:** From 1281 identified records, 40 eligible studies were conducted in 13 African countries, with South Africa (16) and Kenya (13) having the most interventions. The six key intervention types, implemented over an average of 9 months, were peer support programmes and community ambassadorship initiatives; utilization of mobile health applications; PrEP training and counseling; integration of PrEP into public HIV care clinics and family planning services; utilization of pharmacies for PrEP delivery; and use of mass media to create awareness. Uptake of PrEP varied between 27% and 98%, with most studies recording over a 50% uptake. However, a decline in retention was observed with each passing month during the studies, particularly with mobile health applications. Major barriers and facilitators to PrEP uptake and retention were identified. The barriers included loss or damage of mobile devices, belief that condom alone suffices, financial insecurity, partner/peer stigma and misconceptions, and concerns about privacy, side effects, and self-efficacy. The key facilitators were community engagement, ease of access, positive provider attitudes, perceived effectiveness of PrEP, partner and peer support, a person-centered approach to individual needs, integration into existing health services, and understanding and addressing risk perceptions.



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**Conclusions:** Challenges with PrEP access, fear of discrimination, and poor risk perceptions are among the significant barriers to the efficacy of PrEP intervention programmes. Strategies to facilitate community engagement and address existing barriers are important to consider when designing future interventions and national roll-out programmes for PrEP in Africa.

## EPE157

### Reducing harm behind bars: a scoping review of implementation strategies for harm reduction interventions in carceral settings

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**Background:** Drug-related harms (i.e. HIV, overdose) disproportionately impact people who use drug in incarcerated settings, where harm reduction program availability, modality, and implementation lag far behind those in community settings. International governing bodies have called for scale-up in carceral settings and many novel implementation strategies have been deployed globally but have not been systematically assessed.

Using an implementation science lens, we aim to synthesize tested, real-world strategies to inform scale-up of future jail- and prison-based harm reduction programs.

**Methods:** Between February 16 and June 19, 2023, we screened MEDLINE, sociological databases, and gray literature for studies with detailed, individual-level primary data on harm reduction program implementation in incarcerated settings (PROSPERO #CRD42023400682). For eligible studies, we used a consensus approach to extract study data, determine study validity using the Quality Assessment for Diverse Studies (QuADS) tools, and infer (unless explicitly stated) discrete implementation strategies. We report study characteristics, implementation outcomes, targets, theoretical frameworks, and provide a synthesis of tested implementation strategies mapped along the Consolidated Framework for Implementation Science (CFIR) domains to identify specific implementation gaps and opportunities.

**Results:** We screened 4,197 abstracts, 448 full-text articles, and included 46 eligible analyses (from North America, Europe, Asia, Australia, and the Middle East) reporting implementation strategies related to MOUD (n=35, 76%), SSP (n=5, 11%), overdose prevention (n=4, 8.7%) and other HIV prevention interventions (n=2, 4.3%). Three studies explicitly stated their implementation strategy (we inferred the strategy for 43 studies [93.5%]). Primary implementation outcomes identified were adoption, acceptability, retention, feasibility, and sustainability. We identified studies

using implementation strategies successfully targeting all five domains of the CFIR framework (Outer Setting, Inner Setting, Individuals, Process, and Intervention characteristics).

Table 1. Characteristics of 18 (of 46) eligible studies included in the review and corresponding evidence-based interventions, implementation strategy, and Consolidated Framework for Implementation Research (CFIR) domain target

Author (Last Name) (Date)	Location	Study Design	Participants (sample size)	Evidence-based Intervention	Implementation Strategy	CFIR Domain
Shahid (2019)	Iran (Tehran, Isfahan, and Hamadan)	Pilot study	Adult prisoners (n=341)	SSP	Approval of policymakers, syringe distribution/exchange	Outer
Kilcock (2005)	USA (Baltimore, MD)	Pilot study	Adult prisoners (n=140)	MOUD	Line-drawing/needle/syringe exchange (LNE) treatment option	Intervention
Stanton (2022)	USA (Rural Appalachia)	Pilot study	Adult women (n=60)	HIV Prevention Training	NCA HIV training - adapted Feedback module	Inner, Process, Intervention
Orkin (1998)	Australia (New South Wales)	Cross-sectional	Adult prisoners (n=102)	SSP	Revised syringe cleaning guidelines	Outer, Intervention
Stark (2006)	Germany (Berlin)	Cohort study	Adult PMO (n=174)	SSP	New Policy allowance and campaign	Outer, Inner, Process
Chambers (2011)	USA (Albuquerque, NM)	Pilot study	Prisoners (n=30)	Overdose prevention	Naloxone Training & Kit	Intervention, Inner
Hamer (2006)	Puerto Rico (San Juan)	Pilot study, mixed methods	Male prisoners (n=40) Officials & staff (n=20)	MOUD	New protocol, physical clinic, counseling, training	Outer, Inner
Belcher (2020)	USA (MD, Tidewater County)	Pilot study	Adult prisoners (n=7)	MOUD	Telephone supervised injection	Intervention, Inner
Majumdar (2022)	USA (NY, NY)	BCT	Adult prisoners, pre-release (n=116)	MOUD	Supervised injection (individualized supervision of substance)	Intervention, Process
Dunlop (2021)	Australia (New South Wales)	Non-randomized experimental study	Adult prisoners, pre-release (n=126)	MOUD	Direct supervised injection (in real methadone)	Intervention, Process
Peterson (2017)	Norway (Oslo)	Pilot study	Adult prisoners (n=31)	Overdose prevention	Naloxone Training & Kit	Individuals, Intervention
Wickertshaus (2012)	Malawi (Blantyre, Lilongwe)	Cross-sectional	Prisoners living with HIV (n=72)	MOUD	New policy procedures	Outer, Process

\*Within the formatting requirements of AIDS abstracts (20 rows max); data from 18-46 studies presented here. Full results (and additional tables/figures) to be displayed at conference.

**Conclusions:** Our findings highlight a range of tested implementation strategies, outcomes, and related barriers that can inform future innovation in and scale-up of harm reduction interventions tailored to incarcerated settings.

## EPE158

### Assessing preferences of long-acting PrEP modalities among oral PrEP-experienced postpartum individuals in Cape Town, South Africa: a qualitative study

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**Background:** Postpartum people in South Africa (SA) are at increased risk of HIV acquisition, posing increased risk for vertical transmission. Long-acting HIV pre-exposure prophylaxis (PrEP) may mitigate structural and sociocultural barriers postpartum individuals in SA face in accessing and persisting on daily oral PrEP. We qualitatively

assessed theoretical preferences for and facilitators and barriers to long-acting PrEP use among postpartum individuals with experience using oral PrEP.

**Methods:** We conducted individual, semi-structured in-depth interviews with 20 postpartum individuals enrolled in an observational PrEP study in Cape Town. Trained peer interviewers asked participants about theoretical preferences regarding future PrEP modalities, and facilitators and barriers to using injectable PrEP or the vaginal ring. We performed thematic analysis using an inductive and deductive approach, achieved reliability through the joint coding of 25% of transcripts by two coders as well as iterative feedback with the research team that conducted and transcribed the interviews, and organized the data by emerging themes related to the theoretical acceptability of each long-acting PrEP modality discussed.

**Results:** From September to November 2022, we conducted in-depth interviews with 20 postpartum individuals (median age 30 years [IQR 24-35]). Participants reported substantial theoretical preference for long-acting injectable PrEP over oral PrEP due to effectiveness in HIV prevention, increased duration of protection, and discreteness, but identified injection pain and possible side effects as potential barriers to use. Many participants described a preference for oral PrEP over the PrEP vaginal ring due to concerns regarding the need for vaginal insertion as well as concerns about effectiveness, although some identified the ring's longer duration of effectiveness and perceived painlessness as potential facilitators. Participants largely disclosed their oral PrEP use to individuals in their social circles (e.g., partners, family, friends), and were open to potentially disclosing their long-acting PrEP use to similar individuals.

**Conclusions:** Our sample of postpartum individuals had varied theoretical preferences regarding PrEP use, highlighting the necessity of increased availability of diverse PrEP options in SA, providing individuals with choice in HIV prevention methods. Future research should explore the feasibility of offering short- and long-acting PrEP modalities in particular to postpartum individuals in SA.

## EPE159

Development and evaluation of a pre-exposure prophylaxis (PrEP) eligibility prediction tool: improving public health outcomes through accurate risk identification

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**Background:** Pre-exposure prophylaxis (PrEP) has emerged as a highly effective tool for preventing the transmission of HIV among individuals at high risk. Accurately identifying individuals who are eligible for PrEP is

crucial for optimizing resource allocation and improving public health outcomes. The aim of this study was to develop and evaluate a PrEP eligibility prediction tool aimed at identifying individuals who are eligible for PrEP.

**Methods:** A dataset of 19,894 individuals was used to develop and validate the PrEP eligibility prediction tool. The dataset included comprehensive demographic, behavioral, and clinical variables associated with PrEP eligibility. Selected machine learning algorithms, in particular logistic regression (LR), decision trees (DT), and random forests (RF), were used and systematically compared for model development. Performance evaluation was conducted using accuracy, sensitivity, specificity, positive predictive value (PPV), negative predictive value (NPV), and area under the curve (AUC).

**Results:** The PrEP eligibility prediction tool demonstrated an overall accuracy of 88.2%. Out of the total sample, 16,256 instances were correctly predicted as suitable (positive), while 1,148 instances were incorrectly predicted as suitable (false positives). Additionally, 1,198 instances were incorrectly predicted as unsuitable (false negatives), and 1,292 instances were correctly predicted as unsuitable (negative). The AUC value of 0.82 indicated good discriminatory power of the tool in distinguishing between suitable and unsuitable individuals for PrEP. The RF model obtained the best performance in prediction resulting to the sensitivity of 88.5%, specificity of 88.1% with AUC of 0.82 on the training data, and sensitivity of 89.7%, specificity of 85.3% with AUC of 0.91 on the testing data.

**Conclusions:** The developed PrEP eligibility prediction tool shows promise in accurately identifying individuals suitable for PrEP. The tool's high accuracy, sensitivity, specificity, F1 score and AUC values suggest its effectiveness in identifying individuals who are eligible for PrEP initiation and adherence support. Integration of this tool into clinical practice has the potential to ensure that those at highest risk of HIV transmission receive appropriate preventive care, and optimize resource allocation. Furthermore, comparing different ML algorithms uncovered patterns in predicting PrEP use with comparatively reduced uncertainty and, therefore, making it important for effective decision-making.



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## EPE160

### The South-South Learning Network provides effective ways to learn and share best practices in HIV prevention in sub-Saharan Africa

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**Background:** HIV prevention in sub-Saharan Africa remains a complex challenge, requiring innovative approaches to reduce HIV incidence. The South-South Learning Network (SSLN) is a program designed to strengthen national HIV prevention programs in 15 African countries through shared learning of best practices in HIV prevention. In the mid-term evaluation of this 4-year program, the preferred and most effective learning activities for SSLN countries were identified.

**Methods:** SSLN offers countries thirteen types of learning activities and each country has a unique set of activities they attend based on their program needs. A mixed-methods approach was used to establish the effectiveness of the SSLN program which included an in-depth review of program documents, an online survey completed by country HIV prevention stakeholders (n=296), and in-depth interviews (n=60).

**Results:** The most frequently attended activities were webinars (65%), completion of prevention self-assessment tools (64%), country champion meetings (61%), Link & Learn sessions (35%), and regional champions meetings (28%). Participants showed a clear preference for in-person engagements. The five activities that were perceived as most effective were the in-person activities, which came out strongly in both the survey (Figure 1) and the key informant interviews.

The interviews unanimously highlighted the effectiveness of activities with small-group interactions. Passive information activities such as webinars, online resources, and virtual site visits, seemed less effective, but are often a conversation starter and a jumping-off point for more intensive engagement.



Figure. Perceived effectiveness among survey respondents of different SSLN learning activities.

**Conclusions:** Les activités du SSLN, en particulier les activités d'apprentissage en personne, sont très appréciées et très efficaces pour partager les apprentissages et les meilleures pratiques en matière de prévention du VIH. Les initiatives qui souhaitent promouvoir l'apprentissage des meilleures pratiques en matière de VIH devraient se concentrer sur la promotion des engagements en petits groupes et, si possible, faire en sorte que ces apprentissages aient lieu en personne.

## EPE161

### Perspectives of cisgender women, transgender men, and healthcare providers on an HIV risk self-assessment digital chatbot

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**Background:** To facilitate PrEP uptake among populations at risk for HIV, we tested a digital chatbot for cisgender women and transgender men (assigned female at birth who self-identify as man) to use at health facilities while clients wait to see their providers. Co-designed with community members, the chatbot provided information on HIV prevention, helped individuals consider their own HIV risk, and prompted them to discuss HIV and PrEP with their healthcare providers. In July 2023, cisgender women (N=133) and transgender men (N=18) aged 18-49 with self-reported HIV negative/unknown status seeking health services from a community clinic providing HIV/STI services and 4 public health facilities (family planning/HIV service units) used the chatbot.

**Methods:** One-month post-implementation, we conducted in-depth interviews with a subset of participants (cisgender women=15; transgender men=10) and 10 healthcare providers to obtain feedback on their attitudes and experiences with the chatbot and conducted qualitative thematic analysis.

**Results:** Findings focused around three categories: Content, delivery mode, and implementation issues. **Content:** (a) Clients reported gaining new knowledge on HIV prevention, risk factors, and PrEP, and that it helped to dispel misconceptions around HIV and PrEP; (b) Clients felt empowered and more comfortable speaking with the provider about HIV/PrEP after using the chatbot; and (c) Providers felt that sessions with chatbot users were more interactive, efficient, and potentially facilitated PrEP uptake. **Delivery:** (a) Clients appreciated the confidentiality provided by the chatbot, and that it was non-stigmatizing; and (b) Clients enjoyed the interactive interface.



**Implementation:** (a) Chatbot was a good use of waiting time; (b) Providers expressed that the chatbot is ideal in a facility setting but expressed concern for its use in the community setting. When asked about whether their provider should be able to see their chatbot responses, most were not in favor of their personal information being shared.

**Conclusions:** Pre-service waiting time is an ideal opportunity for clients to learn about HIV prevention and reflect on their HIV risk prior to meeting with a healthcare provider. The chatbot was well-received by both clients and healthcare providers and has the potential for rapid scale-up to facilitate PrEP uptake among cisgender women and transgender men.

## EPE162

**"Yeah they suck. It's like they don't care about our health." Perceptions on provider mistrust and PrEP among Black women under community supervision in New York City**

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**Background:** Black women experience some of the poorest health outcomes and this is especially true for Black women involved in the carceral system, who are at elevated risk for HIV/STI infections, poor sexual and reproductive health, and chronic diseases. There is an urgent need for more effective healthcare engagement, prevention, and treatment for Black women.

This study aims to investigate the experiences of accessing healthcare services for Black women who are drug-involved and under community supervision.

**Methods:** We conducted semi-structured interviews with 43 Black drug-involved women under community supervision in New York City from a sub-sample from Project Eworth. Participants were asked how concerned they felt about healthcare issues in general; experiences with healthcare providers, including barriers faced in accessing gynecological care; attitudes and beliefs and level of trust/mistrust in healthcare providers; communication with their doctor about concerns related to HIV/STI risk, PrEP as a form of HIV prevention and if they would take PrEP if they were trying to get pregnant. HIV-positive participants were not asked the PrEP questions. Nvivo12 was used, and we employed a team-based approach to cod-

ing. Codes and themes relating to accessing healthcare, experiences with providers, and perceptions and attitudes of the healthcare system are presented.

**Results:** We identified three themes through analysis that influenced Black women's ability to engage with healthcare providers and systems:

1. Lack of knowledge and trust for PrEP for HIV prevention;
2. Provider-level barriers (e.g., provider judgment around drug use, withholding information; lack of communication; lack of knowledge of participants' prior medical information); and,
3. Mistrust of providers and the medical system.

**Conclusions:** Our findings highlight the need to improve trust and collaboration between healthcare providers and Black women, including for HIV prevention. This study addresses a critical gap in understanding perceptions of discrimination, stigma barriers to attaining quality health care, and has implications for PrEP uptake and adherence. Providers must be held accountable by funders and accreditation agencies in providing diversity, equity, and inclusion training for providers and healthcare organizations. Greater representation of Black healthcare providers who can identify with this population may impact access to and retention in care.

## EPE163

**Enhancing communication but falling short on timely visits: a case study of the Medical Appointment Notification Assistance (MANA) application in HIV client care, Bangkok**

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**Background:** In 2020, the Medical Appointment Notification Assistance (MANA) application was developed to improve on-time patient visits by sending appointment reminders. We analyzed the frequency of on-time and late clinic visits among person living with HIV who enrolled in MANA at a large tertiary hospital in Bangkok from May 2020 through October 2023.

**Methods:** MANA was offered to every client visiting the clinic for ARV or viral load services, with electronic consent obtained through the application at time of registration. Reminders were sent three times before drug refill and viral load test appointments (7, 3, and 1 day before), and two times after missed appointments (5 and 7 days). De-



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mographic and visit data were stored using the hospital information system. Median and chi-square tests were performed to assess statistical significance using STATA.

**Results:** Of 4,537 patients, 1,653 (36.4%) accepted MANA reminders (73.7% male, 89.2% Thai nationality) while 2,884 (63.6%) did not (69.6% male, 87.4% Thai nationality). No significant difference in median age found between the two groups. MANA users accounted for 6,901 (40.7%) of visits while non-MANA users accounted for 10,055 (59.3%) of visits ( $p < 0.001$ ). Both groups had a median visit count of 5. MANA users had a lower percentage of on-time visits compared to non-MANA users (32.0% and 38.0%, respectively,  $p < 0.001$ ).

	Non-MANA user n= 2,884 n (%)	MANA user n= 1,653 n (%)	p-value	Total N= 4,537 n (%)
Median Age (IQR)	40 (31-48)	41 (33-47)	0.43	40 (32-48)
Male	2,006 (69.6)	1,218 (73.7)	<0.01	3,224 (71.1)
Thai	2,521 (87.4)	1,475 (89.2)	<0.001	3,996 (88.1)
Total number of visits*	10,055 (59.3)	6,901 (40.7)	<0.001	16,956 (100)
Early or on time visits*	3,816 (38.0)	2,211 (32.0)		6,027 (35.5)
Late 1-7 days	1,185 (11.8)	603 (8.7)	<0.001	1,788 (10.5)
Late 8-28 days	1,841 (18.3)	1,402 (20.3)		3,243 (19.1)
Late >28 days	3,213 (32.0)	2,685 (38.9)		5,898 (34.8)

\*total adds up to 16,956 visits

**Conclusions:** While MANA successfully enhances communication between ARV staff and clients, it falls short of improving on-time clinic visits as initially proposed. The findings highlight the limitation of relying solely on message alerts and suggest the need for additional interventions. Bi-directional messages between ARV staff and clients may prove to be a more efficient strategy for encouraging timely clinic visits. Our results emphasize the importance of ongoing learning and adaptation in the development and implementation of healthcare management tools, particularly in the context of HIV client care.

## EPE164

### The emergence of HIV treatment opportunity deserts in Malawi

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**Background:** UNAIDS' has set treatment targets for ending the HIV pandemic by 2030, and an additional goal of eliminating inequities in access to treatment. A major issue is inequity in access between different geographic

areas. Before inequities can be overcome, they need to be found and their underlying causal factors identified. We show how this is possible by analyzing data from Malawi, which has one of the most severe HIV epidemics worldwide (~9% prevalence).

**Methods:** We designed a mathematical modeling framework that can be used in any sub-Saharan African country, with an HIV epidemic, to:

- Quantify geographic inequities in the opportunity to access treatment,
- Determine the location of treatment opportunity deserts, and;
- Identify causal factors underlying treatment opportunity deserts.

Our framework is based on a Floating Catchment Area model, and data collected in 2021. FCA models calculate the opportunity to access a particular resource.

Opportunity is calculated as a function of the supply of the resource, the demand for the resource, the time spent traveling from the demand site to the supply site, the mode of transportation, and human behaviors that affect travel.

**Results:** We find significant geographic inequities in the opportunity to access treatment. Communities with a low opportunity are spatially clustered (Moran's Index = 0.5 to 0.98); this results in dozens of treatment opportunity deserts. Surprisingly, some deserts occur in urban areas. We find that deserts have arisen because of a combination of two factors: the number of healthcare facilities (HCFs) that a community can reach within a maximum travel time (range: zero to 300 HCFs), and localized supply to demand ratios for ART (ranging from over-supply (25) to under-resourced (0)).

**Conclusions:** Treatment Opportunity deserts have arisen in Malawi because there are either only a few reachable HCFs, or many HCFs where the localized demand for ART is greater than the supply. We discuss how deserts may be contributing to ongoing HIV transmission, and recommend strategies to satisfy UNAIDS' goals of reducing geographic inequities in access to treatment, whilst increasing coverage. If deserts are not targeted for additional resources, existing geographic inequities in access will be greatly exacerbated.

## EPE165

### High probability of treatment failure after HIV care transition among adolescents living with HIV in Kenya

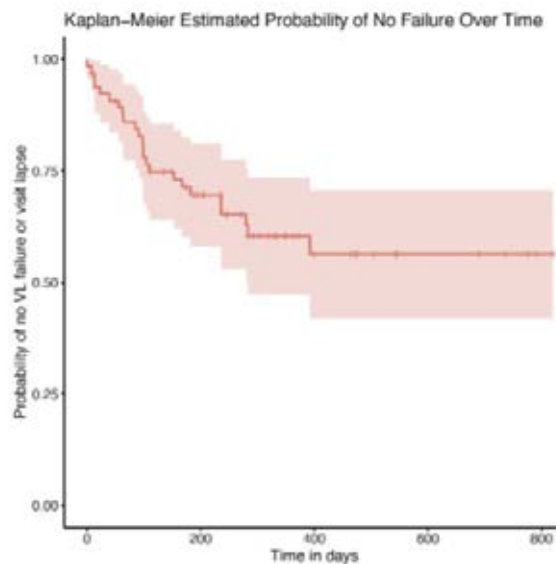
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**Background:** The impending transition of five million adolescents with HIV (AWH) globally to adult HIV care requires urgent attention given the known service disengagement risks and suboptimal clinical outcomes. To address limited data on AWH transition of care in high-burden settings, we evaluated post-transition outcomes among AWH in an ongoing trial in southwestern Kenya.

**Methods:** A total of 880 participants ages 14-24 years were enrolled at three high-volume public facilities in Kisumu County, Kenya between April 2021 and March 2022 in the Adapt for Adolescents study (A4A). We present secondary analysis among AWH who transitioned during study follow-up. A survival analysis to estimate the probability of no failure after transitioning was conducted. Failure was defined as either a high viral load (> 200 copies/ml) or missing scheduled visits by > 14 days post-transition. A Kaplan-Meier estimator was used for estimating the survival curve and point estimates of the probability of survival 6 months and 48 weeks post-transition.

**Results:** A total of 65 AWH (7.4%) transitioned to adult care during study follow-up, 44 (67.7) were female and median age was 19.0 (intraquartile range 18.0-21.0). Figure 1 shows the estimated probability curve of not experiencing post-transition failure among participants. By 6 months, 19 (29.2%) participants had a failure event (8 [12.3%] viral load failure and 11 [16.9%] visit lapse), resulting in probability of no post-transition failure by 6 months of 69.5% (CI 58.1-81.0%). By 48 weeks post-transition, 23 (35.5%) participants experienced any failure event (8 [12.3%] viral load failure and 15 visit lapses [23.1%]); probability of non-failure estimated to be 60.4% (CI 47.3-73.4%).



\*VL failure= Viral load > 200 copies/ml

Figure 1. Survival probability among adolescent with HIV who transitioned to adult clinics.

**Conclusions:** Preliminary findings suggest a high likelihood of treatment failure or disengagement post-transition among AWH in Kenya. Additional research is required to identify risk factors linked to these adverse outcomes and assess tailored programs to mitigate post-transition failure, improving AWH survival rates.

## EPE166

### A mixed-methods cluster-randomised study to test the efficacy, acceptability and feasibility of WhatsApp-based microlearning for HIV training of healthcare workers in remote South African clinics

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**Background:** HIV management changes with new developments, requiring regular guideline updates and ongoing training of healthcare workers (HCWs). In South Africa, this has traditionally been face-to-face, at centralised points, but distance, cost and lack of resources reduce uptake. South Africa has 100% cellphone penetration and 93.2% of adults use WhatsApp. We designed and tested the efficacy, acceptability, and feasibility of short, accessible, scalable, and sustainable microlearning using WhatsApp.

**Methods:** A pragmatic, mixed-methods, cluster-randomised study at 50 clinics in remote Eastern Cape. HCWs were invited to join during explanatory clinic visits. HCWs in the intervention arm received 15-minute, 'live' lessons offered at lunchtime over three weeks. Case-based les-



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sons with learning points from the ART guidelines were given on two WhatsApp groups: one for nurses (seven lessons), the other for community health workers (five lessons).

Outcomes were measured using online questionnaires testing knowledge of learning points, WhatsApp analysis and focus groups. Baseline knowledge was measured, with repeated questionnaires by the intervention groups immediately after training; and control and intervention groups three months later. Quantitative results were reported descriptively and inferentially using linear mixed-effects regression analysis, adjusted for clustering (SPSS™). Qualitative results were described descriptively using proportions and thematic analysis (nVivo™).

**Results:** Uptake and attendance was good. 232/293 (79%) of nurses and 207/271 (76%) of CHWs agreed to participate. In the intervention group, nurses' attendance of the 'live' sessions ranged from 27/101 (27%) to 51/101 (51%); CHWs 27/97 (28%) to 53/99 (54%). Two weeks later, 97/101 (96%) of nurses and 86/98 (88%) of CHWs had read the lessons. Linear mixed regression modelling, adjusted for age, gender, years of experience, stratification, clustering and repeated measures showed a statistically significant improvement in knowledge between the intervention and control arm after three months follow-up for both nurses (0.049; 95% CI 0.01-0.98; p=0.0489) and CHWs (0.74; 95% CI 0.24-1.26; p=0.0039).

Post-training surveys showed 99% of nurses (66/67) and CHWs (70/71) enjoyed the training, saying they would participate in this kind of training if it were weekly. Barriers to 'live' participation were network issues and/or loadshedding.

**Conclusions:** WhatsApp-based HIV training for HCWs is effective, acceptable, and feasible.

## EPE167

### Optimization of treatment outcomes using client segmentation: differences between clients who missed and adhered to clinical appointments

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**Background:** Missed appointments for antiretroviral therapy (ART) are associated with negative consequences among HIV clients. To gauge ART adherence and continuity, the USAID/PEPFAR-funded Meeting Targets and Maintaining Epidemic Control (EpiC) project collaborates with the Vietnam Administration for HIV/AIDS Control to conduct routine client tracking.

We analyzed client records to determine the characteristics of ART clients who missed an appointment in Dong Nai and Tay Ninh provinces to tailor and optimize strategies to improve ART adherence and continuation.

**Methods:** We analyzed de-identified data for ART clients from October 2022 through September 2023. We defined clients with missed appointments as those exceeding 28 days since their expected appointment. Demographic data and appointment-related variables were extracted from client records. Univariate and multivariate logistic regression were used to calculate odds ratios ([OR]) reflecting associations between clients who missed appointments and those who did not.

**Results:** Of 8,577 clients, 5.7% were categorized as having at least one missed appointment, 80.3% of whom were males. Mean age was 33.9 (±10.0), and mean duration of treatment was 55.7 months (±52.1). For clients reached after missed appointments (n=280), the primary reason was relocation for work in another province (30.4%), followed by no social health insurance or no validation of social health insurance (12.6%). Age and treatment duration were directly associated with missed appointments.

	OR	p-value	95%CI
Age	1.013	0.022	1.002 – 1.025
Gender	0.933	0.613	0.713 – 1.220
ART duration (months)	1.006	<0.01	1.004 – 1.008

Table 1. Multiple analysis of the factors associated with missed appointments

**Conclusions:** In Vietnam, tailored and enhanced support may be needed for older clients, those on long-term ART, clients working away from home, and those lacking valid social health insurance. Strengthening data systems to comprehensively address factors contributing to missed appointments, and putting greater effort in client tracking, are crucial for optimizing adherence and ensuring continued treatment.

## EPE168

### "I have to feel comfortable": attitudes towards pharmacy-administered long-acting injectable antiretroviral therapy in a sample of people with HIV

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**Background:** Long-acting injectable antiretroviral therapy (LA-ART) has transformed the landscape of treatment for Human Immunodeficiency Virus (HIV). Currently available LA-ART requires administration by a healthcare provider, and can be challenging to integrate into overburdened health systems. Tasking community pharmacies to administer LA-ART is one potential opportunity to diffuse workload.

Prior to implementing and disseminating this service, it is important to understand perceptions of this differentiated care model in people with HIV (PWH).

**Methods:** A mixed-methods study was conducted in PWH in four geographic areas of the United States (Northern California, Southern Texas, Central Alabama, and Southern Florida) from 6/2022-10/2023 to assess attitudes, implementation barriers, and facilitators for pharmacy-based administration of LA-ART. Respondents completed a baseline survey and semi-structured interview. A thematic analysis was conducted focusing on the attitudes and perceptions of relative advantages or disadvantages of pharmacy-administered LA-ART.

**Results:** The study included 24 PWH. Mean age was 53 years (SD= 13.9) and 50% identified as female. Distribution of participants was 25% from Alabama, 25% from Florida, 42% from Northern California, and 8% from Texas. Seven participants (29%) were currently using LA-ART.

Only six people not on LA-ART (35%) had ever discussed it with their clinician. Participants provided 108 statements expressing attitudes towards pharmacy-administered LA-ART. People on LA-ART tended to express more negative attitudes while people not on LA-ART held more positive views. Negative attitudes stemmed from a lack of established relationships with pharmacy staff, lack of privacy in the pharmacy setting, and perceptions about pharmacy

workload. Both groups described multiple aspects of convenience (general convenience, ease of making appointments, location, extended hours, ability to shop for other items while in the pharmacy) as the main advantages of pharmacy-administered LA-ART. Persons on LA-ART were concerned about pharmacy staff turnover while persons not on LA-ART believed pharmacy wait times were going to be the main disadvantage.

**Conclusions:** In this sample of PWH from four states, persons using LA-ART held more negative attitudes toward pharmacy-administered LA-ART. Their concerns about staff turnover underscore the importance of adequate staffing, communications training, and continuity of pharmacist care to foster trusting pharmacist-client relationships for successful pharmacy-administered LA-ART.

## EPE169

### Association between multi-month ART dispensing and retention in care among people living with HIV in Tanzania

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**Background:** Implementation of multi-month dispensing (MMD) can relieve congestion in health facilities and improve convenience for people living with HIV (PLHIV) who are established on ART. To gauge MMD's impact on retention in care, we used routinely collected electronic medical record data to evaluate the association between MMD and treatment engagement among a cohort of PLHIV starting ART.

**Methods:** This is a retrospective cohort study of PLHIV in Tanzania who initiated ART between January 2018 and November 2021 and who were eligible for MMD six months later (on first or second line ART, kept appointments for six months, undetectable viral load, no opportunistic infections, and not currently pregnant).

Data were collected between 2018 and 2023 from 355 government HIV care and treatment clinics in Kagera and Geita regions. MMD was defined as receipt of one or more 3-month ART refills (3MMD) within the first 18 months of treatment. Disengagement from care was measured 18 months after ART initiation, and was defined as being > 28 days late for their last scheduled ART pickup.

A linear probability model was used to estimate adjusted risk difference (RD) for treatment disengagement comparing PLHIV who received MMD to those who received monthly dispensing, among the subset of eligible people.



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**Results:** 52,112 eligible PLHIV were included in the cohort, among whom 53% were in Kagera and 59% were female. 81% received at least one 3MMD refill during their first 18 months on ART. Among this group, 20% had disengaged from ART at 18-months, compared to 56% of participants who received monthly dispensing (RD: -0.387; 95% confidence interval [CI]: -0.397, -0.377). A higher proportion of male than female participants received MMD (86% vs 78%), and the association with disengagement was stronger among males (RD: -0.505; CI: -0.522, -0.488) compared to females (RD: -0.328; CI: -0.342, -0.314).

**Conclusions:** The results suggest that MMD may be associated with higher retention in care in the first 18 months of ART, with the strongest association among males. These results suggest that MMD may achieve its intended benefits and reduce the risk of treatment interruption.

## EPE170

**Empowering communities: a catalyst for change in HIV prevention and treatment through community voices & preparedness for long-acting injectables**

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**Background:** The „Community Voices & Preparedness for New Treatment Innovations” project, spearheaded by the International Treatment Preparedness Coalition (ITPC), seeks to bridge the gap between HIV innovators and communities affected by HIV. The initiative's primary objective is to bolster awareness, education, access, demand, and affordability of innovative HIV treatments through robust community engagement.

With the global challenges of escalating HIV transmissions and obstacles in achieving viral suppression, the imperative for ongoing innovation is paramount. Long-acting injectables (LAIs) emerge as a transformative force in HIV prevention and treatment.

**Description:** In its current phase, the project has actively involved community groups from Botswana, Eswatini, and South Africa in a multi-stakeholder forum. This approach ensures that community insights inform the efforts of the ITPC, facilitating the introduction of LAIs with genuine community input.

A key focus is to empower HIV innovators, integrating their advancements into normative guidelines and procurement processes while amplifying civil society and community voices on a global scale. Employing an inclusive strategy, ITPC identified and engaged over 50 HIV community leaders from diverse backgrounds across

these countries, who in turn helped address knowledge gaps, concerns, and expectations regarding LAIs for both prevention and treatment.

**Lessons learned:** Knowledge on HIV and LAIs among community stakeholders in the target countries was low and uneven, emphasizing the need for comprehensive HIV education initiatives. Concerns related to safety, injection frequency, cultural considerations, convenience, transition challenges from pills, and potential stigma from healthcare professionals were articulated. Readiness gaps in healthcare facilities, including provider training, resource challenges, security risks, infrastructure limitations, and access difficulties, were identified.

However, the dialogues also highlighted the opportunities that LAIs present, including decongesting healthcare facilities, improving the quality of life for specific groups, addressing treatment fatigue, mobilizing resources, escalating advocacy, and enhancing social lives.

**Conclusions/Next steps:** The recommendations arising from the community dialogues underscore the importance of ongoing community engagement in the design and implementation of LAIs. Key suggestions include the development of targeted community education initiatives, ensuring accessibility and affordability, transparent communication on safety concerns, inclusive decision-making processes, tailored support programs, and the establishment of continuous dialogue platforms.

## EPE171

### Enhancing viral load monitoring among people on antiretroviral therapy using structured mentorship by cluster differentiated service delivery nurses: lessons from Buhera District of Zimbabwe, 2023

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**Background:** Zimbabwe Health Interventions (ZHI) is supporting government of Zimbabwe (GoZ) to achieve and sustain HIV epidemic control. Despite the country achieving 95% viral load (VL) coverage, some districts remain with suboptimal coverage. Between January and March 2022, Buhera district had a VL coverage of 62% and this can result in suboptimal viral suppression and its negative outcomes including HIV transmission, development of opportunistic infections, development of HIV drug resistance and death.

We documented effectiveness of structured mentorship by cluster differentiated service delivery (DSD) nurses in improving VL coverage in Buhera district for the period October 2022 to December 2023.

**Description:** Cluster DSD nurses were hired and deployed by ZHI to support a cluster of health facilities, and their activities included cohort cleaning i.e. ensuring clients' health records were well documented, line listing of clients due for VL testing, mobilization of clients who missed VL testing through phone calls and home visits by lay community referral facilitators (CRFs), and targeted follow-ups for community ART refill groups (CARG) and hard-to-reach clients. VL service uptake data were captured in health facility registers, and the program DHIS2 database. Data for the January 2022 to December 2023 period were

analysed using Ms Excel and STATA 15 generating proportions and assessing differences between proportions. The assessment was covered by the Medical Research Council of Zimbabwe approved protocol (MRCZ/E/159).

**Lessons learned:** Viral load coverage significantly increased from 62% in January to March 2022 to 88% ( $z = -59.52$ ,  $p < 0.0001$ ), in the July to September 2023 period. Similarly, VL suppression increased from 93% in January to March 2022 to 98% ( $z = -21.36$ ,  $p < 0.0001$ ) in the July to September 2023 period.

**Conclusions/Next steps:** Use of structured mentorship and quality improvement approach to a cluster of health facilities by DSD nurses contributed to the significant improvement in VL coverage and suppression rates in Buhera district.

We recommend interventions that optimize identification of clients due for VL test, mobilization of clients who missed VL testing, and targeted follow-ups of community ART refill groups and hard-to-reach clients.

## EPE172

### Intervention to improve HIV continuous care monitoring in public-sector HIV care sites in São Paulo, Brazil: a pre-post implementation evaluation

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**Background:** In Brazil, a nationwide electronic Clinical Monitoring System (SIMC) provides HIV public health facilities (HPHF) with lists of patients who have had their viral load tested and have not started treatment (Gap) or have interrupted antiretroviral therapy (ART interruption).

**Methods:** We are carrying out an intervention in 30 selected HPHF in the state of São Paulo, Brazil, aiming to improve the utilization of SIMC reports for the re-engagement of patients identified in gap or ART interruption. The intervention includes the consistent use of a SIMC e-learning platform and monitoring by trained healthcare professionals. Here we present the percentage variation in the proportion of Gap and treatment interruption between November 2022 and November 2023. Additionally, we calculated the proportions of positive responses to 10 indicators on processes related to the consistent use of SIMC at the selected HPHF, obtained in a local survey carried out before and 12 months after the start of the intervention.



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**Results:** We observed a reduction in the proportion of gap (81.81%) and ART interruption (18.20%) and an increase in the use of SIMC-related processes at the HPHF (78.33%) within 12 months of the start of the intervention (Table 1).

	2022		2023		PV 2022-2023 (%)
	n	%	n	%	
Gap <sup>#</sup>	1591	7.86	283	1.43	81.81
ART interruption <sup>#</sup>	1907	10.22	1630	8.36	18.20
SIMC utilization processes		24.7		79.33	78.33

*Table 1. Average percentage and percentage variance (PV) of Gap, ART interruption and SIMC utilization processes in 30 selected HPHF, November/2022 and November/2023, São Paulo, Brazil.*

<sup>#</sup>Related to 20248 PLWHA in 2022 and 19788 in 2023

<sup>#</sup>Related to 18657 PLWHA in 2022 and 19505 in 2023

**Conclusions:** The results suggest that adoption of SIMC as a monitoring tool is feasible and that consistent use of an e-learning platform combined with monitor support can contribute to the re-engagement of PLWHA in HIV treatment and care.

## EPE173

**Increase in retention rate with a model combining tasks shifting to paramedical staff and differentiated follow-up of PLWH in Senegal**

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**Background:** Maximizing people living with HIV (PLWH) retention in care is critical to the long-term success of PLWH management.

To do this, services must be accessible to PLWH. We hypothesized that a model of tailored care (MTC) for PLWH with more flexible and accessible services delivered by paramedical staff would improve PLWH retention.

**Methods:** We conducted a cluster randomized trial among antiretroviral therapy (ART)-naïve PLWH and ART-stable (on ART for  $\geq 6$  months with a stable condition) PLWH in two Senegalese cities. Intervention health districts received the MTC delivered by paramedical staff with clinician support. MTC included: 1) task shifting of PLWH management to health posts, 2) Differentiated follow-up of ART-stable PLWH: appointments every 3-6 months. Control health districts received standard of care.

The primary outcome was retention rate. Geographical and financial accessibility was a secondary outcome. Arms were compared using TMLE, accounting for clustering.

**Results:** From During September 2017-July 2018, 1014 patients in 13 health districts were included (504 intervention; 510 control). The mean age was  $40.6 \pm 13$  years; 55.5% were female, 39.7% at WHO stages 3-4 and 89.5% ART-stable.

After a mean follow-up duration of  $9 \pm 3$  months, the retention rate was 94.4% [95% CI: 93.8-96.2] in the intervention group versus 92.8% [95% CI: 90.2-93.7] in the control group, HR: 1.12 [1.04-1.33];  $p = 0.04$ ). Access to services was better in the intervention group with shorter travel time (31 minutes vs. 68 minutes;  $p < 0.001$ ), lower transportation cost (US\$1 vs. US\$6;  $p < 0.001$ ) and shorter time spent in the health facility (25 min vs. 89 minutes;  $p < 0.001$ ).

**Conclusions:** In this cluster randomized trial, shifting PLWH services to paramedical staff at health posts with differentiated follow up makes them more accessible with better retention rate. Such a model deserves more attention for proper scaling up to improve PLWH retention of PLWH in care.

## EPE174

**Leakages in the viral load monitoring cascade: an evaluation of the HIV antiretroviral therapy program focusing on viral load monitoring in Sanyati District, 2023**

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**Background:** Viral load (VL) was recommended as the preferred monitoring approach to diagnose and confirm treatment failure. It consists of VL testing after every 12 months and enhanced adherence counselling (EAC) should be done for all people living with HIV (PLHIV) on ART who have a viral load  $>50$  copies/ml. In Sanyati District the proportion of PLHIV with a high VL who had enhanced adherence counselling decreased from 54% in 2021 to 30% in 2022. The target recommended by WHO for enhanced adherence counselling is 100%.

We evaluated the HIV program focusing on VL monitoring to determine reasons for not achieving targets on enhanced adherence counselling.

**Methods:** A descriptive cross sectional study using a process outcome evaluation based on the logic framework was done. The study was conducted in Sanyati District, Zimbabwe with 26 health facilities.

The study population consisted of health workers in Sanyati District. Interviewer administered questionnaires were used to collect data on knowledge of health workers.

A checklist and records review were used to collect data on inputs, processes, outputs and outcomes. Frequencies, medians and proportions on the inputs, processes, outputs and outcomes were calculated.



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**Results:** Sixty-six health workers were interviewed with 49 (74.2%) being females. The median years in service of respondents was 9 ( $Q_1=5$ ;  $Q_3=14$ ). Forty-seven percent of the respondents were registered general nurses. There were frequent breakdowns of VL testing machines. Fifty-two percent of health workers had average knowledge on VL monitoring. Of the 1659 PLHIV who had high VL and only 497 (30%) had at least one EAC session, 344 (69%) completed EAC and had a second VL test. Among those with a second VL results, 54 had high VL and 21 (39%) were switched to second line.

**Conclusions:** The VL monitoring program in Sanyati District had leakages at every step of the cascade. The VL testing machines had frequent breakdowns that affected the VL monitoring program including EAC sessions. Some PLHIV remained on EAC because of lack second VL results. We recommended adopting point of care VL testing, use of job aids in EAC and refresher training on managing high VL among PLHIV.

## EPE175

Waiting for a PrEP appointment: how many people have seroconverted?

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**Background:** In Portugal, both HIV pre-exposure prophylaxis (PrEP) and treatment as prevention (TasP) are accessed in National Health Service (NHS) HIV hospitals units. The Treatment Activists Group (GAT) refers to both according to the status of HIV. The time to complete the first consultation is 30 days after the referral date. People referred for PrEP are at substantial risk for HIV or seroconversion. We aim to estimate the number of people referred for PrEP who seroconverted before accessing the first PrEP medical appointment.

**Methods:** Community health workers provide access to combination prevention according to the status of HIV identified through HIV-1/HIV-2 antibody testing. Referrals for PrEP and TasP are made via a form sent to the hospital consultation email. We extracted referrals made between 2019 and 2023 from the computer archive. We ran statistics for age, gender, country of birth, and key populations. We isolated sequential referrals from PrEP to TasP. We calculated consecutive days between referral dates. We classified cases as "before the first PrEP appointment," "after the first PrEP appointment," and "undetermined" seroconversions. Then, we performed counts and proportions.

**Results:** We referred 8136 people to PrEP.

We identified 53 (0.65%) people referred for TasP after a previous PrEP referral: 20 were cases of seroconversion "before the first PrEP appointment," 27 "after the first PrEP appointment," and 6 "undetermined."

Cases had a median (1Q-3Q) age of 29 (25-31).

These cases occurred mainly in cis men (92.5%) who had sex with men (90.6%) born in Brazil (58.5%).

The distribution of cases by calendar year (2019 to 2023) in the "before the first PrEP appointment" group was 0, 3, 2, 4, and 11, and in the "after the first PrEP appointment" group was 2, 10, 6, and 9. The average (minimum-maximum) interval of consecutive days between referrals in the first group was 139 (58-300), and in the second, 559 (40-1312).

**Conclusions:** The delay in starting PrEP may have contributed to the 20 seroconversions "before the first PrEP appointment" referenced by the GAT between 2019 and 2023. An increasing distribution of these cases/yearly, with half of these occurring in 2023, is of note.

## EPE176

Domestic public spending on HIV in low-and-middle-income countries: current landscape, trends, and determinants (2012-2022)

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**Background:** Utilizing econometric modeling and reports to UNAIDS from 108 countries, the analysis on Domestic public spending unveils crucial insights into the determinants of government expenditures on HIV. It provides a comprehensive evaluation of trends (2012-2022) and the present landscape.

**Methods:** The study employs panel data random effects model, analyzing 1600 country-year data points from UNAIDS reports and detailed information on country Gross Domestic Product (GDP), expenditures on health, HIV Prevalence, treatment coverage, residual of Human Development Index (HDI) and other independent variables. Global AIDS Monitoring data for nine countries reporting recent domestic public spending – South Africa, China, India, Turkey, Thailand, Indonesia, Brazil, Russian Federation and Argentina were used instead of modelled estimates.

**Results:** Significant positive associations were found between a country's HIV Prevalence and non-GDP residuals of the HDI and its level of domestic public spending on HIV. Other predictors were GDP per capita, the share of health in total government expenditures, per capita government expenditure, fragile state and political stability index. With an overall goodness of fit of 0.455 and an F-test p-value below 0.05, the model significantly explains the variation in domestic expenditures.

Over the last decade, domestic public funding significantly fuelled the growth of HIV resources, surging by 36.5%. Despite steady growth until the mid-2010s, the momentum slowed, coming to a halt in 2019. By 2022, Domestic resources for HIV were over 3% lower than in 2021 and 7% lower than the peak observed in 2019.





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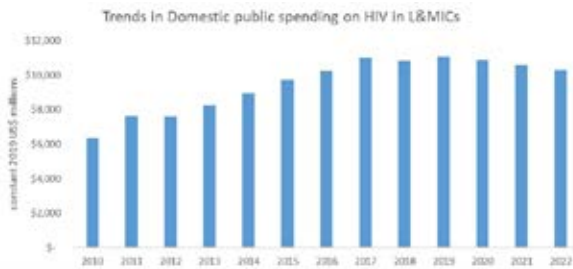
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**Conclusions:** The study underscores the main determinants of domestic public spending for HIV, emphasizing the importance of a country's ability to pay, disease burden, HDI residuals, and the national prioritization of health in government expenditures. Despite past growth, recent declines as evidenced in the study highlight the urgency of sustained investment to resource mobilization targets outlined in the 2021 Political Declaration.

## EPE177

### User costs of accessing HIV testing services among rural communities in Zimbabwe

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**Background:** Out-of-pocket health care user costs exceeding 10% to 40% of daily income are considered catastrophic health expenditure. Although HIV testing services (HTS) are free in Zimbabwe public health facilities, user costs may discourage uptake. We evaluated user costs associated with accessing HIV testing Zimbabwean rural communities in 2018.

**Methods:** Following community-based distribution of HIV self-tests in 40 rural communities from five districts, we analysed a cost survey nested within a population-based survey among participants reporting health-facility provider-delivered HTS in the last 12 months. Participants completed a self-administered questionnaire including questions on their most recent facility-based provider-delivered HTS episode. We elicited direct and indirect costs including transport, food and incidentals, and childcare, and lost time in productive activities. Opportunity cost of time was valued from self-reported lost time accessing services. Costs were analysed by individual, summarised by district and compared to World Bank national extreme poverty line estimates (\$1.80/day).

**Results:** Among 1,212 participants, mean user cost for testing access was US\$5.96 (US\$5.31-US\$6.61), Table 1. The largest contributor was food and other incidentals (\$3.10, 52%). Time spent accessing services (time for travel, waiting and actual testing tie) averaged 3 hours, translating

to an opportunity cost of US\$1.48. Transport costs were \$1.38 (US\$0.78-US\$1.70). The average user cost for testers exceeded the daily national extreme poverty line by \$4.16(231%).

