

# CONFERENCE

Summary Report



**AIDS  
2014**

20th International  
AIDS Conference  
Melbourne, Australia

July 20-25, 2014

[WWW.AIDS2014.ORG](http://WWW.AIDS2014.ORG)



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Stronger Together Against HIV

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Photographs: International AIDS Society (IAS)  
James Braund  
Elisabetta Fino  
Steve Forrest  
Samantha Sagona

International AIDS Society  
23 Avenue de France  
CH 1202  
Geneva, Switzerland  
Tel: +41 22 710 08 00  
Fax: +41 22 710 08 99  
Email: [info@iasociety.org](mailto:info@iasociety.org)



## Remembrance

The opening of the 20<sup>th</sup> International AIDS Conference (AIDS 2014) in Melbourne, Australia, was overshadowed by the attack on Malaysia Airlines flight MH17. Six delegates travelling to the conference were among those killed, including Professor Joep Lange, a former President of the International AIDS Society (IAS) and a pioneer in bringing affordable antiretroviral therapy to people living in resource-limited countries. Also killed were Pim de Kuijer (lobbyist Aids Fonds/STOP AIDS NOW!), Lucie van Mens (of the Female Health Company), Martine de Schutter (Program Manager Aids Fonds/STOP AIDS NOW), Glenn Thomas (of the World Health Organization), and Jacqueline van Tongeren (Amsterdam Institute for Global Health and Development).

This conference summary report is dedicated to these six delegates. Their legacy lives on through the efforts of the global community of HIV professionals dedicated to supporting all those committed to ending AIDS by 2030.



*Flowers and message of remembrance on the AIDS 2014 bridge installation*

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## Acronyms and abbreviations

AIDS 2014	20 <sup>th</sup> International AIDS Conference
ANRS	Agence Nationale de Recherche sur le Sida et les Hépatites Virales
ART	Antiretroviral therapy
ARVs	Antiretrovirals
BMI	Body mass index
bNAbs	Broadly neutralizing antibodies
cART	Combination ART
CBOs	Community-based organizations
COPD	Chronic obstructive pulmonary disease
CVD	Cardiovascular disease
DAAs	Direct acting antivirals
EU	European Union
HAART	Highly active antiretroviral treatment
HCV	Hepatitis C virus
IAS	International AIDS Society
ILO	International Labour Organization
ITPC	International Treatment Preparedness Coalition
KPs	Key populations
MDGs	Millennium Development Goals
MSM	Men who have sex with men
NCDs	Non-communicable diseases
NK	Natural killer (cells)
NRTI	<i>Nucleoside reverse transcriptase inhibitors</i>
NSPs	