District							
n=1212							
Cost item	Average costs in USD (2018)						
Transportation	\$1.70	\$0.78	\$1.50	\$1.21	\$1.70	\$1.38	23%
Food and incidentals	\$2.62	\$2.80	\$2.80	\$4.03	\$3.28	\$3.10	52%
Opportunity cost of time	\$1.71	\$1.73	\$1.80	\$0.52	\$1.63	\$1.48	25%
Total user cost	\$6.02	\$5.31	\$6.11	\$5.75	\$6.61	\$5.96	100%
% above poverty line (\$1.80)	234%	195%	239%	219%	267%	231%	

**Conclusions:** Although testing itself was free, respondents incurred substantially high HTS costs, exceeding their daily income and could create uptake barriers. Reducing waiting time at facilities and community-based and community-led provision of services would directly reduce user cost and indirectly the need for purchasing food and other incidentals. If universal health coverage is to be attained, recognizing user costs as a substantial barrier to service uptake and identifying ways to reduce this will be crucial.

## EPE178

### Cost-effectiveness analysis of a community-based model for delivery of anti-retroviral therapy among stable people living with HIV in Cambodia

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**Background:** People living with HIV (PLHIV) need lifelong antiretroviral treatment (ART) to keep their viral load suppressed, maintain a healthy immune system, and reduce the risk of transmitting HIV. However, adherence to ART among PLHIV is affected by many factors, including access to antiretrovirals (ARV), stigma, and lack of social support.

Community-based care has been instrumental in supporting patient management in many countries. This study evaluated the cost-effectiveness of a community-based ART delivery (CAD) intervention among stable people living with HIV in Cambodia.

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**Methods:** This quasi-experimental study involved 2,040 stable PLHIV in the intervention arm (CAD) and 2,049 PLHIV in the control arm. The CAD intervention involved community action workers (CAWs), who are PLHIV themselves, collecting pre-packaged ARVs from the ART clinics and dispensing them to PLHIV in the communities. PLHIV in the control arm visited the ART clinic and received a 3- to 6-month supply of ARVs under the multi-month dispensing (MMD) model. A cost-effectiveness analysis was conducted with the primary analysis from the public health system perspective, accounting for resource use in the ART clinics between the CAD and MMD arms over the trial period. Using a societal perspective, the secondary analysis included both direct and indirect out-of-pocket expenditure (OOP) incurred by PLHIV and their caregivers in both arms. Additionally, a cost-utility analysis was performed by remapping from Short-Form 12 (SF-12) to EQ-5D-3L.

**Results:** The incremental cost-effectiveness ratio (ICER) for the CAD model was \$3504 per PLHIV adhering to ART and \$2057 per percentage point improvement in the physical component summary (PCS). Both ICERs fell below the defined threshold of three times the gross domestic product (GDP) of Cambodia, rendering the CAD model a cost-effective intervention.

**Conclusions:** This study demonstrated the cost-effectiveness of the CAD intervention in having PLHIV serving as CAWs in delivering ARV to their fellow peers in the community. The results complemented the intervention's effectiveness and implementation feasibility and contributed to the evidence supporting community-based interventions in the care and management of PLHIV in Cambodia.

## EPE179

### Health system determinants and optimizing HIV/AIDS data utilization in health facilities supported by WISH2ACTION in Uganda

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**Background:** The main goal of this study is to examine how routine health information is used to monitor and make decisions in health facilities supported by the Women's Integrated Sexual Health Programme (WISH2ACTION) in Uganda. The study assumes that using health data effectively leads to better decision-making and improved healthcare outcomes.

**Methods:** The research employs a mixed-method approach that includes quantitative and qualitative data collection techniques through self-administered questionnaires with qualitative insights. The sample size is determined using a two-stage cluster design representing urban and rural health facilities. The target popula-

tion comprises healthcare workers, facility in-charges, clinicians, nurses, midwives, and information officers. Quantitative data analysis involves descriptive statistics, Pearson's Chi-Square test, and Generalized Estimating Equations (GEE) to account for facility-level clustering and correlation.

**Results:** The study received an impressive response rate of 112.5% of the expected sample size, which suggests high participant interest and commitment. Of the total respondents, 58.6% demonstrated the ability to use data for decision-making. The gender distribution of the respondents showed a higher representation of females (64.3%) compared to males (35.7%).

The study identified health facility type, location, and staff education level as the key determinants of FP/RH data use, with a statistically significant correlation ( $p=0.000$ ). Supervisory visits were found to play a crucial role in data utilization, with checklists positively impacting data use ( $p=0.0000$ , 2.0270) and discussions negatively impacting it. The availability of national/district strategic plans and guidelines, creating data visuals, receiving feedback reports, and having a performance monitoring team positively influenced data use. The study also found that staff competence in verifying data accuracy and explaining findings enhances data use.

**Conclusions:** The study offers several recommendations considering the educational background of staff when implementing data utilisation strategies, conducting more frequent supervisory visits with a checklist-based approach to improve data quality, and providing education on the importance of national/district strategic plans and guidelines. Health facilities' management creates an organisational culture that promotes the demand for and use of evidence-based decision-making. Finally, the study established that building staff capacity in data utilisation and emphasising the review of minutes from performance monitoring meetings can enhance data utilisation in healthcare facilities.

## EPE181

### An optimized integrated mechanism to shorten the time from HIV screening to successful enrollment in ART in Beijing city of China

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**Background:** Early treatment of people living with HIV (PLHIV) is very important to curb the spread of HIV/AIDS and improve the health of PLHIV. Since August 2023, we began to implement integrated mechanism to optimize the sequence "diagnosis-referral-antiretroviral therapy (ART) enrollment" in pilot health facilities, to shorten the time from HIV screening to successful enrollment in ART.







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**Description:** Before implementing the optimized mechanism, referrals of HIV positive clients were just initiated starting from WB confirmation without involvement of ART clinics, and less communication happened among related facilities, so referrals were basically relied on clients themselves. The optimized mechanism was created including preliminary screening testing facilities, local Centers for Disease Control and Prevention (CDC) and ART clinics with clear duties. ART clinics were required to step in from the positive preliminary screening results to provide tracing and follow-up.

The whole referral was proceeded under close interactions of all related facilities. Under the premise of data protecting, a WeChat working group was established to ensure timely communication among above facilities, so that the positive clients can be identified, contacted and referred in time. Case managers of ART clinics were also newly engaged starting from the preliminary screening to ensure good health education.

**Lessons learned:** From January to July 2023, a total of 25 positive clients were identified locally and successfully enrolled to ART clinics, the average time from preliminary screening to successful enrollment for these cases was 27 days. From August to November 2023 we implemented the optimized mechanism, with 34 positive clients identified and successfully enrolled, the average time from screening to enrolment being 15 days.

This period for 34 positive clients was 12 days shorter than for 25 positive clients. However, the time from HIV screening to confirmation did not change and takes at average 7 days.

**Conclusions/Next steps:** The pilot can help HIV/AIDS clients to get enrollment of ART service sooner. Early involvement of ART clinics and effective communication and progressive intervention between various units can shorten the time from screening to enrollment.

## EPE182

### Implementing cervical cancer screening in routine care for older women living with HIV: experience of VIHEILLIR project in Cameroon

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**Background:** Women living with HIV are six times more at risk of developing cervical cancer (CC). WHO recommends screening with an Human Papilloma Virus (HPV) test, followed by triage with either visual methods or cytology

and treatment of those positive. We share the experience of VIHeillir project (care of comorbidities in elderly people living with HIV) in Cameroon.

**Description:** We offered HR-HPV/DNA testing to women over 50 in two HIV care units, in Yaoundé and Bafia both equipped with PCR testing systems. Project provided HPV cartridges and thermocoagulators. HPV positive women where triaged by visual inspection with Acetic Acid and Lugol's Iodine (VIA/VILI) in the gynaecological service. If eligible, women were treated by thermocoagulation. Biopsies for unclear results were done and confirmed CC referred for management. Beforehand, staff was trained in diagnosis of precancerous lesions.

**Lessons learned:** The CC screening started in March 2022, during 21 months of activities we learned:

Organizational issues:

- All services engaged in care delivery should be involved: identify key persons constantly present in the service and interested in collaboration
- Optimize care pathway between services to ensure inclusion and follow up: awareness by all providers on the need of screening and permanent availability of dedicated staff facilitate procedures.
- Organize steady supply and management of consumables to avoid waste and stock ruptures: a regular follow up of stocks, expiration dates should be in place
- Avoid dependence on a unique screening algorithm and plan for alternatives in case of breakdown of the PCR device,

Communication and training issues:

- Share care algorithms with all care providers: support of nationally recognized experts has an impact on acceptability of the strategy.
- Information on CC and HPV during routine visits improves women adherence to care: verify the effective use of educational tools and assess patients understanding
- Organize inclusive and continuous training with an engaged pool of trainers

**Conclusions/Next steps:** The integrated strategy « test and treat » in HIV units is feasible in Cameroon. Challenges with medical supplies, maintenance of equipment and limited knowledge of women on the need for screening could be barriers to effective implementation.

## EPE183

### Sustaining HIV epidemic control through locally-led approaches

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**Background:** Approaches to sustain epidemic control must be contextualized, locally led, and adaptable. Through comprehensive insurance benefit packages, improved workforce information systems, and enhanced capacity in financial management and regulation of social contracting, our activities empower partners to advance global health goals and sustain improved health outcomes.

**Description:** The presentation demonstrates four locally led approaches:

#### 1. Integrating HIV into Health Financing Mechanisms

In Nigeria, the project collaborated to develop national and state-level blueprints, leading to over 90% of facilities providing HIV services through health insurance and the expansion of coverage to 611,000 individuals. Success has extended to Tanzania, Burkina Faso, and Ethiopia, with Cambodia catalyzing universal access to free healthcare, including HIV care.

#### 2. Improving Public Financial Management

Capacity strengthening and mentorship support in 14 countries focused on key efficiency drivers including PFM, activity-based costing, and program-based budgeting. In Kenya, this resulted in 26 counties mobilizing \$20 million for HIV. In Nigeria, budget allocation increased 67% with a 193% increase in funds released for HIV.

#### 3. Supporting Social Contracting

The project has supported 22 countries in operationalizing and optimizing social contracting mechanisms, particularly through the development of an adaptable social contracting diagnostic tool. In the Kyrgyz Republic funding for social contracting increased by 35%.

#### 4. Strengthening Health Workforce through Improved Health Information Systems

In Botswana, the project upgraded and migrated the integrated Human Resource Information System (iHRIS), ensuring an up-to-date and accessible health workforce database critical for sustained epidemic control and preparedness for future crises.

**Lessons learned:** Our approaches emphasize locally led and adaptable solutions. Successes include the elimination of user fees, strategy development for domestic resource mobilization, effective extension of social protections, and strengthened PFM.

Lessons learned underscore the significance of tailored, evidence-based approaches and collaboration with local stakeholders, ensuring the integration of HIV services into broader health systems for sustained epidemic control.

**Conclusions/Next steps:** The project and its results demonstrate the importance of intentional, embedded, and localized sustainability efforts. In the context of do-

nor transition, competing priorities, and compressed fiscal space, it's paramount that sustainability is treated as an ongoing, transformative process to protect gains and safeguard against reversals.

## EPE184

### The last mile: can the achievement of UNAIDS 95-95-95 targets be sustained in a region with high burden of HIV? Comparing serial population-based surveys in western Kenya, 2018-2022

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**Background:** Western Kenya is home to ~30% of Kenya's estimated 1.4 million people living with HIV (PLHIV). We analyzed data from two serial population-based HIV bio-behavioral surveys (HBBS) done in 2018 and 2022 to determine status of the Joint United Nations Programme on HIV/AIDS (UNAIDS) 95-95-95 targets and compared social and behavioral factors in the population across both surveys in a region with high burden of HIV.

**Methods:** We analyzed data on health services, behavioral risks, HIV status, and viral load, from 20,742 persons aged 15+ years in Siaya County, western Kenya of whom 2,878 were PLHIV: 1,756 in 2018 and 1,122 in 2022. We calculated weighted prevalence of demographic and behavioral factors, HIV infection, knowledge of status, antiretroviral (ART) use and viral load suppression (VLS; <1,000 copies/mL) and compared data between survey years using chi-squared tests.

**Results:** Majority, (70%) of the PLHIV were female, and median age was 41 years (interquartile range, 33-50). HIV prevalence declined from 15.8% (95% confidence interval [CI]15.5-16.1) in 2018 to 11.5% (95% CI 11.2-11.7) in 2022; and was higher in females than males (18.9% vs. 11.0% in 2018; 13.6% vs. 8.6% in 2022).

Overall, there were significant decreases in having: ever experienced violence (19.4% vs. 9.4%,  $p<0.001$ ), sexually transmitted infection in the past 12 months (5.5% vs. 3.9%,  $p<0.029$ ) and multiple sexual partnerships (27.1% vs. 21.1%,  $p<0.001$ ). Among males, HIV disclosure to partners decreased from 86.3% to 80.8% ( $p=0.03$ ); and use of mind-altering substances remained high; 28.8% in 2018 vs. 32.7% in 2022 ( $p=0.20$ ). In 2018, 95.7% of PLHIV knew their HIV status, 96.1% of whom were on ART, and 92.4% were virally suppressed while in 2022 the achievement was 97.3%, 98.5%, and 98.5%.

**Conclusions:** The 2020 UNAIDS 90-90-90 and more ambitious 95-95-95 targets were surpassed in 2018 and 2022 respectively, highlighting the effectiveness of Siaya County's HIV program. Nevertheless, strategies to increase disclosure of HIV status and address high prevalence of



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mind-altering substance use among males may be useful. A limitation of our study is the paradox of decline in HIV prevalence and may be a pointer to attrition and mortality.

## EPE185

Cardiovascular health assessment in people living with HIV in Sub-Saharan Africa

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**Background:** People living with HIV (PLWH) are at elevated risk of cardiovascular disease due to traditional, HIV-specific, lifestyle factors; their cardiovascular health profiles (CVH) are therefore complex and require thorough characterization to guide primary prevention efforts.

The American Heart Association's Life's Simple 7 (LS7) scale was employed in PLWH receiving antiretroviral therapy (ART), and there is limited data on ART-naïve individuals. Therefore, we applied LS7 scale to compare CVH between ART-Naïve PLWH and HIV-negative adults in Tanzania.

**Methods:** A cross-sectional analysis was conducted using the HTN& HIV and CICADA Datasets with PLWH and HIV-negative adults recruited from HIV clinics in Mwanza, Tanzania, East Africa. Modified Life's Simple 7 (LS7) definitions were applied to the cohorts.

Ordinal regressions were employed to investigate associations between HIV status and each individual LS7 metric adjusting. Poisson regressions to evaluate relationship between HIV status and Total LS7 Score.

**Results:** Our study included 2219 participants, where 492 PLWH and 503 controls in HTN& HIV and 860 PLWH, 364 HIV-negative in CICADA cohort. PLWH had higher total LS7 scores (4.3 vs 3.9,  $p<0.001$ ) and (4.16 vs 3.85,  $p=0.015$ ) in HIV & HIV and CICADA cohorts respectively.

PLWH also had higher prevalence of ideal overall CVH (47% vs 33%,  $p<0.001$ ) and (40% vs 35%,  $p<0.001$ ) in the respective cohort. This difference remained significant even after adjusting for potential confounding.

In both cohort, PLWH had higher prevalence of Ideal BMI, Ideal Blood Pressure, Ideal Total Cholesterol than HIV-negative counterparts and lower prevalence of Ideal Smoking.

By contrast, PLWH in HTN & HIV cohort had lower prevalence of Ideal Physical Activity while PLWH in CICADA cohort had lower prevalence Ideal Blood Glucose.

**Conclusions:** Cardiovascular disease prevention for newly diagnosed PLWH in Sub-Saharan Africa should prioritize primary prevention strategies such as smoking cessation, enhancing physical activity levels, and screening for diabetes.

Figure 2: Distribution of Life's Simple 7 Metrics in PLWH and HIV-negative participants in HTN&HIV cohort

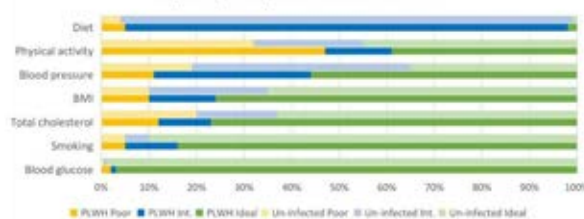
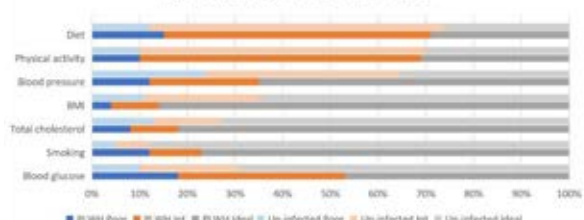


Figure 1: Distribution of Life's Simple 7 Metrics in PLWH and HIV-negative participants in CICADA cohort



## EPE186

A mixed methods evaluation of barriers to and clinical outcomes of lung cancer screening among people living with HIV

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**Background:** People living with HIV (PLWH) experience higher rates of tobacco use and lung cancer than the general population. Lung cancer screening (LCS) with low-dose computed tomography (LDCT) may identify lung cancer at earlier, more treatable stages, yet the uptake of LCS among PLWH is low. Understanding physician knowledge of and barriers to LCS referral may increase screening rates. Evaluating the clinical outcomes of PLWH who engaged in LCS shared decision-making visits may provide additional data to highlight the importance of preventive screening.

**Description:** This quality improvement project was conducted to identify potential barriers and facilitators to increasing referrals of PLWH to an LCS program at an academic medical center in the United States.

Phase 1 consisted of chart extraction identifying PLWH who have undergone a shared decision-making visit for LCS from 2015-2023.

Phase 2 consisted of a survey of infectious disease providers' knowledge of and perceived barriers to LCS. Screening outcomes and provider perceptions of LCS were evaluated to understand barriers and facilitators in the LCS pathway of PLWH.

**Lessons learned:** A shared decision-making visit was attended by 61 PLWH and 96.7% subsequently completed the LDCT. At the baseline scan, the average age was 61 years. Individuals were 56% Black, 73% male, and average

pack year smoking history was 41. At the baseline scan, 31% had a positive screen (lung nodule  $\geq 4\text{mm}$ ) and 2 lung cancers were identified. Twelve providers responded to the survey with 100% agreeing that LCS is beneficial to PLWH. Providers endorsed perceived barriers to LCS including 83% citing a lack of knowledge on LCS eligibility guidelines.

**Conclusions/Next steps:** PLWH that engage in a shared decision-making visit are likely to complete the LDCT. The benefit of LCS in this population is highlighted by the screening findings. Survey results highlight that providers understand the importance of LCS but encounter many barriers to education and referral. Decreasing barriers to referral may have a positive impact on screening rates, prognosis, and treatment of lung cancer among PLWH. Next steps include incorporating provider referral pathways and alerts into the electronic health record and engaging care team members to promote LCS.

early detection and treatment. The Image Service is part of our strategy; for this reason, we have a doctor specializing in Neuro-Imaging who responds primarily to queries from the Neuro-AIDS subdivision, which improved care and prevented delays in requesting CT and MRI.



## EPE187

### Integration in the care and treatment of Neuro-AIDS in HIV: experience of the Centenario Provincial Hospital from Argentina

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**Background:** The objective of the work is to carry out a retrospective analysis of the experience of integration of the HIV/AIDS Service, Imaging Service and Neurology Service (Neuro-AIDS) at the Centenario Provincial Hospital.

**Description:** We mainly treat patients in the Neuro-AIDS stage, for which we established a joint approach strategy between Neuro-Infectology and Neuro-Imaging specialists, by offering specific consultations within the HIV/AIDS Service, achieving greater adherence to specific treatments. Our HIV/AIDS Service operates within the Centenario provincial Hospital, where it is integrated into the *Imaging and Neurology Services (Neuro-AIDS)* in a joint approach strategy.

We develop healthcare tasks such as HIV detection campaigns in our community, while providing access to the *National Program for Treatment and Response to HIV/AIDS* in Argentina, making it easier for patients to monitor and control the infection, antiretroviral therapy, and we offer a medical team made up of specialists from different Services.

**Lessons learned:** The *Comprehensive Approach Strategy for Neuro-AIDS* has demonstrated a significant reduction in its occurrence within our service, a fact demonstrated by Neurology admissions to ICUs in 2023 with Neuro-AIDS deaths (1 of 89 patients). In turn, we have established a limit point in the case of Neurosyphilis for screening at 1/32 as an indication for Lumbar Puncture, which allowed

**Conclusions/Next steps:** Neuro-AIDS is composed of extremely aggressive pathologies with great morbidity and mortality; for this reason, we have established a joint approach strategy that has proven to reduce its appearance and improve the life expectancy of those who suffer from it. We believe that integration in Neuro-AIDS care means a better quality of life for patients.

## EPE188

### Integration of comprehensive infectious disease screening within an inpatient detoxification unit in Philadelphia: capitalizing on engagement opportunities to reduce harm and improve patient outcomes

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**Background:** People living with substance use disorders (SUD) are at higher risk for infectious diseases (ID) relative to people without SUD but have low rates of screening given barriers to accessing care. Short-stay detoxification units offer engagement opportunities for ID screening, but challenges to implementation include limited time for disclosing results and appropriate management. We explored the feasibility and uptake of embedding comprehensive ID screening labs into an inpatient detoxification unit in Philadelphia.

**Description:** From July 10, 2023 to January 10, 2024, patients admitted to a 12-bed inpatient detoxification unit embedded within an acute medical center were offered opt-out ID screening by attending addiction psychiatrists.



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Screening tests included HIV antigen/antibody, Hepatitis A (HAV) IgG, Hepatitis B (HBV) (surface antigen, surface antibody, core IgG antibody), Hepatitis C (HCV) antibody with reflex to confirmatory viral load, interferon gamma release assay (IGRA), and sexually transmitted infections (STIs) (syphilis, gonorrhea, chlamydia, trichomonas). The proportion of labs collected, identified infections, and preventive service needs were assessed. No systematic screening existed prior to this intervention.

**Lessons learned:** Of 242 patients admitted to the unit during the study period, screening was completed in 132 (55%) for HIV, 114 (47%) for HAV, 138 (57%) for HBV, 143 (59%) for HCV, 118 (49%) for IGRA, 143 (59%) for syphilis and 108 (45%) for gonorrhea/chlamydia.

Of patients who were screened, 69 (50%) and 51 (45%) were identified as needing HBV or HAV vaccination respectively. 5(4%) individuals living with HIV who were out of care were identified and re-linked to care. 44 (31%) of patients screened for HCV needed treatment and 19 incident episodes of STIs were identified.

Facilitators to screening included invested providers and presence of phlebotomy on-site. Barriers included short stay and off-site outpatient clinic which limited patients' ability to follow up on results despite linkage to outpatient ID care.

**Conclusions/Next steps:** Embedding ID screening tests into a short-stay detoxification unit was feasible and resulted in timely identification of previously undetected cases of infectious diseases, facilitating prompt linkage to care. Future implementation research should evaluate the effectiveness and sustainability of an integrated admission order-set and track receipt of follow up care to build on this work.

## EPE189

### Providers' and PLHIVs' perspectives on integrating the management of hypertension into community ART delivery models in Uganda

M. Muddu<sup>1</sup>, R. Namaganda<sup>2</sup>, F. Ayebare<sup>3</sup>, J.L. Davis<sup>4</sup>, J. Kiwanuka<sup>2</sup>, M. R. Kamya<sup>2</sup>, A. R. Katahoire<sup>2</sup>

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**Background:** Although community antiretroviral therapy (ART) delivery models improve retention and viral load suppression for PLHIV, hypertension management is not integrated into these models, yet over 20% of PLHIV receive care in the community and are at risk of cardiovascular disease.

This study sought to explore stakeholders' perspectives on integrating hypertension care in community ART delivery models in Uganda.

**Methods:** We conducted 39 interviews with healthcare providers (n=12), health leaders (n=5), policymakers (n=3) and PLHIV with hypertension (n=19). The study was conducted in four health facilities in three districts including Butambala, Gomba and Sembabule in central Uganda. Interviews were audio recorded, transcribed verbatim, and later translated into English. We de-identified the data by adding unique labels to audio files and transcripts. A codebook was developed with major codes identified and their definitions. All the transcripts and the codebook were uploaded into NVivo 20 software for further coding and analysis. Data was analyzed thematically.

**Results:** We identified two major themes; *experiences of PLHIV with hypertension services in community ART models*, and *stakeholder perspectives on how to integrate hypertension services in community ART delivery models*. Regarding their experiences, PLHIV either received no hypertension services at all or they only received prescriptions for hypertension medicines that they had to buy from private pharmacies. There were frequent stock outs of hypertension medicines and when medicines were available, options were limited. As a result, patients often resorted to alternative medicines especially herbal medicines. In relation to stakeholder perspectives, the study reveals the need to engage and work with PLHIV peers, community health workers and other community providers. Additionally, training healthcare providers, ensuring availability of medicines and BP machines, putting in place guidelines to ensure integration of hypertension management in community ART delivery and setting up monitoring and evaluation systems for hypertension are needed.

**Conclusions:** Non-integration of hypertension care in community ART puts PLHIV at risk of cardiovascular disease and use of unreliable care. Leveraging existing community structures, training providers, ensuring medicine availability and routine service monitoring for hypertension would go a long way to ensure integration of hypertension care in community ART delivery models.

## EPE190

### Leveraging Geo-NLP for enhanced antiretroviral drug distribution in Nigeria using social media and news data

O. Bashirudeen<sup>1</sup>

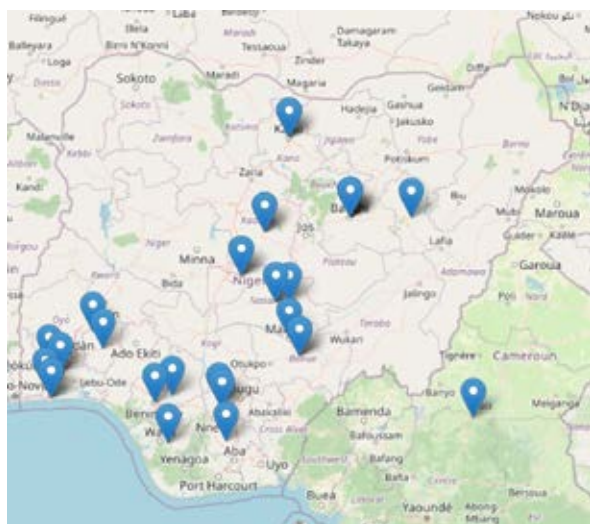
<sup>1</sup>University of Ibadan, Pharmacy, Ibadan, Nigeria

**Background:** In Nigeria, the timely and efficient distribution of antiretroviral drugs (ARVs) is crucial for supporting people living with HIV/AIDS. This study revolutionizes ARV distribution in Nigeria using Geo-NLP, analyzing 52,858 words from online sources about HIV/AIDS and ARVs. It addresses key distribution challenges by efficiently processing complex textual data.



**Methods:** Employing **spaCy** an open source software library for advanced natural language processing, the Geo-NLP model demonstrated exceptional accuracy in categorizing data across multiple labels, including HIV/AIDS-related terms, antiretroviral drugs, and geographical locations, ensuring precise demand analysis and intervention identification.

**Results:** The model's high performance (Precision up to 0.99, Recall up to 0.98) allowed for unparalleled insights into regional ARV needs, reshaping the distribution strategies to be more responsive and efficient.



**Label: HIV/AIDS-RELATED TERMS**

- Precision: 0.95
- Recall: 0.93
- F1-score: 0.94

**Label: ANTIRETROVIRAL DRUGS**

- Precision: 0.95
- Recall: 0.94
- F1-score: 0.95

**Label: GEOGRAPHICAL LOCATION**

- Precision: 0.98
- Recall: 0.95
- F1-score: 0.96

**Label: DATES AND TIMES**

- Precision: 1.00
- Recall: 0.97
- F1-score: 0.98

**Label: NUMBERS AND STATISTICS**

- Precision: 0.96
- Recall: 0.93
- F1-score: 0.95

**Label: ORGANISATIONS**

- Precision: 0.99
- Recall: 0.98
- F1-score: 0.99

**Conclusions:** The innovative use of Geo-NLP to analyze social media and news data offers a novel approach to addressing the distribution challenges of ARVs in Nigeria. This method can enhance the effectiveness of HIV/AIDS treatment programs by ensuring better alignment of

supply with actual regional demands, potentially shaping future strategies in global health management and intervention planning.

## EPE191

### Evaluating expenditures: automating HIV financial data quality reviews for improved reporting

L. Hart<sup>1</sup>, G. Morgan<sup>1</sup>, E. Dunlap<sup>1</sup>

<sup>1</sup>U.S. Agency for International Development, Office of HIV/AIDS, Washington, DC, United States

**Background:** For transparency and accountability, recipients of PEPFAR funding have provided detailed annual expenditure data since 2014, using a Financial Classification Guide to categorize spending by a program area, population, and cost element. Differing interpretations of the guidance can result in inconsistent representation of investments and annual spend per results on key focus areas such as treatment and prevention. High-quality financial data is critical for PEPFAR's evidence-based approach to resource allocation, financial monitoring, and stakeholder reporting. It is also crucial for strategic planning for a sustainable transition of donor-funded HIV programming to country government-funded programming.

**Methods:** USAID automated new data quality checks across dimensions of timeliness, completeness, adherence, accuracy, integrity, validity, and reliability. A global qualitative and quantitative analysis across 56 countries and 575 unique USAID Implementing Mechanisms (IMs) triangulated budget, expenditure, and program monitoring data to identify issues of alignment and adherence to financial classification guidance. Country-level results reports summarized IMs' data quality findings for discussion and partner revision, as necessary, prioritizing missing submissions and subrecipients' misclassified costs attributed to program management.

**Results:** Completeness: In FY23, 490 of 575 (85%) eligible IMs initially submitted data. After performing the global completeness check, USAID increased data completeness to 507 (88%), resulting in a 3% submission increase, totaling \$45,520,185 in previously unreported HIV investments. Validity: Initial submissions revealed 156 subrecipients (totaling \$10,814,113) reporting >50% of investments spent on operational costs. After investigating which dollars did not meet the definition of technical vs operational costs, the number was reduced to 61 subrecipients reporting 50% or more of their HIV investments on operating costs, or \$4,959,056.

#### Conclusions:

As PEPFAR engages global stakeholders in discussion of sustainability, USAID relies on high quality data for policymakers to understand how investments in treatment, prevention, and key and priority populations advance progress toward UNAIDS 95-95-95 goals for HIV control.



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More investigation is required of PEPFAR investments to explore trends and best practices that can be shared across countries and used to inform data-driven policy decisions.

## EPE192

Evaluate and elevate: leveraging the CASPR Outcomes Assessment Tool (COAT) to enhance advocacy impact

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<sup>1</sup>Pangaea Zimbabwe, Monitoring, Evaluation, Results and Learning, Harare, Zimbabwe, <sup>2</sup>AVAC, Monitoring, Evaluation, Results and Learning, New York, United States

**Background:** Advancing community-centered HIV prevention research relies on strong, evidence-based advocacy by coalitions and civil society representing community demands. However, it can be challenging to identify which strategies are successful amongst many stakeholders in a complex research and policy environment. This calls for an effective approach to assess intended and unintended outcomes, sustainability, and establish corrective actions to strengthen future advocacy work.

**Description:** The CASPR Outcomes Assessment Tool (COAT) is a unique tool designed to help advocates quantitatively assess results, analyze the impact of their work, and use that evidence for decision-making and planning the next steps. Advocates start by identifying outcomes, then connect them to key activities/strategies, and evaluate evidence of their contributions to the result. They assign a quantitative rating to 3 dimensions: Influence, Recognition, and Durability, and provide qualitative evidence for the rating. An impact score for each outcome is calculated from 0 (low impact) to 12 (high impact). In the Summary Action Plan, advocates devise follow-up actions for outcomes with low impact, strengthening results and adjusting tactics. The completed COAT report showcases attained outcomes, outlines adjustment plans for underperforming outcomes, and the collective value and influence on the HIV Prevention research agenda.

**Lessons learned:** The COAT effectively assesses advocacy outcomes within CASPR, a consortium of eleven African partners focusing on HIV Prevention Advocacy Research. Unlike traditional methods, CASPR partners use the COAT to brainstorm results, evaluate impact over time, and continuously learn about effective strategies. These impactful results are shared with the Coalition, aiding partners in refining their approaches. The COAT has documented successful advocacy, including the effectiveness of research literacy efforts to strengthen community and stakeholder engagement during clinical trials.

**Conclusions/Next steps:** The COAT enables advocates to concentrate on outcomes rather than solely engaging in activities. It is a valuable tool to gauge the impact of advocacy activities on HIV prevention research and access

and guides them in creating a clear roadmap of successful strategies and areas for improvement. The COAT allows advocates to refine their approach, enhance their impact, and ultimately drive meaningful change in their respective spheres of influence.

## EPE193

Social Network Analysis of MSM in Zhuhai based on a geosocial networking application

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**Background:** Social network analysis (SNA) can enhance our understanding of the social network structure among men who have sex with men (MSM), aiding in the implementation of social-network based interventions.

**Methods:** We used a web crawler to gather data on 11,026 Blued users from September 2021 to November 2021. After that, 3321 inactive users were excluded. Each node represents a user located in Zhuhai. An edge between two nodes represents the existence of the follower/followee relationship or interactions between them. MSM network was constructed with 7,705 nodes and 84,020 edges, weighted by the frequency of digs and comments. We analyzed the topological properties of the entire MSM social network and plotted the subgroup networks for MSM who reported their occupation, number of partners, HIV self-testing status, and pre-exposure prophylaxis (PrEP) use.

**Results:** The majority of Blued users in Zhuhai are young (median: 31 years), 83.7% of users are between 17 and 39 years old. About 37.2% of MSM prefer not to disclose their sexual role, with those identifying as top, bottom, and versatile accounting for 22.5%, 13.4%, and 26.8%, respectively. The number of self-reported sex partners for MSM ranges from 1 to 8, with a median of 2. The overall MSM network exhibits low reciprocity (0.08) and negative assortativity (-0.04), with other topological characteristics such as all degree (average: 22.22), edge density (0.002), transitivity (0.048), and eigenvector centrality scores (0.0002). Among the 901 MSM who self-reported their occupation, students (13%) and tourism/hotel/catering workers (13%) constitute the main populations. Those employed in film/entertainment/culture (5%) show greater activity than others, with biggest all degree (average: 39.15) and betweenness (average: 0.014). In the sub-networks of individuals who have

taken an HIV self-test (n=243) and used PrEP (n=33), young people remain a key population, mirroring the characteristics of the overall network.

**Conclusions:** The Zhuhai MSM population is predominantly young, and the overall network exhibits low reciprocity, indicating a failure to establish reciprocal friendships with others. Additionally, the negative assortativity of the overall network suggests that nodes prefer to attach to others with dissimilar degrees. These topological properties are similar to those of the global MSM Blued network.

## EPE194

### Youth community-led monitoring (Youth-CLM) data collection model for monitoring free HIV/AIDS services (user fees) in Cameroon

L. Sonwa Lontsi<sup>1</sup>, P. Kedy Guy<sup>1</sup>, E.B. Monthe<sup>1</sup>, L. Lontsi Tsakou<sup>1</sup>, P. Fouda<sup>1</sup>

<sup>1</sup>Réseau Camerounais des Adolescents et Jeunes Positifs, Yaoundé, Cameroon

**Background:** The contribution of community-led monitoring mechanisms to improving practices and the quality of HIV/AIDS services offered to people living with HIV is well established. However, the quality of the data obtained is often called into question. In order to ensure the quality of this data, we are sharing a model for data collection. We are sharing a data collection model implemented by the Cameroon Network of Positive Adolescents and Young People (RéCAJ+) and used as part of Youth Community-Led Monitoring (Youth-CLM).

**Description:** Since December 2022, RéCAJ+ has been implementing Youth-CLM in 50 health facilities in the country's 10 regions, with a focus on monitoring the policy of free HIV services (user fees) in health facilities (FOSA). Two collection methods are highlighted with 3 data sources. The first method consists of data collection by sentinels rigorously trained among adolescents and young people living with HIV (AJvVIH) and health providers in health facilities using questionnaires.

The second method consists of data collection through visits to health facilities by mystery shoppers using an evaluation grid.

**Lessons learned:** During quarter 1 2023, 400 AJvVIH beneficiaries and 191 healthcare providers responded to the questionnaires. Mystery shopper data were collected in 14 health facilities. 11.5% (46/400) of beneficiaries and 5.2% (10/191) of health providers said they were not aware of the free services policy. 9.3% (39/400) said they had paid for free services. In addition, during a visit to the health facilities, a mystery shopper paid for a free service.

The reasons given for non-compliance with user fees were: 18.8% (38/191) non-reimbursement of facility invoices, 3.7% (7/191) partial reimbursement, 3.1% (6/191) late reimbursement and 1.6% (3/191) input stock shortages.

**Conclusions/Next steps:** The time taken to reimburse hospital bills needs to be reduced, and awareness-raising campaigns for PLHA beneficiaries and healthcare providers need to be carried out to ensure that user fees are properly implemented.

The triangulation of methods within the framework of community-led monitoring makes it possible to verify and complete the data obtained in order to propose targeted actions to improve the situation.

## EPE195

### What are the results of HIV prevention programs? Developing a Theory of Change and Results Framework to guide Global Fund investments

A. Gerritsen<sup>1</sup>, J. Zhao<sup>1</sup>, L. Aloo<sup>1</sup>, S. McLean<sup>1</sup>

<sup>1</sup>The Global Fund, Geneva, Switzerland

**Background:** The pathway of change for HIV primary prevention is more intricate than for HIV treatment. Measuring prevention results is also more complex. This complexity is exacerbated by increasing numbers of people living with HIV that are virally suppressed.

For Global Fund-supported HIV programs, there is a need to increase the understanding about how prevention interventions work and what the important results are.

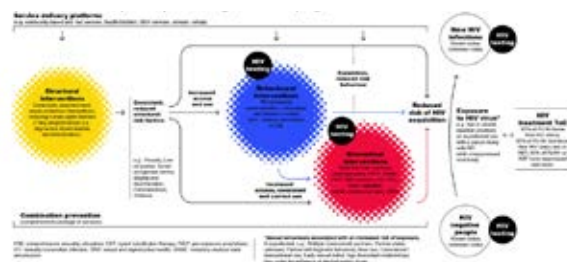


Figure 1. Theory of change - Underlying GF investment in HIV primary prevention - pathways of change / how the programme works.



Figure 2. Global Fund HIV primary prevention Results Framework - results chain (from inputs to impact)

**Description:** Based on literature reviews and consultations, two HIV prevention frameworks were developed:

1. A Theory of Change (Figure 1) illustrating that biomedical interventions have a shorter pathway to reducing the risk of HIV acquisition than behavioural and structural interventions, but at the same time that these interventions support each other to achieve the results;



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2. a Results Framework (Figure 2) elucidating the relationships between inputs (investments), outputs (coverage), outcomes (use, behaviour) and impact (change in new infections). It categorizes outcomes closely tied to impact as "primary".

**Lessons learned:** During the funding request processes of Grant Cycle 7, the Results Framework guided Global Fund grant recipients and relevant stakeholders to prioritize HIV prevention interventions for which there is evidence that these lead to changes in primary outcomes such as more people using HIV prevention options like condoms or PrEP.

**Conclusions/Next steps:** The process highlighted a notable absence of routine collection of prevention outcome data, as surveys are conducted infrequently. The next step for the Global Fund is to promote rapid, easy to administer and cost-effective methods to monitor outcome data to inform and monitor HIV prevention programs.

## EPE210

Provider perceptions of the implementation context for interventions to support people returning to HIV care in Cape Town, South Africa

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<sup>1</sup>University of Cape Town, School of Public Health, Cape Town, South Africa, <sup>2</sup>Vanderbilt University, School of Nursing, Nashville, United States, <sup>3</sup>University of North Carolina, Gillings School of Global Public Health, Chapel Hill, United States, <sup>4</sup>University of North Carolina, Department of Obstetrics and Gynecology, Chapel Hill, United States

**Background:** People on lifelong antiretroviral therapy may cycle in and out of care over time. Understanding provider perceptions about supporting people returning to treatment will aid the development of scalable interventions.

**Methods:** We conducted in-depth interviews with nurses (n=5), counsellors (n=3) and clerks (n=3) at two large HIV clinics in Cape Town, South Africa. Using thematic analysis, guided by the constructs of the Consolidated Framework for Implementation Research Inner Setting domain, we explored the current implementation context for interventions to support return to HIV care after a treatment interruption.

**Results:** *Culture, Relational Connections and Communication:* Providers' feelings towards returning clients ranged from enthusiastic to frustrated. Providers felt that fostering supportive and caring relationships with clients was critical but suggested that anticipated and/or experienced stigma and poor care experiences, including rude providers and long waiting times for those without appointments, were common reasons for repeat disengagement and failure to return to care. Fast-tracked ser-

vices are available for returning clients but are not well known, and fears about negative experiences may lead people to misrepresent themselves as new clients on return, rather than identify as having interrupted care. Positive staff attitudes were highlighted as a necessity across all cadres of staff in the clinic, along with clearer communication between teams, to encourage re-engagement.

*Structural Characteristics and Available Resources:* Missing folders, lack of coordination within a clinic and difficulties transferring between clinics, were reported to create confusion and delays. Linked electronic record systems across clinics are available for the Western Cape province but respondents noted limited use due to poor information technology infrastructure.

Insufficient staff and training were also raised as barriers to providing efficient and supportive care to returning clients. Providers identified flexible service options, like community adherence clubs and treatment buddies to collect medication, as missed opportunities to support returning clients as local guidelines restrict eligibility to those who are virally suppressed.

**Conclusions:** Although providers recognize the need to support returning clients after a treatment interruption, the implementation context in this high burden setting is complex. Interventions are needed to encourage welcoming and simplified services to support providers and people returning to HIV care.

## EPE212

Development of a case-finding algorithm to identify people living with HIV in Medicaid claims data

E.E. Corbin-Gutierrez<sup>1</sup>, K. Outlaw<sup>1</sup>

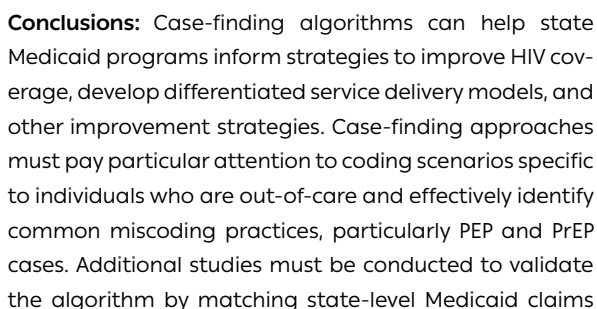
<sup>1</sup>NASTAD (National Alliance of State and Territorial AIDS Directors), Washington, United States

**Background:** State Medicaid programs cover 43 percent of all people with HIV in the United States. Identifying people with HIV in Medicaid claims datasets can be challenging; states report almost 20 percent of Medicaid beneficiaries missing HIV-related claims. Similarly, state HIV surveillance and Medicaid programs report miscoded in claims data is more common than previously thought. Accurately identifying people with HIV in claims data is essential to understanding this population, developing differentiated service delivery models, implementing quality measures, and coordinating services across systems of care.

**Methods:** The team conducted a review of peer-reviewed articles and grey literature published 2013–2023, to understand the various methods previously used to identify people with HIV in claims datasets. An algorithm synthesizing these findings was developed. The algorithm's inclusion criteria included: HIV diagnosis, and procedure codes for specific sequences and combinations of an-

This algorithm also expanded inclusion scenarios to improve recognition of individuals who are not in regular HIV care through sequential claim groups and a multi-year lookback period.

**Conclusions/Next steps:** The future plan involves hospital-led research to establish coordinated mechanisms for HIV prevention and treatment, optimizing resource allocation, enhancing service fairness, efficiency, and quality.



A vertical strip of a colorful geometric pattern. It features a series of overlapping shapes in red, yellow, blue, and black. At the top is a red circle. Below it is a yellow circle. Further down is a blue circle. The pattern continues with various geometric shapes, including squares and circles, in the same color palette, creating a vibrant, abstract design.



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It aims to deepen the involvement of social organizations, improve the one-stop referral service for early HIV detection and treatment, leverage exemplary projects for exchange and research among designated hospitals, and increase resource investment in other regions. The goal is to refine the formulation, procurement, and supervision of HIV/AIDS services, enhancing the efficiency of service procurement models.

## EPE218

### Empowering communities for enhanced Pre-Exposure Prophylaxis (PrEP) uptake Mombasa County (USAID Tujitegemee OVC and DREAMS Program)

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<sup>1</sup>Ananda Marga Relife Team (AMURT), USAID Tujitegemee OVC DREAMS, Mombasa, Kenya, <sup>2</sup>USAID Mission, Nairobi, Kenya

**Background:** The global health priority in the fight against HIV/AIDS necessitates innovative strategies for preventing new infections. Pre-Exposure Prophylaxis (PrEP) has emerged as a powerful tool, particularly in high-risk populations. This abstract explores the implementation of community-led monitoring initiatives within the Mombasa County DREAMS Program in Kenya, focusing on the vulnerability of adolescent girls and young women to HIV through a multifaceted approach.

**Description:** Methods: Active participation of the Project Advisory Committee, including community members and AGYW, was integral to the community-led monitoring intervention, evaluating PrEP services. Tools were developed to assess PrEP awareness, accessibility, and acceptability. Data collection methods encompassed surveys, focus group discussions, and key informant interviews, tracking PrEP initiation, follow-up visits, and addressing potential adherence barriers.

**Results:**

Increased PrEP Awareness:

- Baseline: 60% prior PrEP knowledge.
- Post-implementation: 85% awareness among actively involved community members.

Improved Uptake Rates:

- Baseline: 30% PrEP uptake in the target population.
- Post-implementation: 55% uptake among those engaged in community-led monitoring.

Barriers Identified:

Stigma Reduction:

- Baseline: 45% concerned about stigma.
- Post-implementation: Stigma concerns decreased to 15%.

Misinformation Mitigation:

- Baseline: 25% had misconceptions.
- Post-implementation: Misinformation decreased to 5%.

**Discussion:** This abstract discusses the significance of community-led monitoring in HIV prevention programs, emphasizing its potential to bridge gaps between healthcare providers and communities. Actively involving community members in the Mombasa County DREAMS Program has created a dynamic feedback loop, facilitating continuous improvement overall program effectiveness.

**Lessons learned:** • Community Engagement is Paramount: Actively involving the community positively influences program outcomes.

- Targeted Interventions Yield Results: Tailored approaches addressing stigma, misinformation, and logistical challenges are effective.
- Holistic Strategies Mitigate Barriers: Combining educational campaigns, stigma reduction, and logistical support is more effective than isolated interventions.
- Real-time Data Enhances Adaptability: Community-led monitoring facilitates adaptive strategies through real-time data.

**Conclusions/Next steps:** Community-led monitoring is a promising strategy for enhancing PrEP uptake. Integrating community perspectives and active participation is imperative for preventive intervention success. The lessons learned from the USAID Tujitegemee DREAMS Program emphasize the need for comprehensive, adaptable HIV prevention initiatives. Further exploration of community-led monitoring in diverse settings is encouraged to optimize PrEP implementation and contribute to the global effort to end the HIV epidemic.

## EPE219

### Collaborative quality improvement activities strengthened viral load sample collection in Zimbabwe's Clinic-Lab Interface Initiative

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Control and Prevention (CDC), Harare, Zimbabwe, <sup>4</sup>Global Health Consulting BCM, Washington, United States,

<sup>5</sup>Ministry of Health and Childcare, Harare, Zimbabwe,

<sup>6</sup>Biomedical Research and Training Institute (BRTI),

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**Background:** HIV viral load (VL) testing is an important component of HIV care and treatment. The World Health Organization's (WHO) guidelines recommend annual VL monitoring. In 2019, less than 50% of clients engaged in HIV care met WHO's VL testing guidelines. To address the



low viral load coverage gap, in 2020, the Zimbabwe Ministry of Health and Childcare in 2020 developed a clinic laboratory interface (CLI) quality improvement (QI) initiative with several implementing partners to improve VL sample collection in supported facilities.

**Methods:** The Laboratory African Regional Collaborative (LARC) provided CLI training and coordination to health care workers. Sites were selected based on high volume and low sample collection rates. Baseline data on eligible clients were collected from October through December 2021. Change ideas from the driver diagram was used to systematically plan the project to achieve the aim of improving sample collection were tested using Plan-Do-Study-Act cycles. Capacity-building activities such as joint site support, mentorship visits, a tablet-based QI course for self-study, and learning sessions were used to improve viral load sample collection.

**Results:** The number of sites implementing the collaborative increased from 59 sites in October 2021 to 207 sites by March 2023. Process mapping to identify implementation gaps revealed low adherence to VL guidelines and poor clinic/lab communication. Change ideas found to be most effective included: collecting samples by cohort, synchronizing sample collection with medication pick-up, and sending appointment reminders to clients. The initiative increased VL samples collected from eligible clients from 40% at baseline to 85% between October 2021 and March 2023 within the implementation period.

**Conclusions:** The CLI collaborative approach improved VL sample collection through implementation of change ideas adapted to the context of individual clinics. Laboratory/clinic staff phone contact improved sample collection and transportation. Future focus areas could include sustaining the gains and management of clients with high VL.

dren of FSWs in three regions (Bamako, Sikasso, Segou) in Mali through the offer of index testing to FSW living with HIV.

**Description:** Index testing was offered to 1,097 FSWs, 619 of whom agreed to list contacts (an acceptance rate of 56%). A total of 434 children under 15 years (237 males and 197 females) were listed. However, only 15% (63/434) of the contacts listed were found and tested. Among the 11 HIV cases identified, a high HIV case finding rate of 17% (11/63) was found in children of FSWs.

**Lessons learned:** The rate of finding and testing remains low, due to the mobility of FSWs, the absence of some of the children in their mothers' area of activity, discrimination, and stigmatization. There are another 44% of HIV+ FSW who did not give contacts where HIV positive children could be found. Efficient strategies, such as collaboration with other implementing partners in Epic and non-Epic areas, could prove effective in reaching the maximum number of children that need to be tested.

**Conclusions/Next steps:** Index testing gave us a 17% yield among children of FSW. Nevertheless, the number of children listed and found remains low, due to several factors such as stigmatization, discrimination and the mobility of FSW. Combating stigmatization, discrimination and violence, and orienting clinical and community workers to offer safe and ethical index services could prove effective in reaching the greatest number of child contacts to be tested.



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## EPE225

### Challenges in reaching and testing the children of sex workers through the index testing strategy in Mali

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**Background:** Mali is lagging in achieving the UNAIDS 95-95-95 targets for children, particularly for the first 95 with a realization rate of 58%. Mali has an HIV prevalence rate of 8.7% among female sex workers (FSW).

With low uptake of pre-natal services in many parts of Mali, this increases risk for transmission of HIV to children of FSWs. The FHI 360 Mali PEPFAR/USAID- funded Epic key population (KP) project offered HIV testing services to chil-





### EPF196

Nepal's current legislation in protecting the rights of people living with HIV- findings of an intensive assessment of current laws, policies and instruments

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**Background:** Nepal's discriminatory laws and regulations, as well as inadequate execution of existing ones, have a direct impact on the rights of People Living with HIV (PLHIV). Over the years, the country has made encouraging progress in formulation/implementation of laws, policies, and international treaties; nonetheless, remaining impediments and ineffective and insufficient implementation have raised major concerns and require immediate action to protect the overall well-being of PLHIV.

**Methods:** An assessment was carried out to determine how current laws, policies, and instruments have protected the rights of PLHIV in Nepal. An intensive review of existing laws, directives, policies, guidelines, and draft bills under the current Nepalese legal system was conducted. The Constitution of Nepal (2015) and 313 Acts, 293 Regulations, 67 Policies, 13 Guidelines, and 6 Bills were reviewed in this study. Relevant Supreme Court rulings were examined for case studies. Similarly, 20 key informant interviews and 4 focus group discussions were held with key populations and stakeholders from Nepal's seven provinces.

**Results:** Regulations required for implementation of some acts including the Narcotic Drug Control Act (1977) have not been developed resulting in stigma and discrimination against HIV acquired and affected people and communities. The state's Social Security Act has not addressed issues of CABA children; the only nutrition assistance they receive is from a partner organization and is less than \$10 per month. Many people benefit from the government's health insurance plan; yet Nepal's life insurance regulation statute remains quiet on HIV life insurance. Ambiguity in the legal wordings for Punishment of Offence has allowed justice based on the interpretation of the phrases, rendering PLHIV more vulnerable.

**Conclusions:** Despite national and international commitments, laws and policies that perpetuate stigma, discrimination, violence, and other breaches of human rights continue to be serious impediments. Legal and legislative barriers continue to hinder an effective HIV response among disadvantaged communities, restricting access to services. Governments should develop/revise laws and policies that discriminate against key popula-

tions based on their HIV status. Consistent lobbying and campaigning with political leadership and government authorities is essential.

### EPF197

Gender-based violence among female sex workers in South Sudan: opportunities and challenges for HIV prevention

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**Background:** HIV prevalence among female sex workers (FSWs) in South Sudan is high, at 13% compared to 1.9% among the adult population. Ongoing conflict, high poverty, and cultural norms enable gender-based violence (GBV). The socio-economic environment increases women's vulnerability to sex work, which is criminalized, leading to arrests and money extortion by authorities. Effective HIV prevention approaches are needed for this vulnerable population.

**Description:** The USAID Advancing HIV & AIDS Epidemic Control (AHEC) Activity, led by IntraHealth International, focuses on HIV prevention, care and treatment services for all populations at 14 health facilities in South Sudan. Using a peer-facilitated direct service delivery and technical assistance approach, AHEC also provides integrated HIV and sexual reproductive health services for FSWs at 6 community sites, including a package of post-GBV services. Services are provided in a person-centered and non-stigmatizing manner in the community where FSWs live and work.

**Lessons learned:** AHEC was able to integrate post-GBV services in routine community-based peer education and outreach services. Data shows GBV is high among FSWs with about 25% screened in the period October 2022-September 2023 reporting having experienced some form of GBV (see Fig 1).

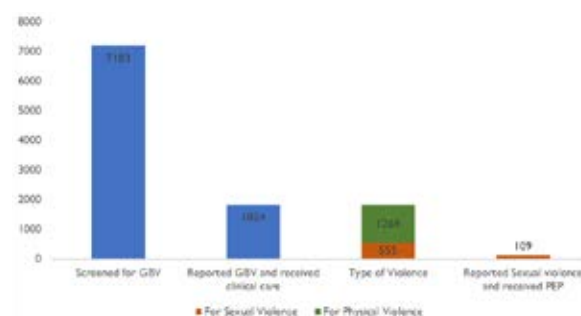


Fig 1: GBV Cascade Among Female Sex Workers, Oct 2022 - Sep 2023

Utilizing a peer approach, where FSWs are trained to provide services to other FSWs, AHEC scaled-up services to meet 97% of annual targets. Challenges still exist, how-

ever, with under-reporting due to fear of criminalization and gaps in the cascade for services that cannot be given onsite.

**Conclusions/Next steps:** Peer-led provision of decentralized HIV prevention services is an innovative approach to reach underserved populations. Criminalization remains a barrier to service access for many key populations. To strengthen progress towards HIV epidemic control, governments should expand safe spaces that allow for key populations to access friendly, person-centered services.

## EPF198

**Lack of access to treatment and criminalization of labor migrants based on HIV-positive status: based on a review of HIV policy progression and migrant's health rights in five origin countries**

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**Background:** Coordination of Action Research on AIDS and Mobility in Asia - CARAM Asia has conducted the research „A Review of HIV Policy Progression and Migrant's Health Rights in Five Origin Countries“ in Asia. This study explores the complex context of healthcare rights for migrants in South and Southeast Asian nations, where labor migration is widely encouraged as an economic remedy. In the quest for macroeconomic advantages, migrants often face a disregard for their rights, particularly in terms of discriminatory health screenings.

The main goal of the study is to assess how HIV and AIDS policies affect the health rights of migrants, particularly in terms of HIV prevention and care. The study aims to uncover barriers and promote comprehensive measures at every phase of migration.

**Methods:** CARAM Asia is a regional network of migrant and migrant support organizations dedicated to promoting and safeguarding health rights of labor migrants, with a specific focus on HIV/AIDS and SRHR issues. The study mentioned above has been conducted by CARAM member organizations in Bangladesh, Cambodia, Pakistan, the Philippines, and Sri Lanka.

The study utilized a thorough methodology, which involved a comprehensive review of migration policies, health laws, strategic plans, and HIV trends. Interviews with key policymakers, such as representatives from The National Center for HIV/AIDS, Dermatology and STD (NCHADS) and the National AIDS Control Program (NACP), along with focus group discussions (FGDs) with HIV-positive migrants, provided insights into the practical impact of policies on the ground.

**Results:** The study reveals critical policy gap in addressing labor migrants' health needs concerning HIV/AIDS in sending and receiving countries. There is a lack of recognition in National AIDS plans, hardly labeled as "vulnerable populations" rather than "Most at Risk for contracting

HIV." It highlights discriminatory health policies in receiving countries that criminalize (arrest, detention, and deportation) labor migrants based on HIV-positive status rather than providing them access to health services.

**Conclusions:** Conclusion and recommendations include the removal of discriminatory health policies particularly in labor migrant's receiving countries, removal of mandatory health testing, exclusionary conditions in recruitment based on HIV status, and the integration of migrants into National AIDS Programs.

## EPF199

**Raising the voice of the HIV community: lessons from strengthening capacity to implement community led monitoring (CLM) in Indonesia**

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**Background:** The HIV epidemic status in Indonesia has significantly improved in recent years, with remarkable progress against HIV. Stopping the pandemic, however, requires more than scientific breakthroughs or expanded services—it requires a better initiative involving more parties, particularly HIV response beneficiaries.

In this light, strengthening capacity of PLHIV and key population networks to monitor quality of service delivery and to advocate equal access to HIV services, becomes a strategic way to improve cascade of care in Indonesia.

**Description:** In 2022, seven PLHIV and key population networks formed an alliance named Joint-CLM to implement community-led monitoring. In collaboration of HIV AIDS research Atma Jaya Catholic University as technical assistance, we conducted five phases: 1) develop capacity building plan, 2) conduct series of workshop with PLHIV and KP networks in district level, 3) designing CLM implementation strategies, 4) CLM implementation and quality assurance, and 5) policy dialogue

**Lessons learned:** The technical assistant successfully empowered Joint-CLM to monitor the quality of HIV-related services in 19 districts which consist of 41 primary health cares, 3 hospitals, 1 clinic and 3 CSOs. Before conducting data collection using surveys, focal points in the regions received capacity building in the form of CLM organization, data collection techniques, data processing and analysis techniques, and advocacy skills.

The training was deemed successful since there was a gain in knowledge based on the average pre-test and post test scores of 49.2 to 65. Through the capacity building process, Joint-CLM are able to conduct evidence-based advocacy with the dashboard platform developed to present monitoring results, enhanced partnerships with health providers and CBOs, and build collaborative learning through Joint-CLM.



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**Conclusions/Next steps:** Based on the assisting technical CLM activities, several follow-up activities need to be carried out to ensure the sustainability of CLM implementation are:

1. Monitoring of service improvement commitment,
2. Expanding the coverage to include more cities/district as intervention areas,
3. Maintaining the CLM management model in additional districts to provide mentoring among focal points,
4. Maximizing the utilization of the Joint-CLM dashboard,
5. Establishing a shared understanding regarding CLM among stakeholders involved at the national level to facilitate the implementation of CLM in new districts.

## EPF200

Association of sexual assault with mental health, behavior, cardiovascular disease and HIV infection: a Mendelian randomization study

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**Background:** Existing evidence has indicated that sexual assault is associated with cardiovascular disease (CVD). However, the causal effect is unknown. We aimed to examine whether sexual assault have a causal effect on mental health, behavior, cardiovascular disease and HIV infection.

**Methods:** We conducted a two-sample Mendelian randomization study using the summary statistics of victim of sexual assault from the UK Biobank (17,230 cases and 99,441 controls). The summary statistics of two phenotypes of mental health (depression and anxiety or panic attacks), five phenotypes of behavior (smoking initiation, bulimia nervosa, risk-taking behavior, age at first sexual intercourse, and age at first birth), eight phenotypes of CVD (hypertension, coronary artery disease, stroke, heart failure, atrial fibrillation, peripheral arterial disease, aortic aneurysm, and venous thromboembolism), and HIV-1 infection were extracted from several large-scale genetic consortia or meta-analyses targeting individuals of European ancestry only. The primary approach employed was the random-effects inverse-variance weighted (IVW) estimation method, accompanied by several alternative estimators serving as supplementary methods.

**Results:** Only one SNP associated with sexual assault was selected as instrumental variables (IVs). IVW analysis indicated that genetically predicted sexual assault was significantly associated with depression (OR 1.22, 95% CI 1.09-1.37; P value <0.001), smoking initiation (12.09, 5.11-28.61; <0.001), risk-taking behavior (1.81, 1.45-2.26; <0.001), age at first birth (0.01, 0.00-0.13; <0.001), coronary artery disease (15.61, 2.85-85.51; <0.001), and atrial fibrillation (19.16, 3.27-112.20; <0.001). In addition, sexual assault presented a sug-

gestive association with age at first sexual intercourse (0.56, 0.34-0.93; 0.030), hypertension (1.28, 1.04-1.57; 0.020), venous thromboembolism (1.09, 1.01-1.18; 0.030), and HIV-1 infection (20.17, 1.14-357.04; 0.040).

**Conclusions:** We found significant causal association between sexual assault and CVD. Efforts should prioritize the development and implementation of robust prevention strategies for sexual assault, considering its significant causal association with various health outcomes. Concurrently, it is imperative to perpetually assess and enhance the existing supportive interventions for victims, ensuring they are comprehensive and adept at addressing the multifaceted consequences of sexual assault.

## EPF201

Barriers to harm reduction: a qualitative study of the challenges faced by people who inject drugs in Burundi

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**Background:** This study aimed to evaluate the challenges in delivering harm reduction interventions for people who inject drugs (PWID) in Bujumbura, the capital city of Burundi. Harm reduction interventions, such as needle and syringe programs (NSP) and opioid agonist therapy (OAT), are proven to reduce the transmission of HIV and hepatitis C among PWIDs. Still, their coverage and accessibility are low in many settings.

**Description:** We used a qualitative study approach, collecting and analysing qualitative data from 2 participants comprising people from PWIDs, harm reduction centres, service providers, policymakers, and civil society organisations in Burundi interviewed five people from policymakers and civil society organisations in Bujumbura. We interviewed 25 participants and conducted two policy documents (constitution, penal code) to assess harm reduction services' availability, utilisation, policy landscape, and implications for public health.

**Lessons learned:** We found that NSP programs were less available to PWID, and none of the harm reduction clinics visited provided the OAT. The majority of the participants said that the main barriers to accessing harm reduction services were the lack of services and the lack of equipment for harm reduction clinics. We also found that the laws are highly punitive and may lead to fear of seeking health services. Few of harm reduction service providers have enough training. Lastly, most participants highlighted the social stigma they face in their families leading to being changed from their families.

**Conclusions/Next steps:** We recommend that the government of Burundi should reform the laws and policies to decriminalise drug use to protect and promote the human rights of these groups. We also suggest that the service providers improve the quality and coverage of their

interventions and that civil society and the international community support these groups' advocacy, service delivery and empowerment.

We also propose that further research should be conducted to monitor and evaluate the impact of these punitive laws on the HIV epidemic and the health outcomes of these groups.

## EPF202

### Breaking chains, building lives: embracing compassionate alternatives for people who inject drugs in Kenya

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**Background:** Kenya has an estimated 26,673 people who and inject drugs (PWIDs) (NASCOP 2021) with a HIV prevalence of 18.7%, 6 times higher than that of the general population at 3.7% (NSDCC 2023). The Kenya AIDS Strategic Framework 2020/21-2024/25 describes comprehensive programming with PWIDs as a key strategy for HIV prevention.

The punitive approach of drug policies, which focus on punishment rather than rehabilitation, has failed to address the root cause of addiction. This approach has worsened the impact of the disease, leading to increased rates of relapse and recidivism.

**Description:** The National Harm Reduction Program adopts the Diversion Policy, a comprehensive strategy, redirecting PWIDs from the criminal justice system to rehabilitation programs. It features a collaborative Drug Panel, engagement of multifaceted stakeholders, and specialized drug courts prioritizing rehabilitation. Recognizing substance abuse as a health issue, the program integrates mental health services into healthcare systems, addressing co-occurring disorders with positive outcomes. Success is bolstered by impactful public awareness campaigns, reducing addiction stigma, and fostering an environment where PWIDs are more likely to seek help.

**Lessons learned:** Combining these strategies, societies have effectively shifted focus from punitive measures to a more compassionate and therapeutic approach, ultimately fostering better outcomes for PWIDs. Diversion programs offer treatment and rehabilitation options instead of incarceration, addressing the underlying issues of addiction and providing support for recovery. These alternatives prioritize rehabilitation and aim to break the cycle of drug abuse and criminal behavior.

**Conclusions/Next steps:** Shifting to alternatives like rehabilitation and specialized drug courts, recognizing addiction as a health issue, and prioritizing treatment over punishment is key to programming with PWIDs. This approach acknowledges the need for support and care for PWIDs, breaking the cycle of addiction, reducing recidivism, and fostering lasting health and well-being in society.

## EPF203

### Section 144 and constitutional rights of transgender persons: unravelling the complex nexus of HIV risks in Nagpur district of Maharashtra, India

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**Background:** This study delves into the complex interplay between constitutional rights and governmental restrictions, focusing on the application of Section 144 of the Code of Criminal Procedure, 1973, in curbing the fundamental rights of transgender individuals and its repercussions on HIV transmission. According to Article 19(1)(a) of the Indian Constitution, individuals possess the right to freedom of speech and expression.

However, recent events from January to October 2023 in Maharashtra's Nagpur District have spotlighted the clash between the broad scope of Article 19(1)(a) and governmental limitations.

**Description:** The Nagpur District Administration issued an order prohibiting transgender individuals from seeking alms in various public settings. Citing disruptions caused by beggars, the City Commissioner of Police justified the directive to maintain public order.

Violation of this order carries legal consequences, with potential jail terms ranging from one to six months based on the severity of disobedience and its impact on public order.

**Lessons learned:** Charges filed under various sections of the Indian Penal Code included offenses such as disobedience (section 188), unlawful assembly (section 143), rioting (section 147), public nuisance (section 159 and 268), extortion (section 384), and criminal intimidation (section 506). This legal response significantly affected the cultural practice of managati (collecting alms) within the Transgender-Hijra community, pushing many to resort to sex work as a primary means of livelihood.

Simultaneously, disruptions in the supply chain of essential items like condoms and lubricants, facilitated by the state administration, heightened the risk of unprotected sex and increased the probability of HIV transmission among transgender individuals in the district.



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**Conclusions/Next steps:** Advocacy efforts ensued, with local organizations (CBO's and NGO's) and representatives engaging in meetings with the Nagpur district administration. The Commissioner, in response, promised to explore alternative livelihood options, ensuring basic minimum wages according to norms and potential monthly earnings of up to Rs15,000. This situation calls for a comprehensive analysis of constitutional freedoms, weighing the impact of imposing curfews under Section 144 on livelihoods, cultural practices, and its impact on HIV transmission. Adhering to the principle of proportionality is essential to guarantee fundamental rights while maintaining law and order.

## EPF204

### Meaningful inclusion of the transgender community in implementing community led monitoring in Zimbabwe

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**Background: Purpose:** Over the years, transgender persons have not been included in all community initiatives particularly those involving monitoring and evaluating the impact of programs. Not only has this been a hindrance to the meaningful involvement of the community, but it has also had a bearing on the attainment on positive public health outcomes.

The program sought to deliberate on ways in which transgender persons could be meaningfully involved in the community led monitoring mechanisms in Zimbabwe

#### Objectives:

1. To create space for the transgender communities to lead in implementing and monitoring of health service delivery
2. To develop a stigma free CL program model for Transgender and Intersex persons
3. To advocate for the inclusion of gender affirming health care services in public health facilities for the transgender and intersex persons

**Description:** As an active implementer of the CLM program with support from UNAIDS in Zimbabwe, I have gained an understanding of how the programme is designed, its shortcoming and enablers for optimal delivery. I work with a group of community health advocates who were trained in technical areas that aid their advocacy work such as lobbying and advocacy, monitoring and evaluation. Using the skills gained, community health advocates from the transgender community have been conducting monitoring in selected health facilities in both rural and peri urban areas.

This programme has assisted the advocates to surface key issues and experiences of the transgender communities which were missed in the mainstream CLM programme.

**Lessons learned:** One key lesson was that transgender and intersex persons are best placed to solicit for feedback and document experiences of their community as they elate to accessing services from health facilities. Qualitative data collected through the community health advocates reflected several unknown realities such as that Transgender and Intersex persons seeking to access services from facilities were either denied access or recorded under sex workers or MSM despite them being totally different communities with peculiar needs.

**Conclusions/Next steps:** Trans Smart Trust will advocate for the development of a National CLM strategy that has a structure which is inclusive of all the various Key and Vulnerable populations existing in Zimbabwe.

## EPF205

### Prevalence of violence among adolescent girls aged 10 to 14 years who experienced early sexual debut: evidence from 4 Provinces of Zimbabwe, 2023

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**Background:** Violence against women and children remains a public health challenge in Zimbabwe, and one of the drivers of new HIV infections. Zimbabwe Health Interventions (ZHI) is implementing the Determined, Resilient, Empowered, AIDS free, Mentored and Safe (DREAMS) program which seeks to reduce HIV incidence among adolescents' girls and young women (AGYW) in 9 high HIV burden districts of Zimbabwe.

The DREAMS program assesses experiences of various types of violence at enrolment and during program implementation. About 0.6% (329/48,990) of adolescent girls (AG) aged 10-14 years reported having had sexual intercourse during DREAMS enrolment.

We assessed prevalence of violence among 10-14-year-old AG who reported having had sex at program enrolment.

**Methods:** We conducted a descriptive cross-sectional study where routine program data for AG aged 10-14 years for the period October 2022 to September 2023 were extracted from the DREAMS DHIS II database. Prevalence analysis was conducted using SPSS version 23 and Ms Excel generating frequencies, proportions, and measures of association between early sexual debut and various forms of violence perpetrated against them.

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The assessment was covered by medical Research Council of Zimbabwe approved non-research determination protocol (MRCZ/E/254).

**Results:** A total of 48,990 AG aged 10-14 years were enrolled in the DREAMS program between October 2022 and September 2023. Out of these, 0.6% (329/48,990) reported having had sex in their life. About 33% (107/329) of those who had sex experienced some form of violence in their lives. AG aged 10-14 years who had ever had sex were more likely to have experienced some form of violence [COR=2.3, 95% CI (1.81-2.87),  $p<0.05$ ] than those who did not. 33% (107) of the AG were not planning on using condoms in their next sexual encounter. About 18% (60/329) of the AG who had early sexual debut reported having had forced sex.

**Conclusions:** Prevalence of violence was high among adolescent girls aged 10-14 years who had early sexual debut, and there was a strong association between early sexual debut and experience of childhood violence. We recommend further analysis of program data, and implementation of violence prevention and response interventions targeting AG, parents/guardians, and community members.

## EPF206

### Integration of the World Health Organization pediatric and adolescent advanced HIV disease package into national HIV guidelines: a policy review

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**Background:** In July 2020, World Health Organization (WHO) released their STOP AIDS Package offering recommendations for identifying, preventing, and managing advanced HIV disease (AHD) in children and adolescents living with HIV (CALHIV). Comprehensive inclusion of these recommendations in national policy can help guarantee CALHIV receive the recommended services and help reduce AHD-related mortality. We identified national guidelines updated after July 2020 from six high HIV-prevalence countries (Kenya, Malawi, South Africa, Uganda, Zambia, and Zimbabwe) and reviewed their inclusion of the package's recommendations.

**Methods:** We categorized STOP AIDS Package recommendations into themes, encompassing general AHD considerations, malnutrition, TB, cryptococcal meningitis (CM), rapid ART initiation and optimization, miscellaneous aspects including serious bacterial infections (SBIs), immunizations, and other general pediatric services, and monitoring and evaluation (M&E). We reviewed the inclusion of 37 recommendations in publicly available national HIV guidelines. Frequencies describing the inclusion of these recommendations were summarized.

**Results:** The number of recommendations included in the national guidelines of each country ranged between 20 (54%) and 35 (94%). Five countries included AHD definitions for CALHIV, though only two included reinitiating care after treatment interruption in their definitions. Five countries included recommendations on malnutrition screening and four on treatment for severe acute malnutrition. All countries included TB screening recommendations; five included TB prevention, diagnosis, and treatment recommendations. All countries included CM screening and prophylaxis recommendations; five included treatment recommendations. All countries recommended rapid optimized ART initiation within seven days of diagnosis. All recommended cotrimoxazole prophylaxis, but two lacked SBI treatment recommendations. Five countries included immunization recommendations, though none highlighted measles revaccination after immune reconstitution. Three countries included recommendations on other pediatric services like vitamin A and deworming. One country included M&E considerations for CALHIV with AHD.

**Conclusions:** This review demonstrated varying inclusion of WHO-endorsed pediatric AHD recommendations in recently updated national HIV guidelines, noting gaps in recommendations on general pediatric services, immunizations (specifically measles revaccination), and M&E considerations. Expanding options for integration with maternal child health services may facilitate better adoption of WHO's STOP AIDS Package within national policies and programs and improve CALHIV health.

## EPF207

### Optimizing advanced HIV disease diagnosis and treatment: the impact of CD4 testing in enhancing disease management for people living with HIV

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**Background:** The World Health Organization defines advanced HIV disease (AHD) using clinical staging or CD4 cell counts. In Vietnam, despite national guidance recommending CD4 testing at treatment initiation, AHD is primarily determined using clinical staging due to limited resources, which may lead to missed diagnoses. The US-AID/PEPFAR-funded Meeting Targets and Maintaining HIV Epidemic Control (EpiC) project and the Vietnam Administration for HIV AIDS Control collaborated to determine how AHD can be better prevented and managed through a retrospective review.

**Description:** We conducted a cross-sectional review of client records in six HIV treatment facilities in two southern provinces in Vietnam to identify those with AHD and determine the potential extent of missed AHD diagnoses. Records reviewed were from October 2021 through Sep-





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tember 2022 for individuals newly initiated on antiretroviral therapy (ART) within the last 12 months, and those who returned to treatment after loss to follow-up, experienced treatment failure, or died. We examined symptoms recorded in client records to reevaluate indication of opportunistic infections and determine clinical staging, and CD4 counts for those for whom the diagnostic was conducted.

**Lessons learned:** Of 1,246 records reviewed, 234 (18.8%) in individuals were retrospectively identified with AHD. Among individuals with AHD, 105 (44.9%) had had a CD4 test, and 129 (55.1%) were diagnosed based on clinical staging only (three or four). Among those with AHD and a CD4 result, only nine had CD4 counts  $>200$  cells/ $\text{mm}^3$  and would automatically have been identified as having AHD. Of the remaining 96 individuals with CD4 counts  $\leq 200$  cells/ $\text{mm}^3$ , 50 (52.1%) were characterized at clinical stage one or two and would not have been diagnosed with AHD using clinical staging alone. The majority of this subgroup (43/50; 86%) were individuals newly initiated on ART.

**Conclusions/Next steps:** Reliance on clinical staging alone may pose a high risk of missed AHD diagnosis in Vietnam, particularly among clients newly initiated on ART. Reinforcing the importance of and affordable access to CD4 testing is crucial for early AHD detection, enabling effective prevention and management. Considerations for innovations like point-of-care diagnostics and enforcement of guidance by the government can help overcome implementation challenges.

## EPF208

Investigating the spatial association between supervised consumption services and homicide in Toronto

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**Background:** Supervised injection sites (SIS) are effective at reducing HIV transmission risk among people who inject drugs. However, their effect on public safety remains contested. In Toronto, Canada, a fatal drug market-related homicide near an SIS in 2023 prompted a provincial SIS audit. We therefore sought to investigate the homicide rate in areas proximal to SIS before and after their implementation within Toronto.

**Methods:** Using decedent files from Ontario's Office of the Chief Coroner (January 2016 to December 2019), we created three geographic zones related to SIS using Euclidean distance: within 500 meters ('near'), between 500 meters and 3 kilometers ('far'), and beyond a 3-kilometer radius of an SIS ('out'). We compared fatal shooting and stabbing rates occurring over two 18-month periods: prior to SIS implementation (January 2016 to July 2017) vs.

post-implementation (July 2018 to December 2019). Incidence rate ratio (IRR) and 95% confidence intervals (CI) were calculated for deaths in each zone using a negative binomial regression model. We undertook a sensitivity analysis whereby we adjusted the near zone boundary to 250m, 500m, and 1000m from an SIS.

**Results:** Between August 2017 and June 2018, 9 SIS were established in Toronto. Overall, 140 fatal shootings and fatal stabbings occurred (Incident rate [IR] = 5.06 per 100,000 population; 95% CI = 4.26 to 5.97) across Toronto. As shown in Table 1, compared to the period prior to SIS establishment, there was no significant increase in the incidence rate of fatal shootings and stabbings in the near and far zones proximal to SIS.

	Near Zone		Far Zone		Out Zone	
	Post vs Pre-SIS (Rate Ratio; 95% CI)	P-value	Post vs Pre-SIS (Rate Ratio; 95% CI)	P-value	Post vs Pre-SIS (Rate Ratio; 95% CI)	P-value
250 m	0.38 (0.03 to 2.35)	0.267	1.09 (0.51 to 2.36)	0.795		
500 m	0.43 (0.11 to 1.35)	0.121	1.51 (0.60 to 3.95)	0.341	1.64 (1.08 to 2.53)	0.014
1000 m	0.73 (0.28 to 1.80)	0.466	1.26 (0.41 to 3.98)	0.655		

Table 1. Changes in monthly fatal shooting and stabbing rates surrounding SIS in Toronto, before (January 1 2016 - July 30 2017) and after (July 1 2018 - December 31 2019) implementation.

**Conclusions:** We found no evidence of a spatial association between the location of SIS implementation and the rate of fatal shootings and stabbings in Toronto. These results can inform efforts to understand the public safety effects of SIS.

## EPF215

Enhancing knowledge dissemination on HIV/AIDS among young career researchers in Northern Uganda

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**Background:** Despite global progress in addressing HIV/AIDS, targeted efforts are essential to enhance knowledge dissemination among young career researchers in Uganda. This study assesses current awareness, challenges, and opportunities related to HIV/AIDS knowledge dissemination, aiming to identify strategies to empower young researchers in shaping effective responses to the epidemic in Northern Uganda.

**Methods:** A cross-sectional mixed methods study design was used with a total of 69 participants with diverse affiliations, including universities, health organizations, and hospitals, engaged in the study using a snowball sam-

pling method. Data was collected using a structured on-line questionnaire. Quantitative data, including age and Likert-scale responses, were analyzed to generate summary statistics using descriptive statistics measures. Data analysis was done using Artificial intelligence derivatives likened to R. This study adhered to ethical guidelines, ensuring participants' anonymity and confidentiality. Informed consent was obtained before participation, and participants were assured that their responses would be used for research purposes only.

**Results:** Overall, the survey comprised 69 participants with an average age of 28.2 years (SD = 4.09), showcasing varied perceptions of the effectiveness of current dissemination channels. The age of participants correlates positively ( $r = 0.45$ ,  $p < 0.05$ ) with perceptions of current dissemination channels, indicating older participants hold more positive views. Frequent attendance at HIV/AIDS events is significantly associated (chi-square = 14.21,  $p < 0.01$ ) with reporting positive outcomes from collaborative efforts. Role differences (students vs. researchers) are evident ( $t(27) = 2.36$ ,  $p < 0.05$ ), with researchers placing a higher emphasis on collaboration. Affiliation influences challenges faced (ANOVA  $F(2, 26) = 5.12$ ,  $p < 0.01$ ), as those in health organizations report more challenges than those in universities and hospitals.

**Conclusions:** These findings emphasize the need for age-tailored strategies, the importance of active participation, role-specific interventions, and organizational context considerations in strengthening knowledge dissemination on HIV/AIDS among young career researchers in Northern Uganda is imperative.

## EPF222

### The ethics of biobanking research involving African youth living with HIV: discrepancies between individual perceptions and policy considerations

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**Background:** Biobanking is often used in research involving youth living with HIV (YLWH). The ethics of this practice and policies guiding it must be carefully considered as its use persists.

**Methods:** We conducted a qualitative analysis comparing perspectives on biobanking obtained in interviews with Kenyan YLWH, caregivers, and subject matter experts (SMEs), with a critical review of available guidelines and policies from African countries on biobanking involving youth.

**Results:** Interviews were conducted with 99 participants: 40 YLWH, 20 caregivers, and 39 SMEs (community leaders, healthcare providers, clinical researchers, social scientists, international research experts, and laboratory experts). Interviewees across all three groups stressed the importance of confidentiality, transparency, informed consent, and secure storage. Other notable themes included concerns about long-term biospecimen storage, unauthorized use, and sharing of biospecimens with ill-intentioned individuals; requests, by some, for assurances of participant benefits, and faith, from others, that researchers would act in participants' best interest; and disagreement over the use of identifiers in biospecimen labeling, with interviewees weighing the risk of disclosure against the advantage of easy follow-up. Relevant policy documents, published between 2004-2023, were only available from 12 countries: Botswana, Ethiopia, Kenya, Malawi, Nigeria, Rwanda, South Africa, Sudan, Tanzania, Uganda, Zambia, and Zimbabwe. All countries had policies on confidentiality and consent. Most ( $n=11$ ) had policies addressing transparency and sharing biospecimens with other researchers or institutions ( $n=9$ ). Fewer countries had policies governing biospecimen use ( $n=5$ ) and storage ( $n=4$ ), delineating participant benefits ( $n=4$ ), and biospecimen labeling ( $n=4$ ).

**Conclusions:** Perceptions regarding ethical considerations in biobanking research involving African YLWH demonstrated some consensus, though inconsistently. Discrepancies were observed when comparing interviewee responses to limited, and occasionally dated, country policies. Results emphasize the need for clear, improved, and timely policy guidance on these issues, which should be addressed as important research involving this vulnerable population continues.



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## SS04 AIDS 2024 Co-Chairs' Choice

### SS0402LB

The next Berlin patient: sustained HIV remission surpassing five years without antiretroviral therapy after heterozygous CCR5 WT/ $\Delta$ 32 allogeneic hematopoietic stem cell transplantation

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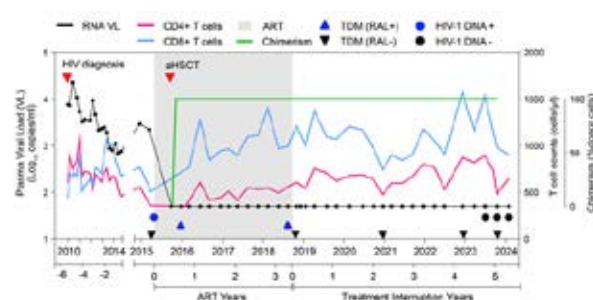
**Background:** A scalable cure for HIV remains elusive. Successful cases, including the pioneering cure observed in the so-called Berlin patient, are limited to individuals receiving allogeneic hematopoietic stem cell transplantations (aHSCT) with homozygous CCR5 $\Delta$ 32/ $\Delta$ 32 allografts that confer resistance to HIV infection. Transplants with functional CCR5 were previously thought to be ineffective

for sustaining HIV long-term remission without antiretroviral therapy (ART). Recently, the case of the Geneva patient demonstrated extended viral control for 18 months after aHSCT from a wild-type CCR5 donor.

**Methods:** Longitudinal follow-up analyses of patient samples, including gut biopsies, from 2009 to 2024. Testing for HIV RNA, HIV DNA, viral tropism, CCR5-expression, viral outgrowth, antiretroviral drug levels and HIV-specific immune responses.

**Results:** We found prolonged HIV remission exceeding five years without ART following heterozygous CCR5 WT/ $\Delta$ 32 aHSCT for acute myeloid leukemia (AML) in a heterozygous CCR5 WT/ $\Delta$ 32 male. HIV RNA and total HIV DNA were detected pre-aHSCT with predicted R5 viral tropism. Transplantation from an HLA-matched (10/10) unrelated donor in October 2015 led to full-donor chimerism and AML remission.

Acute graft-versus-host disease (Grade I) was limited to the skin and treated with topical steroids. CD4+ T cell CCR5 expression levels matched CCR5 WT/ $\Delta$ 32 controls. HIV remains undetectable in plasma (LOD 20 copies/ml) 5.5 years after treatment interruption (TI) in September 2018. Repeated HIV DNA measurements were negative in peripheral blood as well as duodenal and ileum biopsies. No viral outgrowth was detected from stimulated CD4+ T cells. Antiretrovirals were undetectable throughout TI, with HIV-specific antibody levels decreasing and no detectable HIV-specific T cell responses post-aHSCT.



**Figure 1: Longitudinal follow-up from 2009 to 2024**  
Plasma HIV-1 RNA levels (black line; left y-axis) and T cell counts (CD4, pink; CD8, blue; right y-axis) from time of HIV diagnosis to today. Donor chimerism (%donor cells; green; second right y-axis). Red triangles indicate the time of HIV diagnosis and aHSCT. Gray shaded areas indicate time on ART (Raltegravir (RAL), Abacavir/Lamivudine (ABC/3TC)). Blue and black triangles indicate timepoints of therapeutic drug monitoring (TDM) with or without detectable antiretroviral drug levels (i.e. RAL), respectively. Blue and black dots indicate timepoints with or without detectable total HIV proviral DNA, respectively.

**Conclusions:** HIV cure induced by aHSCT is not restricted to the use of homozygous CCR5 $\Delta$ 32/ $\Delta$ 32 donors. Effective reservoir reductions, durable HIV remission and potential cure can also be achieved with functional viral co-receptors, suggesting that allogeneic immunity fundamentally contributes to HIV eradication.

**SS0403LB**

No confirmed virological failures (CVF) for 144 weeks when switching 2-/3-/4-drug ART to DTG/3TC in heavily treatment-experienced PLWHA with prior M184V/I and virological failures (VF) in the prospective SOLAR-3D study

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**Background:** DTG/3TC is not approved for stable-switch in individuals with known history of DTG and/or 3TC resistance or prior VF. The majority of heavily treatment-experienced (HTE) PLWHA do not qualify for on-label switch to DTG/3TC. Large prospective studies evaluating DTG/3TC's ability to maintain PCR<50 in virologically suppressed individuals switching ART in the setting of prior/current M184V/I and multiple VF are lacking.

SOLAR-3D, the largest and longest prospective comparative study to-date, preliminarily demonstrated no CVF through 96-weeks. Week 144 results will be presented.

**Methods:** SOLAR-3D, a prospective, open-label, comparative 144-week study, evaluates switching 2-/3-/4-drug ART to STR DTG/3TC in HIV-1 HTE adults with multiple prior VF, prior/current M184V/I, virologic suppression for ≥6mos, and ≥2 prior ART.

Participants were consented/enrolled from 5/2/2019-10/16/2020 at the NGO, HCAI, in Stratford CT(USA).

There were no exclusions for prior INSTI use, any CD4, prior M184V/I or K65R, or 3TC-associated mutations detected at BL by ProViral DNA NGS.

Week-144 results were analyzed by ITT-E and PP using FDA snapshot analyses.

**Results:** N=100 participants switched to DTG/3TC, n=50 with historical/prior M184V/I (37% with current M184V/I by ProViral DNA NGS) and n=50 without prior M184V/I.

Participants with prior M184V/I had significantly greater median prior VF (n[IQR]: 9[7-13] vs 4[3-5], p<0.001), longer duration HIV (28.4 vs 15.5yrs, p<0.001), longer ART duration and duration PCR<50c/mL, and were older with lower nadir CD4.

Median time on DTG/3TC was 192-weeks for both groups. Through Week 144, no difference in efficacy was observed between those with vs without prior M184V/I:

- Primary Endpoint: PCR≥50, n[%]: 2[4%, 2 of 2 re-suppressed] vs 3[6%, 2 of 3 re-suppressed], by ITT-E (5.1% vs 7.9%, PP);
- Secondary Endpoint: PCR<50, n[%]: 37[74.0%] vs 36[72.0%], by ITT-E (94.9 vs 92.3%, PP);
- No CVFs, treatment-emergent resistance were observed, nor differences regarding PCR TND(<20), viral blips, AEs, or treatment discontinuations.

**Conclusions:** SOLAR-3D is the largest prospective trial to demonstrate neither prior nor current M184V/I impact the efficacy and durability of switching virologically suppressed PLWHA with prior VF to DTG/3TC through

144-weeks. Switching to DTG/3TC must be explored in economically-developing countries where economic/safety advantages of discontinuing TDF could be consequential.

**SS0404LB**

Antimicrobial resistance in *Neisseria gonorrhoeae* infections among MSM on Doxycycline post-exposure prophylaxis

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**Background:** Prevention of bacterial STIs with post-exposure doxycycline (Doxy-PEP) in MSM raised concerns regarding antimicrobial resistance (AMR). We studied the impact of Doxy-PEP on *Neisseria gonorrhoeae* AMR in the ANRS DOXYVAC trial.



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**Methods:** 545 MSM on HIV PrEP were randomized to Doxy-PEP (n= 362) or No-PEP (n=183) and followed for a median of 14 months. Participants were tested at baseline and every 3 months by nucleic acid amplification technic (NAAT) using the Cobas 6800 (Roche) and culture for GC detection in urine, oro-pharyngeal and anal samples. Etest (Biomérieux) determined MICs and EUCAST guidelines were used for interpretation. Molecular analysis was performed by Whole Genome Sequencing on GC isolates and on NAAT-positive samples in search of molecular determinants of resistance (*tetM* gene, V57M substitution in S10 protein, MtrR and its promotor modification, mutations in the genes coding for 23S rRNA, S91F substitution in GyrA protein, *penA* mosaic gene). P-values were calculated using Fisher's exact test.

**Results:** From January 2021 to February 2023, 450 samples (278 patients) were GC-positive by NAAT. Seventy-eight GC obtained in cultures (7 at baseline, 40 No-PEP group, 31 Doxy-PEP group) and 231 GC-NAAT-positive samples (38 at baseline, 99 No-PEP group, 94 Doxy-PEP group) were retained for molecular testing.

MICs of ceftriaxone, fluoroquinolones and aminoglycosides were similar in the Doxy-PEP and No-PEP groups and no significant change in genetic determinants for these antibiotics was found. Only TEM-1 genes associated with penicillin resistance were more frequently observed in the doxyPEP group than in the no-PEP group (40.4% vs 17.5% of cases respectively,  $p=0.04$ ).

All GC isolates were resistant to tetracycline, with a significant increase in rate of high-level tetracycline resistance in the Doxy-PEP vs. No-PEP group (35.5 vs 12.5%, respectively  $p=0.04$ ). In addition, the genetic determinant *tetM* was significantly more frequent in the Doxy-PEP group as compared to the No-PEP group (55/94=59.1% vs 23/99=23.7%), respectively ( $p<0.0001$ ). No mutation in the gene encoding 23S rRNA was observed.

**Conclusions:** All GC were resistant to tetracycline but rate of high-level resistance mediated by the *tetM* gene were higher with Doxy-PEP. No impact of Doxy-PEP on Ceftriaxone susceptibility was found.

## SS0405LB

Tenofovir-diphosphate concentrations and viral suppression following monthly point-of-care urine tenofovir testing among adults initiating antiretroviral therapy: primary outcome of the randomised controlled STREAM HIV trial

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**Background:** Point-of-care urine tenofovir (TFV) tests may improve HIV treatment outcomes and need to be assessed in randomized trials. The STREAM HIV trial evaluated whether monthly urine TFV testing among people with HIV (PWH) initiating dolutegravir-based antiretroviral therapy (ART) improved adherence.

**Methods:** We recruited PWH initiating first-line ART at three public clinics in South Africa and randomised participants 1:1 to the intervention (monthly point-of-care urine TFV testing [UCSF/Abbott] with adherence counselling) or control arm (monthly adherence counselling without urine TFV testing).

The primary outcome was adherence at 24 weeks, assessed by intracellular TFV-diphosphate concentrations in dried blood spots using mass spectrometry.

Secondary outcomes were retention-in-care and viral suppression (VS <200 copies/ml). We compared log<sub>10</sub> TFV-diphosphate concentrations using t-tests and estimated risk ratios (RR) using modified Poisson regression.

**Results:** 539 participants (58% female, mean age 33 years, CD4 count 393 cells/μl, median viral load 38,163 copies/ml, 5.8% active TB) were initiated on ART between 02/2021-06/2023. At 24 weeks, 242/270 intervention and 234/269 control arm participants had TFV-diphosphate results for analyses. Geometric mean TFV-diphosphate concentrations were similar among intervention and control participants (1,253 versus 1,198 fmol/punch,  $p=0.510$ ).

However, the proportion with detectable TFV-diphosphate (≥200 fmol/punch) was higher in the intervention than control arm (98.8% versus 92.7%, RR=1.06, 95%CI

1.02-1.11,  $p=0.001$ ), Figure 1. Retention-in-care (88.5% versus 86.2%,  $RR=1.03$ , 0.96-1.09), VS (93.8% versus 91.4%,  $RR=1.03$ , 0.97-1.08) and Retained+VS (82.2% versus 78.8%,  $RR=1.04$ , 0.96-1.13) were slightly higher in the intervention than control arm, but not significantly different.

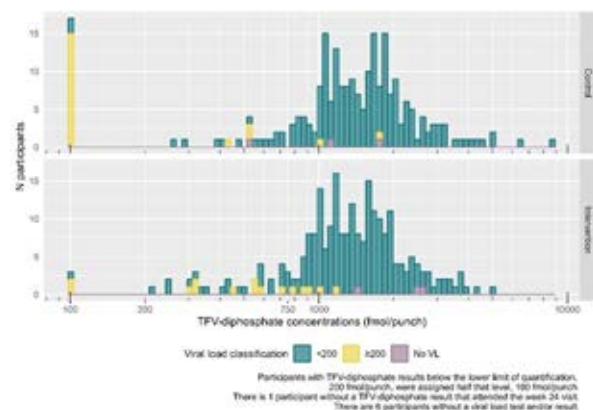


Figure 1. Tfv-diphosphate concentrations and viral suppression dynamics in the STREAM HIV trial at 24 weeks.

**Conclusions:** In this South African cohort initiating dolutegravir-based ART, overall adherence and VS were high at 24 weeks. Monthly point-of-care urine Tfv testing led to more participants achieving detectable Tfv-diphosphate concentrations, but did not produce higher drug concentrations or more VS. The impact of urine Tfv testing in combination with point-of-care viral load testing will be assessed at 72 weeks.

## SS0406LB

### Automated 24/7 dispensing of HIV prevention goods and self-tests via vending machines

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**Background:** To overcome barriers in accessing HIV prevention products and self-tests—such as reducing dependency on physical interactions with staff, operating hours, and geographic limitations of service providers—in 2023, a network of vending machines (VMs) was launched in Moldova as part of enhanced HIV/AIDS response measures.

**Description:** The VM network was launched in 2023, it consisted of 25 vending machines that provide free, round-the-clock, automated dispensing of preventive goods and self-testing kits for HIV. These were located in 14 major cities across Moldova and are maintained by nine CSOs providing HIV prevention services.

Utilizing RFID cards, clients can access goods in accordance with limits and sets based on their affiliation with one or more KG. The VMs are integrated into a digital ecosystem and provide real-time information on the utilization of goods linked to the client's de-personalized demographic profile.

**Lessons learned:** From 1 June 2023 to 29 April 2024, the VMs provided access to preventive goods and HIV self-tests 29,836 times to 3,513 representatives of key groups. Considering that a social worker typically spends 3 to 7 minutes per transaction for the distribution and registration of preventive goods, the automated dispensing saved over 300 workdays, which were reallocated to addressing complex cases in providing HIV prevention, care, and support services. The service was most popular among PWUD (3,015 of 3,513), followed by SW (619), MSM (104), and PLHIV (131), noting that one individual may belong to multiple key groups. 26.56% of users were female and 73.44% were male.

**Conclusions/Next steps:** The 24/7 automated dispensing of HIV preventive goods is essential for broadening service access. It eliminates barriers like discrimination and geographic limitations by allowing non-stop access without direct human contact, enhancing service perception through initiatives like prize draws. The pilot's success demonstrates potential for expansion, particularly to regions like penal systems with restricted access. Digital tracking enables targeted, data-driven resource allocation by providing insights into user trends and needs.



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## SY25 Use of long-acting injectable cabotegravir in pregnant and lactating people

### SY2503

Initial evaluation of injectable cabotegravir (CAB-LA) safety during pregnancy in the HPTN 084 open-label extension

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**Background:** HPTN 084 demonstrated that long-acting injectable cabotegravir (CAB-LA) significantly reduced HIV acquisition compared to daily oral TDF/FTC in individuals born female. Few data exist regarding the safety of CAB-LA during pregnancy.

From 2022, eligible participants were offered the choice of open-label CAB-LA or TDF/FTC as PrEP in the ongoing HPTN 084 open-label extension (OLE), and contraceptive

restrictions were removed. Participants could consent to continue CAB-LA injections throughout pregnancy. We report on maternal safety and pregnancy outcomes during the OLE.

**Methods:** Pregnancies confirmed on two separate samples on the same day from OLE start through to November 2023 are included in this analysis. Pregnancies were categorised by exposure into:

1. CAB-LA injections during pregnancy,
2. CAB-LA prior to pregnancy only, or;
3. No CAB-LA exposure (TDF/FTC group).

Pregnancy incidence, maternal adverse event (AE) incidence, and poor pregnancy outcomes (composite outcome of spontaneous abortion <20 weeks, intrauterine fetal death or stillbirth ≥20 weeks, premature birth <37 weeks, or small for gestational age) were assessed.

**Results:** Of 2472 participants in the OLE, there were 351 confirmed incident pregnancies in 334 participants over 3118 person years (incidence 11.3/100 person-years [py]; 95% CI 10.1 – 12.5). Among participants with CAB-LA use during or prior to pregnancy, median time from last injection to pregnancy detection was 8 (IQR 7-9) and 13 (IQR 8-56) weeks respectively. A median of 4 (IQR 2-4) injections were received by participants with CAB-LA use during pregnancy. There were no maternal deaths. Pregnancy-related maternal AE incidence was 43.7 (95% CI 30.9-60.0), 52.9 (95% CI 24.2-100.5), and 40.0 (95% CI 14.7-87.1) per 100 py among those using CAB-LA during pregnancy, prior to pregnancy or no CAB-LA respectively.

Poor pregnancy outcome rates were similar across groups with negative outcomes reported in 28% (55/194), 35% (24/69), and 26% (11/43) of pregnancies with CAB-LA use, prior CAB-LA or no CAB-LA respectively. One major congenital anomaly was observed overall (CAB-LA during pregnancy group).

**Conclusions:** CAB-LA was well tolerated in pregnant women. Maternal and pregnancy outcomes were consistent across non-randomized exposure groups and with expected background rates. These data provide reassurance regarding use of CAB in pregnancy.

## SY2504

### Evaluation of long-acting cabotegravir (CAB-LA) pharmacokinetics during pregnancy: a sub-study analysis of the HPTN 084 open label extension study

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**Background:** HPTN 084 found that long-acting cabotegravir (CAB-LA) was well-tolerated and significantly reduced the risk of HIV acquisition in women compared to tenofovir disoproxil fumarate/emtricitabine (TDF/FTC). In the HPTN 084 open label extension (OLE) study, long-acting contraceptive requirements were removed, and pregnant participants could consent to CAB-LA injections during pregnancy. A nested sub-study evaluated the pharmacokinetics of CAB-LA among a subset of participants who continued to receive CAB-LA injections during pregnancy.

**Methods:** Fifty HIV-negative participants who enrolled in the pregnancy sub-study between 11 May 2022 and 13 July 2023 and received  $\geq 4$  CAB-LA injections in the 12 months prior to pregnancy and during pregnancy were evaluated in this analysis. Participants underwent monthly PK sampling during pregnancy. Trough ( $C_{trough}$ ) CAB concentrations were averaged (geometrically) within each participant over the pre-pregnant, pregnant, and post-partum (through 24 weeks) periods and during each pregnancy trimester, and then summarized. Area under the concentration-time curve (AUC) was determined during each trimester. Ratios of  $C_{trough}$  CAB concentrations between pregnant and pre-pregnant periods were determined for each participant.

**Results:** The mean weight for participants in the pre-pregnant, pregnant, and postpartum periods were 66.3 kg, 71.8 kg, and 68.6 kg, respectively. The median number of CAB-LA injections administered in the year prior to

pregnancy was 6 (range: 4-7) and during pregnancy was 4 (range: 4-5). Median  $C_{trough}$  concentrations during the pre-pregnant, pregnant, and postpartum periods were 2.1  $\mu\text{g/mL}$  (IQR: 1.3, 2.7), 1.9  $\mu\text{g/mL}$  (IQR: 1.5, 2.2), and 2.6  $\mu\text{g/mL}$  (IQR: 1.9, 3.5), respectively. Median  $C_{trough}$  concentrations during the first, second, and third trimesters were 2.5  $\mu\text{g/mL}$  (IQR: 2.0, 3.2, min: 1.3), 1.8  $\mu\text{g/mL}$  (IQR: 1.5, 2.4, min: 0.8), and 1.6  $\mu\text{g/mL}$  (IQR: 1.3, 2.0, min: 0.6); median AUCs were 88.9 (first trimester), 125.0 (second trimester), and 108.3 (third trimester) days\* $\mu\text{g/mL}$ . Median individual  $C_{trough}$  ratios comparing each trimester to the pre-pregnant period were 1.3, 0.9, and 0.8 for the first, second, and third trimester, respectively.

**Conclusions:** Initial analyses suggest that CAB concentrations decrease throughout pregnancy; however, concentrations largely remain above protocol-defined exposure targets. While dose modifications are unlikely to be required for those who continue CAB-LA during pregnancy, additional analyses are required.

### OAA02 It's about timing: When to start, when to stop

#### OAA0206LB

##### Factors influencing time to viral rebound during analytical treatment interruptions in HIV cure trials

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**Background:** Achieving sustained control of HIV replication in the absence of ART is an important goal in HIV cure research. To identify factors associated with time to detectable viremia and time to loss of virologic control, we conducted a meta-analysis among participants in 6 interventional HIV cure trials.

**Methods:** Each of the 6 trials included an analytical treatment interruption (ATI). We determined factors influencing time to detectable viremia (defined as plasma HIV-1 RNA  $\geq 50$  copies per ml) and time to loss of virologic control (defined as either restart of ART or two consecutive measurements of plasma HIV-1 RNA  $\geq 5,000$  copies per ml) using cox proportional hazard regression to calculate hazard ratios.

**Results:** Among the 114 included participants median age was 47 years (range: 22 to 68 years). The trials investigated the following interventions alone or in combination: broadly neutralizing antibodies (bNAbs) (3BNC117, 10-1074), histone deacetylase inhibitors (HDACi) (romidepsin, pa-



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nobinostat), HIV-1 peptide vaccine (Vacc-4x) and toll-like receptor 9 (TLR9) agonist (MGN1703). We found that pre-ATI total HIV-1 DNA  $\geq 850$  copies as well as intact proviral DNA  $\geq 70$  copies per  $10^6$  CD4+ T cells were associated with shorter time to detectable viremia (HR = 1.94, 95% CI: 1.27, 2.98; HR = 1.75, 95% CI: 1.01, 3.00).

Total HIV DNA  $\geq 850$  copies per  $10^6$  CD4+ T cells also predicted shorter time to loss of virologic control; as did time from diagnosis to ART  $\geq$  one year (HR = 1.60, 95% CI: 1.05, 2.45; HR = 1.56, 95% CI: 1.02, 2.39). HDACi treatment seemed to predict shorter time to loss of virologic control, whereas bNAb treatment at ART initiation of individuals harboring 3BNC117-sensitive viruses was associated with delayed time to loss of virologic control (HR = 1.69, 95% CI: 1.09, 2.62; HR = 0.26, 95% CI: 0.09, 0.73).

**Conclusions:** Our findings shed new light on factors influencing time to viral rebound as well as loss of virologic control. These findings can inform the design of novel cure trials but also highlight the potential impact of early bNAb treatment on virological control during ATI.

## OAA06 HIV in children: What are the challenges?

### OAA0606LB

HIV infection alters the breastmilk virome of mothers living with HIV and the gut virome of related infants through early life.

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**Background:** Infants born to mothers living with HIV that remain uninfected (HEU) experience higher risk of morbidity and mortality, reduced responses to vaccination, and altered gut bacterial microbiota. However, little is known regarding the effect of maternal HIV infection on the establishment and composition of the infant gut virome.

**Methods:** From a cohort of South African mothers living with HIV and related HEU infants (n=40 pairs) and an age-matched control group of mothers not living with HIV and their infants (n=40 pairs), we undertook viral DNA and RNA metagenomic sequencing of purified viral particles. Viral and bacterial communities were analyzed in maternal stool and breast milk and infant stool through the first 36 weeks of life. Vaccine responses were measured via multiparameter flow cytometry and bacterial communities were profiled using 16S rRNA gene sequencing.

**Results:** We find that maternal HIV status is significantly associated with distinct composition of the breast milk (F = 3.28, P < 0.001) and gut viromes of related infants (F = 1.93, P = 0.004), relative to controls. HEU infants also display 11-fold increased relative abundance of putative *Bifidobacteria* bacteriophages (P < 0.001) and a concomitant 24-fold reduction in the abundance of *Bifidobacteria* (P < 0.001) in the first week of life, relative to unexposed infants.

*Bifidobacterium longum* abundance in the first week of life was significantly positively correlated with later responses to Bacille Calmette-Guerin (BCG) vaccination (R<sup>2</sup>=0.35, P=0.002), which was contrasted by a significant inverse correlation between the abundance of a eukaryotic DNA virus within the *Smacoviridae* during the first week and BCG responses (R<sup>2</sup>=0.12, P = 0.04).

**Conclusions:** Mothers living with HIV have significantly different composition of the breast milk virome, and the gut virome of their related infants also significantly differs compared to infants not exposed to HIV. These shifts include increases in the relative abundance of putatively *Bifidobacteria*-infecting bacteriophages and reductions in the relative abundance of *Bifidobacteria* in HEU infants relative to unexposed infants.

These results provide early insights into the effect of maternal HIV infection on the establishment of the infant gut virome and its relationship to bacterial microbiota and responsiveness to vaccination.

## OAA13 The quest for HIV vaccines

### OAA1306LB

Potent and broadly neutralizing HIV-1 antibodies with improved pharmacokinetics achieved by negative supercharging

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**Background:** Our previous work demonstrated that reducing the net charge of the variable domain of HIV-1 antibodies diminishes off-target binding and enhances pharmacokinetics (PK).

In this study, we investigated whether reducing the net charge by substituting select Arg or Lys with Gln or Glu in the first constant Ig domain of the heavy chain (CH1) and the constant domain of the light chain (CL), or by incorporating various acidic regions present in human protein molecules into the C-termini of the heavy and light chains, could enhance the PK of HIV-1 antibodies.

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**Methods:** We engineered a panel of HIV-1 antibody variants with Arg or Lys residues systematically substituted with Gln or Glu in the CH1 and CL domains in the presence or absence of acidic regions incorporated into the C-termini of the heavy and light chains and assessed neutralization potency against a 12-virus panel and PK in Tg32 hFc mice.

**Results:** Our findings revealed that K129E, K210E, and K214E substitutions in the CH1, and K128E, K147E, K190E, and K192E substitutions in the CL improved the PK of VRC01.23LS, VRC07-523LS, and N6LS while maintaining potency. Antibody variants with their net charge optimized in both the variable and CH1/CL domains displayed significantly extended PK compared to variants with substitutions in either the variable or constant domain alone. Interestingly, incorporating the acidic tail of alpha-synuclein (ATS) into the C-termini of the heavy and light chains of HIV-1 antibodies also enhanced PK without compromising potency. Furthermore, when the acidic tails were added to the charge-optimized variants, not only did PK further improve, but the potency of VRC01.23LS, VRC07-523LS, N6LS, PG9LS, PGT128LS, 3BNC117LS, 10-1074LS, and VRC34.01LS<sub>mm28</sub> increased unexpectedly by 6- to 10-fold compared to their wild-type counterparts.

**Conclusions:** While confirmation is needed regarding whether the enhanced potency observed in *in vitro* pseudovirus assays translates to improved protection in non-human primates, the conservation of the CH1 and CL domains in IgG1 suggests that these substitutions in the CH1 and CL, along with the addition of acidic tails, have the potential to enhance the PK and potency of various therapeutic antibodies.

## OAA28 Cracking the code of the tissue reservoir

### OAA2806LB

Spatial characterization and phenotypic profile of macrophage HIV reservoirs in lymph node and gut tissues from subtype C HIV infection

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**Background:** HIV Cure is impeded by the incomplete characterization of all sources of rebound-competent HIV reservoirs to direct targeted eradication therapies. Lymph node (LN) and gut tissues are key sites of HIV res-

ervoir persistence, where most research focuses on follicular helper T cell reservoirs. Emerging evidence reveals that macrophages may also harbour HIV, however there are controversies regarding their role as productively HIV infected reservoirs, partially due to their phagocytic role. This study aimed to characterize macrophage subtype C HIV reservoirs in human lymph node and gut tissues in terms of their phenotype, location, and their potential for sustained productive infection during suppressive antiretroviral therapy (ART).

**Methods:** Formalin-fixed paraffin-embedded LN and gut tissues from 20 people living with HIV (subtype C) in South Africa obtained from the FRESH and the HPP lymph node cohorts. Multi-colour immunofluorescence microscopy combined with in-situ hybridization RNAscope was employed to characterize and localize macrophage sub-populations containing HIV protein antigens and viral RNA. High-resolution oil-immersion microscopy was used to distinguish between macrophages that were productively infected and those that had ingested infected CD4+ T cells.

**Results:** Lymph node germinal centre (GC) CD68+ macrophages harboured both HIV gag-p24 protein and HIV gag-pol RNA. In HIV infection, the frequency of LN CD68+ macrophages was elevated ( $p=0.0039$ ). The density of GC CD68+P24+ macrophages was higher in late-treated compared to early-treated PLWH. There was a strong positive correlation between the density of GC CD68+P24+ macrophages and plasma viral load in late-treated individuals ( $p=0.0167$ ;  $r=1$ ). High-resolution imaging techniques revealed that phagocytic macrophages exhibited intracellular staining for CD4+ T cells, and were distinctively localized outside the GCs. In contrast, productively infected macrophages within GCs displayed gag-p24 co-localization in the absence of intracellular CD4 ingestion. In the gut, CD68+ macrophages harboured HIV gag-pol RNA and gag-p24 protein in the lamina propria and Peyer's Patches.

**Conclusions:** This study reveals that CD68+ macrophages are productively HIV infected tissue reservoirs, capable of contributing to viral rebound. These findings offer significant insights into the spatial distribution and characteristics of macrophage-associated reservoirs, establishing a basis for developing targeted strategies aimed at eliminating these reservoirs in LN and gut tissues.







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## OAA35 Immune dysfunction and residual viremia

### OAA3506LB

Natural killer cell in lymph nodes; phenotype, location, and function during acute infection and how HIV modulates their effector functions

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**Background:** The persistence of HIV reservoirs in lymph node (LN) germinal centres (GC) despite HAART remains a barrier to achieve complete eradication of HIV. There is growing evidence that lymph nodes lack cytolytic responses, that may be linked to poor infiltration by dysfunctional cytolytic T cells. Natural killer (NK) cells represent the cytolytic arm of innate immunity with CXCR5+ NK cells having been correlated to decreased viral burden SIV infected LNs. However, there remains a paucity of information concerning migration and cytotoxicity of NK cells in human LNs.

Therefore, our aim was to assess the presence and functional capabilities of these CXCR5+ NK cells during treated HIV infection in the lymph node using immunofluorescent staining assays and flow cytometry.

**Methods:** PBMC and lymph node tissues (formalin-fixed paraffin-embedded tissue and dissociated LMC) were obtained from the HIV Pathogenesis Programme (HPP) lymph node study (LNS) and FRESH cohort, Durban, South Africa. Frozen PBMC and LNC were phenotypically and functionally characterised using flow cytometry analysis with standardized surface stain and ICS protocols, while LN tissues were imaged and analysed using Immunofluorescence microscopy.

**Results:** NK cells identified in the tissues of ART-treated PLWH lack CXCR5 expression required for migration into GC where we have showed HIV persists. Furthermore, there were significantly more CXCR5- NK cells ( $p = 0.0087$ ) when compared to CXCR5+ NK cells in HIV infected individuals.

Further, the NK cells were consistently found to localise outside the GCs. These NK cells also exhibited reduced expression of cytolytic markers CD107a and granzyme B. Additionally, while the overall frequency of CD56+ NK cells remained steady during HIV infection, HIV- samples displayed a notably higher density of CD56+ CD16+ NK cells ( $p = 0.0159$ ) compared to infected individuals.

**Conclusions:** The observed localization outside the GC and the reduced expression of cytolytic markers in NK cells are noteworthy and parallels similar observations in

CD8+ T cells, suggesting potential common mechanisms contributing to HIV persistence in tissues. This study contributes to a more comprehensive understanding of how HIV-1 infection impacts the immune system, particularly NK cell biology, during treatment.

### OAB01 STick-it

### OAB0106LB

Efficacy of dolutegravir/lamivudine (DTG/3TC) in adults with HIV-1 and isolated reactive hepatitis B core antibody (anti-HBc): results from the phase 3/3b GEMINI-1/-2, STAT, TANGO, and SALSA studies

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**Background:** As 2-drug antiretroviral therapy regimens emerge, clinical management of people living with HIV-1 and isolated reactive anti-HBc is important. In real-world studies of people living with HIV-1 switching to 2-drug regimens, reactive anti-HBc was associated with lower HIV-1 suppression rates but not elevated liver enzymes or hepatitis B virus (HBV) reactivation. However, further evaluation is warranted.

We present outcomes for participants with isolated reactive anti-HBc receiving DTG/3TC vs comparator regimens in phase 3/3b studies.

**Methods:** This analysis includes individuals with past HBV exposure (reactive anti-HBc), no evidence of active HBV infection, and non-reactive HBV surface antibody among treatment-naïve participants in GEMINI-1/-2 and STAT and virologically suppressed participants in TANGO and SALSA.

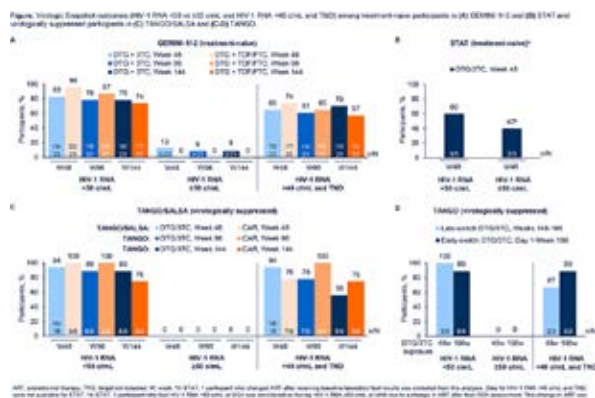
#### Results:

Overall, 46 participants in GEMINI-1/-2, 5 in STAT, 13 in TANGO, and 12 in SALSA had isolated reactive anti-HBc. Proportions of participants with HIV-1 RNA <50 c/mL or HIV-1 RNA <40 c/mL and target not detected were generally high and comparable between treatment groups across all studies; few participants experienced HIV-1 RNA ≥50 c/mL (Figure).

Liver function test toxicities were reported in 10/23 (43%) participants receiving DTG + 3TC in GEMINI-1/-2 and 3/16 (19%) receiving DTG/3TC in TANGO/SALSA; most were grade 1 or 2. Across studies, 1 participant receiving DTG + 3TC in GEMINI-1/-2 had hepatitis E virus infection and liver enzyme elevations that met liver-stopping criteria, which



led to treatment discontinuation at ~144 weeks and study withdrawal. Adverse events typically associated with HBV were reported in 5/23 (22%) participants receiving DTG + 3TC in GEMINI-1/-2 and 1/9 (11%) receiving DTG/3TC in TAN-GO. No HBV reactivation was reported in any study.



**Conclusions:** Among people living with HIV-1 with isolated reactive anti-HBc, DTG/3TC demonstrated high and similar HIV-1 suppression rates vs 3-/4-drug comparator regimens, with few liver enzyme elevations leading to discontinuation and no reports of HBV reactivation.

## OAB17 TB or not TB?

### OAB1706LB

Knowing the true prevalence of tuberculosis (TB) in Nigeria: a call for the bi-directional diagnostic approach to TB detection

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**Background:** Tuberculosis (TB) is an infection which primarily attacks the lungs. Currently in Nigeria, emphasis is laid on initial diagnosis made on the Cepheid GeneXpert® system. The molecular technologies employed on the GeneXpert® allows for the quick and easy detection of TB infection in sputum samples. However, with Nigeria still leading Africa in TB prevalence, and in the number of undetected cases, diagnosing presumptive TB clients with only the GeneXpert® system becomes inadequate in the presence of Extra-pulmonary TB (EPTB).

This study seeks to highlight the comparative benefits of applying a bi-directional diagnostic approach to TB screening in Nigeria.

**Methods:** In this cross-sectional study, a total of 1,415 randomly diagnosed Advanced HIV Disease (AHD = CD4<200 cells/mm<sup>3</sup>) clients in Plateau State, North-Central Nigeria were tested for the *Mycobacterium tuberculosis* (Mtb) lipopolysaccharide using the Urine TB LF-LAM® test kit. This study took place from October 2022 to December 2023. Clients who were positive with the Urine TB LF-LAM® further produced sputum samples which were used for the MTB/RIF GeneXpert® testing. Obtained data were analyzed using simple descriptive statistics.

**Results:** From the 1,415 AHD clients in this study, 91/1,415 (6.4%) tested positive with the Urine TB LF-LAM®; while 17/91 (18.7%) were Mtb detected on the GeneXpert® machine. 74/91 (81.3%) EPTB and 17/91 (18.7%) Pulmonary TB (PTB) prevalence were recorded respectively.

**Conclusions:** Considering the current national emphasis on GeneXpert® screening for initial TB diagnosis, results obtained in this study indicates a large number of presumptive TB clients with EPTB are largely left undiagnosed. It is recommended that all presumptive TB clients be bi-directionally diagnosed using the Urine TB LF-LAM® and the GeneXpert® screening tests. This double-pronged approach will help to optimize the TB case detection in Nigeria.

**Key Words:** TB, EPTB, AHD, Nigeria, Urine TB LF-LAM®, GeneXpert®

## OAB21 Young people age too!

### OAB2106LB

Universal HIV testing of children at 18 months of age in South Africa: a novel policy as the last mile to close the pediatric case finding towards HIV epidemic control.

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**Background:** South Africa is the first country to adopt a policy on universal HIV testing for all children aged 18 months aligned to the Vertical Transmission Program and the Expanded Programme on Immunization. This policy was adopted in 2019 and is aimed at improving the pediatric HIV case finding in facilities and communities. Based



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on NAOMI HIV estimates, South Africa has the largest pediatric HIV epidemic globally, with an estimated 152,984 children <15 years living with HIV in 2024<sup>1</sup>.

**Methods:** We conducted a retrospective review of program data from 2018 to 2023, District Health Information System (DHIS II). Data is based on the Government of South Africa financial year (April to March). Data was for children aged 18 months: i) HIV tests, ii) Hexa-4 vaccinations, iii) live births 18 months prior to the review period, and iv) census estimates for age one year.

**Results:** There was a 48% increase in the number of children tested annually from 238,392 in 2018 to 352,827 in 2023. The proportion of children with a recorded vaccination who were tested for HIV increased from 32% in 2018 to 45% in 2023, while HIV positivity decreased from 0.6% to 0.3% over the same period. Over the five-year period, 36% (1.35 million) of the 3.8 million children receiving the Hexa-4 vaccine were tested for HIV. The Hexa-4 vaccination coverage was 69.7% compared to the estimated population.

**Conclusions:** Our findings indicate scale-up of integrated EPI and HIV testing services at 18 months of age. However, these data also highlight missed opportunities for universal testing currently. This novel policy is critical to closing the pediatric HIV case finding gaps, key on identifying slow progressors, and children with disadvantaged backgrounds who do not present to the healthcare facilities.

## OAB26 ART nouveau

### OAB2606LB

Long-acting cabotegravir (CAB) plus rilpivirine (RPV) in the first, virologically-suppressed adolescents with HIV-1 to receive an every 8-week, all-injectable regimen in a multicenter, multinational Study: IMPAACT 2017 week 48 outcomes

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**Background:** Long-acting (LA), intramuscular (IM) cabotegravir+rilpivirine is the first LA combination antiretroviral treatment (ART) regimen. [IMPAACT 2017](#) evaluates the safety, acceptability, tolerability, and pharmacokinetics (PK) of this combination in virologically-suppressed (HIV-1 RNA <50 c/mL) adolescents. Data through Week-48 are presented.

**Methods:** In this Phase I/II trial, virologically-suppressed adolescents (12-18 years;  $\geq 35$  kg) with HIV-1 switched from their pre-study ART to at least 4 weeks of daily oral CAB+RPV followed by 600 mg CAB-LA + 900 mg RPV-LA IM (3-mL each) in the contralateral gluteus medius at Week 4 and 8, and then every 8-weeks.

**Results:** Eighteen centers in 5 countries enrolled 144 participants: median (range) age 15 years (12-17), body mass index 19.5 kg/m<sup>2</sup> (16.0-34.3), weight 48 kg (35-101), 51% female, 74% Black and 92% vertically acquired infection. Most participants received  $\geq 1$  injection (142/144), completed Week-48 (140/144) and received the number of injections expected (140/144).

Fifty-six (39%) participants experienced a drug-related adverse event (AE); three (2%) were  $\geq$  Grade 3 AE (injection site [IS] pain and abscess [n=1]; IS abscess [n=1]; anaphylaxis leading to study drug discontinuation [n=1]). Most common drug-related non-IS AEs were rash (n=4), headache (n=3) and nausea (n=2).

Fifty-two participants (36%) experienced a drug-related IS AE; mostly Grade 1 (92%) resolving within 7-days (86%). No confirmed virologic failures occurred through Week-48. Median (Q1-Q3) Week-48 observed pre-dose concentrations for CAB (2.77  $\mu$ g/mL[1.99-3.55]) and RPV (67.9 ng/mL[52.8-82.4]) approximated those in adults and were well above the respective protein-adjusted IC<sub>90</sub> (Figure). While 44% and 93% of CAB-LA and RPV-LA recipients reported some pain during injection, all reported preferring LA injections to daily oral treatment at Week-48 (140/140).

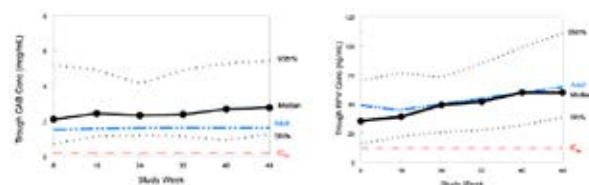


Figure. IMPAACT 2017 CAB and RPV troughs (black lines - medians [solid] with 5<sup>th</sup> - 95<sup>th</sup> [dashed]) compared to adults (blue lines) from LATTE-2/ATLAS-2M studies and protein-adjusted IC<sub>90</sub>s (red lines).

**Conclusions:** Week-48 multinational data from the first, virologically-suppressed adolescents living with HIV-1 who switched from daily oral to injectable CAB-LA + RPV-LA every 8-weeks demonstrate favorable safety/PK profile, strong participant preference and inform clinical use and regulatory submissions.

## OAB34 Co-morbidities: The heart of the matter

### OAB3406LB

Abacavir is associated with elevated risk for cardiovascular events in the REPRIEVE trial

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**Background:** Major adverse cardiovascular events (MACE) are more common in people with HIV (PWH). In REPRIEVE, pitavastatin reduced MACE by 35% among PWH with low-to-moderate traditional risk. We evaluated the role of prior and current use of antiretroviral agents (ART) on the development of MACE.

**Methods:** The trial enrolled PWH age 40-75 years on ART for at least 180 days, with a CD4 count  $>100$  c/mm<sup>3</sup> and low-moderate CVD risk. ART history was collected at baseline, including duration of exposure to select agents. Analyses in the REPRIEVE ITT population were performed for first MACE (including MI, TIA/stroke, revascularization, CV death), with median follow-up of 5.6 years. Cox proportional hazards models stratified by treatment group were used to account for treatment group differences. Effects of ART exposure were estimated in models unadjusted and adjusted for entry risk factors.

**Results:** Among 7,769 participants, 31.1% were natal female and 65.2% non-White. Median age was 50 years, LDL 108 mg/dL, 10-year ASCVD risk score 4.5%, CD4 621 cell/



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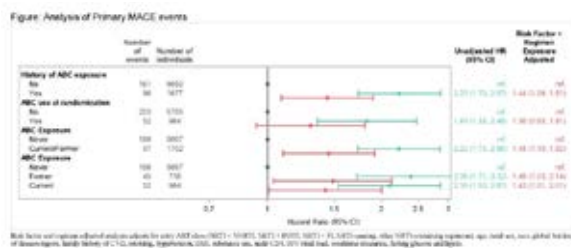


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mm<sup>3</sup> (447,826 c/mm<sup>3</sup>) with 88% having an HIV viral load <400 copies/mL. The median duration of ART use was 9.5 years (5.3,14.8 years) and varied by Country. Overall, 22% reported prior exposure to abacavir (ABC), 86% to Tenofovir (TDF), 49% to Thymidine analogs (AZT/d4T), and 47% to protease inhibitors (PIs). At study entry 13% were using ABC, 61% TDF, 10% AZT/d4T, and 26% PIs. Entry regimens included 2 NRTIs plus an NNRTI–47%, INSTI–25%, or a PI–19%. In adjusted analyses including the baseline regimen, both former and current use of ABC was associated with higher incidence of MACE (Figure). Former or current use of other ART agents was not associated with MACE (data not shown).



**Conclusions:** Former and current use of abacavir was associated with a higher incidence of subsequent major adverse cardiovascular events in the REPRIEVE trial.

## OAB36 Co-morbidities: Beyond the heart

### OAB3606LB

Non-inferior efficacy and less weight gain when switching to DTG/3TC than when switching to BIC/FTC/TAF in virologically suppressed people with HIV (PWH): the PASO-DOBLE (GeSIDA 11720) randomized clinical trial.

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**Background:** DTG/3TC and BIC/FTC/TAF are preferred regimens in major guidelines, but there are no fully powered trials comparing between them.

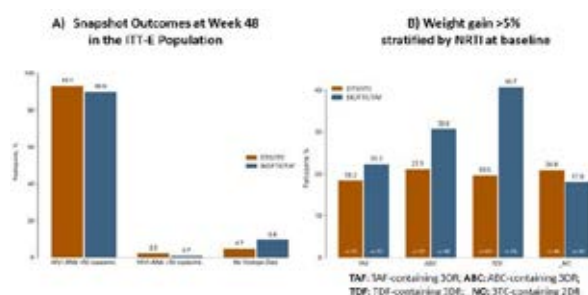
**Methods:** PASO-DOBLE (ClinicalTrials.gov NCT04884139) is a randomized, open-label trial conducted at 30 sites throughout Spain. Virologically suppressed PWH on reg-

imens containing  $\geq 1$  pill/day, boosters, or drugs with cumulative toxicity such as efavirenz or TDF were eligible. Participants were randomized (1:1) to switch stratifying by TAF in the regimen discontinued and sex. Primary end-point was the proportion of PWH with RNA  $\geq 50$  copies/mL at 48 weeks (FDA snapshot, 4% non-inferiority margin) in the exposed intention-to-treat population. Weight changes were also evaluated.

**Results:** Between 14-July-2021 and 24-March-2023, 553 PWH initiated DTG/3TC (n=277) or BIC/FTC/TAF (n=276), including 155 (28%) with TAF in the regimen discontinued and 147 (27%) women. At 48 weeks, DTG/3TC was non-inferior to BIC/FTC/TAF [risk difference between DTG/3TC (2.2%) minus BIC/FTC/TAF (0.7%) 1.4%, 95%CI -0.5 to 3.4] (Figure A). HIV RNA levels were low ( $\leq 282$  copies/mL) in those showing detectable viral load.

Mean adjusted weight increased significantly more with BIC/FTC/TAF (1.81kg, 95%CI 1.28-2.34) than with DTG/3TC (0.89kg, 95%CI 0.37-1.41) [difference 0.92kg, 95%CI 0.17-1.66]. The proportion of participants with weight gain  $>5\%$  at 48 weeks was 29.9% for BIC/FTC/TAF vs. 20% for DTG/3TC (adjusted OR 1.81, 95%CI 1.19-2.76).

While proportions of PWH experiencing  $>5\%$  weight gain with DTG/3TC were similar irrespective of the nucleos(t)ide reverse transcriptase inhibitor (NRTI) backbone discontinued, proportions of PWH experiencing  $>5\%$  weight gain with BIC/FTC/TAF were 50% or 100% higher than those with DTG/3TC when switching from abacavir or TDF (Figure B). Weight change in women (OR 1.131, 95% CI: 0.700-1.826) didn't differ from that in men. There were few discontinuations (DTG/3TC=1, 0.4%; BIC/FTC/TAF=2, 0.7%) due to adverse events.



**Conclusions:** Switching to DTG/3TC demonstrated non-inferior efficacy and resulted in less weight gain than switching to BIC/FTC/TAF at 48 weeks.

## OAB38 An INSTIgrated tale

### OAB3806LB

Dolutegravir with recycled nucleoside reverse transcriptase inhibitors maintains better viral suppression than protease inhibitor based antiretroviral therapy over 144 weeks: VISEND Trial

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**Background:** Dolutegravir (DTG) is recommended for both first and second line antiretroviral therapy (ART). Despite emerging evidence on positive clinical outcomes among individuals failing NNRTI-based ART and switched to DTG-based regimens with maintained NRTIs, there is paucity in data on longer-term outcomes. We hereby report the 144-week outcomes of the VISEND trial.

**Methods:** We conducted a 144 week, randomized, open-label, phase 3 non-inferiority trial in Zambia. We randomized adults with viral load (VL)  $< 1000$  copies/mL on tenofovir disoproxil fumarate (TDF), lamivudine (3TC) plus efavirenz (EFV) or nevirapine (NVP) to TDF,3TC,DTG (TLD) or tenofovir alafenamide fumarate (TAF), emtricitabine (FTC), DTG (TAFED) [Arm A]. Participants with VL  $< 1000$  copies/mL were randomized to TLD or TAFED or standard-of-care (SOC) second line comprising Lopinavir/ritonavir (LPV/r) or atazanavir/r (ATV/r), zidovudine (ZDV), 3TC [Arm B]. Primary end point was VL  $< 1,000$  copies /mL (viral suppression (VS)), assessed using the FDA snapshot algorithm (intent-to-treat (ITT) population). Noninferiority was tested with a margin of 10 percentage points.

**Results:** Of 1,201 participants, 99% in Arm A maintained viral suppression on both TLD and TAFED [difference, -0.0%, 95% CI -0.02- 0.02] at week 144. In Arm B, 98% TLD-treated adults achieved VS, compared to 96% for TAFED and 89% for 3TC/ZDV/PI/r. Noninferiority of switching to both DTG-based arms was achieved compared to the SOC (TLD versus ZDV/3TC/PI/r difference, 9.9% [5.9 - 13.9]; TAFED versus ZDV/3TC/PI/r difference, 8.8% [4.7 - 12.9]). The base-



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line prevalence of tenofovir and lamivudine/emtricitabine associated resistant mutations was 56% (204/363) and 75%, (273/363) respectively. In those randomised to TDF/3TC/DTG and TAF/FTC/DTG, 61% and 52% had no predicted tenofovir activity respectively; whereas 75% had no predicted lamivudine or emtricitabine activity in both groups. There was no major resistant mutations to DTG but 26 to bPI and 32 to NRTIs among those with virologic failure over the study period.

**Conclusions:** In the VISEND trial, HIV-positive adults with virologic failure to TDF/3TC/NNRTI, had favourable outcomes when switched to DTG with recycled NRTIs compared to those switched to SOC boosted-PI despite high baseline resistance to NRTIs.

No emergent INSTI mutations were reported at week 144. We recommend recycling of TDF(TAF)/3TC with DTG following failure.

## OAC10 Paving the way to safety: Harm reduction successes in challenging settings

### OAC1006LB

Explaining the transmission dynamics of mpox in Europe and the Americas between 2022-2024: findings from an online survey in 23 countries

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**Background:** After rapid epidemic growth between May-August 2022, new mpox diagnoses declined in Europe and the Americas, with low-level transmission continuing thereafter. Characterising the extent of behavioural adaptation, mpox vaccination, and mpox prevalence across these regions during the first year of the outbreak can support understanding transmission dynamics.

**Methods:** WHO conducted a retrospective online survey in 23 countries in Europe and the Americas between 19-31 May 2023. The survey was advertised via four geospatial dating applications used by gay, bisexual and other men who have sex with men, and trans and gender diverse people. We described and regionally compared the mpox prevalence, mpox vaccination rates (2 doses) and the extent and duration of behavioural adaptation. We estimated crude and adjusted prevalence ratios (PRs) with confidence intervals (CI) for behavioural outcomes using generalised linear models.

**Results:** Of 16,875 participants, 6.4% (1,086) reported having mpox during the outbreak. Vaccination with at least one vaccine dose was reported by 29.6% (4,987/16,875) of participants; 20.8% (3,502/16,875) reported two doses. Complete vaccination in Latin America (3.5%) and in Eastern Europe and Western Balkans (1.6%) was significantly lower than in Western Europe (27.7%) and North America (51.3%,  $p<0.001$ ). Adaptations to sexual behaviour were reported by 50.9% (8,583/16,875) and across all regions. Among those who made adaptations, 35.5% (3,045/8,583) said they continued adapting their sexual behaviour up to May 2023. In regression models, participants who reported concerns about mpox (58.6%) were more likely to adapt their behaviour (aPR95%CI: 2.43 [2.34-2.53]), whereas participants who reported vaccination (aPR95%CI: 0.25 [0.28-0.31] or having had mpox (aPR95%CI: 0.37 [0.30-0.44]) were less likely to continue adaptations. Participants in Latin America or North America were significantly more likely to adapt their sexual behaviour and to continue with adaptations compared to participants in Western Europe ( $p<0.001$ ).

**Conclusions:** Adaptations to sexual behaviour due to mpox were widespread and dynamic, and responded to evolving individual risk perceptions. Given stark vaccine inequity during the first year of the global response, but comparable reduction in transmission, we propose that the sudden decline in mpox transmission seen at the end of 2022 occurred as a combination of community-led behavioural adaptation and naturally-acquired immunity.

## OAC15 Meeting people where they are: Interventions to support testing

### OAC1506LB

Risk factor assessment for HIV, HBV, and HCV in migrants from Central and South America

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**Background:** The unprecedented increase of migratory flow in the Americas region, with individuals seeking to reach the United States of America via Mexico, represents a significant challenge for local health authorities. These key populations are exposed to numerous risks, such as sexual violence and drug use, which pose a risk of expo-

sure to HIV and viral Hepatitis. This study aims to assess the risk factors involved in the incidence of these infections among migrants.

**Methods:** Community-based screening programs were conducted in shelters, refugee centers, and migrant houses in the state of Nuevo Leon, Mexico. Between December 2023 and April 2024, adults from Central and South America, transiting through Nuevo Leon to the United States, were invited to participate. A sociodemographic questionnaire was administered, and screening was performed using rapid tests for HIV, hepatitis B and C viruses, and syphilis.

**Results:** A total of 117 migrants participated, with 59% identifying as males and a mean age of  $33 \pm 9$  years. Predominantly from Honduras (46%), Venezuela (13%), and Guatemala (11%), primary motivations for migration included fleeing violence (46%) and seeking employment (35%), with a mean transit duration of 9 months. Eighty-seven percent reported engaging in heterosexual intercourse, yet only 38% used contraceptive methods, with condoms being the most common (62%). Drug use was documented in 16% of participants, mainly marijuana (84%). Use of drugs during sexual intercourse was reported in 12%, with marijuana being the most common. Sale of sexual services occurred in 10%, with only 25% of these using condoms. Sexual abuse was reported by 12% of participants. Screening acceptance rates for HIV and syphilis tests were 86%, for Hepatitis B 93%, and for Hepatitis C 85%. Three participants had a positive rapid HIV test, confirmed with HIV viral load; one of them had a positive rapid syphilis test. All were referred for treatment initiation and follow-up.

**Conclusions:** These findings underscore the critical importance of tailored interventions for HIV prevention, treatment, and care within migrant populations. Highlighting the urgent need for comprehensive public health strategies addressing the intersecting vulnerabilities faced by migrants, including access to sexual health education and interventions for people who use drugs.

## OAC22 Progress towards safe motherhood: Preventing vertical transmission

### OAC2206LB

#### Early HIV infection diagnostic challenges in injectable long-acting cabotegravir implementation in routine public health PrEP service in Zambia

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**Background:** To further curb new HIV infections, injectable long-acting cabotegravir (CAB-LA) pre-exposure prophylaxis (PrEP) was introduced routinely in Zambia in February 2024, the second country after the USA to roll out CAB-LA PrEP outside research settings. It is critical to understand risks of resistance and optimal HIV testing strategies in such real-world settings.

We describe early experience and challenges in identifying acute HIV infection (AHI) in a low-resource implementation environment.

**Description:** Using clinical screening tools, at-risk priority and key populations are identified and screened for CAB-LA PrEP eligibility. Screening includes assessment for AHI, HIV testing using third-generation rapid diagnostic antibody test (RDT), and HIV nucleic acid amplification test (NAAT), though it has a two-week turn-around time. If HIV RDT and AHI screening is negative, CAB-LA initiation injection 1 is administered; injection 2 is given one month later after confirming continuation eligibility. NAAT is used to confirm eligibility upon receipt of results.

**Lessons learned:** From 9 February to 30 April 2024, we screened 927 individuals for substantial HIV acquisition risk. 853 screened RDT/AHI negative and were initiated on CAB-LA PrEP. Among them, 4/853 (0.5%) individuals (3 men,



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1 woman, ages 21-28) tested NAAT positive. Three of the four (75%) had received dose 1; one (25%), had received both dose 1 and 2 by the time NAAT results were received. HIV-1 RNA levels among the four NAAT+ persons were <30, <30, 141, and 533,000 copies/mL. Resistance testing on the HIV-1 RNA >1,000 copies/mL sample showed sensitivity to integrase strand transfer inhibitors. Furthermore, two discordant results (RDT negative and NAAT+) were recorded prior to CAB-LA initiation. There was better consistency in results with NAAT when a different RDT was used.

**Conclusions/Next steps:** Early experience in CAB-LA PrEP revealed challenges in identifying AHI in resource-limited settings using WHO-recommended RDTs for HIV screening. Two different serological assays showed better concordance to NAAT. Vigilant monitoring and stringent testing protocols are critical for accurate AHI identification and program optimization.

We recommend two different serology tests and/or virologic testing to detect AHI among persons initiating CAB-LA PrEP to prevent resistance. Point of care PCR platforms could reduce NAAT turnaround time and improve early AHI diagnosis.

## OAC29 Weather, wealth and war: Political, environmental and social determinants of HIV outcomes

### OAC2906LB

The impact of Russia's war in Ukraine on opioid agonist treatment (OAT) services, a primary HIV prevention strategy among people who inject drugs (PWID)

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**Background:** Russia's full-scale war in Ukraine since 24-Feb-2022 has greatly disrupted OAT services for PWIDs, especially in high HIV burden southeastern regions, leading to internal displacement. Our study seeks to assess how the war and internal relocation affect OAT retention, critical for HIV prevention among PWIDs.

**Methods:** We conducted a two-year comparative cohort survival analysis using Ukraine's national OAT registry from 252 clinics across 25 regions. The study compared local OAT patients in conflict-remote regions with con-

flict-affected regions and internally displaced patients. Regions were clustered into frontline, target, and remote based on conflict-related metrics: numbers of air raids, explosions, artillery attacks, and percentages of internally displaced population.

The primary outcome, treatment retention, was assessed considering time-dependent displacement status, medication type (methadone vs. buprenorphine), OAT dose (optimal (methadone:  $\geq 90$ mg; buprenorphine:  $\geq 16$ mg) vs. suboptimal), dispensation strategy (daily vs. THD: take-home dosing), age, sex, inject drug duration, HIV-status.

**Results:** The nationwide sample of PWID receiving OAT as of 23-Feb-2022 comprised 17,265 individuals, with 4,953 (28.7%) in frontline, 8,786 (50.9%) in target, and 3,526 (20.4%) in remote regions. Most were male (84.6%), averaging  $38.9 \pm 7.5$  years old. From 24-Feb-2022 through 01-Jan-2024, 519 (0.03%) individuals underwent internal relocation, and 5,040 (29.2%) experienced treatment dropout.

Compared to the local patient cohort in remote regions, patients local to target and frontline regions had elevated risk of treatment discontinuation (adjusted hazard ratios (aHR): 1.31, 95%CI: 1.27-1.35; aHR: 6.92, 95%CI: 6.87-6.97, respectively). Internally displaced patients in target, frontline, and remote regions faced significantly greater dropout risk than local patients in conflict-distant regions (aHR: 5.95, 95%CI: 5.80-6.03; aHR: 6.80, 95%CI: 6.73-6.87; aHR: 16.79, 95%CI: 16.61-16.95, respectively).

The dropout risk for internally displaced patients in remote areas mirrored that of patients in frontline regions. Predictors of higher treatment retention included optimal dosing (aHR: 0.79, 95%CI: 0.76-0.82), THD (aHR: 0.72, 95%CI: 0.68-0.76), and receiving methadone (aHR: 0.88, 95%CI: 0.84-0.92). Females and people with HIV had a heightened risk of treatment discontinuation (aHR: 1.17, 95%CI: 1.13-1.21; aHR: 1.07, 95%CI: 1.04-1.11).

**Conclusions:** Russia's full-scale war in Ukraine increased the risk of OAT discontinuation for patients in conflict-affected regions and all internally displaced patients, undermining HIV prevention efforts among PWIDs.

Further research on national OAT service preparedness for disasters is crucial for uninterrupted care for key populations.

# OAC33 The long and winding road: Trends in HIV diagnosis, treatment and mortality

## OAC3306LB

Tracking progress in HIV control among male prison inmates in North India: findings from HIV Sentinel Surveillance 2019–2023

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**Background:** India's National AIDS and STD Control Programme targets 80% reduction in new infections from 2010 to 2026. Further, 95% of people living with HIV (PLHIV) should know their status, and 95% of those who know their status should receive treatment. Prison inmates are at substantial risk of HIV infection. We therefore aimed to track progress in HIV control from 2019 to 2023 among prison inmates in North India.

**Methods:** We did a secondary analysis of data for male prison inmates in seven Central Prisons across six States / Union Territories in North India. Data were collected during the 2019, 2021 and 2023 rounds of HIV Sentinel Surveillance. We examined the trends across surveillance rounds in HIV seroprevalence, knowledge of HIV status among PLHIV, and uptake of antiretroviral therapy by PLHIV who knew their status, using mixed-effects logistic models accounting for prison-level clustering. Additionally, we fitted models adjusting for socio-demographics, imprisonment characteristics, knowledge of HIV, behavioural risks and HIV testing.

**Results:** We included 8,400 prison inmates, i.e. 2,800 in each round. From 2019 to 2023, HIV seroprevalence increased from 3.8% to 5.7%. There were declines in awareness of HIV status among PLHIV (65.4% in 2019 to 28.1% in 2023) and uptake of antiretroviral therapy among PLHIV who knew their status (94.3% in 2019 to 84.4% in 2023). The trend in HIV seroprevalence was partly explained by injecting drug use, but persisted despite adjustment. The trend in knowledge of HIV status was explained by HIV testing and knowledge of HIV.

**Conclusions:** Injecting drug use is an important contrib-

utor to HIV infection among prison inmates in North India. Further, HIV testing and treatment coverage remain low in this population. Innovations in programme implementation are needed to enhance behaviour change, HIV testing and antiretroviral therapy coverage in prison settings.

## OAD07 Emerging patterns: Exploring trends and shifts in drug use

### OAD0706LB

"The simplest way to go:" A mixed methods analysis of why women who inject drugs selected long-acting injectable cabotegravir instead of daily oral PrEP

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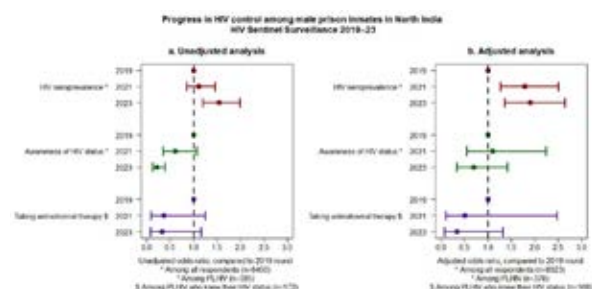
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**Background:** Women who inject drugs (WWID) have disproportionately high rates of HIV, and thus would benefit from HIV pre-exposure prophylaxis (PrEP). WWID who struggle with daily adherence may prefer long-acting injectable cabotegravir (CAB-LA) however, few studies have assessed product preference, and none have described the process of product selection among WWID who were offered both modalities.

**Methods:** Quantitative data are from 82 English-speaking, cisgender WWID ≥18 years, who received a PrEP prescription (oral PrEP or CAB-LA) from a provider integrated within a syringe services program (SSP) in Philadelphia (USA). Qualitative data are from a subset who completed a semi-structured interview (n=18 who chose CAB-LA, n=7 who chose oral PrEP). All participants are part of an ongoing RCT designed to reduce HIV acquisition risk. We used thematic analysis to explore the process of product selection.

**Results:** Most WWID selected CAB-LA (75/82). Higher frequency of injection drug use and higher average number of sexual partners were each associated with selecting CAB-LA (93% daily vs 70% less than daily,  $p=0.056$ ; 1 vs 0,  $p<0.01$ , respectively). No matter which product WWID se-



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lected, the decision-making process was similar. Product selection, as described in participant interviews, was informed by their perceived risk for HIV exposure, if/how adherence might be impacted by their individual context (e.g., addiction severity), the brief individual counseling session they received prior to making their selection, and prior experience with oral and/or injectable medications. For WWID selecting CAB-LA, reducing day-to-day action to receive long-term prevention benefits was important, as few believed they would adhere daily.

Those selecting oral PrEP expressed more medical mistrust and dislike of needles and injectable medications. All women felt supported in their product selection by their PrEP providers.

**Conclusions:** Nearly all WWID in our study selected CAB-LA, suggesting a strong preference for this modality in this group. Women, including those selecting oral PrEP, had strong rationales for their choice. Offering women a wider array of products to choose from will likely increase uptake, as it has for other sexual health tools, like contraceptives.

## OAD16 Catalysts of change: Key population-led innovations

### OAD1606LB

Key strategic actions to improve uptake of and create demand for pre-exposure prophylaxis (PrEP) among key populations (KPs): qualitative evidence from Cambodia

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**Background:** The majority of new HIV infections were among KPs but the uptake and retention rates of PrEP among MSM, TGW and female entertainment workers (FEW) in Cambodia were limited (about half of those previously enrolled in PrEP program discontinued PrEP). Additional evidence and support are required to better understand their suboptimal demand, uptake and retention of PrEP in order to come up with effective improvement strategies.

**Methods:** A qualitative study was conducted among policy-level stakeholders (n=9), potential PrEP clients (n=70) and PrEP providers (n=26) using key informant interview for the first group and focus group discussions as well as in-depth interviews for the last two. The data collection

took place in six selected PrEP sites across three provinces and Phnom Penh capital. The analysis was based on Braun & Clarke's thematic analysis methodology highlighting contextual, political, sociodemographic and behavioral factors that impact PrEP demand and use.

**Results:** Side effects, stigma/discrimination, misinformation, ineffective risk communication strategies and low HIV risk perception were commonly reported barriers to PrEP demand and uptake. Raising PrEP credibility and accessibility, encouraging involvements from KP community, and other public and private sectors and improving messages surrounding PrEP and PrEP users, should be considered to improve this suboptimal demand and uptake.

Socio-demographics	MSM (n=25)	TGW (n=21)	FEW (n=24)
Age (median, IQR)	(26, 9)	(24, 8)	(24, 11)
Education			
None to some or completed primary	1	7	16
Some secondary to ≥ BA (Bachelor) degrees	24	14	8
PrEP use			
Current users (on-demand or daily)	13	10	11
Non-users (including never users)	12	11	13

FEW, biological females, exchanged vaginal/oral/anal sex for money, goods, or gifts in past 12 months

IQR, Interquartile range

PrEP non-users, those who never use PrEP or have stopped using PrEP ≥3 months

Commonly reported challenges/barriers	Commonly suggested strategies for improvement
<p><b>Pre-exposure</b></p> <ul style="list-style-type: none"> <li>• Lack of information on PrEP (what it is, how it works, where to get it, how to use it, etc.)</li> <li>• Lack of knowledge on HIV risk (what it is, how it is spread, etc.)</li> <li>• Lack of motivation to get PrEP (e.g., "I don't want to take it every day")</li> <li>• Lack of knowledge on where to get PrEP (e.g., "I don't know where to go")</li> <li>• Lack of knowledge on how to use PrEP (e.g., "I don't know how to take it")</li> </ul>	<ul style="list-style-type: none"> <li>• Provide regular technical and non-technical training to PrEP providers and community-based organizations (CBOs)</li> <li>• Make sure the information on PrEP is communicated in clear, simple, and easy-to-understand language</li> <li>• Make sure that PrEP is also communicated in a way that is acceptable to the target population</li> <li>• Provide information on HIV risk and how to reduce it</li> <li>• Provide information on where to get PrEP</li> <li>• Provide information on how to use PrEP</li> </ul>
<p><b>Prior prescription</b></p> <ul style="list-style-type: none"> <li>• Lack of information on PrEP (what it is, how it works, where to get it, how to use it, etc.)</li> <li>• Lack of knowledge on HIV risk (what it is, how it is spread, etc.)</li> <li>• Lack of motivation to get PrEP (e.g., "I don't want to take it every day")</li> <li>• Lack of knowledge on where to get PrEP (e.g., "I don't know where to go")</li> <li>• Lack of knowledge on how to use PrEP (e.g., "I don't know how to take it")</li> </ul>	<ul style="list-style-type: none"> <li>• Provide regular technical and non-technical training to PrEP providers and community-based organizations (CBOs)</li> <li>• Make sure the information on PrEP is communicated in clear, simple, and easy-to-understand language</li> <li>• Make sure that PrEP is also communicated in a way that is acceptable to the target population</li> <li>• Provide information on HIV risk and how to reduce it</li> <li>• Provide information on where to get PrEP</li> <li>• Provide information on how to use PrEP</li> </ul>
<p><b>PrEP providers</b></p> <ul style="list-style-type: none"> <li>• Lack of information on PrEP (what it is, how it works, where to get it, how to use it, etc.)</li> <li>• Lack of knowledge on HIV risk (what it is, how it is spread, etc.)</li> <li>• Lack of motivation to get PrEP (e.g., "I don't want to take it every day")</li> <li>• Lack of knowledge on where to get PrEP (e.g., "I don't know where to go")</li> <li>• Lack of knowledge on how to use PrEP (e.g., "I don't know how to take it")</li> </ul>	<ul style="list-style-type: none"> <li>• Provide regular technical and non-technical training to PrEP providers and community-based organizations (CBOs)</li> <li>• Make sure the information on PrEP is communicated in clear, simple, and easy-to-understand language</li> <li>• Make sure that PrEP is also communicated in a way that is acceptable to the target population</li> <li>• Provide information on HIV risk and how to reduce it</li> <li>• Provide information on where to get PrEP</li> <li>• Provide information on how to use PrEP</li> </ul>
<p><b>PrEP users</b></p> <ul style="list-style-type: none"> <li>• Lack of information on PrEP (what it is, how it works, where to get it, how to use it, etc.)</li> <li>• Lack of knowledge on HIV risk (what it is, how it is spread, etc.)</li> <li>• Lack of motivation to get PrEP (e.g., "I don't want to take it every day")</li> <li>• Lack of knowledge on where to get PrEP (e.g., "I don't know where to go")</li> <li>• Lack of knowledge on how to use PrEP (e.g., "I don't know how to take it")</li> </ul>	<ul style="list-style-type: none"> <li>• Provide regular technical and non-technical training to PrEP providers and community-based organizations (CBOs)</li> <li>• Make sure the information on PrEP is communicated in clear, simple, and easy-to-understand language</li> <li>• Make sure that PrEP is also communicated in a way that is acceptable to the target population</li> <li>• Provide information on HIV risk and how to reduce it</li> <li>• Provide information on where to get PrEP</li> <li>• Provide information on how to use PrEP</li> </ul>

**Conclusions:** KP-tailored messages to promote PrEP might be more cost-efficient but could risk inducing stigma and discrimination against this population. Prevention efforts related to PrEP should focus more on effectively communicating HIV risks with correct (factual) information and simple wording rather than on KP populations due to their explicitly stated sexual-orientation-and-gender-identity-related HIV risks.



## OAD32 Unveiling layers: Exploring intersectionality and addressing HIV stigma and discrimination

### OAD3206LB

Unveiling the hidden truth: HIV-related stigma and discrimination among European healthcare workers

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**Background:** HIV-related stigma in healthcare settings is recognised as a barrier to achieving positive health and well-being and is linked to negative healthcare outcomes. Data on HIV stigma in the healthcare setting has been lacking, and as a result the European Centre for Disease Prevention and Control and the European AIDS Clinical Society partnered to conduct the first ever European-wide HIV stigma survey.

**Methods:** A survey, translated into 38 languages, was developed and conducted from September 15 to December 5, 2023, targeting clinical and non-clinical professionals in healthcare settings. A non-probability sample was recruited via a multi-channel campaign, leveraging national healthcare professional networks and social media. The survey measured respondents' HIV-related knowledge and training, personal attitudes and behaviours towards people living with HIV (PLHIV).

**Results:** In total, 18,430 healthcare workers from 54 countries responded to the survey. Most respondents were female (74%) and occupied a variety of healthcare roles, although doctors (44%) and nurses (22%) were the most common. Knowledge about HIV on the concept of 'undetectable equals untransmittable' (U=U), post-exposure prophylaxis (PEP), and pre-exposure prophylaxis (PrEP) varied across types of professional roles and health facilities, with many (69%) not agreeing with correct statements of HIV transmission and prevention.

More than half of respondents would be worried when providing care to PLHIV, including drawing blood (57%) or dressing wounds (53%). Eight percent reported they would avoid physical contact and a quarter (26%) that they would wear double gloves when providing care to PLHIV. Twelve percent of healthcare workers preferred not

to provide care to people who inject drugs, while 6% preferred not to provide care to men who have sex with men, sex workers, and transgender persons. Twenty-two percent reported having witnessed unwillingness to provide care, 19% witnessed disclosure of HIV status without consent, 18% poorer quality of care, and 30% discriminatory remarks or talking badly about PLHIV.

**Conclusions:** This study identifies an urgent need for robust, multifaceted interventions, encompassing education and facility-levels to eliminate stigma, improve HIV knowledge among healthcare workers, and ensure equitable, non-stigmatizing care for all PLHIV, ultimately contributing to the global goal of ending the AIDS epidemic by 2030.

## OAD37 Exploring the kaleidoscope of experiences among people living with HIV

### OAD3706LB

"It's going to be hell": Impact of the Ghanaian anti-LGBT bill on the lives and health of sexual minority men and trans and gender diverse people living with HIV

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**Background:** Criminalization of LGBTQ+ Ghanaians poses a threat to the wellbeing of sexual minority men (SMM) and trans and gender diverse (TGD) people living with HIV (PLHIV), populations whose HIV prevalence are 18.1% and 46.1% respectively. In 2021, an anti-LGBT bill was introduced in Ghana's Parliament and subsequently passed in 2024.

To understand the effects of criminalization on Ghana's key populations, we examined the impact of the bill on the lives and HIV treatment and care of SMM and TGD PLHIV.

**Methods:** Between April 2023-January 2024, we conducted in-depth interviews (N=46) and focus group discussions with a subsample of 12 HIV-positive SMM and TGD people in Accra, Ghana. Participants were purposefully sampled through HIV clinics/organizations. Eligibility criteria were: assigned male at birth, has sex with men, HIV-positive, and ≥18 years. Questions explored the impact of crimi-



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nalization and other stressors on mental health and HIV treatment and care. Interview transcripts were analyzed using thematic analysis.

**Results:** Participant mean age was 28.5 years. Most participants shared that the bill negatively impacted their lives and the LGBTQ+ community. Reported impacts included fear of going outside, dating, or socializing with other LGBTQ+ people and increased personal and community experiences of stigma/discrimination and verbal/physical violence.

Participants anticipated experiencing more stressors, losing their jobs, being outed, or facing arrest if the bill becomes law; some planned to leave Ghana.

Nearly half indicated that the bill had impacted or will impact their HIV treatment and care and that of other SMM and TGD PLHIV, including avoiding clinics in fear of being stigmatized/reported to police/outed as gay by providers; limited/no access to treatment and care; worsening mental distress from living with HIV; and fear of death. Some stopped going for HIV care or stopped taking ARVs; many shared experiencing psychological distresses such as fear, stress, worry, sadness, and suicide ideation.

**Conclusions:** Ghana's anti-LGBT bill increased violence/other stressors facing SMM and TGD PLHIV and negatively impacted HIV treatment and care. HIV stakeholders must exert pressure against the signage of the bill into law and support local groups to mitigate its effects, including provision of mental health support for SMM and TGD PLHIV.

## OAE04 Advanced HIV disease: Hiding in plain sight

### OAE0406LB

Performance characteristics of HIV RNA screening with long-acting injectable cabotegravir (CAB-LA) pre-exposure prophylaxis (PrEP) in the multicenter global HIV Prevention Trials Network 083 (HPTN 083) Study

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**Background:** Long-acting cabotegravir (CAB-LA) is highly effective for HIV pre-exposure prophylaxis (PrEP) but complicates detection of HIV infection. HIV RNA screening is the most sensitive method for detecting infections in persons using CAB-LA PrEP, usually detecting infections before integrase strand transfer inhibitor resistance emerges. We evaluated the performance HIV RNA screening in the HPTN 083 Open Label Extension study (OLE) among MSM/TGW.

**Methods:** In the OLE, sites performed rapid testing, antigen/antibody (Ag/Ab) testing, and HIV RNA testing at every study visit. HIV status was determined based on-site testing and retrospective testing at a central laboratory. We calculated the positive predictive value (PPV) and false positive rate (FPR) of isolated positive RNA results and the sensitivity of RNA screening with other tests.

**Results:** This analysis included 27,335 visits conducted for 2,620 participants through 11/30/23. Twenty-nine participants acquired HIV during the OLE. In 5/29 (17.2%), HIV in-



fection was first identified by an isolated positive RNA test result (true positives, Table); in 2 of these cases, HIV infection was first identified at OLE enrollment. Twenty-three additional participants had an isolated positive RNA test result (22 HIV negative [false positives], 1 HIV status indeterminant). The PPV for detecting infection by RNA screening for participants with vs. without CAB-LA in the past 6 months was 9.1% (95% CI 1.6, 30.6) vs. 60% (95% CI 17, 92.7), respectively. The FPR and sensitivity for RNA screening for participants with vs. without CAB-LA in the past 6 months were: FPR: 0.08 (95% CI 0.05, 0.13) vs. 0.06 (95% CI 0.01, 0.24); sensitivity: 87.5% (95% CI 46.7, 99.3) vs. 100% (95% CI 80, 100), respectively.

Case number	Original randomized study arm	Case type	Days between the last CAB injection and the 1st HIV-positive visit	Site HIV RNA result at the 1st HIV-positive visit (copies/mL)
1	Cabotegravir	Infection detected at OLE entry, >6 months after the last CAB injection	425	1,597
2	Cabotegravir	Infection detected at OLE entry, >6 months after the last CAB injection	486	493
3	TDF-FTC	Infection during the oral CAB phase	No CAB injections	1,830
4	TDF-FTC	Infection with delayed CAB injection	38	124
5	TDF-FTC	Infection with delayed CAB injection	57	4,120

Table. HPTN 083 participants who had a positive HIV RNA screening test with non-reactive HIV rapid and Ag/Ab tests at the first HIV-positive visit over 3,893 person-years of follow-up.

**Conclusions:** HIV RNA screening performed poorly for detecting HIV infection during CAB-LA PrEP injections; performance was better immediately prior to CAB-LA initiation. Although infrequent, most isolated positive RNA test results while on CAB-LA were false-positive results. Guidelines for HIV testing algorithms designed to screen for long-acting PrEP failure should consider these performance characteristics.

## OAE20 A tale of two diseases: Novel strategies towards elimination of tuberculosis and viral hepatitis

### OAE2006LB

Integrating HIV, tuberculosis and addiction treatment services in primary care clinics in Ukraine: two-year outcomes from a randomized controlled trial

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**Background:** Ukraine's HIV epidemic is concentrated among people who inject drugs (PWID). As Ukraine prioritized primary care (PCC) over specialty addiction centers (SAC), we compared quality health indicators (QHIs) in individuals receiving opioid agonist therapies (OAT) in SAC (standard-of-care) and PCCs.

**Methods:** Starting in 2018, we conducted a multi-phase, Type-2 hybrid implementation trial comparing QHI outcomes (percentage) in participants prescribed OAT in SACs and PCCs in 13 cities. PCC:SAC allocation was 2:1 and PCC-allocated participants were stratified in clinics receiving pay-for-performance (P4P) or not. QHIs were measured every 6 months over 24 months and included standardized measures for specialty (HIV, TB, OAT) and primary care (i.e., recommended screening for prostate/cervical cancers, etc.) outcomes.

To increase confidence in providing specialty services in PCCs, clinicians participated in weekly tele-education training sessions. QHI outcomes were compared between PCC and SAC using likelihood-based mixed models with missing at random assumptions.

**Results:** Among 1,459 participants enrolled, there were no differences in sex (male=83%), age (mean=39 years), HIV (41.9%) and HCV (57.0%) prevalence in those in SAC (N=509) or PCC (N=950) participants.

At baseline, composite mean QHIs did not differ between arms, however, mean QHIs were consistently higher at PCC vs SAC at 6 (5.7; 95%CI 1.5-9.9;  $p=0.010$ ), 12 (9.1; 95%CI 4.8-13.4;  $p<0.001$ ), 18 (10.2; 95%CI 5.9-14.5;  $p<0.001$ ), and 24 (9.0; 95%CI 4.6-13.3;  $p<0.001$ ) months.

The composite QHIs were further divided into primary and specialty care outcomes, with primary care QHIs significantly higher at all follow-up timepoints and specialty QHI scores higher later at 18 and 24 months. Composite and specialty QHIs were significantly higher for P4P versus non-P4P PCCs only at 24 months.



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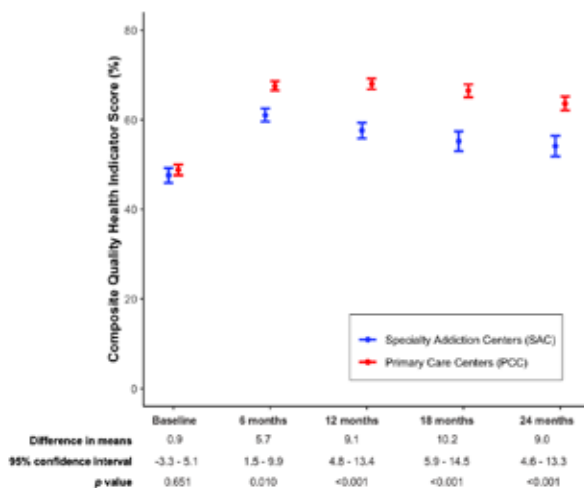
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**Conclusions:** Integrating services in PCCs resulted in better comprehensive outcomes relative to SACs for PWID confirming the need to integrate care for PWID with or at high risk for HIV and TB.

## OAE23 Realizing nothing about us without us: Communities in the lead, ensuring accountability and quality

### OAE2306LB

Differentiated service delivery of PrEP with key population- led organizations in Myanmar

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**Background:** In Myanmar, HIV prevalence is significantly high among key populations; 34.9% in PWIDs, 8.8% in MSMs, and 8.3% in FSWs (UNAIDS, 2021) where prevalence among the general population is less than 1%. Pre-exposure prophylaxis is a proven effective combination prevention globally and is effectively introduced in Myanmar in 2020. Since the reception, HIV/TB Agency, Information, and Services (AIS) Activity, through its two implementing partners, were the first PrEP implementers in Myanmar. In 2022, AIS expanded PrEP with KP-led CSOs to improve PrEP availability and strengthen the role of KP-led organizations in HIV service provision.

**Description:** In 2022, AIS collaborated with three KP-led CSOs and set-up PrEP distribution points at six KP-run community outlets, where a medical team from AIS IPs conducted regular mobile visits to the sites. The CSO partners generate the demand, bring clients to the facilities, ensure enrollment in PrEP and other services. AIS IPs

provided training to the CSO staff to improve their PrEP knowledge and demand generation capacities to reach the hard-to-reach KP. The CSOs partners also take the role in PrEP counseling and baseline investigations for PrEP. After initiating, they also follow-up the clients for adherence and PrEP refill. In mid-2023, AIS expanded collaboration with one more CSO for PrEP provision to FSW.

**Lessons learned:** From Feb 2022 to Mar 2024, 1600 clients have been initiated for PrEP through 7 community outlets in Yangon; 1352 MSM, 123 TG, and 125 FSW. This represents around 30% of overall PrEP enrollment of AIS projects. Despite the political instability, KP-led CSOs improved client recruitment and PrEP service provision through community outlets.

**Conclusions/Next steps:** KP-led CSO involvement in PrEP service provision improved KP enrollment in PrEP, especially the hidden population. KP-friendly community outlets provide more options and improve KP access to PrEP. This model improves the capacity of KP CSOs and promotes their role in service provision. Further institutionalization and expansion of this model will improve the PrEP coverage among KP in Myanmar.

## OAE25 Integrating social enterprise for sustainability of key population programmes

### OAE2506LB

Incremental uptake of HIV and sexually transmitted infections testing, treatment, and prevention services by integrating gender-affirming care to sexual health service delivery model: The Tangerine Clinic

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**Background:** The Tangerine Clinic in Bangkok was opened in 2015 to offer a trans-led health service which integrates gender affirming care with sexual health service. We examined the effectiveness of the Tangerine Clinic model in increasing the utilization of HIV and sexually transmitted infection (STI) testing, treatment, and prevention among transgender clients of the Tangerine Clinic.

**Methods:** The Tangerine Clinic performance outputs in 2021, including number of clients reached, recruited, tested and treated for HIV, syphilis, gonorrhea/chlamydia, post-exposure prophylaxis (PEP), and pre-exposure pro-



phylaxis (PrEP), were used for the analysis. We explored the ratio of provider-initiated HIV testing (conducted when offered as part of gender affirming care) to self-initiated HIV testing. Then we calculated the hypothetical outputs of four service delivery models: a) solely HIV service, b) integrated hormone and HIV service, c) HIV/STI service, and d) integrated hormone and HIV/STI service.

**Results:** The ratio of provider-initiated:self-initiated HIV testing was 0.79:0.21. Integrating gender-affirming care to HIV service resulted in additional 1,369 HIV testing, 24 clients with HIV diagnoses, 20 starting HIV treatment, 51 starting PEP, and 329 starting PrEP. If gender-affirming care was integrated into HIV/STI service, 1,594 additional cases would be tested for syphilis, 67 newly diagnosed, and 62 treated. For gonorrhea and chlamydia, 332 additional cases would be tested, 74 newly diagnosed, and 74 treated. When only STI was integrated to HIV service without gender-affirming care, only 339 syphilis testing were conducted, 14 diagnosed, and 13 treated. Only 71 gonorrhea/chlamydia testing were made, 16 diagnosed, and 16 treated.

**Conclusions:** Integrating gender-affirming care to sexual health services at the Tangerine Clinic led to an increase uptake of HIV and STI testing and treatment services. PrEP and PEP services can also be scaled up among transgender people through this integrated gender-affirming and sexual health service model.

## OAE30 The new vital sign: Evidence for action to improve mental health access for diverse populations

### OAE3006LB

Moral injury or burnout? The personal impact on health care workers delivering HIV care and treatment in an under-capacitated health system in Mozambique

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**Background:** People living with HIV enrolled in antiretroviral treatment in Mozambique report being treated with disrespect by healthcare workers (HCW). We have hypothesized that HCWs' negative behavior towards patients is likely a reflection of burnout, compassion fatigue, and moral injury associated with delivering treatment in resource-limited settings. A pilot intervention addressing resilience and burnout among health providers to

improve provider mental health/wellbeing and clients' health-related outcomes began in January 2024 in Zambezia Province, Mozambique.

**Methods:** Four health facilities were randomized to one of four conditions: an anti-stigma intervention, a resilience intervention, a combination anti-stigma/resilience intervention, or control. In January and February 2024, we conducted 100 surveys with HCW to measure baseline resilience (decompression and activation factors from the Early Warning Resilience Survey), burnout (Copenhagen Burnout Inventory), and moral injury (MISS-HF). Data were collected into a secure REDCap database via tablets. Descriptive analysis was performed.

**Results:** Participants were mostly female (63%), married (66%), and median age was 33 years. Forty-four percent of participants had clinical degrees (e.g., nurses, physicians), 29% were health counselors, and the remainder were in non-clinical roles. Participants had worked a median of 6.5 years providing health care services. Participants scored very high on the resilience measure (median score 32/40). Few participants reported burnout (1 person scoring above 50, indicating moderate burnout). In contrast, moral injury was identified among 36% of participants (moral injury is identified with a score of 36 or higher). Among the most reported moral injury items, 29% felt guilty they could not prevent someone from dying, 28% acted in a way that violated their own morals, and 21% felt betrayed by other health care professionals. Despite these concerns, only 15% reported that the feelings have caused them significant distress or have impaired their ability to function in relationships, work or in other areas of life that are important to them.

**Conclusions:** With a third of health care workers screening positive for moral injury, delivery of quality HIV services is potentially put at risk. Specific psychosocial support to providers targeted at improving their well-being could have a positive impact on care delivery.



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## OAE39 New strategies for optimizing person-centred care

### OAE3906LB

Game-changing Injectable PrEP: how layering the new HIV prevention method onto existing person-centered service delivery is supporting client continuation in Zambia

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**Background:** In February 2024, Zambia introduced CAB-LA, with the USAID DISCOVER-Health project implementing in six sites in two districts. CAB-LA has expanded HIV prevention choices for high-risk individuals, particularly for those who struggle with oral PrEP continuation. Challenges for some include pill burden, lack of privacy and stigma associated with the daily pill.

**Description:** CAB-LA introduction was layered onto existing oral PrEP service provision, at high performing sites with high PrEP initiation. Best practices from oral PrEP provision were used to address possible adherence issues, including training healthcare workers in comprehensive counseling, and utilizing community health workers as PrEP mentors to generate demand, and provide in-person psychosocial counseling. To help CAB-LA clients adhere to appointments, they are provided with appointment cards with the next injection date clearly indicated, coupled with automated reminders and telephone follow-ups.

**Lessons learned:** From February 9 - March 31, 2024, USAID DISCOVER-Health initiated 641 clients on CAB-LA. 208 (32%) were adolescent girls and young women (AGYW), 215 (33%) were adolescent boys and young men (ABYM), 170 (27%) were high-risk individuals >25 years, 27 (4%) were female sex workers (FSW) and 10 (2%) were men who have sex with men (MSM). As of March 31, 446 clients were due for their one-month visit (initiation injection two), with 335 receiving the second injection, representing a one-month continuation rate of 75.1%. When broken down by population type, one-month continuation was 70%, 82%, 77% and 33% for AGYW, ABYM, FSW and MSM respectively. In the period under review, 631 clients were initiated on oral PrEP at the same sites. 463 clients were due for a one-month visit, and 345 (74.5%) returned at one-month.

**Conclusions/Next steps:** Early implementation of CAB-LA demonstrates minimal difference in continuation between oral PrEP (74.5%) and CAB-LA (75.1%) at sites with established peer support and strong oral PrEP performance. This demonstrates the timely gains in layering a new HIV prevention option onto a strong existing service

delivery platform, with established client trust and skilled staff. Longitudinal tracking of this initial cohort of CAB-LA clients will be critical to determining CAB-LA continuation over several months and its possible impact on reducing HIV transmission.

## OAF03 The law, human rights and access to medicines

### OAF0306LB

Are countries allowing communities to lead? The global landscape of national civil society laws and their association with HIV 95-95-95 indicators

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**Background:** Civil society organizations (CSOs) are essential for the HIV/AIDS response. CSOs mobilize communities, engage with marginalized and key populations, and participate in advocacy efforts to address AIDS-related stigma and discrimination, and in service delivery by ensuring access to treatment services and treatment adherence support. National laws dictate whether CSOs can register and operate freely and whether CSOs can receive government funds to provide services and are hypothesized to matter in the AIDS response. The actual effect of these laws, however, has not been shown or measured. This study provides an overview of global adoption of civil society related laws and tests their association with HIV 95-95-95 targets.

**Methods:** Text of laws and legal information was collected by the HIV Policy Lab through in-depth legal and policy review for 194 countries from 2017-2023. Laws were coded by legal experts to measure two indicators: i) presence of social contracting policies for financing CSOs and ii) capability of CSOs to register and operate freely under national law. Countries were coded as 'Adopted' (both indicators adopted), 'Partially Adopted' (one adopted) and 'Not Adopted' (neither adopted). Using a cross-sectional dataset, fractional logistic regression was used to determine associations between the adoption of CSO laws and HIV 95-95-95 indicators.

**Results:** The number of countries that adopted and partially adopted Civil Society policies has significantly increased between 2017 (n=85, 70.8%) and 2023 (n=90, 84.1%) ( $\chi^2(1, N=227)=4.9, p<0.05$ ). Results from fractional logistic regression show that the odds of PLHIV knowing their HIV status increases by a factor of almost 2 in countries which



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have adopted civil society freedom policies compared to countries without civil society freedom policies and legislation [OR:1.899, 95%CI:1.42-2.53,  $p<0.0001$ ].

**Conclusions:** Legislation and freedom policies for civil society impact national ability to reach AIDS targets. The adoption of national laws supporting both CSO operational freedom and social contracting should be a priority for the global AIDS response. Tracking the national policy environments for CSOs is an important step to ensuring that countries adopt policies that reduce the burden of HIV/AIDS, both nationally and globally.

## OAF11 The HIV response in the context of political instability and emergencies

### OAF1106LB

Community-level HIV stigma and discrimination's impact on HIV testing, treatment uptake, and viral load suppression in 33 African countries: a pooled analysis of 76 nationally representative surveys (2000-2022)

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**Background:** Stigma and discrimination may hinder reaching the UNAIDS 95-95-95 targets for HIV diagnosis, treatment, and viral load suppression (VLS), particularly in high-burden African countries. Despite global goals of "zero discrimination", comprehensive, comparable, cross-country analyses that strengthen the evidence-base linking stigma to HIV outcomes are lacking.

**Methods:** We pooled individual-level data from 76 nationally representative surveys with information on HIV stigma, past-year HIV testing (self-reported), ART uptake and VLS (both biomarker-based). We included Demographic and Health Surveys, Population-based HIV Impact Assessment, and country-specific surveys. We analyzed three stigma measures: 1) discriminatory attitudes towards people living with HIV (PLHIV), 2) shame of associating with PLHIV, and 3) perceived HIV stigma.

We used generalized estimating equations with robust standard errors to estimate adjusted prevalence ratios (aPR) for each stigma measure's association with HIV outcomes. Individual-level stigma was averaged at a community-level (survey cluster). Models were adjusted for sex, age group, rural/urban residence, marital status, education, regional HIV prevalence (HIV testing analysis), country and year. We present aPRs for a 50% increase in community stigma prevalence.

**Results:** Data from 842,169 respondents (70,109 PLHIV) across 33 countries were included. Median discriminatory attitudes, shame of associating with PLHIV and perceived stigma were 36% (IQR:19-64%), 18% (IQR:0-33%) and 79% (IQR:64-92%) respectively. All stigma measures were associated with lower past-year HIV testing (Figure). As community-level discriminatory attitudes increased by 50%, PLHIV were 17% (95%CI:0.78-0.87) less likely to be on ART and had 15% lower VLS (95%CI:0.8-0.9). In communities with greater HIV shame, PLHIV had lower ART uptake (aPR=0.88; 95%CI:0.81-0.95) and VLS (aPR=0.89; 95%CI:0.81-0.98), with similar results for perceived HIV stigma.

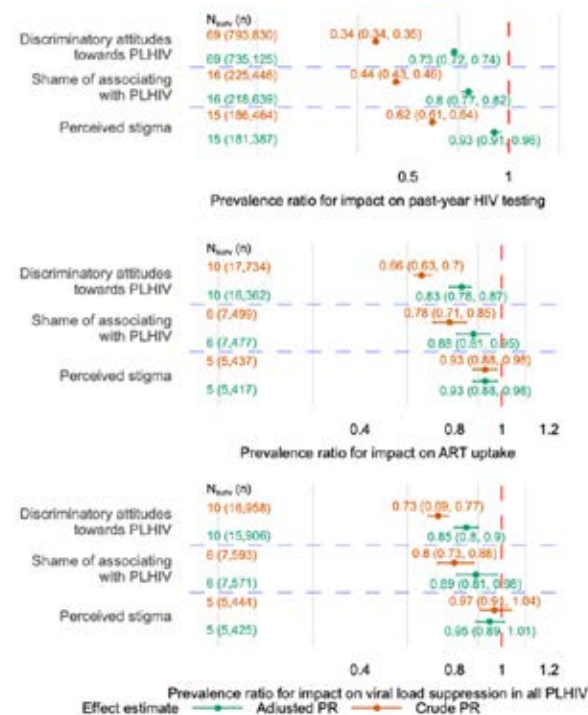


Figure. Crude and adjusted prevalence ratios for the impact of stigma on HIV outcomes. PR = prevalence ratio; N<sub>surv</sub> = number of surveys; n = sample size.

**Conclusions:** In one of the largest studies of this type, stigma was linked with reduced engagement at every stage of HIV care. Addressing stigma and discrimination could strengthen the HIV response and improve treatment outcomes among PLHIV.



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## OAF27 Criminalized populations addressing human rights barriers: Pathways to progress

### OAF2706LB

Sustaining KP service delivery in harsh legal push-back environments among LGBTQ populations in Uganda amidst the 2023 anti-homosexuality act (AHA)

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**Background:** In 2023, the Ugandan Parliament passed a bill to criminalise homosexuality and proposed harsh penalties to all those that may be convicted of the offence of homosexuality and those abating homosexuality. The social and legal ramifications pushed LGBTQ communities underground, limiting access to HIV prevention services.

Although Uganda has made tremendous progress in reducing the prevalence of HIV and AIDS among adults from 18% in 1992 to the current 5.2% (UPHIA 2020), the Anti-Homosexuality Act (AHA) threatens these achievements and goals. HIV among men having sex with men is at 13.2%, female sex workers at 31.1%, and people with injecting drug use at 17%.

**Description:** Following the ascent to the AHA 2023, there was a surge in heightened discrimination, violence incidents, arrests, mob justice, services providers fearing to treat LGBTQI, and disruptions to health services utilization.

To these consequences,

1. A Response Team (RT) from Ministry of Health, Uganda AIDS Commission, CCM and UNAIDS/UNFPA) was formed to address,
2. The adaptation framework for continuity of services was established,
3. MOH provided a guidance through a circular, on provision of services to all people without discrimination,
4. Training of health workers in the provision of KP friendly services in 24 most affected districts.

Targeted dialogue meetings reached 180 policymakers, law enforcers and health workers in 24 hotspot districts. The KP community peers were facilitated to conduct client follow up, refills and linkages.

**Lessons learned:** The AHA enactment of 2023 led to increased discrimination, violence, and disruptions in accessing healthcare services for LGBTQ communities in Uganda.

Establishment of a Rapid Response Team (RRT) facilitated coordinated efforts among different partners to address the adverse effects of the legislation on LGBTQ individuals. Reorientation trainings for service providers and the implementation of adaptation frameworks were effective strategies to ensure continuity of LGBTQ-friendly services in affected districts.

**Conclusions/Next steps:** The AHA significantly impeded HIV prevention efforts targeting LGBTQ populations, posing a threat to Uganda's goal of ending AIDS as a public health threat by 2030.

Collaborative initiatives involving government agencies, CSOs are vital for mitigating the negative impact of discriminatory laws and promoting access to health services for key populations.

## OAF31 Transformative leadership and approaches for people living with HIV and criminalized populations

### OAF3106LB

Promoting equality in the labor market: a study on the HIV law and discrimination against PLHIV in Brazil

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**Background:** The law 12,984/2014, known as the "HIV Law", plays a important role in criminalizing discrimination against People Living with HIV (PLHIV) in Brazil, standing out as an strategic tool in combating stigma and discrimination.

**Methods:** The study period covered data from 2015 to 2022, with the setting being Brazil. A retrospective observational study design was employed, analyzing discrimination cases against PLHIV reported to the Federal Public Ministry (MPF).

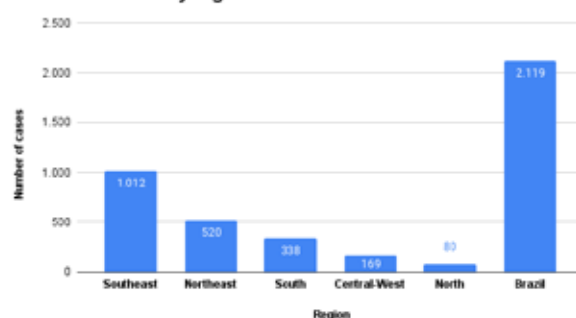
The study population consisted of individuals who faced discrimination due to their HIV status. Data collection involved gathering information from MPF records.

Analysis was conducted using Excel, focusing on quantifying, and categorizing discrimination cases by region and type.

**Results:** During the study period, a total of 2,119 discrimination cases against PLHIV were reported in Brazil, with 1,077 cases investigated and resulting in 569 convictions. The Southeast region recorded the highest number of cases (1,012), followed by the Northeast region (520). Primary forms of discrimination included denial of employment (941 cases), dismissal (234 cases), and segregation (103 cases).



Number of cases by region of Brazil



**Conclusions:** Despite advancements in legal frameworks, challenges persist in effective law enforcement, including the need for a greater understanding of legislation and the complexity of proving discrimination, which is often obscured or indirect. The threat of stigma and discrimination undermines fundamental rights at work, highlighting the ongoing necessity to address barriers and foster more inclusive work environments. It is necessary to undertake comprehensive measures to enhance awareness of existing laws, provide robust training for government and organizations of workers and employers, and strengthen mechanisms for reporting and supporting PLHIV who face discrimination.

## OAF41 Removing legal, policy and human rights barriers for children and young people

### OAF4106LB

Challenges in access to identification documentation and protection services for unaccompanied minors and undocumented children

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**Background:** This research investigates challenges faced by unaccompanied minors and undocumented children in South Africa regarding access to identification documents and protection services. It addresses root causes hindering access, explores interventions, and gathers officials' perceptions from DSD, DOE, and DHA. Lack of documentation jeopardizes access to services, posing risks of statelessness. Climate change exacerbates vulnerabilities.

Recommendations include interdepartmental committees, policy changes, temporary documents, and strengthening family tracing efforts to address these complex challenges.

**Methods:** The research delineates a qualitative methodology to explore into accessibility challenges faced by children, particularly regarding identification documents and Child Protection Services (CPS). It involves participants from DHA, DSD, and DOE, employing a multi-stage sampling technique. Qualitative research, emphasizing depth over quantity, engages 47 respondents through questionnaires, interviews, and workplace observations. Triangulation of content and thematic analysis methods was done to ensure reliability by combining various data sources and analysis techniques, enhancing understanding of challenges and policy practices.

**Results:** The study examines challenges faced by undocumented children and unaccompanied minors accessing basic services, focusing on DOE, DSD, and DHA. DOE challenges are with strict admission policies, leading to dropouts. DSD faces discrepancies in service rendering due to resource constraints. DHA finds it difficult to register undocumented children, compounded by DNA testing requirements. Recommendations include simplifying DHA registration, enhancing interdepartmental collaboration, and improving communication within DOE. These interventions aim to create a more inclusive support system despite persistent challenges, emphasizing streamlined processes and capacity building.

**Conclusions:** In the early 2000s, South Africa faced a surge in HIV/AIDS orphaned children, overburdening the state and family resources. A conference convened to address the crisis, advocated for an intersectoral structure involving government, civil society, and business. This study emphasizes interdepartmental cooperation to support Vulnerable Children (OVC&Y), noting DSD challenges denying services due to lack of documentation. DHA's complex registration, including mandatory DNA testing, which pose financial burdens. Capacity-building and policy shifts are here-by urged to streamline services and allocate resources effectively, ensuring coordinated action for OVC&Y protection.



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## LB01

**The HIV-1 Tat protein released by infected cells increases virus infectivity and modifies Env antigenicity by stabilizing the open conformations of Env**

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**Background:** The HIV-1 Tat protein released by infected cells (extracellular Tat, eTat) exerts several actions increasing virus infectivity both at the portal of entry and in the acute and chronic phases of infection. In this context, we have previously shown that eTat binds Env forming a novel cell-entry complex (the Tat/Env complex), which enhances virus capture by dendritic cells as well as infection of CD4+ T cells through a transactivation-independent mechanism (P. Monini, PlosOne 2012).

We now show that Tat enhances HIV-1 infectivity by altering the conformational dynamics of Env, thus affecting both CD4 recognition and Env antigenicity.

**Methods:** Single cycle HIV-1 was incubated with the transactivation-silent mutant Tatcys22 and added to CD4+ T cells (A3.01, T2M-bl) in the presence/absence of soluble CD4 (sCD4) or the monoclonal antibody b12. The effects of recombinant Tat on Env conformational dynamics was determined by single-molecule fluorescence resonance energy transfer (smFRET). Surface plasmon resonance, Isothermal titration calorimetry, electron microscopy and hydrogen-deuterium exchange-mass spectrometry were used to study Tat binding to soluble, native-like BG505 and B41 SOSIP.664 gp140.

**Results:** Tat binding to native Env on virus particles induces/stabilizes the open conformation(s) of Env. Through this action, Tat enhances HIV-1 infectivity by favoring CD4 recognition. At the same time, this affects Env antigenicity as indicated by the increased neutralization potency of sCD4 and mAb b12 in the presence of Tat. Noteworthy, the ratio between enhanced infectivity and increased vulnerability to sCD4 and mAb b12 is shifted by Tat in favor of virus infection. Env opening by Tat was observed also with SOSIP Envs; however, stoichiometric concentrations of Tat lead to SOSIP gp140 collapse/dissociation and aggregation.

**Conclusions:** These data highlight that Tat and the Tat/Env complex are key targets for an effective vaccine against HIV. Further advancement of soluble native-like Envs is needed to develop immunogens based on the Tat/Env complex; alternatively, mRNA vaccines assembling the native Tat/Env complex in the context of virus-like particles may represent a new avenue for a preventative vaccine.

(Funding: B&MGF INV-037179)

## LB02

**Interferon signature contributed to CD4+ T cell depletion among immunological non-responders under ART**

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**Background:** Even with sustained viral suppression achieved under ART, 20-30% of people with HIV (PWH) are prone to experiencing a challenging aspect of incomplete immune reconstitution. However, the underlying mechanisms driving CD4+ T cell depletion in immunological non-responders (INRs) remain incompletely understood.

**Methods:** To characterize the immunological features during CD4+ T cell depletion, we performed 5' V(D)J 10x Genomics scRNA-seq and scTCR-seq on peripheral blood mononuclear cells (PBMCs) from INR (n=9), immunological responders (IR, n=14), and healthy donors (HD, n=10) to gain insights into the dynamics of CD4+ T cell depletion. Flow cytometry and public bulk RNA-seq data analysis were applied to validate the findings.

**Results:** In total, we analyzed the single-cell transcriptomes of 232,369 PBMCs derived from 33 individuals, including PWH and healthy donors. Utilizing UMAP and Louvain clustering, we identified 8 major cell subsets and 51 minor cell subsets. Individuals with immune non-response (INRs) among PWH exhibited significantly reduced levels



of naïve-like CD4<sup>+</sup> T cells, along with increased proportions of central memory-like, exhausted-like, and proliferating-like CD4<sup>+</sup> T cell subsets. Differential expression analyses unveiled a heightened interferon (IFN)-gamma response transcriptional profile in CD4<sup>+</sup> T cells from INRs compared to those from individuals with IRs and HDs. Clonotype and trajectory analyses suggested a tendency of CD4<sup>+</sup> T cells from INRs to differentiate into exhausted T cells, while pseudotime analysis highlighted a strong association between IFN signatures and exhaustion signatures during CD4<sup>+</sup> T cell differentiation. Bulk RNA-seq analysis on public data further validated that the inhibition of IRF and STAT family transcription factors in primary CD4<sup>+</sup> T cells using shRNA led to decreased expression of HAVCR3.

**Conclusions:** Together, our study provides high-resolution insights into the immune landscape in INRs. The heightened IFN response pathway in CD4<sup>+</sup> T cells emerges as a significant immunological feature of INRs, contributing to CD4<sup>+</sup> T cell exhaustion and depletion in INRs undergoing ART.

### LB03

Single-cell multi-omics reveals the mechanisms behind the failure of immune reconstitution in people living with HIV after receiving antiretroviral therapy

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**Background:** Antiretroviral therapy (ART) can successfully suppress HIV viral replication, but about 15-30% of people living with HIV (PLWH) still fail to recover their CD4<sup>+</sup> T cell counts and are more susceptible to various comorbidities and at a higher risk of mortality.

The study aims to explore the mechanism behind the failure of immune reconstitution by utilizing single-cell multi-omics analysis.

**Methods:** We performed a multiomics (scRNA-seq and scATAC-seq) analysis on peripheral blood mononuclear cells collected from Hangzhou Xixi Hospital. PLWH required receiving treatment for at least 4 years and having a viral load < 50 copies/mL. And finally we recruited 46 PLWH immune responders (PLWH-IRs), 43 immune non-responders (PLWH-INRs) and 53 healthy individuals (HDs).

**Results:** We analyzed a large dataset consisting of a total of 2,680,107 single cell transcriptome and 1,174,029 single cell chromatin accessibility profiles. From the single-cell transcriptome data, we identified 36 cell subtypes. When comparing with PLWH-IRs and HDs, we observed a sig-

nificant decrease in CD4<sup>+</sup> T cells (CD4<sup>+</sup> Naive T, CD4<sup>+</sup> Tcm, CD4<sup>+</sup> Th17, CD4<sup>+</sup> Tfh, CD4<sup>+</sup> Treg), CD8<sup>+</sup> Naive T cells, and B cells (Naive B, Memory B) in PLWH-INRs. On the other hand, there was an increase in CD8<sup>+</sup> CTL (GZMB<sup>+</sup> CTL, GZMK<sup>+</sup> CTL), NK cells (CD16<sup>+</sup> NK, XCL<sup>+</sup> NK), Myeloid cells (CD14<sup>+</sup> Mono, CD16<sup>+</sup> Mono, CD34<sup>+</sup> HSPC), and Plasma B cells. Meanwhile, we observed signaling pathways such as inflammatory response, AP-1 Score and Cytotoxic Score activated in many cell types of PLWH-INRs.

Moreover, the expression of IL1 $\beta$  and CCL3 (positive regulators of inflammatory response) was significantly increased, while CCR7 (involved in T cell differentiation and activation) showed a significant decrease in PLWH-INRs. These findings are consistent with clinical observations of higher inflammation and lower CD4<sup>+</sup> T cell counts in PLWH-INRs.

Notably, abnormal activation of the apoptosis signal in CD4<sup>+</sup> T cells in PLWH-INRs, which may be related to the poor recovery of CD4<sup>+</sup> T cell counts in PLWH-INRs.

**Conclusions:** We provided a comprehensive analysis of the single-cell multi-omics landscape in a cohort of PLWH, revealed distinct levels of inflammatory response, T cell differentiation, activation and apoptosis in long-term treatment PLWH.

### LB04

Age-dependent acceleration of biological aging during pathogenic SIVmac infection

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**Background:** People with HIV (PWH) experience HIV-enhanced aging having an increased risk of early onset chronic diseases typically developing later in life and premature DNA methylation (DNAm) changes. To assess the impact of pathogenic HIV/SIV infection on aging, we studied epigenetic aging during pathogenic SIVmac infection in the rhesus macaque (RMs) using DNAm-based clocks.

**Methods:** We analyzed DNAm profiles across a SIVmac infection in young and old RMs in 40 longitudinal PBMC samples from the baseline, acute, early- and late chronic infection, and 56 samples from the cerebellum, colon, liv-





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er, heart, fat, and spleen from the advanced stage of infection. We estimated epigenetic age (EA) and epigenetic age acceleration (EAA), and tested associations of EA and EAA with pathogenesis biomarkers.

**Results:** The late stage of infection was associated with an increased EA in the PBMCs in the young, but not in the old RMs. EA in the PBMCs was associated with the CD4+ T-cell depletion and activation of circulating CD4+ and CD8+ lymphocytes in the young, and increased plasma levels of inflammatory marker CRP and macrophage activation marker sCD163 in the old.

During the advanced stage of SIV infection, EAA was increased in the young compared to the old RMs in the cerebellum and heart according to 10 and 9 clocks, respectively, suggesting that the long-lived brain and cardiac cells are more vulnerable to premature dysfunctions in the young.

EAA in the spleen and colon was positively correlated with the immune activation of the CD8+ T-cells (CD8+CD38+HLA-DR+) in the circulation in the young RMs; while EAA in the spleen was correlated with the proportion of CD8+Ki67+ T-cells in the old. In the young RMs, EAA in the colon correlated with the plasma levels of interleukin IL-8, while EAA in the cerebellum anticorrelated with the plasma levels of IL15 (a longevity factor for CD8+ T-cells). In the old RMs, EAA in the spleen was correlated with circulating levels of interleukins IL-1b and IL-12.

**Conclusions:** 1) Infection drives aging in tissue-specific and age-dependent manner. 2) Virus-enhanced aging is linked to different aspects of pathogenesis in young and old individuals.

## LB05

### Ineffective priming of NK cell cytotoxicity by HIV-1-infected macrophages

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**Background:** In addition to T cells, the human immunodeficiency virus type I (HIV-1) infects macrophages and establishes a latent myeloid reservoir, which is one of the barriers to current HIV-1 cure efforts. Natural killer cells

(NK) are innate antiviral immune cells that are filled with cytotoxic granules to kill virus-infected cells. They are currently studied in "shock and kill" approaches to eliminate the HIV-1 reservoir. However, they require priming by macrophages to become fully activated against virus-infected targets. Here, we investigated whether HIV-1 infection of macrophages results in priming of NK cells and is a sufficient trigger to boost their antiviral function.

**Methods:** We infected primary monocyte-derived macrophages (MDM) *in vitro* with HIV-1 (strains 89.6, THRO) and assessed priming of MDM phenotype, NK cell cytotoxicity and antiviral cytokine production using flow cytometry, qPCR and degranulation assays after MDM/NK cell co-culture (N=6 -13). Additionally, we investigated whether NK cells from PLWH remain responsive to priming by autologous monocyte-derived macrophages pre-activated with LPS/IFN $\gamma$  (N=7).

**Results:** HIV-1 infected MDM showed a significant induction of *IL15RA* compared to bystander MDM, which was one log below the *IL15RA* mRNA levels detected after LPS/IFN $\gamma$  stimulation. In comparison to the strong proinflammatory stimulus mediated by LPS, priming of NK cells by HIV-1-infected macrophages failed to potently induce cytotoxicity, but skewed NK cells towards production of TNF and IFN $\gamma$ , despite the upregulation of activating NKG2D ligands and CD48 on the surface of MDM upon HIV-1 infection. Crosstalk of NK cells with MDM resulted in upregulation of the inhibitory NK-cell receptor ligand HLA-E on the surface of resting macrophages. In PLWH, we identified CD56dim NK cells expressing inhibitory HLA class I binding receptors (KIR and NKG2A) as the subset most reactive to MDM-priming, whereas CD56low NK cells remained dysfunctional despite co-culture with MDM.

**Conclusions:** In summary, HIV-1 infection of macrophages alone was ineffective in priming NK cell cytotoxicity. Additionally, macrophages protected themselves during the priming process by upregulating inhibitory NK-cell signals. These results support the need for further NK cell boosting regimens to accompany latency reactivation and cure efforts aimed at long-term functional immune control of the myeloid HIV-1 reservoir.







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## LB07

### Pharmacological manipulation of HIV-1 RNA splicing enhances innate immune sensing and selective cell death of the transcriptionally-competent viral reservoir

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**Background:** Antiretroviral therapy (ART) can control HIV-1 infection, but is not curative. A latent viral reservoir persists in presence of ART and people with HIV (PWH) still experience chronic inflammation during therapy. Viral RNA (vRNA)-expression in cells of the transcriptionally-competent reservoir has been implicated in contributing to the chronic inflammation observed in PWH, and post-transcriptional processes like vRNA splicing can influence innate immune recognition.

**Methods:** Here, we utilise an innovative strategy to eliminate the transcriptionally-competent viral reservoir by manipulating HIV-1 RNA splicing to enhance intracellular innate immune sensing, thereby triggering apoptotic pathways to selectively induce cell death of the viral RNA-expressing cells. Multiplexed single-cell fluorescence *in situ* hybridisation technology was used to concurrently measure HIV-1 viral RNA expression, innate immune activation, and apoptosis.

**Results:** In both a primary *in vitro* HIV-1-infected CD4+ T-cell model of latency and *ex vivo* CD4+ T-cells from PWH, unspliced viral RNA, both intact and defective, efficiently activated innate immune responses, as indicated by IFN- $\beta$  mRNA co-expression. Pharmacologically inhibiting HIV-1 RNA splicing with Filgotinib combined with latency-reversal enhanced IFN- $\beta$  mRNA expression and increased apoptosis susceptibility in unspliced vRNA-expressing cells, resulting in a ~35% reduction in the size of the inducible transcriptionally-competent reservoir in *ex vivo* CD4+ T-cells from PWH after five days.

**Conclusions:** These findings firstly highlight the important role played by unspliced vRNAs, including defective vRNAs, in inducing innate immune activation, and support the feasibility of targeting HIV-1 RNA metabolism coupled with apoptosis induction as a promising strategy to eliminate the transcriptionally-competent viral reservoir towards an HIV-1 Cure.

## LB08

### Comparative analysis of antibody responses to CN54gp140 and AIDSVAX B/E in the PrEPVacc trial

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**Background:** The PrEPVacc trial assessed two different vaccination regimens and compared their efficacy in preventing HIV acquisition to placebo in a Phase IIb trial. Participants were randomized to receive either (DNA HIV PT123 + AIDSVAX B/E) four times or (DNA HIV PT123 + CN54/MPLA) twice followed by (MVA-CMDR/ CN54gp140/MPLA) twice or placebo over a 48-week vaccination period. The main immunological endpoint was titre of binding antibodies to both CN54gp140 or AIDSVAX at week 26, two weeks after the third vaccination.

Arm	Week 0	Week 4	Week 24	Week 24
A	DNA-HIV-PT123 AIDSVAX B/E	DNA-HIV-PT123 AIDSVAX B/E	DNA-HIV-PT123 AIDSVAX B/E	DNA-HIV-PT123 AIDSVAX B/E
B	DNA PT123 CN54gp140+ MPLA-L	DNA PT123 CN54gp140+ MPLA-L	MVA-CMDR CN54gp140+ MPLA-L	MVA-CMDR CN54gp140+ MPLA-L
C	Placebo+ Placebo	Placebo+ Placebo	Placebo+ Placebo	Placebo+ Placebo

**Methods:** The trial enrolled 1512 participants across four sites: MRC SA, Durban, South Africa; NIMR MMRC, Mbeya, Tanzania; MUHAS, Dar es Salaam, Tanzania; and MRC/UVRI & LSHTM, Masaka, Uganda. Serum samples were collected at week 0, week 26 post vaccination, and at additional timepoints not presented here. The endpoint titre was determined by serial dilution by ELISA for all those samples positive at a dilution of 1:100.

**Results:** An interim pooled analysis of 248 samples shows a binding antibody endpoint titer indicates a higher geometric mean for CN54 (3031, IQR: 2700 – 8100) compared with AIDSVAX specific antibodies (1182, 300 – 8100). Further analysis will categorize total antibody titres, assess response determinants of responses (gender, age, and site), and associations with HIV infection post-week 26.

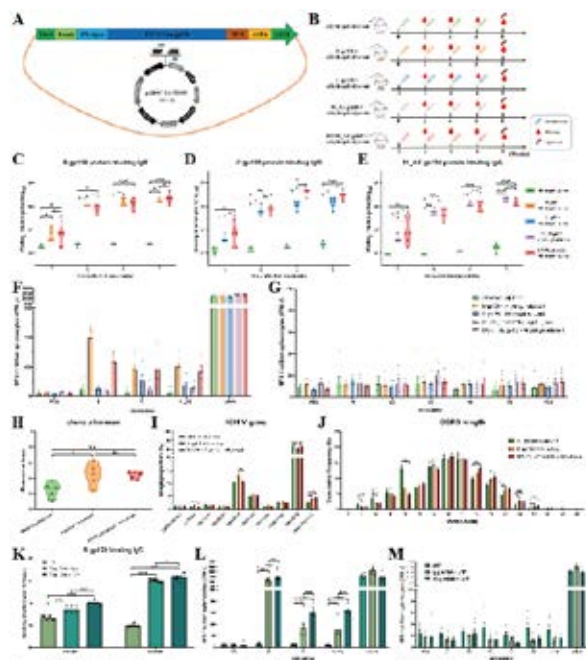
**Conclusions:** This interim pooled analysis of a subset that completed 3 vaccinations suggests higher geometric mean titers of binding antibodies to CN54gp140 compared to AIDSVAX B/E at week 26. Further unblinded analysis of the full dataset will be presented at the meeting.

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**Background:** An effective HIV-1 vaccine should elicit high-titer broad neutralizing antibodies and robust specific T-cell responses.

**Methods:** Consensus sequences of HIV-1 B, C, and 01\_AE-gp120 proteins were obtained using online tools. These sequences were then used to express polymerized proteins in CHO-S cells and combined with alhydrogel for four times immunization in Balb/c mice. The binding antibody levels in mouse serum were determined using ELISA, specific T-cell responses in spleen cells were evaluated via Elispot, and the sorted CD19<sup>+</sup> cells from splenocytes were used for BCR sequencing.



**Figure 1.** (A) The structure of the protein expression vector based on the consensus sequence of HIV-1 gp120. (B) The schematic diagram of the multi-valent vaccine immunization strategy. (C) Bar graph showing the binding antibody levels (OD) for gp120, gp120 (B), and gp120 (C) in mouse serum at weeks 0, 2, 4, 6, and 8. (D) Bar graph showing the binding antibody levels (OD) for gp120, gp120 (B), and gp120 (C) in mouse serum at weeks 0, 2, 4, 6, and 8. (E) Bar graph showing the binding antibody levels (OD) for gp120, gp120 (B), and gp120 (C) in mouse serum at weeks 0, 2, 4, 6, and 8. (F) Bar graph showing the binding antibody levels (OD) for gp120, gp120 (B), and gp120 (C) in mouse serum at weeks 0, 2, 4, 6, and 8. (G) Bar graph showing the binding antibody levels (OD) for gp120, gp120 (B), and gp120 (C) in mouse serum at weeks 0, 2, 4, 6, and 8. (H) Bar graph showing the binding antibody levels (OD) for gp120, gp120 (B), and gp120 (C) in mouse serum at weeks 0, 2, 4, 6, and 8. (I) Bar graph showing the binding antibody levels (OD) for gp120, gp120 (B), and gp120 (C) in mouse serum at weeks 0, 2, 4, 6, and 8. (J) Bar graph showing the binding antibody levels (OD) for gp120, gp120 (B), and gp120 (C) in mouse serum at weeks 0, 2, 4, 6, and 8. (K) Bar graph showing the binding antibody levels (OD) for gp120, gp120 (B), and gp120 (C) in mouse serum at weeks 0, 2, 4, 6, and 8. (L) Bar graph showing the binding antibody levels (OD) for gp120, gp120 (B), and gp120 (C) in mouse serum at weeks 0, 2, 4, 6, and 8. (M) Bar graph showing the binding antibody levels (OD) for gp120, gp120 (B), and gp120 (C) in mouse serum at weeks 0, 2, 4, 6, and 8.

**Results:** During the immunization of Balb/c mice, a single protein vaccine can produce sufficient binding antibody levels after the second immunization. However, the significant IFN- $\gamma$  T cell response was not observed in the

V1-V5 region peptides, and only the immunogen-specific T cell response was generated. For multi-valent vaccine immunization, the IFN- $\gamma$  T cell response and the binding antibody level of three kinds of immunogen-specific can be generated meanwhile, and there is no significant difference from the single immunogen immunization group. After the protein vaccine's four consecutive immunizations, the cloning diversity of the HIV-1 B-gp120 protein immunization group and the multi-valent vaccine immunization group has increased significantly. At the same time, it was found that the CDR3 BCR clone ratio increased by 15-19 amino acids, and the multi-valent vaccine immunization group was more significant. Among the B-gp120 mRNA vaccine-immunized mice, high-titer immunogen-specific binding antibodies and the IFN- $\gamma$  T cell response can be detected. Among them, the T cell response is more advantageous.

**Conclusions:** Multi-valent vaccine immunization, based on various protein vaccines, did not markedly diminish the specific binding antibody levels or T-cell responses compared to single immunogen immunization. Moreover, hybrid immunization enhanced BCR cloning diversity and the ratio of CDR3 length with 15-19 amino acids. The mRNA vaccine platform demonstrated remarkable advantages in enhancing T-cell responses.

## LB10

### Impact of the immune responses induced by a protein-based COVID-19 vaccine on the efficacy of SIV suppression in rhesus macaques

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**Background:** Control of the COVID 19 pandemic requires systemic vaccination to prevent severe diseases and death of the SARS-CoV-2 patients. As these vaccines induce T- and B-cell activation and systemic inflammation for priming the immune responses to vaccine, it is important to assess the impact of these immune responses on the outcome of ART-suppressed HIV infection.

**Methods:** Eight rhesus macaques (RM) were intravenously SIVmac239-challenged (300 TCID<sub>50</sub>), and virus was suppressed with antiretroviral therapy (ART) at 42 days post challenge (pc) for six months. Then, 6 RMs received





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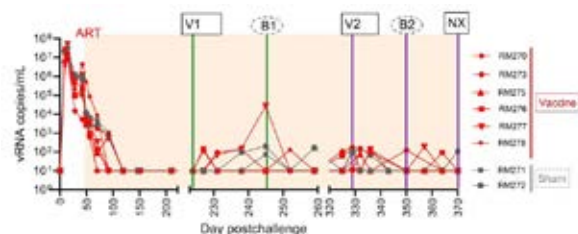
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an adjuvanted Delta (B.1.617.2) S1 SARS-CoV-2 subunit vaccine with Toll-like receptor 4 agonist RS09 (rS1RS09) twice (intradermally-224 dpc; intramuscularly-329 dpc) with Squalene-based oil-in-water adjuvant in a prime-boost regimen, every three weeks; two RMs received sham vaccination. Plasma viral loads (pVLs), T- and B-cell counts and activation and proliferation, as well as biomarkers of inflammation, gut integrity and coagulation (D-dimer) were monitored.

**Results:** SARS-CoV-2 vaccination induced robust humoral immune responses, which neutralized the infectivity of SARS-CoV-2 variants, including Wuhan and Delta (B.1.617.2), and less effectively Omicron (BA.1). This robust immune response triggered increased T- and B-cell activation and proliferation (Ki-67, CD69, HLA-Dr) and increased systemic inflammation (CRP, inflammatory cytokines). Consequently, postvaccine viral blips occurred in both vaccinated and sham-receiving animals, but not in a historic control group receiving ART only. Viral blips were reduced in size ( $\approx 10^2$  copies/ml) and duration, being rapidly controlled. No discernible impact on gut integrity was observed after vaccine administration (sCD14, sCD163, I-FABP, collagen).



**Conclusions:** Our SARS-CoV-2 vaccine formulation induced immune (T- and B-cell activation and proliferation) and inflammatory responses that triggered viral blips in ART-suppressed SIVmac in RMs. These blips were transient and relatively low, and thus they did not induce significant mucosal damage. However, such blips of replication should be closely monitored, as they may contribute to the resistance to ART.

## LB11

### A pilot, randomized controlled trial of doxycycline pre-exposure prophylaxis versus placebo for prevention of bacterial sexually transmitted infections in men who have sex with men living with HIV

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**Background:** Doxycycline post-exposure prophylaxis (doxyPEP) is efficacious in preventing bacterial sexually transmitted infections (STI) in men who have sex with men (MSM). Doxycycline pre-exposure prophylaxis (doxy-PrEP) has also shown promise and may represent another option for STI prevention. We undertook a pilot study of doxyPrEP in MSM living with HIV.

**Methods:** MSM living with HIV with previous syphilis were randomized 1:1 to receive 48 weeks of daily doxycycline 100mg orally versus placebo in this double-blind pilot study in Toronto and Vancouver, Canada. Participants were followed quarterly with STI screens (syphilis serology, gonorrhea/chlamydia nucleic acid amplification testing of urine, pharynx, and rectum), adherence and sexual behaviour questionnaires, and adverse event (AE) assessments. Nasal swabs were collected to evaluate the emergence of doxycycline resistance in *Staphylococcus aureus* carriers. STI rates were compared between arms using Poisson regression.

**Results:** Fifty-two MSM were enrolled with median age of 43 years (interquartile range [IQR], 38-54), from 01/2020 to 01/2023. Forty-one participants (78.8%) completed the study protocol. We observed a reduction of 79%, 92%, and 68% in syphilis, chlamydia, and gonorrhea, respectively, in the doxycycline arm relative to placebo (Table). There were no between-arm differences in drug adherence (pill count) or sexual behaviours (number of partners, condomless sex acts) at any time point. Most AEs (78.4%) were mild, and the proportion of AEs related to study drug did not differ by study arm. There was one drug-related discontinuation (worsening gastroesophageal reflux), and one serious adverse event (mpox-related proctitis; unexpected and unrelated to drug), both in the doxycycline arm. New doxycycline resistance developed in 3/19 and 2/19 ( $p=0.57$ ) *S. aureus* isolates from baseline to week 48 in the doxycycline and placebo arms, respectively.


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	Total STIs per arm		Incidence rate (95% CI), per 100 person-years		Rate ratio* (95% CI)	p-value
	Doxy-cycline	Place-bo	Doxycycline	Placebo		
Syphilis	1	5	3.95 (0.96, 16.28)	19.26 (10.23, 36.28)	0.21 (0.04, 0.97)	0.04
Chlamydia	1	13	3.97 (0.69, 22.77)	50.09 (30.86, 81.30)	0.08 (0.01, 0.49)	0.01
Gonorrhea	4	13	15.88 (6.61, 38.15)	50.09 (30.81, 81.44)	0.32 (0.12, 0.86)	0.02
Total	6	31	23.71 (9.93, 56.66)	119.44 (81.42, 175.20)	0.20 (0.08, 0.51)	<0.001

Abbreviations: CI, confidence interval; STI, sexually transmitted infection.

\* Rate ratio &lt;1 suggests lower incidence rate in doxycycline arm.

**Table. Total number and incidence of syphilis, chlamydia and gonorrhea by study arm**

**Conclusions:** DoxyPrEP significantly decreased rates of syphilis, chlamydia and gonorrhea compared to placebo, and was well-tolerated in MSM living with HIV. These pilot findings support our further evaluation of doxyPrEP compared to doxyPEP in an ongoing larger trial.

## LB12

Anti-racist, anti-sexist, anti-ageist implementation science study of long-acting injectable cabotegravir and rilpivirine in clinic and community settings: ILANA primary endpoint (M12) results

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**Background:** Limited evidence exists on community delivery of long-acting injectable cabotegravir+rilpivirine (CAB+RPV-LAI). Prior studies significantly underrepresented women, racially minoritised, and older people. ILANA

is the first to deliver CAB+RPV-LAI in community settings using an inclusive protocol to recruit equitably. We present primary endpoint (M12), and pre-specified sub-group analyses (gender/race/age).

**Methods:** ILANA is an on-label 1-year UK-based implementation study where participants received 2-monthly CAB+RPV-LAI in clinic and community settings. We present M12 primary endpoint: Feasibility of Intervention Measure (FIM) for injection and community; secondary endpoints: Acceptability of Intervention Measure (AIM), Intervention Appropriateness Measure (IAM), HIV Treatment Satisfaction Questionnaire (HIVTSQs-12).

**Results:** Between May-December 2022, we enrolled 114 participants (53% female, 51% Black, 40% >50yrs, 68% heterosexual). Median time on ART=11 years (IQR 7,16). One participant experienced virological failure, 12 discontinued.

Among participants with completed questionnaires (n=95), M12 injection feasibility, acceptability, and appropriateness were high: 79.0%, 85.3%, and 87.4% agreed or completely agreed with each measure (≥4), respectively. Women scored lower on injection feasibility (FIM: W:69.1% vs M:92.5%, p=0.01) and appropriateness (IAM: W: 80.0% vs M:97.5%, p=0.01) as did Black participants (FIM: B:65.3 vs NB:93.5, p<0.01; IAM: B:65.3% vs NB:93.5%, p<0.01).

M12 community setting feasibility, acceptability, and appropriateness were low overall: 47.4%, 44.2%, and 47.4% respectively. All scores were lower in Black versus non-Black participants (FIM: 36.7% vs 58.7%, p=0.03; AIM: 34.7% vs 54.4%, p=0.05; IAM: 36.7% vs 58.7%, p=0.03).

Treatment satisfaction improved significantly from baseline (mean difference +6.52 (SD 11.38), p<0.01). Women (+4.35 (10.61) versus men (+9.5 (11.85), p=0.03) and Black versus non-Black participants (+3.76 (10.44) vs +9.46 (11.71), p=0.01) had smaller increases.

Outcomes at M12	Overall (n=95)	p-value	Women (n=55)	Men (n=40)	p-value	Black (n=49)	Non-Black (n=46)	p-value	<50 (n=57)	≥50 (n=38)	p-value
Injection: n (%) that agree or completely agree (≥4)	FIM	75 (79.0)	38 (69.1)	37 (92.5)	0.01	32 (65.3)	43 (93.5)	<0.01	48 (84.2)	27 (71.1)	0.12
	AIM	81 (85.3)	46 (83.6)	35 (87.5)	0.60	39 (79.6)	42 (91.3)	0.11	49 (86.0)	32 (84.2)	0.81
	IAM	83 (87.4)	44 (80.0)	39 (97.5)	0.01	38 (77.6)	45 (97.8)	<0.01	53 (93.0)	30 (79.0)	0.06
Community setting: n (%) that agree or completely agree (≥4)	FIM	45 (47.4)	23 (41.8)	22 (55.0)	0.20	18 (36.7)	27 (58.7)	0.03	31 (54.4)	14 (36.8)	0.09
	AIM	42 (44.2)	22 (40.0)	20 (50.0)	0.33	17 (34.7)	25 (54.4)	0.05	29 (50.9)	13 (34.2)	0.11
	IAM	45 (47.4)	23 (41.8)	22 (55.0)	0.20	18 (36.7)	27 (58.7)	0.03	31 (54.4)	14 (36.8)	0.09
HIV-TSQs change from baseline: mean difference (SD)	6.52 (11.38)	<0.01	4.35 (10.61)	9.50 (11.85)	0.03	3.76 (10.44)	9.46 (11.71)	0.01	7.70 (11.76)	4.74 (10.69)	0.22

**Table 1. Implementation outcomes overall and by sub-group**

**Conclusions:** Participant perceptions of CAB+RPV injection feasibility, acceptability and appropriateness are high. We demonstrate notable differences in women and Black





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participants. Regarding community delivery, feasibility and acceptability were less favourable than in studies delivering CAB+RPV-LAI in clinics. Analysis of in-depth interviews is underway.

## LB13

### High viral suppression after transition from nonnucleoside reverse transcriptase inhibitor- to dolutegravir-based antiretroviral therapy in the Thai national treatment programme

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**Background:** Dolutegravir based ART, mainly fixed dose combinations of tenofovir disoproxil fumarate/lamivudine/dolutegravir (TLD) has been rapidly scaled up as 1<sup>st</sup> and 2<sup>nd</sup> line ART for people living with HIV (PLWH) in many low-middle income countries. Thailand's National HIV program transitioned from predominantly nonnucleoside reverse transcriptase inhibitor (NNRTI)-based ART to DTG-based ART in 2020. We assessed treatment outcomes among Thai PLWH who transitioned from NNRTI to DTG based ART under the National AIDS Program (NAP) in Thailand.

**Methods:** PLWH aged ≥15 years who transitioned from NNRTI- to DTG-based ART in the UHC from 2020-2023 with at least 1 viral load (VL) available after 6 months of DTG treatment were included. Viral suppression and VL failure were defined as VL <50 copies/ml and ≥1000 copies/mL, after at least 6 months of DTG, respectively. Vital status was confirmed with Death Registry.

**Results:** Of 302,018 PLWH who transitioned from NNRTI (mainly efavirenz)- to DTG-based ART, 3,726 (1.2%) died, 41,628 (13.8%) were lost to follow-up, and 155,911 participants were eligible for this analysis. Median age was 46.6 years, 58.8% were female and median CD4 was 508 cells/mm<sup>3</sup>. Median NNRTI duration before DTG was 8.1 years, median duration from DTG switch to VL measurement was 8.6 (IQR 6.5-11.3) months, and 5% had VL > 50 copies/mL at DTG switch. Among 148,018 PLWH with VL < 50 cop-

ies/mL at DTG switch, 95.7%, 98.3% and 0.8% had VL <50, <200 and ≥1000 copies/mL, respectively. Of 7,893 PLWH with VL >50 copies/mL at DTG switch, 76.8%, 90% and 6.5% had VL < 50, <200 and >1000 copies/mL, respectively. Compared to PLWH aged > 50 years, adolescents and young adults (aged <24 years) had higher VL failure rates (8.1% vs 4.3%).

**Conclusions:** In PLWH who transitioned from NNRTI- to DTG-based ART with pre-switch VL<50 copies/mL, and ≥6 months of follow-up, the majority remained virologically suppressed, and only 0.8% experienced VL failure. The higher rate of VL failure (6.5%) among those with VL >50 copies/mL at DTG switch, especially in adolescents and young adults (8.1%) suggest close VL monitoring and a need of long acting ART in this population. National DTG resistance surveillance is warranted.

## LB14

### Transitioning adolescents living with HIV to tenofovir/lamivudine+dolutegravir despite a detectable baseline viral load and previous exposure to tenofovir/lamivudine+efavirenz ensures higher virological response: the CIPHER-ADOLA Study in Cameroon

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**Background:** WHO recommends transitioning to tenofovir/lamivudine/dolutegravir (TLD)-regimen to improve virological success (VS), considering vulnerable populations like adolescents living with HIV/AIDS (ADLHIV). Due to scarcity of evidence in this target population, we sought to ascertain VS and virological rebound (VR) among Cameroonian ADLHIV after switching to TLD in real-life.

**Methods:** Multicentre cohort-study was conducted among ADLHIV (aged 10-19) switching/starting TLD monitored with  $\geq 2$  HIV-RNA load (VL) measurements after switch. Survival analyses were performed to evaluate VS (VL<200 copies/mL in the viremic-group) and VR (VL $\geq$ 1000 copies/mL among non-viraemic-group) according to baseline parameters.

**Results:** Overall, 351 ADLHIV were enrolled (52.1% female, median [IQR] age 14[12-15] and weight 40[34-52] Kg). At baseline, 62.1% (n=218) were non-viremic and 37.9% (n=133) viremic; 60.5% switched from a TDF/3TC-based regimen. Overall, VS at 12- and 24-months was 65.0% and 94.3%, achieved in a median-time of 6.8 [4.8-8.6] months. At 24-months, 100% of males achieved VS versus 90.4% in females,  $p=0.065$ ; 100% ADLHIV starting TLD as their first-line treatment achieved VS, compared to those switching with a detectable VL (VL=51-999 copies/mL: 96.1%; VL $\geq$ 1000 copies/mL: 91.1%,  $p=0.620$ ). No difference in VS was found between switching from TDF/3TC-backbone (89.9%) versus ABC/3TC (100%),  $p=0.353$ . Of the 7 cases of non-VS, 57.1% switched from TDF/3TC-backbone and 57.1% had a VL $\geq$ 1000 copies/mL. VR at 12- and 24-months was 2.8% and 10.8%, respectively. At 24-months, ADLHIV switching from ABC/3TC showed a lower probability of VR (16.7%) versus TDF/3TC (23.9%) and AZT/3TC (70.2%),  $p=0.008$ . Lower VR in ADLHIV switching from EFV-based (6.6%) versus DTG (31.4%) and LPV/ATZ/r (40.3%),  $p=0.008$  was observed. Of the 25 ADLHIV experiencing VR, most received TD-F/3TC (52.0%) versus ABC/3TC (32.0%) and AZT/3TC (16.0%),  $p=0.035$ . At multivariate analysis, switching from DTG-

based regimen had 8-times more risk of VR (aHR [95% CI]: 8.099 [1.404-46.730],  $p=0.019$ ) compared to switching from EFV-based regimen.

**Conclusions:** In Cameroon, switching ADLHIV to TLD favours a sustained viral control after switch. However, VR occurs in some cases, especially when switching from a DTG-based regimens. Thus, scaling-up the transition of ADLHIV to TLD, regardless of previous exposure to TD-F/3TC/EFV and baseline VL, would contribute to markedly decreasing, down toward eliminating, paediatric AIDS.

## LB15

### Accelerating treatment optimization for children in South Africa: the introduction of paediatric dolutegravir in a large-scale paediatric HIV programme.

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**Background:** South Africa has made strides towards the UNAIDS 95-95-95 target for ending the AIDS epidemic, achieving a general population cascade of 95-78-92 by the end of 2023. However, the children's cascade lags at 82-66-67. In response, South Africa introduced Paediatric Dolutegravir (pDTG) 10mg tablets in 2023 to enhance adherence, expedite viral load suppression, and provide a cost-effective regimen for children living with HIV (CLHIV). **Description:** In 2023, South Africa adopted the use of pDTG 10mg as first-line antiretroviral therapy for children living with HIV (CLHIV) who are at least 4 weeks old and weigh 3-20 kg. National guidelines training ensued with training of provincial trainers, followed by training of healthcare workers at facilities. South Africa then began to switch and initiate CLHIV to a pDTG-containing regimen in April 2023 prioritizing those newly identified and those not virally suppressed.

**Lessons learned:** Between April 2023 and March 2024, the proportion of CLHIV under 10 years transitioned and/or initiated on pDTG-containing regimen increased from 20% to 48%. Viral load suppression for CLHIV under 10 years on ART increased from 64.2% to 73.3%. Critical to this successful transition was collaboration across program, supply chain and community, as well as communication of set targets and availability of job aids such as the ARV dosing charts. Ongoing engagements with suppliers ensured stock availability and monthly provincial meetings promoted equitable stock distribution, and maximized expiring medicines use.



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**Conclusions/Next steps:** The transition and initiation rates onto pDTG-containing regimens, coupled with the applaudable increase in viral load suppression, underscore the effectiveness of this strategic shift. The strategy forms part of Global Alliance country plan; stakeholders will continue collaborating to transition all CLHIV to pDTG, train, monitor uptake, and assess its impact on ART retention rates.

## LB16

### Patterns of dolutegravir resistance in sub-Saharan Africa 2022-2024: the DTG RESIST study of leDEA

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**Background:** Most people with HIV (PWH) in low- and middle-income countries now receive dolutegravir (DTG)-based ART. It is critical to monitor the emergence of DTG resistance in different settings and in different HIV-1 subtypes.

**Methods:** In DTG RESIST, clinics of the International epidemiology Databases to Evaluate AIDS (leDEA) network enrol adults and adolescents (≥10 years) on DTG-based ART for >3 months with >1 routine viral load (VL) ≥1000 copies/mL, regardless of prior treatment history. We perform VL testing in a central laboratory in Durban, South Africa on plasma or dried blood spot specimens followed by HIV-1 pol sequencing for specimens with VL ≥1000 copies/mL. We present data as of 5 April 2024.

**Results:** Since June 2022, we have enrolled 590 participants in 15 countries. Participant's median age was 35 years (IQR 23-46 years), 338 (57%) were women and 523 (89%) from sub-Saharan Africa. So far, of the 307 specimens from 14 sites in 6 African countries received at the laboratory, 145 (47%) had a VL ≥1000 copies/mL. From 117 specimens processed, we obtained 115 integrase sequences (all non-B subtypes: 57% C, 17% CRF02\_AG, 8% A1, 18% others). Twenty-eight (24%) had at least one major INSTI drug resistance mutation (DRM), all from treatment-experienced individuals. Most had multiple major INSTI DRMs ± accessory/other INSTI DRMs, and all had NRTI

DRMs. The most frequently observed INSTI DRMs were E138AK (n=23), G118R (n=20), L74IM (n=14), and T66AI (n=12) (Figure); the most frequently observed combination was G118R + E138AK (n=14).

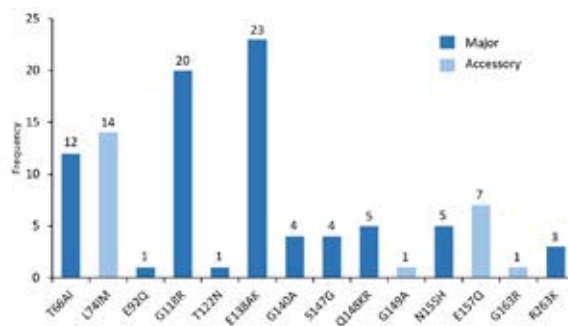


Figure. INSTI drug resistance mutations (DRMs) in genotypes with ≥1 major INSTI DRM (n=28).

**Conclusions:** In this prospective multi-country study of people living with non-B HIV subtypes, approximately one in five individuals with confirmed viraemia on DTG-based ART had high-level DTG resistance. G118R and the G118R + E138AK combination seem to be common resistance mutations, highlighting that resistance pathways likely differ between non-B and B subtypes.

## LB17

### Increased incidence of emergent integrase drug resistance with cabotegravir versus dolutegravir in randomised switching trials

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**Background:** The long-acting injectable regimen of cabotegravir plus rilpivirine (CAB/RPV), has been evaluated for treatment of HIV, predominantly in switch studies for people with HIV who have achieved virologic suppression. Improved adherence from long-acting treatments is hypothesized to decrease risk of treatment failure and treatment-emergent resistance. Yet, comparisons between failure and resistance rates for this injectable regimen versus oral integrase inhibitor regimens have not been made.

**Methods:** We conducted a systematic review of clinical trial registries, PubMed and EMBASE to identify all randomised controlled trials of CAB/RPV or dolutegravir (DTG) for people switching after obtaining virologic suppression (HIV RNA<50 copies/mL). We extracted 48-week (±4 weeks) data on virologic failure (VF) and emergence of HIV drug resistance mutations (DRMs), defined as presence of major integrase inhibitor (INSTI) mutations, based on the

Stanford algorithm. We compared incidence of VF and emergent DRMs between CAB/RPV and DTG trials using Fisher's exact tests.

**Results:** Seven switch trials were identified for CAB/RPV (n=2588), and eleven trials were identified for DTG (n=2733). In trials of CAB/RPV, 26/2588 people (1.0%) developed protocol-defined VF, versus 28/2733 (1.0%) in trials of DTG (p=1.00). In CAB/RPV trials 17/26 people with VF (65%) had major INSTI DRMs versus 0/28 (0%) in DTG trials (p<0.0001). The predominant major INSTI-associated DRMs arising in the CAB/RPV trials were Q148R (30%), N155H (27%), E138K (12%), G140R (12%), and Q148K (7%). Intermediate or high-level cross-resistance to DTG in the CAB/RPV trials was present in 7/17 (41%) cases with INSTI DRMs.

	CAB trials	DTG trials	p-value
Sample size	2588	2733	
Virological failure cases	26	28	1.00
≥1 INSTI-associated DRMs	17	0	<0.0001*
Predominant DRMs	Q148R, N155H, E138K, G140R, Q148K	NA	
Sensitivity analysis †			
Sample size	2769	2733	
Virological failure cases	32	28	0.70
≥1 INSTI-associated DRMs	18	0	<0.0001*

\* Statistically significant result in Fischer's exact test

† Inclusion of results from LATTE study assessing oral CAB  
CAB, cabotegravir; DTG, dolutegravir; INSTI, integrase strand transfer inhibitor; DRMs, drug-resistance mutations

**Conclusions:** Treatment-emergent INSTI resistance was more common with use of CAB/RPV than for DTG in switch trials, despite the perceived adherence benefits associated with long-acting formulations. Significant cross-resistance with DTG was seen for those failing CAB/RPV with resistance. Close monitoring of INSTI resistance in individuals and populations may be warranted as injectable CAB is more widely implemented.

## LB18

### Efficacy and safety of ensitrelvir in non-hospitalized adults at standard or high risk of progression to severe COVID-19: the SCORPIO-HR phase 3, randomized, double-blind, placebo-controlled trial

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**Background:** Ensitrelvir, an oral SARS-CoV-2 3CL protease inhibitor, has demonstrated virologic and clinical efficacy in prior studies. The SCORPIO-HR trial assessed efficacy and safety of ensitrelvir in non-hospitalized adults with symptomatic mild-to-moderate COVID-19.

**Methods:** In this global randomized (1:1) trial (August 2022-December 2023), adults (≥18 years) with COVID-19 symptom onset ≤5 days received once-daily ensitrelvir (375 mg day 1, 125 mg days 2-5) or placebo. The primary endpoint was time to sustained (≥2 days) resolution of 15 COVID-19 symptoms, recorded in participant diaries, through day 29 in participants starting treatment ≤3 days of symptom onset.

Other endpoints included reduction in SARS-CoV-2 RNA, viral culture, RNA rebound, and safety.



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**Results:** Of 2093 participants, 1888 (90%) started treatment  $\leq 3$  days of symptom onset. The mean ( $\pm$ SD) age was  $41 \pm 14$  years; 55% female; 76% vaccinated; 31% high-risk ( $\geq 65$  years or  $\geq 1$  risk factor for severe disease); 42% White; 41% Asian; 9% Black; 45% Hispanic/Latino.

The primary endpoint of restricted mean time to symptom resolution was not significantly different between ensitrelvir (12.5 days) and placebo (13.1 days; difference, -0.6 days; 95%CI: -1.4, 0.2;  $p=0.14$ ; Table). At day 4, ensitrelvir reduced least-squares mean RNA by 0.72  $\log_{10}$  copies/mL more than placebo (95%CI: 0.55, 0.90;  $p<0.001$ ).

Among those with positive viral culture at enrollment and available data, 274/287 (95%) ensitrelvir-treated versus 210/280 (75%) placebo-treated participants had negative culture at day 4 ( $p<0.001$ ). Through day 29, RNA rebound was uncommon and similar ( $<1.5\%$ ) between treatment arms.

Adverse events were reported in 638 (62%) ensitrelvir-treated and 635 (61%) placebo-treated participants. No treatment-related serious adverse events or deaths occurred, and only 4 participants had COVID-related hospitalizations by day 29.

Endpoint	Analysis population	Symptom resolution period	Mean days to symptom resolution			Restricted mean difference	p-value
			Ensitrelvir	Placebo	Difference (95% CI)		
Primary endpoint	Symptom onset $\leq 3$ days (n=1888)	$\geq 2$ consecutive days	12.5	13.1	-0.6 (-1.38, 0.19)	0.14	0.07
Pre-specified supportive analyses**	Symptom onset $\leq 3$ days with positive PCR test at baseline (n=1535)	$\geq 2$ consecutive days	12.3	13.0	-0.7 (-1.56, 0.16)	0.11	0.08
	Symptom onset $\leq 3$ days (n=1888)	$\geq 1$ day	11.4	12.2	-0.8 (-1.53, 0.02)	0.06	0.03

\*Fifteen COVID-19 symptoms: stuffy nose, runny nose, sore throat, cough, low energy or tiredness, feeling hot or feverish, shortness of breath or difficulty breathing, chills or shivering, muscle or body aches, diarrhea, nausea, vomiting, headache, loss of taste, and loss of smell.

\*\*Supportive analyses were not part of the statistical hierarchy, were not adjusted for multiplicity, and should be interpreted in an exploratory manner. Peto-Prentice's generalized Wilcoxon test for supportive analyses were not prespecified.

Table. Time to Sustained Resolution of 15 COVID-19 Symptoms\* through Day 29.

**Conclusions:** Despite demonstrating antiviral activity, safety, and a trend toward shorter time to symptom resolution, ensitrelvir did not meet its symptom resolution primary endpoint, highlighting the challenge of relating antiviral activity and clinical endpoints when evaluating novel COVID-19 therapeutics in the current era.

## LB19

### Trends in the HIV epidemic of Puerto Rico: 1981-2023

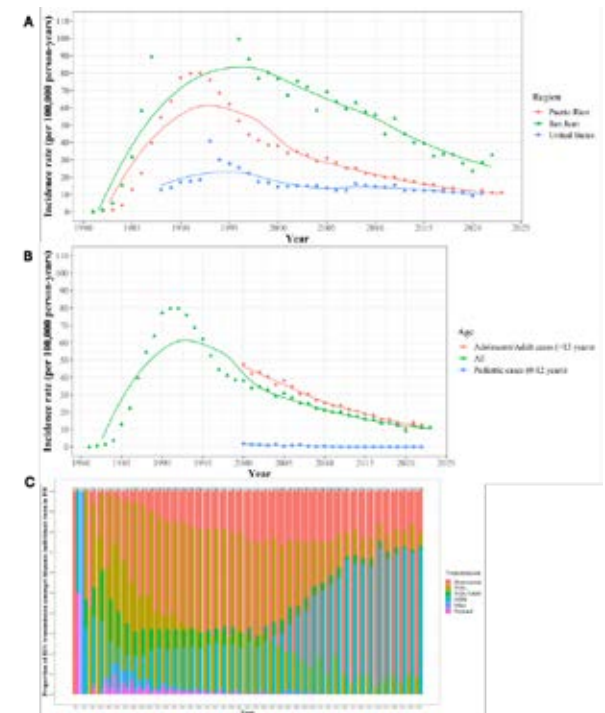
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**Background:** Puerto Rico (PR) ranks amongst US states/territories with the greatest HIV burden and presents a unique case-study of the HIV epidemic with unique transmission periods and program successes. Yet the history of HIV in PR remains largely unappreciated. We provide an epidemiological summary of the PR HIV epidemic.

This study highlights transmission trends and provides an underpinning for future programmatic analyses.

**Methods:** The PR Department of Health provided annualized, de-identified HIV case and risk-factor data from 1981-2023. CDC provided national case data for 1988-2021. We compared trends in prevalence and incidence rate, stratified by geography and demographics, and evaluated trends in mode of transmission.



**Results:** All-age HIV incidence rates (per 100,000 person-years) increased throughout the 1980s reaching peaks in PR in 1992 (79.8 cases) and nationally in 1993 (40.8 cases) before decreasing to 11.3 cases and 10.8 cases in PR and nationally, respectively, at the study end. San Juan's incidence remained above the national average. From 2000-2023, PR incidence rates (per 10,000 person-years) declined from 47.4 to 12.5 cases for adolescents/adults and from 1.9 to 0 cases for pediatrics. Amongst

**Conclusions:** Despite the high HIV incidence in San Juan, broadly, PR has narrowed the incidence gap with the US nationally over three decades and is one of the first globally to eliminate mother-to-child transmission. Historically, transmission drivers of HIV have varied with a marked decline in IDU-related and perinatal cases. This study provides insights on PR HIV epidemic trends to inform policy analyses and future prevention initiatives nationally.

# LB20

# Pre-treatment drug resistance in Colombia, a nationwide survey of antiretroviral resistance associated mutations through next-generation sequencing

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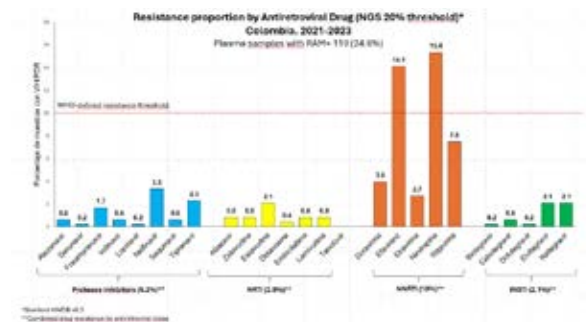
**Background:** In Colombia, current National Guidelines recommend the use of second-generation integrase inhibitors (INSTI) containing regimens as the initial antiretroviral treatment; however, efavirenz-based regimens are still the most prescribed in more than half of initiators, followed by ritonavir-boosted protease inhibitors. INSTI use is slowly increasing but is mainly restricted to switch therapy or virologic failure.

The prevalence of transmitted resistance in Colombia is unknown, a crucial gap in our knowledge to support country level guidelines.

**Methods:** We aimed to assess the prevalence of HIV pre-treatment drug resistance (PDR) through Next-Generation Sequencing (NGS) in plasma samples from volunteers initiating or reinitiating first-line ART in Colombia with all country regions represented. Recruitment was conducted according to the HIV prevalence rates reported to a surveillance system.

We present the results from 483 samples collected between Jul-2021 to Oct-2023. NGS threshold of 20% was performed by the Centre for Research in Infectious Diseases, National Institute of Respiratory Diseases, Mexico City. Stanford HIVDB 9.3 was used for RAM analysis. Study data are shown in cumulative rates.

**Results:** We recruited 483 volunteers nationwide, 98.3% harbored HIV sub-type B clade, 94.3% had Colombian citizenship, and female sex was 12.7%, the median age was 32.4, LT-CD4 count of 674 cells/uL, 24.8% less than 200 cells/uL; median HIV-1 RNA viral load was 213,930 copies/mL. Only 6.1% were reinitiating ART. Genotyping found wild-type virus in 61.7%, and unsuccessful amplification occurred in 12 samples. At a 20% threshold level, mainly NNRTIs transmitted RAMs were detected, primarily K103NS (11%). INSTI RAMs displaying intermediate and low resistance levels were found in 2.1%.



**Conclusions:** Our country-wide resistance data indicates that the use of NNRTI as a first-line therapy must be discouraged. We found a low 2.1% prevalence of INSTI RAMs. These data provide a valuable PDR profile for Colombia to support the National HIV Guidelines for treatment initiation.

**LB21**

# Evaluating the impact of increased provision of low dead space syringes on HIV and HCV transmission among people who inject drugs: a modelling analysis for 19 countries

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**Background:** Low dead space syringes (LDSS) may reduce HIV and HCV transmission risk among people who inject drugs (PWID) compared to high dead space syringes (HDSS). We evaluated the potential impact of introducing detachable LDSS into needle and syringe programs (NSPs) across 19 countries.

**Methods:** We adapted an existing dynamic mathematical model of HIV and HCV transmission among PWID to include different types of syringe use. We parameterized use of LDSS and HDSS based on surveys of service providers in each of the 19 countries. Based on laboratory experiments, we assumed that use of fixed and detachable LDSS reduced risk of HCV transmission by 80% and 44%,

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respectively, compared to HDSS. For each country, the model was calibrated within a Bayesian framework to country-specific data from global systematic reviews. We estimated the proportion of new HIV and HCV infections that could be averted over 2024-2030 if HDSS distributed by NSPs were replaced with detachable LDSS over 2024-2027, with and without a concurrent scale-up of NSP coverage to 75%.

**Results:** Replacing HDSS with detachable LDSS could avert 1.7% (95% credibility interval: 1.1-2.6) and 1.4% (1.1-1.8) of new HIV and HCV infections, respectively, over 2024-2030. Greater impact would be achieved across countries with higher (>40) NSP coverages: 11.9% (8.0-16.0) and 14.3% (12.7-16.2) of HIV and HCV infections averted.

Across all 19 countries, scaling up NSPs to 75% coverage could avert 39.4% (29.4-47.5) and 29.6% (24.4-35.0) of HIV and HCV infections. However, this scale-up could avert 46.1% (36.7-53.4) and 36.1% (30.8-41.2) of new HIV and HCV infections if NSPs switched from providing HDSS to detachable LDSS.

**Conclusions:** Switching from providing HDSS to effective detachable LDSS can substantially increase the impact of NSPs and may provide an important tool for the elimination of HIV and HCV among PWID.

## LB22

Dating and social media app mining predicts pre-exposure prophylaxis (PrEP) uptake in young sexual and gender minority young people in the United States

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**Background:** Pre-exposure prophylaxis (PrEP) is an essential tool for HIV prevention and is underutilized in key populations such as sexual and gender minorities (SGM). Given the widespread use of LGBTQ-specific dating and social media apps, we leveraged data from these apps in order to inform targeted and innovative interventions to enhance PrEP utilization.

**Methods:** We adapted eWellness, an Android mobile phone app, to passively collect data from research participants through app use, keystroke, and GPS location monitoring for use in a machine-learning model from 2021-2024.

The model was trained to identify PrEP usage, which was independently validated through participant-submitted photos of PrEP pill bottles. To measure the accuracy of our predictive model, we calculated F1 scores for PrEP predic-

tion based on collected data. Ethical safeguards and privacy measures were stringently adhered to throughout the study.

**Results:** A total of 82 SGM were enrolled into our study, of which 46 (56%) were taking PrEP at baseline. The machine-learning model demonstrated strong predictive accuracy for PrEP usage with an F1 score of 0.79 when taking all mobile app data into account, including messaging, dating, and social media apps.

Other features were tested such as use of social media apps exclusively, usage of words associated with sexual and substance use risk, and location monitoring, though all demonstrated less predictive power (F1 scores: 0.70, 0.55, 0.50, respectively), compared to all mobile app data, inclusive of both dating and social media apps.

**Conclusions:** Our findings underscore the potential of leveraging app data as a strong predictive tool for PrEP uptake. These insights hold potential for improving global HIV prevention efforts through customized PrEP promotion interventions, especially in areas with high usage of LGBTQ-specific apps.

Future research should explore the model's applicability to different regions and varied SGM subpopulations to enhance its generalizability.

## LB23

Uptake of doxycycline post-exposure prophylaxis (doxyPEP) and declines in bacterial sexually transmitted infections following doxyPEP initiation among HIV PrEP users in a real-world setting

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**Background:** Data are limited on real-world use and effectiveness of doxycycline post-exposure prophylaxis (doxyPEP) for prevention of bacterial sexually transmitted infections (STIs).

We evaluated doxyPEP uptake and changes in STI testing and incidence following doxyPEP initiation in a large cohort of HIV PrEP users.

**Methods:** Kaiser Permanente Northern California, a large integrated healthcare system, implemented doxyPEP in November 2022. Electronic health records of adults dispensed HIV PrEP from November 2022–December 2023 were extracted, with pharmacy data used to identify doxyPEP users. We compared characteristics of doxyPEP users and non-users using chi-square tests. Among doxyPEP users, we measured quarterly chlamydia, gonorrhea and syphilis testing (proportion tested at least once per quarter) and positivity (proportion testing positive at least once per quarter). We used Poisson regression to compute risk ratios (RRs) comparing mean STI positivity from 24 months before to 12 months after starting doxyPEP. To minimize bias from increased STI detection around the time of doxyPEP initiation, we excluded a baseline window from 90 days before to 14 days after individuals' doxyPEP initiation date.

**Results:** Among 11,551 PrEP users, 2,253 (19.5%) initiated doxyPEP, of whom 98.9% had male sex recorded at birth and 48.6% had a bacterial STI in the year before starting doxyPEP.

Compared with non-users, doxyPEP users were older (mean, 40.3 vs 38.8 years), more likely to be commercially insured (92.8% vs 88.9%) and had used PrEP longer (mean, 3.7 vs 2.2 years; all  $P < 0.001$ ).

Among doxyPEP users, mean proportion tested per quarter remained stable from pre-doxyPEP (74.1%) to post-doxyPEP (76.1%;  $P = 0.297$ ).

Quarterly chlamydia positivity decreased from 9.6% pre-doxyPEP to 2.0% post-doxyPEP (RR=0.21, CI=0.16–0.27,  $P < 0.001$ ), with declines at each anatomical site (all  $P < 0.001$ ). Quarterly gonorrhea positivity decreased from 10.2% pre-doxyPEP to 9.0% post-doxyPEP (RR=0.88, CI=0.77–1.00,  $P = 0.048$ ); site-specific declines were observed for rectal ( $P = 0.022$ ) and urethral ( $P = 0.001$ ), but not pharyngeal ( $P = 0.240$ ), gonorrhea.

Quarterly syphilis positivity decreased from 1.7% pre-doxyPEP to 0.3% post-doxyPEP (RR=0.20, CI=0.11–0.37,  $P < 0.001$ ).

**Conclusions:** In this cohort of HIV PrEP users, 1 in 5 initiated doxyPEP during the first year of availability. Receipt of doxyPEP was associated with substantial declines in chlamydia and syphilis, and modest declines in gonorrhea, varying by anatomical site.

## LB24

### Optimizing HIV testing among sex workers through moonlight testing in Harare, Zimbabwe

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**Background:** To increase access to HIV testing and counseling services for female sex workers in Harare, Zimbabwe. The project focuses on broadening HIV and Sexual Reproductive Health and Rights Service (SRHR) delivery options among female sex workers who face barriers to accessing traditional facility-based services. The aim of the intervention is to increase HIV testing uptake among sex workers through Moonlight testing and to promote early HIV diagnosis and linkage to care and treatment services for female sex workers.

**Description:** To increase the HIV and Aids service uptake among female sex workers, National Aids Council (NAC) Harare as the coordinating board, partnered with Implementing Partners and adapted Moonlight testing as way of expanding service delivery options between January and April 2024. The project operates under the leadership of NAC which is mandated to coordinate multisectoral response to HIV and AIDS.

#### Intervention Activities:

- Conduct hot spot mapping and validation
- Community mobilization and engagement:
- Deploying mobile testing units to hot spots
- Distributing self-test kits to Female sex workers
- Offer pre- and post-test counseling, as well as referrals for HIV treatment, care, and support services

**Lessons learned:** Table 1.0 Shows HIV testing among female sex workers in Harare January –April 2024

Performance Indicator	Static -Facility Based HIV testing	Daily outreaches HIV testing	Moonlight HIV testing
HTS -TST	3751	4126	1120
HTS (POS)	262 (7%)	371 (9%)	134 (12%)
TX New	256 (98%)	356 (96%)	127 (95%)

HTS TST = Number of newly tested HIV individuals

TX new = Number of individuals initiated on ART

HTS (POS) = Percentage of HIV positive individuals

Table.

- Moonlight testing increased the uptake HIV service among female sex workers
- Positivity rate is higher for moonlight testing compared to facility based and day outreach.
- Linkage to care through Moonlight testing was found to be above 95%

#### Conclusions/Next steps:

- Moonlight testing proved to be a viable option to expand HIV testing uptake among female sex workers in Harare.



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- Project data indicates that Moonlight testing is a viable strategy for achieving the 95-95-95 targets for female sex workers which is key to attain epidemic control for key populations.

## LB25

### Factors associated with non-disclosure of HIV status: findings from a People Living with HIV Stigma Index 2.0 study in the country of Georgia

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**Background:** In Georgia, PLHIV face heightened risk due to widespread stigma and discrimination. Due to stigma, PLHIV struggle to disclose their HIV status. However, disclosure has many positive outcomes, including reduced internalized stigma and stress, strengthened relationships, empowerment, and improved access to treatment and support.

This study aimed to examine the dynamics between stigma, discrimination, and status disclosure using data from the Georgian PLHIV Stigma Index 2.0 study.

**Methods:** Utilizing data from the PLHIV Stigma Index 2.0 conducted by a PLHIV community-based organization in Georgia in 2022-2024, participants were recruited from HIV-specific healthcare centers and NGOs using venue-based and limited chain referral sampling methods. Data collection employed a comprehensive questionnaire covering demographics, stigma experiences, healthcare interactions, human rights, and non-HIV-related discrimination. Ethical approval was obtained, ensuring confidentiality and respecting participants' rights.

**Results:** Overall, 765 PLHIV completed the survey. The mean age of the respondents was 40.6 (SD=10.8) years and 67.3% were men, of those currently in being in sexual relationship (61.9%) almost half (46.2%) new about their partners' HIV positive status.

We found high levels of non-disclosure in our sample: 91.4% found it difficult to disclose their status and 86.9% reported hiding it from others. Nearly 40% of respondents reported not sharing their status with their sexual partner. In the bivariate model, factors such as age, partner's HIV status, previous disclosure experiences, enacted and internalized stigma, self-discriminatory actions, and access to treatment were significantly associated with non-disclosure.

Logistic regression analysis further highlighted older individuals (OR: 3.35; 95% CI: 1.27-8.83) and those perceiving disclosure positively (OR: 14.87; 95% CI: 6.27-35.19) as more likely to disclose their HIV status to sexual partners.

**Conclusions:** Study finds significant challenges surrounding HIV status among PLHIV in Georgia, where high levels of non-disclosure prevail. Key findings highlight the significant impact of age, partner's HIV status, previous disclosure experiences, enacted and internalized stigma, self-discriminatory actions, and access to treatment on the decision to disclose HIV status to sexual partners. These insights underscore the urgent need for tailored interventions to address stigma, improve disclosure experiences, and promote open communication within intimate relationships, ultimately enhancing the well-being of PLHIV in Georgia.

## LB26

### Preliminary results of a stigma reduction intervention clinical trial among urban and rural Tanzanian women with HIV

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**Background:** In Tanzania, HIV is a leading cause of death and an estimated 810,000 women are living with HIV (WLWH). Stigma is a barrier to testing, prevention, treatment, and well-being for WLWH, yet few evidence-based interventions exist to address it. This study tested preliminary efficacy of a theoretically-based, culturally relevant, linguistically sensitive, sex-specific stigma-reduction intervention, *Labda Siku Moja* (Maybe Someday) through a pilot randomized clinical trial.

**Methods:** The stigma-reduction intervention consisted of five video stories comprised of personalized stigma coping messages acted by and relevant to Tanzanian WLWH, and guided by the Theory of Narrative Transportation. WLWH watched the videos in groups of 8 to 10 organized by age groups. Motivational Interviewing was used as the mechanism of debriefing each of the five stories. To test preliminary efficacy and determine effect sizes of this intervention, a 2 (treatments) x 4 (time points [baseline, 30, 90, 180 days]) repeated-measures RCT was used. Participants were recruited from one urban and one rural health center.

**Results:** Of the 192 WLWH screened for study participation, 167 met enrollment criteria; 87 were randomized to the intervention and 80 to the control, stratified by age (18-24/25+). Retention was high; 154 (92%) completed the 30-day and 155 (93%) completed the 90-day follow-up surveys. From baseline through 90-days, participants in the intervention arm significantly reduced scores more than the control arm for overall stigma ( $p<.0001$ ) and sub-scales: perceived ( $p=.0006$ ), anticipated ( $p<.0001$ ), health sector ( $p=.0328$ ), experienced ( $p=.0024$ ), internalized

( $p<.0001$ ), and disclosure related stigma ( $p<.0001$ ). There was a significant increase on coping self-efficacy ( $p=.006$ ), self-esteem ( $p=.0015$ ), resilience ( $p=.0086$ ), and disclosure of HIV status ( $p=.0012$ ) among women in the intervention arm more than the control arm over the same follow-up period.

**Conclusions:** These findings suggest that it is possible to mitigate the negative effects of stigma among WLWH. Further analysis is planned to evaluate the durability of the intervention through 180 days. Further research is necessary to determine how to scale the intervention for widespread dissemination.

Similarly, as stigma experiences differ among men and women, additional research is also needed to develop and test a stigma reduction intervention for men living with HIV.

## LB27

### The HIV fashion extravaganza: reducing stigma and increasing PrEP uptake among Pakistani gender diverse population through fashion advocacy

S. ----<sup>1</sup>

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**Background:** Stigma on enjoying various forms of sexual experiences, kinks and fantasies among gender diverse population of Pakistan is highly stigmatized. The fear of getting HIV is restraining them from enjoying pleasurable sexual experiences. It was noticed that there are no such mediums to increase awareness of using Prep and supporting them in accessing the medication in the country. Realizing that LGBTQIA+ community has a higher level of interests with shopping, dressing and fashion. This project developed a small scale pilot clothing services which talks about Prep and uses the collection of the money to arrange medication for them in two cities of Pakistan.

**Description:** The individuals are accessed and connected through snowball connections and have been ordering shirts, stoles and basic coats. The dress packaging has a prep information leaflet in the parcel and a safer platform to connect for information, services and medication related support. The brand also provides kink affirming information so the individuals can also receive any specific products safely and enjoy better pleasurable sex experiences with their partners. Some of the clothes also have designs and patterns which exhibit HIV and Prep related information or small mottos which they can safely wear in private and personal events. Currently 11 young people from gender diverse and key populations are part of the pilot and they are sexually active living with their partners covertly or meeting multiple partners in their cities.

**Lessons learned:** 9 out of 11 of these had never used Prep or had no kink affirming or sexual pleasure related information which enhanced and the project supported them to

initiate Prep. They also believed that there are no safety or prevention options to HIV apart from a condom. Remaining 2 were somehow aware and could also afford Prep and the project provided them safe support for re-filling prescriptions and getting medications.

**Conclusions/Next steps:** Gender diverse populations are sexually active and are at moderate risk of contracting HIV due to lack of awareness about Prep. Innovative means like fashion and clothing brands can be a new generation tool to bring awareness for Young people in countries like Pakistan.

## LB28

### Identifying prospective HIV cure adopters in the Netherlands: a latent class analysis of the perceived importance of optimal HIV cure attributes

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**Background:** In the pursuit of HIV eradication or ART-free durable control, it is imperative to consider the perspectives of people with HIV (PWH), the prospective adopters. The study aimed to identify subgroups of PWH based on their perceived importance of potential optimal HIV cure attributes. It also assessed how these subgroups differ regarding acceptance of potential cure strategies that may come available for clinical assessment departing from ideal standards.

**Methods:** Between July 2023 and March 2024, a cross-sectional survey was conducted among 420 PWH in the Netherlands. Participants rated the importance of eight optimal attributes and acceptance of fifteen minimal attributes. Latent class analysis categorized prospective adopters based on their ratings of optimal HIV cure attributes (important-neutral-unimportant). Analyses of variance examined differences in acceptance of minimal HIV cure attributes between adopter classes.

**Results:** Most participants found optimal HIV cure attributes like "No HIV transmission risk" (76.4%), "full immune system recovery" (66.4%), "full protection from HIV reinfection" (63.8%) important optimal HIV cure attributes important. Approximately half considered "no more need for ART" (54.8%), "no serious side effects" (51.0%), and "HIV



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eradication from the body" (49.3%) important. Fewer rated "one-time procedure" (42.9%), and "short regimen duration" (29.8%) as important. Four latent classes were identified: *idealists* (30.71%), who found all attributes important, *indifferentists* (28.81%), who rated all attributes neutral, *pragmatics* (6.7%), who found most attributes not important, and *outcome-prioritizers* (35.24%), who found most attributes important except for cure regimen-related factors. The only minimal HIV cure attributes considered unacceptable were "severe side effects", "potential relapse of ART-free durable control", and "risk of reinfection". Pragmatics were generally most accepting of minimal HIV cure attributes, followed by outcome-prioritizers, idealists, and indifferentists.

**Conclusions:** Distinct subgroups of prospective adopters of HIV cure were identified, with pragmatics and outcome-prioritizers likely to become earlier adopters compared to idealists and indifferentists. Findings also suggested that ART-free durable control may be acceptable, as HIV removal was not considered most important, and many minimal HIV cure attributes were acceptable. These insights can shape and tailor communication strategies to further increase acceptance of clinical assessments deviating from ideal standards.

## LB29

### Africa and Appalachia: shared challenges, shared solutions

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**Background:** This project aimed to address the high HIV/AIDS burden in Africa and Appalachia—regions with significant healthcare access barriers, including stigma, geographic isolation, and limited resources. The objective was to enhance HIV prevention and treatment through robust community engagement and innovative approaches.

**Description:** The initiative operated across diverse locales in Africa and Appalachia. In Africa, where an estimated 25.7 million people live with HIV, the project implemented telemedicine solutions leveraging the widespread use of mobile phones to facilitate remote healthcare consultations, medication adherence reminders, and health education, particularly in rural and underserved areas. With 26.3 million residents across 423 counties, Appalachia utilized community health workers (CHWs) to educate and connect individuals to HIV services. CHWs, often with personal experiences related to HIV/AIDS or substance misuse, were instrumental in building trust within communities, thereby enhancing healthcare access and reducing new infections.

**Lessons learned:** The project demonstrated significant outcomes, with telemedicine in Africa enhancing treatment adherence by approximately 30% and improving

patient follow-up care by 40%. In Appalachia, the involvement of CHWs led to a 25% increase in HIV testing rates and a 20% increase in linkage to care within the first year of intervention. These interventions highlighted the critical role of trust and community involvement in the success of health programs.

**Conclusions/Next steps:** The effectiveness of integrating technology and personal outreach in HIV/AIDS interventions underscores the need for continued innovation and community involvement in health strategies. Future efforts should focus on expanding successful models, increasing community-led initiatives, and fostering global partnerships to address common challenges.

The project's success advocates for sustained investment in traditional and innovative methods, aiming to enhance the global HIV response by adapting strategies based on regional cultural and structural dynamics.

## LB30

### Structural interventions and biomedical HIV prevention in the context of widow cleansing and wife inheritance in western Kenya: a mathematical modeling study

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**Background:** In parts of Africa, women who become widowed lose housing, bank accounts, and other property and must re-marry to avoid extreme poverty. To re-marry, some women are required to undergo widow „cleansing“ – condomless sex with a man who removes „impurities“ ascribed to her from her husband's death – and are „inherited“ as a wife of a brother-in-law.

This study explores how HIV biomedical and structural interventions could reduce HIV-related harms associated with these practices.

**Methods:** We adapted an HIV agent-based network transmission model (EMOD-HIV) previously calibrated and validated for the Nyanza region of western Kenya. Building on the model's pre-existing configuration of marriages, mortality, and widowhood, we added widow cleansing and wife inheritance with assumptions based on literature and the authors' contextual expertise. Modeled HIV prevalence among inherited widows was validated to match observed data. We modeled the effect of widowed women, cleansers, and inheritors receiving biomedical HIV interventions (testing, treatment for those tested positive, and one year of pre-exposure prophylaxis (PrEP)

initiated at cleansing for those tested negative) with or without structural interventions (female empowerment). We modeled low (30%) and high (70%) intervention uptake and reported HIV outcomes including cumulative infections over 2025–2050.

**Results:** Modeled HIV prevalence among inherited widowed women was 61.1% (95% CI: 60.6–61.5%), comparable to observed prevalence of 64.1% (95% CI: 63.2–65.4%). Among all widowed women, biomedical interventions averted 3.2% (95% CI: 1.1%–5.3%) of HIV infections with low uptake and 5.9% (95% CI: 3.8%–7.9%) with high uptake. Combined biomedical and structural interventions averted 12.9% (95% CI: 11.1%–14.6%) of HIV infections with low uptake and 26.4% (95% CI: 24.8%–27.9%) with high uptake. Impacts were smaller for men, e.g., high-uptake structural and biomedical interventions averted 2.5% (95% CI: 0.8%–4.1%) of infections among cleansers and 3.5% (95% CI: 2.4%–4.5%) among inheritors.

**Conclusions:** Widowed women are a vulnerable population with extremely high HIV prevalence. Combined biomedical and structural interventions focused on the practice of widow cleansing and wife inheritance have the potential to avert up to one-quarter of HIV infections among widowed women, and a smaller proportion among men participating in these practices.

## LB31

### Drivers and barriers to PrEP uptake in the Western Balkans: findings from a behavioural and cultural insights study in North Macedonia

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**Background:** North Macedonia in 2021 was the first Western Balkans country to pilot PrEP. Currently, one clinic in Skopje delivers PrEP, but uptake has been slow. A behavioural and cultural insights study was implemented by World Health Organization Regional Office for Europe (WHO/Europe) and local stakeholders to explore the views of representatives of key populations (KPs) and healthcare workers (HCWs), within a WHO/Europe Tailoring Health Programmes project, aimed at investigating drivers/barriers to PrEP uptake and developing tailored interventions to increase PrEP coverage.

**Methods:** 41 in-depth interviews with KPs representatives who had ever/never used PrEP (purposive sampling), and 4 focus group discussions with HCWs involved in PrEP delivery or referral (voluntary response sampling), were conducted between December 2023 and February 2024 in all regions of North Macedonia. Recordings were analysed through content analysis, with results entered into rapid analysis process sheets using the COM-B framework (Capability, Opportunity, Motivation-Behaviour).

**Results:** Participants' demographics.

	Key populations representatives (n=41) n (%)	HCWs involved in PrEP delivery (n=7) n (%)	HCWs involved in PrEP referral (n=20) n (%)
Gender identity			
Cisgender men	28 (68.3%)	2 (28.6%)	7 (35.0%)
Cisgender women	5 (12.2%)	5 (71.4%)	13 (65.0%)
Transgender men	2 (4.9%)	-	-
Transgender women	6 (14.6%)	-	-
Key population			
Gay, bisexual and other men who have sex with men	27 (65.9%)	1 (14.3%)	-
Persons who inject drugs	2 (4.9%)	-	-
Sex workers	11 (26.8%)	-	-
PrEP use			
Ever used PrEP	12 (29.3%)	1 (14.3%)	-
Ethnicity			
Macedonian	30 (73.2%)	7 (100%)	19 (95.0%)

Among KPs, detailed knowledge of PrEP (including dosing schedules, side effects, contraindications) was a much stronger driver for uptake than awareness of PrEP as an HIV prevention method alone. Knowing someone who had used and recommended PrEP was another strong driver. Anonymous HIV testing, low costs, competent and sensitive staff at the clinic encouraged PrEP uptake. Centralization of PrEP delivery and lack of anonymous access to PrEP services were identified as critical barriers. Among HCWs, lack of information about PrEP was the main barrier for referring clients for PrEP. Insufficient knowledge, myths and stigma around PrEP, and stigma towards KPs in healthcare settings were identified as important barriers both among KPs and HCWs.

Barriers and drivers identified were relevant across gender, key population, age, ethnicity, region.

**Conclusions:** These findings provide important insights for co-designing with local stakeholders effective interventions to increase PrEP uptake in North Macedonia, and other Western Balkan countries with comparable backgrounds.



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## LB32

Understand how health, well-being, social support, violence, and stigma shape resilience pathways among Kenyan youth aged 15-24 living with HIV in urban informal settlements through structural equation modeling

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**Background:** Resilience among young people living with HIV is shaped by their behavior and self-perceived HIV management skills. The COVID-19 pandemic disrupted the livelihoods particularly in urban informal settlements in Kenya further marginalizing already vulnerable residents. Yet, little is known about contextual factors associated with resilience among this population.

**Methods:** We conducted across-sectional survey between February and April 2024 recruiting participants aged 15 to 24 from three HIV clinics located in two informal settlements: Korogocho and Viwandani. Resilience was measured by 25-item standard scale, with two factors described as personal competence and acceptance of self and life. General health status is measured by GHQ-28 with four subscales, somatic symptoms, anxiety and insomnia, social dysfunction and severe depression. Linear regression analysis is used to model the association between resilience and HIV self-management (measured by Perceived HIV self-management Scale) and adherence to treatment (measured by HIV Adherence Self-Efficacy Scale).

Further, we evaluated the complex pathway of the relationship between resilience and general health status, social support, adverse childhood experiences, HIV stigma using structural equation modeling (SEM).

**Results:** Of 300 eligible participants, the majority were from Korogocho (62%) and were female (80%), lived in semi-permanent housing (60%), and living with HIV for more than 10 years (35%). About two thirds, or 57%, had secondary as their highest education level. Resilience explained 14% (13%) of the variance of perceived HIV self-management (adherence) in the linear regression model.

After adjusting for age, sex, language, education, years since HIV diagnosis, general health, and distance to clinic, resilience was significantly associated with perceived HIV self-management ( $p < 0.001$ ) and adherence to treatment ( $p < 0.001$ ).

Pathway analysis showed a direct effect of better general health on the higher level of resilience ( $p = 0.006$ ), with Bentler's Comparative Fit Index 0.93. The most notable path relationship suggested was between the social dysfunction of general health and resilience ( $p < 0.001$ ).

**Conclusions:** In this cross-sectional study, youth aged 15-24 living with HIV experienced high levels of distress, significantly associated with resilience levels. Adverse childhood experiences and social dysfunction that focus on self-esteem were significantly related to resilience levels and may provide avenues for intervention strategies among this population.

## LB33

Effectiveness of Needle and Syringe Program on HIV prevention and PrEP uptake among people who use drugs: outcome of National Pilot program in Nigeria

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**Background:** Needle and Syringe Programme (NSPs) is a key recommendation by WHO for HIV prevention among People Who Inject Drugs (PWID). Despite the growing data on injecting practices across Sub-Saharan Africa, there has been a great reluctance by Government entities to approve NSP within their national program. In 2019, the Government of Nigeria established the national harm reduction programme and commissioned a needle and syringe program pilot in four different states including the Federal Capital territory (FCT).

The key objective of the pilot study was to assess the acceptability of implementing NSP in Nigeria and evaluate the optimization of HIV service delivery and uptake among PWID. The result presented in this study is the recent validated outcome of the FCT pilot.

**Methods:** The NSP pilot was implemented over a period of 10 months and was independently evaluated using mixed methods. The pilot utilized a cohort approach with three hundred (300: 73% males; 27% females) PWIDs enrolled in two phases. Each cohort was exposed to an 8-week peer education program on HIV and received a package of defined services (HIV testing Services (HTS),

**Results:** Evaluation showed that NSP program implementation is feasible in the FCT with opportunities of scaling up services to other locations. More so, provision of clean needles and syringes was highly accepted among PWIDs with expressed desire that it should be sustained. At baseline more than three quarter of the cohort reported sharing needles and syringes, an experience higher among the females. At evaluation, the percentage of needle sharing reduced by almost 45% with only 20% reduction among the females.

Also, only 35% knew their HIV status (49.3% females vs 30.9% males) at baseline but this increased to 79.3% (75.7% females vs 85.8% males) at the end. 33 PWIDs tested positive to HIV, 11 persons for HBV while no positive case for

HCV at baseline. At the project evaluation, no new cases of HBV and HCV was recorded but 8 new cases of HIV who are all females. Prep usage increased from 0% to 30.7% at evaluation.

**Conclusions:** The leadership of the Government is critical to the implementation of comprehensive harm reduction program

## LB34

### Using longitudinal genetic-network to understand the Risk of Secondary HIV-1 Transmission among HIV/AIDS Individuals Receiving ART: A Longitudinal Observational Study in Guangxi, China

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**Background:** The „Treat-all“ policy is crucial for controlling secondary HIV-1 transmission (SHT). However, data on the prevalence of SHT and its correlates among antiretroviral therapy(ART) patients is limited.

This study aims to assess the prevalence of SHT and its correlates among ART patients in Guangxi, China.

**Methods:** A longitudinal genetic network study was conducted from January 1, 2000 to December 31, 2021 in Guangxi. Patients diagnosed from 2000 to 2017 were classified as baseline patients, and newly diagnosed HIV cases from 2018 to 2021 were defined as follow-up patients.

Patients who genetic linked to the patients diagnosed in baseline or preceding year of the follow-up were identified as secondary HIV-1 transmission. The Generalized Estimating Equations (GEE) model was used to identified the correlates of SHT.

**Results:** Of 3,177 identified HIV patient with sequences, 2,245 patients were at baseline, and 932 were newly diagnosed patients with HIV at follow-up. A total of 10,331 baseline objectives were observed by repeated measurement analysis. The prevalence of SHT was 10.8% (1,117/10,331). In the GEE model, patients who self-reported condomless sex in the past three months have a secondary transmission risk of 41%.

Participants with diagnosed age of 30-49 and aged 50 or older had 52% and 87% increased risk of SHT, respectively. This age trend was non-linearly related to the risk of SHT with a cut-off value of 43.13 years.

Furthermore, individuals whose steady sexual partners or spouse are seropositive for HIV also increased 32% of SHT. Conversely, those patients with high education were found to be reduced SHT risk. Some factors were associated with SHT, including men, minority HIV-1 subtypes (CRF07\_BC, CRF08\_BC, others), higher CD4-T cell count ( $\geq 350$  cells/ul, CD4).

**Conclusions:** The study indicated a moderate SHT among ART patients in Guangxi. This study is the first to identify that older ART patients with condomless sex presented a heightened risk of secondary HIV transmission, indicating the necessity to enhance the practice of safe sex among the patients received ART. Urgent enhancements to the efficacy of ART for patients, coupled with targeted interventions for high-risk individuals, are essential as the scale of ART implementation expands

## LB35

### Acceptability and feasibility of social norms intervention for integrated adolescent HIV-violence prevention in South Africa

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**Background:** *Schools Championing Safe South Africa* is an intervention targeting prevention of sexual violence perpetration and HIV risk behavior among teenage boys. The intervention is developmentally tailored, leveraging the power of school environments in prevention. It works by combining correction of misperceived norms via school poster campaigns with behavioral training delivered via two interactive health behavior lessons. We report on the acceptability and feasibility of the intervention.

**Methods:** A pilot randomized controlled trial (RCT) of N=282 teenage boys between 15-17 years old was completed between 2020-2023 at two high schools in South Africa. To evaluate acceptability, surveys on satisfaction with the content, format, and delivery of the intervention were administered to participants and teachers at the intervention school. To evaluate feasibility, we examined recruitment and retention data and intervention attendance.



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**Results:** Boys reported completing acts of unwanted sexual petting, oral, vaginal, and anal sex (55%, 32%, 38%, 24%, respectively). Risk for HIV infection was also high; 82% of participants reported ever having vaginal sex and 34% reported ever having anal sex. Of those who reported having sexual intercourse, 66% reported using a male or female condom during sexual intercourse (anal and/or vaginal). There was high satisfaction with the intervention. Of the 142 adolescent boys who received the intervention, 99% responded to the evaluation survey. 84.3% reported the quality of the program as "good" or "excellent". 93.5% reported that the content in the intervention met "most" or "almost all" of their needs. 88.6% reported they would come back to the program or want to see the program run again. Teachers also found the program to be highly acceptable. 92.5% reported they would come want to see the program run again. There was excellent feasibility with 99% retention at the 6-month follow up timepoint. Among the intervention group, 79% and 75% reported receiving the first and second sessions of the intervention, respectively.

**Conclusions:** Promising results on acceptability and feasibility indicate a need to further test the efficacy of this developmentally tailored intervention concurrently targeting prevention of HIV and sexual violence among teenage boys by means of a novel norms correction and behavioral skills training.

## LB36

HIV risk and role of biomedical, bio-behavioral, and structural interventions for adolescents and young adults participating in traditional funeral practices in western Kenya: a mathematical modeling study

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**Background:** A *disco matanga*, or "disco funeral," is a celebration of a decedent's life that is culturally important in parts Africa, often involving overnight travel and alcohol consumption. These are known risk factors for HIV, which is prevalent in many areas where *disco matanga* is practiced. However, the contribution of *disco matanga* to HIV transmission is not well-understood.

We used agent-based network modeling to estimate how *disco matanga* impacted HIV transmission, and to explore relevant biomedical, biobehavioral, and structural interventions.

**Methods:** We adapted EMOD-HIV, a previously validated network-based model of HIV in the Nyanza region of Kenya, to incorporate *disco matanga* assumptions informed by literature review. Occurrence of *disco matanga* was modeled to occur following any death in the population. We compared past HIV incidence (1980–2024) with and without incorporating *disco matanga*, and future HIV incidence (2025–2050) with different interventions for *disco matanga* attendees:

1. Biomedical (HIV prophylaxis),
2. Bio-behavioral (reduction in condomless sex partners),
3. Structural (female empowerment to avoid unwanted sex).

We estimated HIV infections and deaths averted in the overall population, with sensitivity analysis around intervention uptake.

**Results:** Over 1980–2024, *disco matanga* contributed 7.8% (95% CI: 5.5%–9.3%) of all HIV infections, an effect that peaked at 9.9% (95% CI: 6.4%–12.0%) in the year 2004, coinciding with a peak in all-cause mortality due to HIV/AIDS. Biomedical prevention at *disco matanga* could avert up to 9.7% (95% CI: 8.9%–10.5%) of adult HIV infections and 2.3% (95% CI: 1.9%–2.6%) of deaths; bio-behavioral 2.9% (95% CI: 2.1%–3.6%) of infections and 0.9% (95% CI: 0.6%–1.2%) of deaths; and structural 1.2% (95% CI: 0.5%–1.8%) of infections and 0.5% (95% CI: 0.2%–0.7%) of deaths. Results were highly sensitive to intervention uptake.

**Conclusions:** We conducted the first modeling study, to our knowledge, simulating the interactions between *disco matanga*, HIV/AIDS, and intervention options. We found that biomedical, biobehavioral, or structural interventions aimed at *disco matanga* could substantially reduce HIV transmission and mortality in the Nyanza region. Research is needed to understand the feasibility and acceptability of HIV interventions tailored to local cultural practices.

## PLWHA Ukrainian war refugees in Slovakia: a retrospective, observational study

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**Background:** In order to a better understand the medical needs from Ukrainian war refugees living with HIV/AIDS. We decided to describe virological status, coinfections and treatment of the Ukrainian PLWHA war refugees in Slovakia.

**Methods:** Between 1 march, 2022 and 31 march, 2023 we conducted multicenter, retrospective, observational study in Slovakia. Data were collected from all Ukrainian with refugee status who were living with HIV or were newly diagnosed and presented to any of the five HIV/AIDS centers in Slovakia. The information was obtained through medical interviews, physical examinations, and laboratory tests.

Additionally, a medical report containing the medical history of each patient was requested from the Ukrainian Ministry of Health.

**Results:** 141 refugees from Ukraine presenting at our outpatient clinic were included. Most were women (56.74%, n=80/141). Median age was 41 years (range 16-60). The median CD4+ cell count was 680 cells/mL (range 20-1670 cells/mL), and 69.29 % (n = 97/141) had viral load (HIV RNA) < 40 copies/ml (Graf n. 1). At the time of arrival in Slovakia, 87.86% (N= 123/140) was receiving ART and 90.24% (N: 111/123) were on dolutegravir (DTG)-based regimens. Coinfections with hepatitis C virus 31.06% (n = 41/132), hepatitis B virus 12.50% (N: 17/136) and active pulmonary tuberculosis 1.74% (N: 2/115) were reported. Three newly diagnosed participants died from acquired immune deficiency syndrome complications.

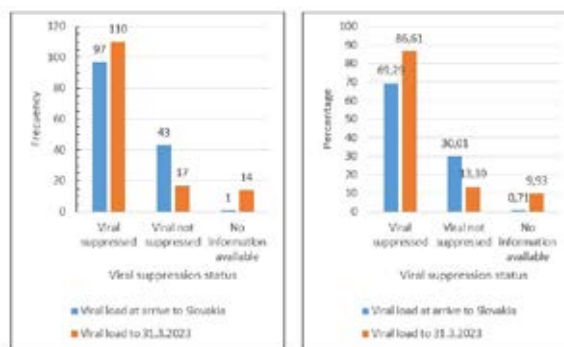


Figure. Graf n.2 Frequency and percentage of viral suppression status in war refugees Ukrainian PLWHA.

**Conclusions:** The description of the epidemiological, demographic, immunological, coinfection and treatment characteristics of Ukrainian PLWHA displaced by the war has allowed Slovak HIV specialists to understand better their medical needs and to provide the best possible medicale care. Patient databases accessible online can help coordination between and within countries; however, adequate data protection remains a challenge. As the war appears unlikely to end in the near future, it is necessary to be prepared to receive more refugees in the coming months.

## LB38

### A blended learning implementation package to increase HIV index case testing outcomes in Malawi: a cluster randomized controlled trial

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**Background:** Index Case Testing (ICT) is an evidence-based intervention to diagnose people living with HIV (PLHIV), yet faces implementation challenges to scale up in sub-Saharan Africa. The WHO endorses digital approaches to overcome implementation barriers in resource-limited settings. We developed and evaluated a blended learning implementation package that combines digital and face-to-face training modalities to enhance health care worker ICT skills.

**Methods:** We conducted a cluster randomized controlled trial from October 2022 to September 2023 at 33 health facilities (clusters) in South-eastern Malawi. Clusters were randomly assigned in a 2:1 ratio to receive standard ICT







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implementation (Standard arm) versus the blended learning implementation package (Enhanced arm). Index clients were PLHIV who were newly or previously diagnosed with HIV. Contact clients were their sexual partners, biological children and other household members.

We fit a negative binomial mixed-effects model to estimate intervention impact on the HIV index case testing cascade. Primary outcomes data was abstracted quarterly from Malawi ministry of health HIV registers and calculated as facility-level rates accounting for facility size variation. All models accounted for longitudinal measures within cluster.

**Results:** Clusters were randomly assigned to the Enhanced (n=11) or Standard (n=22) arm. We observed trends in a positive direction for all indicators: index client participation in ICT (RR=1.25, CI: 0.93, 1.69), contacts elicited (RR=1.39, 95% CI: 1.07, 1.79), contact clients tested (RR=1.47, CI: 1.01, 2.14), and contact clients newly diagnosed with HIV (RR=1.20, CI: 0.82, 1.76). In the Enhanced arm, index clients also received more HIV self-test kits for secondary distribution (RR=2.32, 95% CI: 1.11, 4.85).

**Table 1.** Outcomes for HIV Index Case Testing cascade per total potential indexes (N=33 clusters, 4 quarterly time-points)

	Enhanced Median counts (25 <sup>th</sup> , 75 <sup>th</sup> percentile)	Standard Median counts (25 <sup>th</sup> , 75 <sup>th</sup> percentile)	Rate Ratio (95% Confidence Interval)
Total potential index clients	487 (386, 820)	550 (449, 859)	Not applicable
Index clients who participated in ICT	140 (114, 226)	132 (78, 212)	1.25 (0.93, 1.69)
Contact clients elicited	63 (42, 86)	42 (26, 64)	1.39 (1.07, 1.79)
Contact clients tested	39 (24, 59)	27 (17, 39)	1.47 (1.01, 2.14)
Contact clients newly diagnosed HIV+	2 (1, 3)	2 (1, 3)	1.20 (0.82, 1.76)
HIV self-test kits distributed	5 (3, 10)	1 (0, 7)	2.32 (1.11, 4.85)

**Conclusions:** Blended learning implementation package increased contact clients elicited, contact clients tested, and HIV self-test kits distribution compared to standard implementation and could be a useful tool for scaling up ICT programs.

## LB39

### Enhancing HIV self-testing (HIVST) coverage among diverse communities and future directions in Myanmar: insights from a pilot project (May 2022 - March 2024)

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**Background:** In Myanmar, HIV/AIDS remains a significant public health concern, exacerbated by limited testing coverage and accessibility barriers. Traditional testing methods face barriers such as stigma and limited health-care infrastructure, necessitating innovative approaches like HIVST. This study examines factors influencing access to HIV testing through self-testing initiatives and investigates three distinct channels for amplifying HIVST adoption across the nation.

**Description:** HIVST pilot project was introduced in three States/Regions in May 2022 to assess its feasibility and acceptability across diverse communities. A comprehensive program review was conducted, synthesizing data from HIVST pilot project and evaluations conducted by implementing partners. The analysis examined the uptake and acceptability of three different HIVST strategies. Factors influencing access to HIV testing were scrutinized to understand their impact on testing outcomes. Three channels were assessed: online Sate Cha platform linked with 16 private pharmacies, key-population led distribution involving five community-based organizations and four healthcare facilities.

**Lessons learned:** From May 2022 to Mar 2024, 3,850 individuals were tested, with 97% from key populations. 68% (n=2,613) underwent their first HIV test using HIVST kits, revealing its effectiveness in reaching new testers. The reactive rate was 6% (n=219) among 3,757 reported results. Factors influencing access to HIV tests, stigma and confidentiality concerns (24%, n=923), and accessibility (32%, n=1,237), were clarified. Distribution channels varied, with online reaching 12%, key-population-led 42%, and facility-based 46%. This shows the varied effectiveness of different distribution strategies and emphasizes the importance of a multifaceted approach. Partnerships among stakeholders, alongside digital technologies, were vital lesson learned for scaling up HIV self-testing initiatives effectively.

**Conclusions/Next steps:** The review highlights HIVST as a valuable tool for expanding testing coverage and reaching underserved populations in Myanmar through three different distribution channels. Addressing identified barriers and fostering collaboration among stakeholders are crucial next steps to scale up HIVST effectively and combat the HIV/AIDS epidemic.

## LB40

### Generic production of lenacapavir targeting under \$100 PPPY[1]: Analysis of the Active Pharmaceutical Ingredient

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**Background:** Cost-Plus (Cost+) pricing and voluntary licensing (VL) to generic companies has enabled 30M+ people to receive HIV treatment in low-resource settings. Licensors, licensees, and funders heroically collaborate so poor people do not die because of property rights (Patents). Twice-yearly lenacapavir as PrEP could substantially reduce the current rate of 1.3M new infections/year. Lenacapavir is presently far too expensive (\$25k-\$45k/pppy) for low-resource settings.

Lenacapavir is a complex small molecule with a Cost-of-Goods (COGs) heavily dependent on the Active Pharmaceutical Ingredient (API). But lenacapavir is a low-dose drug (approximately 2 grams/patient-year).

**Methods:** We questioned whether lenacapavir could realistically achieve \$100/pppy and subsequently \$35-\$40/pppy for maintenance PrEP, with: 1) Cost+ pricing; and 2) guaranteed purchases of 1M and 10M treatments/year. This represents approximately 2,000kg and 20,000kg of API demand. We targeted API pricing of \$25,000/kg and \$10,000/kg to enable these COGs. There is very limited data available for lenacapavir API pricing, and the originator's (Gilead Sciences) cost basis is very different from that for generic production.

We evaluated the API Routes of Synthesis (ROS) and Key Starting Materials (KSMs) in patents/publications. Quotes/discussions and rates for Overhead and Labor (OHL) were obtained from generic companies. Standard tools used by pharma companies were used to project API COGs.

**Results:** Our analysis and quotes for KSMs/APIs support that \$25,000/kg is achievable for lenacapavir API, with a committed demand of 2,000kg/A. An API COGs of \$10,000/kg requires substantial changes to the ROS. Bioequivalence trials and the R&D expense of a better synthesis are needed. Yet, \$10,000/kg seems reasonably achievable with R&D investment at suppliers and 20MT/A volume demand. At these API COGs, target pricing for the finished product (\$100 and \$35-\$40/pppy) can likely be met.

**Conclusions:** Lenacapavir API can achieve pricing of \$25,000/kg, potentially falling to \$10,000/kg or less with R&D investment and scaled demand.

This would result in eventual pricing for PrEP of \$35-\$40/pppy. Mass-production of generic lenacapavir, under VLs is required to achieve this. Gilead has not yet agreed to provide VLs for lenacapavir.

## LB41

### Reaching the unreached and hidden key population by leveraging on virtual platforms in Nairobi, Kenya - KP Program

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**Background:** Since COVID-19, we have seen increased key population (KP) activity on online platforms (social media fora, mobile applications, websites, geosocial networking, social networking applications). KP and hidden/hard-to-reach populations are increasingly reverting to virtual spaces to network and seek sexual partners. The SWOP program in Nairobi, Kenya serving over 40,000 KPs (SWs, MSM, TG) has applied novel approaches implementing virtual KP programming to harness online platforms, expand access to unreached individuals facing high risks, and additionally reaching existing program beneficiaries already using online and mobile platforms.

**Description:** From October 2022 to September 2023 the SWOP Program undertook activities aimed at increasing Virtual KP Engagement.

- Conducted Community Engagement (through KP Community sensitization) using peer educators and community champions;
- Developed a KP-friendly mobile application "Safe Clinic Network"
- Conducted staff sensitization and training of virtual peer educators on Virtual KP Programming.
- Conducted virtual spaces and social apps mapping used by different KP typologies; engaged peers online by sign posting health information and direct messaging while promoting download of the safe clinic app.
- Linked clients with services at the clinic.

**Lessons learned:** 5012 KPs were contacted and reached with HIV prevention messages on the virtual spaces: 28.5% SW's, 24.3% MSM and 47% Transgender. Of the 5012, 573 (11%) were enrolled into a facility and received clinical services.

Messaging Apps (WhatsApp) had the most online interactions (over 21%), Social networking (Facebook) accounted for over 16% of the total engagements. Social Networking and dating apps were popular among MSM, MSW and TG's, (Grinder- 13.5%, Romeo - 12.3%.



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## Conclusions/Next steps:

- Hidden and hard-to-reach populations can be reached leveraging on virtual KP programming. Sensitization and capacity building in all stakeholders is critical for successful programming.
- Programs need to plan and dedicate resources for linkage of services from virtual space to service delivery facilities.
- Need to strengthen M&E for the strategy (realistic/simple data collection tool)
- Address security concerns
- by digital literacy; MSM reporting cases of blackmail and sexual predators targeting FSW's in the virtual spaces
- Align to data privacy laws and regulations for virtual programming and health applications
- Conduct Virtual spaces mapping and size estimates for effective Virtual programming

## LB42

Differentiated service delivery: rapidly identification of eligible clients to be shifted in less intensive model through clinical mentorship in Rwanda

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**Background:** Since 2016, Rwanda adopted the "Treat all" strategy following the World Health Organization recommendations, and all clients who test HIV-positive are linked to care and initiated Antiretroviral therapy on the same day where feasible. This strategy has led to an increase in the number of patients on ART. Rwanda has adapted its national HIV treatment guidelines to include differentiated service delivery.

This model was initiated among stable clients and they benefited from three or six multi-months drug dispensing (3MMD&6MMD) to reduce the burden of visits for People Living with HIV (PLHIV) and the workload for health care providers.

**Description:** Clinical mentors from all hospitals were invited for an orientation meeting, where guidance and required tools and materials were provided. Teams were established by coupling a medical doctor and nurse. Each team was appointed generally to reach at least 5 sites (health facilities) per week. Supervisors from RBC were also appointed to support and coordinate clinical mentor's activities. Clinical mentors had the responsibility to provide all necessary information to Health Care Providers and collect data from registers to identify PLHIV who were eligible to be shifted to less intensive Model in DSD. In total 561 health facilities have been visited and the total number of 195,220 PLHIV on the ART; 20,3%(39,708) are on

one-month pharmacy dispensing, 24,8%(48,536) on 3MMD and 54,3%(105,922) on 6MMD. In 39,708 on one month, 5,156(13%) were stable and eligible to be shifted in less intensive model.

**Lessons learned:** Shifted clinical mentorship was a good way to reach health care providers and identification of eligible clients for less intensive model to sustain DSD. Eligible clients have been shifted to the less intensive model(3MMD&6MMD) to decreased the number of required clinical visits for PLHIV and the workload of overloaded health care providers.

**Conclusions/Next steps:** Clinical mentor facilitated on-site refresher training of Health care providers and identification of PLHIV eligible to be shifted in less intensive model. This ensure uninterrupted access to antiretroviral therapy and limit the frequency of visits. Both PLHIV and healthcare providers are in appreciation of the model and commended its sustainability toward HIV epidemic control.

## LB43

Implementation and impact of the advanced HIV disease response strategy in Brazil: a comprehensive analysis

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**Background:** The prevalence of advanced HIV disease (AHD) among people living with HIV (PLHIV) remains concerning, with 28% affected, and 66,000 PLHIV lost to follow-up in Brazil in 2023. To tackle this challenge, the Brazilian Ministry of Health introduced the Advanced HIV Disease Response Strategy, with the goal of improving care delivery in five states.

This study aims to describe the initial six months of implementation and present data on prevalence and compliance.

**Methods:** The Advanced HIV Disease Response Strategy was implemented in 22 Brazilian cities across five states to address HIV healthcare gaps and improve access to care. This analysis focuses on healthcare facility gaps, capacity-building initiatives, and its impact on HIV care access. Key actions included point-of-care CD4 tests, Urine Lipoarabinomannan Assay (LAM), Urinary Histoplasma Antigen test (HistoAg), Cryptococcal Antigen Assay (CrAg), care linkage, primary prophylaxis, opportunistic infection treatment, tuberculosis preventive treatment(TPT), and antiretroviral therapy(ART) within 7 days. Additionally, an online monitoring system was developed (click here).

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**Results:** The AHD Response Strategy trained 5,653 health-care workers and provided care to 2,651 PLHIV from June to December 2023. Characteristics of the population included a predominantly young demographic, low education levels, and a significant representation of marginalized groups: 83% aged 25-39yo, 43% with  $\leq 7$  years of schooling, 73% Black, 22% men who have sex with men, and 5% transgender.

Among these, 25%(n=663) were reached through a re-engagement strategy, 39%(n=1034) joined post-diagnosis, and 36%(n=954) presented spontaneously due to illness. Point-of-care testing was crucial in assessing this population: the results revealed positivity rates of 28% for LAM, 3.3% for CrAg, and 5.8% for HistoAg, underscoring the prevalence of opportunistic infections. Furthermore, 1,383 PLHIV(57%) received cotrimoxazole prophylaxis, while 1,843 individuals (76%) initiated ART, 66% within seven days of enrollment.

**Conclusions:** Implementation of AHD response strategy highlights POCT's role in identifying infections and guiding interventions. Adherence to the package, including POCT, care structuring, PLHIV follow-up and hospital support, was notable.

Challenges persist, especially in vulnerable populations, due to staff overload and limited resources. Introducing point-of-care diagnostics may revolutionize HIV care, impacting treatment adherence. The implementation underscores successes and challenges, emphasizing ongoing support and adaptation to meet PLHIV's complex needs, especially those with advanced disease.

## LB44

### Disseminating U=U improves retention in care and viral suppression: a pilot RCT in South Africa

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**Background:** People living with HIV (PLHIV) who are virally suppressed cannot transmit the virus sexually: "Undetectable = Untransmittable (U=U)". However, in many settings, PLHIV do not receive information on U=U as part of routine HIV counselling. There is limited evidence of the impact of U=U communication strategies on PLHIV clinical care outcomes.

**Methods:** We developed a video-based App, called "Undetectable & You", to deliver information on U=U through testimonials of PLHIV and their partners and piloted the App in a randomized pilot trial. PLHIV (n=135) were recruited from public sector clinics in Johannesburg following HIV counselling.

After a baseline survey, participants were randomized 1:1 to the App (~15 minutes) or to control (no intervention). Intervention participants also received monthly text messages on U=U.

Knowledge and attitudes were assessed immediately after the intervention and participants were followed for 10 months in clinical charts to assess retention in care and documented viral suppression (<200 copies at 3-10 months, our primary outcome).

**Results:** Participants in the intervention arm (n=64) and control arm (n=69) had similar baseline characteristics. The intervention increased U=U knowledge, i.e. the percentage believing there was zero risk of transmission if virally suppressed, from 42% (control) to 76% (intervention) (p<0.01). Percent retained in care (any medication pick-ups) beyond 30 days was 81% in the control arm and 94% in the intervention arm (risk difference: 13%, p=0.030).

The retention gap between intervention and control participants widened from 6% in the first two months to 13% in months 3-4 and 17% in months 5-6 (Figure).

Percentage virally suppressed was 35% in the control arm and in 55% in the treatment arm (risk difference: 20%; p=0.021). Participants reported high intervention acceptability and that they could relate to the characters in the videos.

**Conclusions:** In a pilot RCT, interacting with the "Undetectable & You" App after HIV counselling increased U=U knowledge, retention in care, and viral suppression.

## LB45

### Sustainability of national financing in response to HIV in the Republic of Kazakhstan

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**Background:** The Republic of Kazakhstan faces a concentrated HIV epidemic, with a prevalence of 0.3%, primarily affecting key populations (KP), including people who inject drugs (7.2% - IBBS, 2022) and men who have sex with men (6.5% - IBBS, 2021).

In 2022, the government funding for the HIV program covered around 92% of the national response. However, to achieve 95-95-95 targets by 2030, annual HIV program budget should be increased and optimized resource allocation for the prioritized programs can have an impact in reducing infections and deaths.







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**Description:** The Global Fund grant aimed to strengthen the sustainability of national financing for HIV programs through State Social Orders (SSO) for NGO engaged in HIV prevention among KPs and PLHIV. The Principal Recipient developed terms of reference for NGOs and outreach workers, guidelines for obtaining SSOs, and facilitated advocacy meetings among decision-makers. Additionally, they provided training to enhance the capacity of NGOs to obtain SSOs.

Notably, amendments were made to the "On Public Health And Healthcare System" code, specifically regarding the norms governing the allocation of SSOs to NGOs for HIV prevention.

Additionally, reductions in dumping rates associated with SSO procurement, were implemented, lowering them from 20% to 10%. Furthermore, the government reduced the payment for participation in public procurement portals for SSOs from 30 monthly calculation index (MCI) (130\$) to 1 MCI (7\$).

**Lessons learned:** Advocacy efforts resulted in heightened government interest and increased SSOs allocations to NGOs serving KPs and PLHIV. Financing surged from KZT 16.1M in 2020 to KZT 150B in 2023, with the number of NGOs receiving SSOs rising from 4 in 2020 to 15 in 2023 (Table 1).

Year	2020	2021	2022	2023
Financing for SSO for HIV prevention, KZT	16.1M	19.7M	74.2M	150.0M
Number of NGO received SSOs	4	5	7	15

Table 1. Changes in the financing for SSO targeting KPs and PLHIV in RK, 2020-2023.

**Conclusions/Next steps:** The increased SSO allocations for NGOs working with KPs and PLHIV indicate the effectiveness of advocacy and partnership efforts in Kazakhstan's healthcare system. Future steps include maintaining government policies to improve access of NGOs to apply for government funding via SSOs.

## LB46

### Mass generic production of lenacapavir could cost under \$100 per person-year: the need for voluntary licensing

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**Background:** Despite improvements in access to both HIV treatment and oral PrEP, there were 1.3 million new HIV infections in 2022. If the PURPOSE trials demonstrate preventative efficacy, six-monthly lenacapavir PrEP could benefit millions of people worldwide. However, lenacapavir prices are currently up to \$44,819pppy.

**Methods:** We projected minimum pricing of lenacapavir based on generic mass-production and a Cost-Plus (Cost+) model. Current lenacapavir Active Pharmaceutical Ingredients (API) and Key Starting Materials (KSMs) costs were obtained from export databases (Panjiva and Trade Visions LLC). Routes of synthesis (ROS) were analysed to project a Cost of Goods (COGs) for initial and increasing demand.

The costs of formulation, vials and profit margins were included using standardised algorithms and Cost+ pricing. We estimated Cost+ prices with scale-up to produce sufficient doses for 1M then 10M treatment-years and compared this with current national list prices.

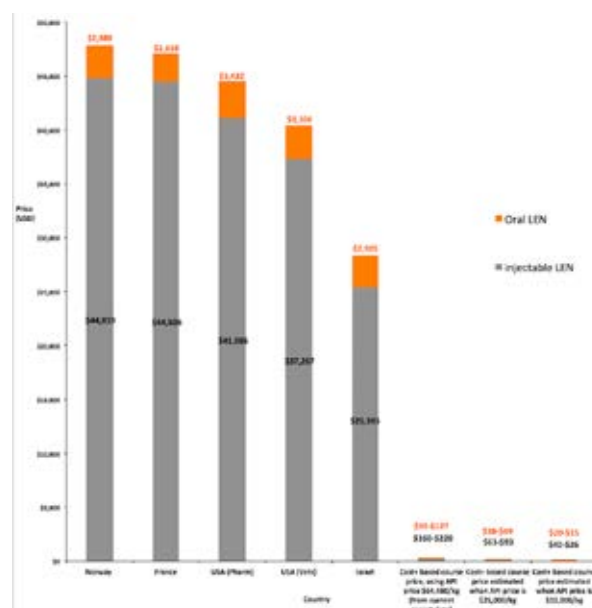


Figure. Lenacapavir course prices (pppy) compared with cost+ based course prices.

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**Results:** Lenacapavir API is currently exported for \$64,480/kg on 1kg scale. Based on the ROS and KSMs, an API COGs of \$25,000/kg is achievable for a committed demand of 1-million treatments (2000kg/year of API). An API COGs of \$10,000/kg for 10M treatment-years is achievable to drive cost reductions on further scale-up, but requires substantial improvements by manufacturers to the ROS. Including formulation, vials and profit margins, generic injectable lenacapavir could be mass-produced for \$63-93pppy for 1M treatment-years, falling to \$26-\$40pppy for 10M treatment-years. These prices require voluntary licenses and competition between generic suppliers. Current prices for 1-year of lenacapavir PrEP were \$25,395-44,819pppy in countries with available data.

**Conclusions:** We demonstrate that lenacapavir can be mass-produced for \$63-\$93pppy, potentially falling to \$26-\$40pppy with scale-up. Mass-production of generic lenacapavir, under voluntary license by multiple suppliers, is required to achieve these prices. This mechanism is already in place for the mass-production of other antiretrovirals. Gilead has not yet agreed lenacapavir voluntary licenses with the Medicines Patent Pool.

## LB47

### Cost-effectiveness of PrEP provision in the combination HIV prevention and community engagement (COPE) intervention for men and transgender women who exchange sex in Bangkok and Pattaya, Thailand

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**Background:** The COPE study was an open-label daily PrEP study among young men who have sex with men (MSM) and transgender women (TGW) who exchange sex in Thailand. HIV incidence was significantly lower during time on PrEP than off PrEP (PMC10442968). To inform PrEP implementation and scale-up in Thailand, we estimated the incremental cost-effectiveness ratio (ICER) for the COPE intervention with PrEP as implemented to a similar hypothetical combination HIV prevention intervention without PrEP use.

**Methods:** Participants recruited from community clinics included 846 Thai MSM and TGW in Bangkok and Pattaya who exchanged sex in the last year, were aged 18-26

years, and were confirmed to be not living with HIV. Intervention components included community engagement, venue outreach, social media, HIV testing, STI testing and treatment, and optional daily oral PrEP at no cost.

Participants could start and stop PrEP during study participation. Micro-costing and direct observation were used to identify resources associated with PrEP use with participant travel costs based on surveys.

Discounted (3%) lifetime quality-adjusted life-years (QALYs) and medical care costs were estimated from state-transition Markov modeling. Results are reported in 2018 USD and Thai Baht (฿).

**Results:** The incremental cost of PrEP provision was \$415.82 (฿13,413) per person-year on PrEP and \$248,824 for all 598.4 person-years on PrEP during study participation.

Estimated impacts include 21 infections prevented, 52.9 discounted QALYs saved, and \$154,904 discounted lifetime medical care costs averted. The ICER was \$1,774 (฿57,236) per QALY saved—less than the willingness-to-pay threshold in Thailand of \$4,960 (฿160,000).

Cost-effectiveness of PrEP provision as part of a combination HIV prevention intervention for young Thai MSM and TGW who exchange sex (2018-2020).

	Total		Per person-year	
	USD	Thai Baht	USD	Thai Baht
Clinical costs	\$ 68,881	฿2,222,000	\$115.11	฿3,713
PrEP medication	\$135,836	฿4,382,000	\$227.00	฿7,323
Costs to participants (time and travel)	\$ 44,106	฿1,423,000	\$ 73.71	฿2,378
Total intervention cost	\$248,824	฿8,027,000	\$415.82	฿13,413
HIV medical care costs averted	\$154,904	฿4,997,000	\$258.66	฿8,350
Incremental cost	\$ 93,920	฿3,030,000	\$156.95	฿5,063
Cost per QALY saved (52.9 QALYs)	\$ 1,774	฿57,000		

**Conclusions:** Adding daily oral PrEP access to a combination clinic-based and community-based intervention was cost-effective for preventing HIV infections and averting future morbidity, mortality, and health care costs.

From medical care and social perspectives, no-cost PrEP at community-based clinics for MSM and TGW who exchange sex is a worthwhile investment.



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## LB48

### Leveraging integrated disease testing to enhance access to early infant diagnosis of HIV in Cross River State, Nigeria.

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**Background:** A delayed detection and treatment initiation among HIV-exposed infants (HEI) caused by a prolonged turnaround time (TAT) using molecular PCR laboratories was observed in Cross River State, Nigeria. Recognizing the pivotal role of integrated disease testing and taking advantage of multi-disease testing platforms in the TB program, we explored its potential in improving diagnostic accessibility and healthcare outcomes as part of the U.S. President's Emergency Plan for AIDS Relief (PEPFAR) U.S. Agency for International Development (USAID)-funded ACE 5 project.

**Methods:** Assessment of the testing capacity of existing GeneXpert machines running at less than 50% informed the decision for integration, providing an opportunity for optimization through the inclusion of samples from the HIV program. Discussion with the TB program led to the agreement to pilot the proposed HIV and TB partnership, leveraging existing GeneXpert platforms.

Through a collaboration with the public healthcare facilities, we integrated HEI testing with TB diagnostic testing using five GeneXpert machines supplied by the TB program and trained healthcare professionals on the use of the multi-disease testing platform in Cross River State. We present the TAT from sample receipt to analysis and test result release (analytic stage) before and after the introduction of the GeneXpert multi-disease testing platform.

**Results:** Among 241 HEI whose samples were tested through the GeneXpert multi-disease platform, the average TAT from receipt at the laboratory to analysis was 0.9 days, and from sample analysis to result release was 0.2 days (total 1.1 days compared to 60 days prior to the intervention); 25 (10%) HEI had samples collected and tested within 72 hours compared to <5% prior to the intervention.

**Conclusions:** The integrated disease testing approach demonstrated significant success in overcoming barriers to accessibility and enhancing timely access to diagnostic services for HEI. A significant reduction in TAT was observed.

The findings emphasize the importance of collaboration across programs, technology adoption, and capacity building for sustained improvements in healthcare services. Implementing integrated testing models can contribute to a more robust and accessible healthcare infrastructure, improving health outcomes, particularly among pregnant and breastfeeding women living with HIV and their HEI, and ultimately reducing mother-to-child transmission.

## LB49

### Integrating 5As counseling and pharmacotherapy in tobacco use cessation into HIV care continuum: results from a clustered randomized trial study in Kisumu, Kenya.

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**Background:** People with HIV (PWH) use tobacco more often than the general population. Tobacco use among PWH is associated with higher rates of AIDS and non-AIDS-related disease and death. To address these issues, we conducted a cluster-randomized trial in 20 clinics to compare the effect of the integration of a brief intervention and an intensive tobacco cessation intervention into HIV care in Kisumu Kenya.

**Methods:** Providers received a brief online training on the provision of the five As from Kenya's *National Guidelines for Tobacco Dependence Treatment and Cessation*. (Ask, Advice, Assess, Assist, and Arrange) or an intensive online training on the five As and the provision of pharmacotherapy. All completed an online survey three months post-training. Patients in 10 sites assigned to the brief intervention received a single counseling session and referral to a national Quitline in line with the *National Guidelines*. Patients in 10 sites assigned to the intensive intervention received four monthly counseling sessions, referral to the Quitline, pharmacotherapy.

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All participants were surveyed and had exhaled carbon monoxide measured, at baseline and three months. We used generalized estimating equations to compare the providers' five As, self-reported tobacco use and exhaled carbon monoxide at three months.

**Results:** Relative to providers in clinics that implemented the brief intervention (N=104), providers in clinics that implemented the intensive intervention (N=121) were no more likely to always or usually ask (89% vs .93%; difference=-4%, 95%CI=-12.2%-4.2%), advise(93% vs. 93%; difference=0%, 95%CI=-7.6%-7.3%), assess(87% vs. 91%; difference=-5%, 95%CI=-4.4%-13.6%), assist (89% vs. 91%; difference=-2%, 95%CI=-6.5%-10.7%), and arrange (83% vs. 81%; difference=2%, 95%CI=-12.9%-9.2%). Relative to patients in clinics that implemented the brief intervention (N=288), patients in clinics that implemented the intensive intervention (N=290) were more likely to report no tobacco use (47.1% vs. 15.3%; difference=32%, 95%CI=24.1%-39.4%) and lower mean, SD exhaled CO measured at three-months (7.5, 5.6 vs. 9.6,6.1; difference=2.07, 95%CI=1.09-3.04).

**Conclusions:** Integration of intensive tobacco cessation counseling and pharmacotherapy into HIV care was associated with significantly more provision of tobacco smoking cessation services and tobacco cessation among PWH compared to a standard brief intervention. Scale-up of this intensive intervention could substantially enhance tobacco cessation among PWH.

## LB50

### Improving HIV mortality surveillance in Malawi through civil registration and vital statistics system

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**Background:** Timely and accurate data on HIV/AIDS-related deaths are needed to inform policies and strategies for addressing the epidemic. In most resource-limited settings affected by HIV, mortality data are primarily from health facilities and may underestimate the true burden of deaths occurring outside the health system.

**Description:** We describe lessons learned from establishing and scaling up mortality surveillance in Malawi to improve timeliness and accuracy of HIV-related mortality. A civil registration and vital statistics (CRVS) system was adapted from the United Nations Principles and Recom-

mendations for a vital statistics system to include a compulsory medical certification of cause of death (CoD) at the facility level and a World Health Organization (WHO) verbal autopsy (VA) tool for community deaths. Trained health care workers and village custodians recorded deaths in hospitals and communities, respectively. An agile software development approach was used to design, develop, and implement a flexible electronic system from open sources. CoD data from the facility and VA were coded using the International Classification of Diseases (ICD) system and analyzed using the ANACOD electronic tool and InterVA5 software, respectively.

**Lessons learned:** Between 2017 to 2023, the system was implemented and scaled up from 4 to all 28 districts. As of January 2024, 127,275 deaths were captured, with 31% (39,050/127,275) being registered from communities. Of the 127,275 deaths, 28% were successfully assigned a CoD. CRVS was implemented by the National Registration Bureau using Ministry of Health (MOH) staff which limited MOH ownership. Clinicians were trained on-the-job, but not legally compelled to certify and report CoD. CoD reporting has been incorporated into clinician training to embed in clinical practice. Data were not routinely used at facility level to provide demand for death reporting and therefore, computerizing the system has ensured timely access of data.

**Conclusions/Next steps:** Through implementation of the CRVS system, Malawi is routinely, accurately. and expeditiously monitoring CoD, in health facilities and communities. Linking mortality data in CRVS to electronic medical records may improve death estimates and documentation of CoD among people living with HIV.

## LB51

### The impact of recent anti-transgender laws on transgender adolescents' trust and interactions with healthcare providers

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**Background:** If the anti-transgender laws proliferating across the US are impeding access to healthcare and services, this has implications for HIV prevention.

**Methods:** To inform a sexual risk reduction program for transgender, non-binary and other gender diverse adolescents assigned female at birth (hereafter referred to as TNB), 4 online, asynchronous focus groups of youth ages 14-18 across the US were conducted in March, 2024 (n=73; 59 identified as a transgender boy; 25 as non-binary, genderfluid, genderqueer, bigender, demigender, or unsure). Groups were stratified by sexual experience (ever







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vs. never, self-defined) and residence in "not hostile" versus "hostile" states, defined as those that have passed or are proposing anti-transgender legislation. Focus group questions asked how anti-trans laws impacted behavior and sexual decisions.

**Results:** Many TNB youth in both hostile and non-hostile states said the laws made them hesitant to talk to their doctor. Some have avoided accessing healthcare altogether. Many reported lying about their gender identity to protect their safety: "I've stopped being completely honest with my doctor, because I fear they might put me on some type of list or something."

Others said the laws made them feel rushed to access gender affirming care for fear it might be taken away: "I feel like I'm living in a constant state of fear and desperation." Youth also talked about traveling to other states to access care: "Finding an endocrinologist willing to treat trans minors became increasingly difficult, as my doctors faced being sued. I ended up needing to drive 1h30 to get to a doctor."

Others stopped or delayed medical care: "My transition has been incredibly delayed as I am a transgender man at 18 who is still not on HRT. Many of our HRT clinics were... shut down." Not all youth were affected: "I'm lucky enough to live in a progressive blue state, and none of those anti-trans laws have impacted me."

**Conclusions:** Most TNB youth report a significant increase in barriers to health care access, including sexual health care; and decreased trust in doctors because of anti-trans laws, putting them at greater risk for HIV.

## LB52

### State-level transgender policy Index and implications on the U.S. HIV response

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**Background:** Since 2019, the U.S. has invested in the Ending the HIV Epidemic (EHE) initiative targeting 7 states and 48 counties with additional HIV resources. Simultaneously, the U.S. has seen a significant increase in legislation restricting health access and rights of transgender people – a population most-at-risk for HIV.

Given the known relationship between unsupportive policy environments and poor HIV outcomes, we measure state-level anti-trans policies by EHE area.

**Methods:** The Trans Policy Index (TPI) utilizes data from ACLU and Movement Advancement Project (MAP) policy trackers to summarize the severity of each state's an-

ti-trans legislation across 6 categories (accurate IDs; civil rights; free speech and expression; healthcare; inclusion in public spaces and services; school and education). State policies in each category were independently rated by two researchers, from most restrictive/discriminatory (1) to most protective for trans health (5), with disagreements settled by a third team member (TPI score range: 0 - 88). State TPI scores are reported as values, percentage of each category, and compared by t-tests for;

- 1) EHE states (n=7),
- 2) States with EHE counties (n=20), and;
- 3) Non-EHE states (n=24).

**Results:** Overall, EHE states had the lowest average TPI score (27/88, 31%) followed by states with EHE counties (56/88, 63%), and non-EHE states (60/88, 69%); this trend was observed for each TPI sub-category.

On average, EHE states scored significantly lower than non-EHE states in the subcategories of civil rights (2/16 vs. 13/16,  $p < .01$ ), healthcare (4/16 vs. 11/16,  $p < .001$ ), public inclusion (4/12 vs. 9/12,  $p < .001$ ), and school and education (6/20 vs. 14/20,  $p < .001$ ).

**Conclusions:** High HIV-burden areas like EHE states have harsher legislative landscapes for transgender people, which may negatively influence access to HIV prevention, testing, and treatment and ultimately undercut the goals of the EHE. Such landscapes include laws restricting gender-affirming care and permitting trans discrimination by health insurers, which overall can drive trans people away from healthcare sites, including HIV services. Given the intersection between trans rights, healthcare accessibility, and HIV outcomes, policies aimed at protecting the rights of those most-at-risk for HIV are necessary to end the U.S. HIV epidemic.

## LB53

### Meaningful youth leadership and participation in comprehensive sexuality education: the West and Central Africa regional landscape

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**Background:** West and Central Africa is the global epicentre of youthful demographics, with over 64% of its population under 24 years. Yet, the region lags behind its adolescent and youth sexual and reproductive health and HIV prevention targets. Only 23% of women and 31% of men have comprehensive HIV knowledge, which highlights the need for youth-centred comprehensive sexuality education to bridge the gap. However, meaningful youth leadership and participation data are lacking in this area.

**Methods:** This was a descriptive cross-sectional study employing qualitative data collection and analysis approaches. Data was collected from randomly and purposively selected respondents from 12 countries from November 2023 to January 2024 using interviewer-administered questionnaires and Key Informant Interviews.

#### Results:

Youth participation in comprehensive sexuality education was low in 58% of the countries and insufficient to initiate structural changes for adolescents and youth as it focuses more on programming and less on sustainable youth engagement components like, policymaking, financing, and institutional structures. Barriers noted included the higher age threshold for consent and the requirement of parental consent, lack of autonomy, high gender inequalities disproportionately affecting female participation leadership; weak institutional capacity of youth-led organizations; limitation of efforts to urban areas; limited funding for youth-led programmes; inability to mobilize resources to finance efforts; and high levels of illiteracy in some countries like Chad at 64.7%.

**"We [the youth] are the most impacted. Nobody wins if we are consistently left out of the equation?"**

FGD Respondent, Ghana

**Conclusions:** Over half of the surveyed countries have low youth participation in comprehensive sexuality education that targets youth. This concerning revelation is a clear call to address gender disparities, which disproportionately affect the participation of girls and young women. Additionally, there is a need for multidimensional, sustained youth participation efforts that cater to the diverse needs of youth and to reposition youth as active contributors and indispensable allies, not merely beneficiaries in comprehensive sexuality education policies, funding mechanisms, interventions, and institutional structures.

## LB54

Romances & negligence – living experiences of young PLHIVs in migration and their spouses in villages of India

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**Background:** India has one of the world's largest HIV epidemics, where migration is a major drive of HIV spread. Ganjam-Surat migration corridor is known for high prevalence of HIV.

Location		Study Location					
Total number of PLHIV=1795		Blocks: 06, Gram Panchayats: 102, Population: 0.6 million, HIV population: 662					
District	Ganjam, Odisha, INDIA	0-18 years	18-35 years	35 years and above			
Type	Source Migration district	Boys	Girls	Male	Female	Male	Female
Population	3.6 million (2011 census)	18	12	95	112	244	181
Sex distribution	Male-50.48%, Female-49.42%						
Population density	429 / square kms.						
Geography	8070 square kms.						
Blocks	22						
Gram panchayats	503						

**Methods:** Study period: December 2023 - February 2024 in 6 blocks of Ganjam.

Respondents were 63 (33 Male, 30 Female) between the age group of 18-35 year young adults living with HIV.

Migrants and Spouses of migrants

Set of questions on 8 impact areas:

1. Infection history
2. Status disclosure to partner, community
3. Treatment / ART
4. Marriage, family life
5. Workplace life
6. Status disclosure to employer
7. Psychosocial factor
8. Life with HIV

**Results:** Respondents are from 63 different families. 29 male and 5 female contracted HIV before marriage. Disclosure of HIV status is high among women before marriage than men. In case of 5 women both the partners were positive before marriage. 5 women living alone; 4 are separated and one widow. 10 CLHIV living both parents and 4 living with single parent.

24 men are taking ART regularly. 7 women are not taking ART including 7 children with them. No persistent depressive symptom in the responses of migrants.

Women are worried for their children and have miserable depressive symptoms. Finance is an issue, 50 respondents are enrolled under Pension Scheme of Odisha government.

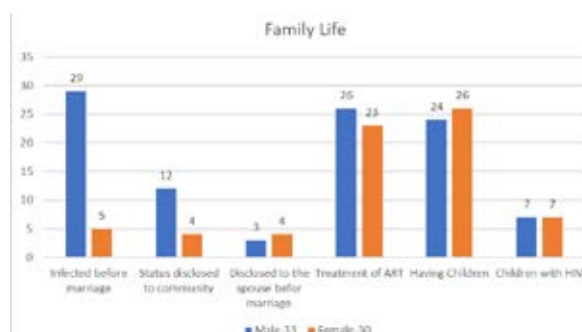


Figure.



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**Conclusions:** In this qualitative study, disclosure concerns are more in PLHIV in personal and professional life. Despite concentrated efforts on ART inclusion and adherence is a big challenge. U=U paradigm and to end the epidemic by 2030 needs more coordinated GO-NGO efforts.

## LB55

### Social pact for non-discrimination and equality treatment associated with HIV in Spain

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**Background:** People living with HIV (PLWH) experience stigma and discrimination in multiple aspects of their lives. On November 2018, the Ministry of Health of Spain adopted the Social Pact against Discrimination and for Equality for PLWH (from now onwards the Pact), a long-requested demand from civil society which acknowledges the need of consistent and stable multi-sectorial and inter-sectorial responses to address structural discrimination against PLWH. We summarize steps taken by public administrations and political actors in advancing the Pact from November 2018 till April 2024.

**Description:** The agreement of Council of Ministers, November 2018, approved instructions to eliminate generic medical causes of exclusion to accessing public employment, such as HIV, diabetes, celiac disease and psoriasis. Interterritorial Health and Social Services councils in 2019 forbade discrimination of PLWH in accessing residential homes for the elderly. An agreement between the General Directorate of Public Health, the State Coordinator of HIV and AIDS and University of Alcalá analyses legal norms that discriminate PLWH and rolls-out studies on attitudes towards PLWH, and perception of stigma and discrimination by PLWH. Law 15/2022, Integral for Equal Treatment and Non-Discrimination includes for the first time HIV serological status as a reason for non-discrimination. Sports Law 39/2022 introduces measures against any kind of discrimination, with reference to HIV-related discrimination. Modification of Royal Decree 2487/1998, November 1998, allows since June 2023 PLWH to work in armed private security.

**Lessons learned:** As a result of the work within the Pact above summarized, the elimination of HIV-related stigma and discrimination became a political priority of the

Spanish Presidency of the European Union in the last semester of 2023, which amplified the political visibility the subject and led to the publication of report HIV-related stigma and discrimination: the challenge in collaboration with the Ministry of Health of Spain, ECDC, SEISIDA, UNAIDS, WHO/Euro.

**Conclusions/Next steps:** The work conducted within the Pact has been (and continues to be) an important advance in the protection of the rights of PLWH in Spain and has contributed to advancing the European political agenda on HIV-related stigma and discrimination at various levels of the European commission and European parliament.

## LB56

### Strengthening technical capacity and leadership of implementers on community-led monitoring (CLM) in West and Central Africa (WCA)

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**Background:** Community-Led Monitoring (CLM) is an ongoing process in which those affected by health inequalities systematically monitor services, analyze the data they collect and conduct evidence-based advocacy to improve service delivery and create an environment conducive to their well-being. Although the concept is not new, it has gained momentum in recent years, thanks to the financial support from donors such as PEPFAR and the Global Fund. UNAIDS is committed to supporting

CLM to enable community organizations and networks to participate in routine activities aimed at improve the quality, availability, accessibility, acceptability and relevance of services.

in Senegal, two managers,

1. OCT (Community Treatment Observatory) On screening issues ; Treatment issues , Viral load , Management of a favorable environment for patient retention in care
2. OCASS (Observatoire Citoyen pour l'Accès aux Services de Santé - Citizens' Observatory for Access to Health Services) Observatory integrated with 3 Diseases (HIV, Malaria and TB)

OCASS will address issues of discrimination and barriers to access to quality health services by users. People affected by these 03 diseases will have the opportunity to report abuses, so that national programs in charge of combating the 3 diseases and more broadly can Contribute to the reduction of human rights-related obstacles

## Methods: Evidence

Site-level data collection

Data analysis

advocacy, Development and implementation of advocacy plan Engagement

Set up Community Consultative Group (CCG) made up of community leaders and programmatic and government decision-makers

**Results:** Organize a sharing meeting on the various "CLM" projects to gain a common understanding of approaches (targeting and methodology). Set up a single Community Consultative Group (GCC)

Strengthen the managerial and resource mobilization capacities of CLM host community organizations

Recruit Pop-Clés collectors in collaboration with key population

Negotiate the reorganization of available CLM budgets to integrate data digitization

**Conclusions:** The workshop provided a dynamic platform for the exchange of experiences, practices and challenges in CLM implementation. Discussions and group work led to the development of strategic and operational plans, strengthening regional collaboration for the effective implementation of CLM in the region. Participants came away with clear commitments and concrete action plans for moving forward in their respective national contexts.

## LB57

### Advancing human rights in Africa: addressing structural barriers to HIV services for marginalized communities

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**Background:** In Africa, discriminatory legislation, exemplified by the Ugandan Anti-Homosexuality Act 2023 and similar laws across the continent, presents formidable obstacles to HIV/AIDS prevention and treatment, especially among marginalized communities like LGBTQ+ individuals.

In response, a comprehensive advocacy campaign emerged, aiming to dismantle these structural impediments while advancing human rights across Africa.

**Description:** The campaign is a multi-level advocacy initiative aimed at advancing human rights in Africa, with a particular focus on addressing the challenges faced by marginalized communities, LGBTQ+ individuals, due to discriminatory legislation such as the Ugandan Anti-Homosexuality Act 2023, and a similar law in Ghana. It operates through proactive engagement, strategic partnerships, and targeted interventions to foster meaningful change. The campaign operates through a collaborative framework involving diverse stakeholders, including civil society organizations, grassroots groups, faith-based organizations, and influential individuals.

## Lessons learned:

- **Inclusive Engagement:** Diverse perspectives, from marginalized communities, are essential for designing effective interventions and ensuring their relevance and impact.
- **Strategic Partnerships:** Collaborating with a range of stakeholders strengthens advocacy efforts and amplifies impact.
- **Leveraging Media:** Social media and digital platforms crucial for expanding outreach, raising awareness, and mobilizing support for human rights initiatives
- **Building Capacity:** Investing in civil society organizations enhances their ability to advocate for change, engage with stakeholders, and navigate complex policy environments effectively.
- **Political Engagement:** Engaging key stakeholders is key to advancing human rights agendas and securing commitments for policy reform and implementation.
- **Sustained Advocacy:** Continuous efforts are essential for driving long-term systemic change and addressing persistent human rights challenges.

**Conclusions/Next steps:** The outcomes of this campaign hold significant implications for HIV prevention, treatment, care, and support efforts, particularly in the context of communities, such as LGBTQ+ individuals, facing discrimination and barriers to accessing essential services. By addressing the policy root causes and legal barriers, the program contributes to creating an enabling environment for comprehensive HIV responses and advancing human rights in Africa. To build on these, future steps entails scaling up successful interventions, sustaining policy advocacy efforts, empowering communities, conducting rigorous research and evaluation, and fostering sustainable financing mechanisms.

## LB58

### Towards creating a tool kit for reporting on HIV & AIDS and other infectious diseases in Africa

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**Background:** Journalism reporting tool kits are numerous world over. Most are generalized, while others are specific to workplace and education. However, this researcher has found none that encompasses HIV & AIDS and other Infectious diseases in Africa.

**Description:** Researching on tool kits in the world for a PhD research completed in 2020, online review of tool kits was done. One of the recommendations was to create a tool kit specifically for journalists writing on HIV & AIDS and other infectious diseases. During the period 2020 to 2024, a review of more than 30 tool kits or similar documents worldwide have been reviewed. In 2020, beside previously known infectious diseases such as HIV & AIDS,



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Ebola and many others, COVID-19 created a new cohort of infectious diseases and it's reporting created concerns as evidenced in many newspaper and research papers. A mixed method approach through content analysis of 30 tool kits world wide and PhD thesis between 2020 and 2024 was done, with an aim of creating a relevant tool kit for Africa reporting on the varied diseases.

**Lessons learned:** Between 2020 and 2024, more than 30 documents that have been created as guidelines on reporting on HIV & AIDS and some infectious disease have been interrogated. No one singular document/Tool Kit that encompasses both HIV & AIDS and other infectious diseases in Africa was found. However, many of the documents reviewed provide key themes in common: social responsibility, ethical reporting, sensi.

However, only UNAIDS Reporting Guidelines provide key words that should not be reported when writing about HIV & AIDS. Whereas none was found that included other infectious diseases, the findings of the 2020 PhD dissertation inform current project which includes words to be avoided. Some of these are: victims, fight/war against, killer/deadly disease, scourge, risk group. Same words are relevance to other infectious diseases but interviews will provide better data.

**Conclusions/Next steps:** Findings prove that this kind of a tool kit is long overdue. The final phase of this document will include results of interviews with people who have had infectious diseases and that is expected to further enrich the final Tool Kit/Reporting Guidebook.

## LB59

### Breaking barriers: improving HIV/AIDS testing and treatment accessibility among rural communities in Uganda

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**Background:** In Uganda, rural communities face formidable challenges in accessing HIV/AIDS testing and treatment services due to a myriad of barriers, including limited healthcare infrastructure, transportation challenges, stigma, socio-economic factors, and lack of awareness. These barriers contribute to low testing rates, late diagnosis, and poor treatment adherence, exacerbating the HIV/AIDS epidemic in rural areas.

**Description:** Titled "Breaking Barriers: Enhancing HIV/AIDS Testing and Treatment Accessibility in Rural Uganda," this study uncovers challenges hindering service access. Employing mixed-methods research, it unravels barriers limited healthcare infrastructure, transport issues, stigma, socio-economic factors, and awareness gaps impacting testing, treatment, and health outcomes. Urgent interventions are needed to improve access, advocating

for infrastructural upgrades, transport solutions, stigma reduction, socio-economic support, and community education. Emphasizing collaboration, the study stresses holistic approaches to combat the rural HIV/AIDS epidemic, underscoring the importance of dismantling barriers and enhancing services for underserved populations.

**Lessons learned:** The findings reveal significant barriers to HIV/AIDS testing and treatment accessibility in rural Uganda. Limited healthcare infrastructure, including inadequate facilities and trained personnel, impedes access to services. Transportation challenges, exacerbated by poor road conditions and long distances to healthcare facilities, further hinder access to care. Stigma and discrimination surrounding HIV/AIDS deter individuals from seeking testing and disclosing their status. Socio-economic factors, such as poverty and limited financial resources, prevent individuals from affording transportation costs, medical fees, and medications. Additionally, lack of awareness and education about HIV/AIDS contributes to low testing rates and late diagnosis.

**Conclusions/Next steps:** Addressing the barriers to HIV/AIDS testing and treatment accessibility among rural communities in Uganda requires a holistic approach that encompasses infrastructural improvements, transportation solutions, stigma reduction initiatives, socio-economic support programs, and community-based education efforts. By implementing evidence-based interventions tailored to the specific needs of rural populations, Uganda can break down barriers, improve access to care, and mitigate the impact of the HIV/AIDS epidemic. This study underscores the urgency of addressing these challenges and underscores the importance of collaborative efforts to achieve equitable access to HIV/AIDS services in rural Uganda.

## LB60

### An overview of European consent requirements for HIV and viral hepatitis B and C testing

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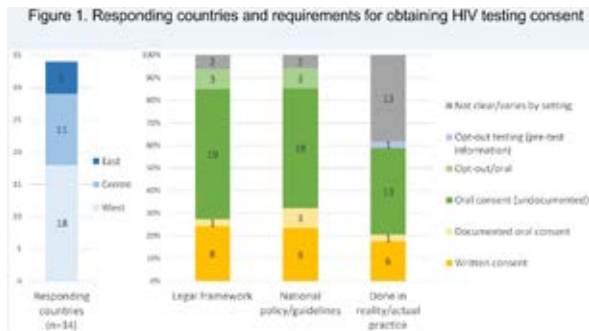
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**Background:** Complicated consent procedures for blood-borne virus testing are a barrier for implementation, particularly in non-specialist healthcare settings. European and global guidelines no longer recommend written consent and individualised pre-test counselling. An overview of testing consent requirements in Europe is lacking.

**Methods:** An online survey on legal and policy frameworks and daily implementation was developed by a working group under the [EuroTEST Initiative](#) and disseminated to clinical and community-based testing facilities and national public health institutions in the countries of the WHO European Region. Data collection and validation occurred between October 2023 and April 2024. Respons-

es were validated via email and/or bilateral discussions if diverging across same-country respondents to obtain one answer per country.

**Results:** 84 responses from 36 community-based testing sites, 33 healthcare facilities and 15 public health institutes in 34 countries were included. Written or documented consent remains a requirement for HIV testing according to legal frameworks and/or national policy/guidelines in eleven countries (4/18 western, 5/11 central, 2/5 eastern, p72). In a third of these, written consent is required in some settings only (hospitals/other healthcare). Practices for how consent is obtained in reality vary widely by setting and do not always follow legal/policy requirements (e.g. hospitals/healthcare settings obtaining written consent even if not required, written consent requirements not strictly adhered to in community settings or legally omitted for anonymous testing). For viral hepatitis, consent requirements are less strict in many countries with written or documented consent being a requirement in six (1/18 west, 3/11 centre, 2/5 east) – generally in the form of a broad consent for all investigations.



**Conclusions:** Written or documented consent remains a requirement for HIV testing in more than a third of responding countries. A recommended procedure for obtaining consent in different settings will help reduce testing barriers and support European countries in reaching the first 95 target.

## LB61

### Increasing hepatitis C virus self testing (HCVST) testing uptake to improve access to HCV services in Nigeria

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**Background:** 2.5 million people are infected with HCV in Nigeria, thereby making it a major public health concern. Though efforts around creating an enabling environment for eradication intensifies, uptake of testing remains painfully slow. To address this challenge, the FMOH, assisted by partners, adopted the WHO-recommended HCVST to increase testing uptake. The National Guidelines for Pre-

vention, Treatment and Care of Viral Hepatitis in Nigeria (2023) was also developed and more activities to generate evidence carried out.

**Description:** A HIVST feasibility study among 1,964 participants made up of PLHIV, PWID, MSM and SW was conducted in Nasarawa state, North Central Nigeria (2023). The study aimed at generating data on:

- 1) feasibility;
- 2) acceptability,
- 3) cost-effectiveness of HCVST (2023 – 2024).

The findings of the study would provide content for the first ever national guideline for HCVST.

**Lessons learned:** The study report showed that participants saw HCVST as feasible because it was convenient, private and it encouraged good health-seeking behaviours. The acceptability of HCVST was demonstrated in participants' knowledge and preference for the types of HCVST kits (blood-based, oral), as well as ease of use. For cost-effectiveness, HCVST was recommended as an additional approach to HCV testing, for community-based interventions and an effective strategy where there are appropriate and sustainable referrals and linkages. Findings from the study also informed the development of the National Guidelines for Hepatitis C Virus Self Testing which was launched on April 30, 2024.

**Conclusions/Next steps:** Evidence now exists that HCVST is feasible, acceptable, affordable and it can improve HCV testing rates. This is very useful as we begin to roll-out the Global Fund (GF) Grant Cycle 7 (GC7) from 2024 - 2026 in the country.

Scaling up this study to more states for more audience, age, gender and context-specific data that will further inform policy and programming even beyond 2026 is a priority activity in the updated national VH testing framework.

## LB62

### Fast track cities Bogota: an experience of multisectoral articulation for HIV response.

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**Background:** In Latin America 56 cities have signed up to the Paris Declaration that includes them in the Fast Track Cities strategy, some have ratified their commitment to put communities at the center with the Seville Declaration.

On June 14, 2023, these Declarations were signed in Bogota. Since then, an Impulse Committee was formed.



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The purpose of this intervention is to position the needs of the communities most affected by HIV in the agenda of the health, education, social integration and women's sectors of the local government.

**Description:** The Impulse Committee is made up of 15 civil society organizations from PLHIV and KP (transgender, sex workers, drug users, women, LGBTIQ+); international co-operation projects, health institutions, UN agencies (PAHO-UNFPA-UNAIDS) and the Health Secretariat.

The experience is a pioneer in the innovative approach because:

We have managed to involve the women's, education and social integration secretariats in the response to HIV, in addition to LGBTIQ+ public policies and sex work; generating a multisectoral response.

It has managed to regain trust between CBOs, local government and UN.

It has strengthened the advocacy capacity of CBOs. We have positioned The Work Plan with the new city government, achieving its inclusion in the draft 2024-2028 district development plan that guarantees its financial sustainability.

**Lessons learned:** Development of a work plan that seeks to strengthen the district's response to HIV with the adoption of combination prevention strategies.

Sustainability can be threatened by changes of government in countries with unstable democratic structures.

Putting communities at the center of the HIV response requires ensuring participation at all stages. A horizontal dialogue is necessary. In addition, to have sources of funding that allow their participation.

**Conclusions/Next steps:** The urban response to HIV is has a high potential to more accurately reflect the specific needs of a particular context.

The combination prevention approach allows linking sectors of government that have not been integrated into the HIV response.

The sustainability of the HIV response depends in turn on the sustainability of the involvement of activists and CBOs.

We are in the process of developing a guide for cities adapted to the Latin American context.



## EPLB01

Peer navigator support increases positive social support and smoking abstinence in people with HIV who smoke

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**Background:** Smoking prevalence among people with HIV (PWH) is high (40-50%) compared to the general U.S. population (13%), is associated with lung and other smoking-related cancers. PWH report that because smoking is common in their social networks, they lack social support for quitting.

We developed a tailored intervention entitled, *Peer navigation for social support for smoking cessation* (PNSS-S). This 24-week randomized pilot study examined feasibility, acceptability, and preliminary efficacy.

**Methods:** Sixty-four participants in the Northeast United States were enrolled between July 2020 and May 2022. Participants were randomized to PNSS-S or to standard care (SC; i.e., nurse-provided recommendation to quit and a quit line referral). All participants met once with a clinic nurse to discuss quitting strategies. Participants in the PNSS-S condition received 12 weekly phone calls from a peer navigator (PN) who was trained in standard smoking cessation counseling. Assessments were conducted at baseline, 4, 12, and 24 weeks.

**Results:** Mean age was 54.5 years (SD 10.9); 41% female. Mean cigarettes per day was 16.0 (SD 9.1). Average time smoking was 35.5 (SD 12.5) years; 14.9 (SD 44.8) lifetime quit attempts. Acceptability was high: mean number of calls with the PN was 8.9 (SD 3.1), and one-quarter of PNSS-S participants completed all 12 weekly calls with their PN. Mean satisfaction scores differed significantly by condition: PNSS-S (29.1 [SD 3.0]), control (25.8 [SD 4.1],  $p = .001$ ; scale range: 8-32). A significant increase in positive social support from baseline to week 12: 17.4 (SD 11.4) to 25.1 (SD 12.2), ( $t=2.4$ ,  $df$  26,  $p = .01$ ) (scale range: 0-40) was seen in PNSS-S but not in the control group, ( $t = 1.11$ ,  $df$  29,  $p=.24$ ). At week 24, 5 (16.6%) participants in PNSS-S and 3 (8.8) in SC endorsed 7-day point prevalence smoking abstinence: OR=2.045 95% CI=[0.45-10.88].

**Conclusions:** Cross-training HIV clinic-based PNs in smoking cessation is feasible. Engaging in peer-based smoking cessation counseling is acceptable to PWH and seems to provide increased social support. Preliminary abstinence rates favor the active intervention. PNSS-S shows preliminary promise as a strategy to increase positive social support for quitting smoking and increasing quit rates. Further study is warranted.

## EPLB02

HIV prevalence and viral load suppression among persons in prisons and staff in Uganda: results of a 2023 nationally representative prevalence survey

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**Background:** HIV prevalence in the general population (GP) in Uganda is 5.8%, but persons in prisons (PIP) face a greater HIV risk. A nationally representative survey was conducted in Uganda prisons in July and August 2023 to determine the prevalence of HIV and progress towards UNAIDS 95-95-95 targets among PIP and staff.

**Methods:** Using a multistage probability sampling design, 6,787 participants including 5,200 male PIP, 781 female PIP, and 806 prison staff were selected from 38 prisons in Kampala and four regions of Uganda (i.e., Eastern, Northern, Western, and Central).

All PIP aged  $\geq 18$  years and staff who were physically present on the day of the survey were eligible for the survey and provided venous blood samples to determine their HIV status (using national HIV rapid test algorithm) and viral load (VL).

Weights were calculated to account for differential selection probabilities and non-response. Descriptive and chi-square statistics were used to summarize and assess association between variables.

**Results:** A total of 6,065 (89.4%) participants were interviewed: including 4,647 (89.4%) male PIP, 707 (90.5%) female PIP, and 711 (88.2%) staff. Median age (interquartile range) was 30 (25-39) years.

A total of 5,743 (94.7%) were tested for HIV: 4,374 (94.1%) male PIP, 686 (97%) female PIP, and 683 (96.1%) staff. HIV prevalence was 10.9 % (95% CI: 10.0%-11.9%): 21.1% (95%CI: 18.2%-24.4%) among female PIP, 11.1% (95%CI: 10.2%-12.1%) among male PIP, and 2.3% (95% CI: 1.4%-3.8%) among staff. Out of the 654 participants with HIV, 606 (92.4%) were aware of their status, of whom 99.2% (601) were on



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antiretroviral treatment (ART). Among those on ART, only 70% (394) had viral load suppression (VLS). All staff with HIV had VLS; VLS among female PIP was significantly lower than that of male PIP (53.1% vs. 69.9% ( $p < 0.0001$ )). VLS varied by region: 59.0% in Eastern to 83.5% in Central region.

**Conclusions:** HIV prevalence among PIP in Uganda was high - almost twice that in the GP. The 2<sup>nd</sup> 95 was achieved but the 1<sup>st</sup> and 3<sup>rd</sup> were still below the target of 95%. Enhanced diagnosis and treatment support for HIV among Ugandan PIP are needed to meet 2025 targets.

## EPLB03

### A socio-ecological classification of trans women stigma experiences from Ghana. BSGH011

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**Background:** Transgender women (TGW) experience more stigmatizing attitudes from institutions, social groups, and individuals. In Ghana, stigmatizing attitudes are exacerbated by legislation, cultural norms, and religious beliefs that favor heterosexuality and demonize other sexual orientations. As a result, TGW often feel devalued, anticipate external hostility, and internalize negative beliefs about their sexual orientations. Recent data suggest sensitization efforts are hampered by reinforced stigma within and across various socio-economic levels.

**Methods:** We used a qualitative research approach to investigate stigma experienced by TGW living in urban slum communities in Ghana. Participants were recruited through purposive sampling and snowball techniques. 20 TGW meeting specific criteria were interviewed individually, providing insights into the various forms of stigma they encounter, and at which levels these stigmas occurred.

**Results:** The data revealed that TGW experience stigma across various socio-ecological levels. At the public policy level, the LGBTQ+ bill emerged as a key driver of stigma. Various subcategories related to this bill included:

- Restrictions on freedom of expression,
- Potential to incite violence against LGBTQ+ individuals,
- Increased isolation to avoid harm,
- Fear of arrest and imprisonment.

At the institutional level, TGW encountered stigma in three areas. The first was at the Healthcare sector, this included, a. rude and unwelcoming behavior from medical staff.

The second was from Law enforcement officers, this included; a. extreme harassment and extortion by officers. Community level stigma encompassed;

- Insults, name-calling,
- Risk of physical harm due to cross-dressing, and,
- General fear of attacks from communities.

At the interpersonal level, TGW experienced,

- Fear of physical attacks,
- Threats of bodily harm,
- Emotional distress and suicidal thoughts,
- Rejection by family and friends.

At the individual/self-stigma level TGW experienced;

- Self-doubt and internal struggles,
- Feelings of regret and guilt,
- Increased stress, and anxiety.

**Conclusions:** Our result highlights the experiences of stigma for TGW living in urban slums. These results also highlight the pervasive and multi-layered stigma faced by TGW across different levels of society. Addressing this stigma requires a comprehensive approach that tackles issues from public policy to individual self-acceptance.

## EPLB04

### Expanding HIV viral load testing accessibility: lessons from differentiated service delivery (DSD) in Indonesia

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**Background:** Access to viral load (VL) testing for HIV treatment monitoring remains challenging for many individuals in Indonesia, with only 19% of those on antiretroviral therapy (ART) undergoing testing in 2022. Barriers such as stigma, distance, and limited opening hours persistently limit PLHIV's access to VL tests.

To tackle these obstacles, Yayasan KNCV Indonesia (YKI) supported the Indonesian National AIDS Program (NAP) to pilot a differentiated service delivery (DSD) model for VL



services aimed at improving VL testing coverage, as part of overall YKI's GF-supported technical assistance project in 2022-2023.

**Description:** The pilot targeted 25 high HIV-burdened districts with low VL testing coverage. Customizable service delivery models were offered to cater to the diverse needs of PLHIV. Each district selected suitable delivery models based on local contexts, with implementation lasting 1 to 4 months in 2023. Options included:

1. Extended Hours: Increasing HIV care, support, and treatment (CST) service duration by four hours on weekdays and weekends to assist PLHIV facing difficulties in accessing VL tests during the facility's normal hours.
2. Mobile VL: Providing VL testing outside CST facilities to support PLHIV experiencing stigma. This involved collaboration with community supporters to mobilize PLHIV to designated testing locations.
3. Home Visits: Healthcare workers visited PLHIV at their homes to collect VL specimens, addressing challenges related to distance and transportation costs.

**Lessons learned:** Results showed a significant 185% increase in the monthly average number of PLHIV whose specimens were sent for VL testing during the DSD periods compared to non-DSD periods in 2023. The „extra hours“ model demonstrated the highest increase at 191%.

DSD model	Number of districts	The average number of PLHIV whose specimens were sent for VL testing per month without DSD	The average number of PLHIV whose specimens were sent for VL testing per month during DSD	% increase
Extra hours	13	132	384	191%
Mobile VL	5	99	249	152%
Home visits	5	68	153	125%
Extra hours & home visits	2	138	393	185%
Total	25	113	322	185%

**Conclusions/Next steps:** The success of DSD underscores its efficacy in addressing access challenges to HIV VL testing. As all models showcased improvement, DSD is strongly recommended to support PLHIV encountering difficulties in accessing essential testing services. These findings highlight the positive impact of DSD on societal health outcomes, emphasizing its importance in HIV care strategies moving forward.



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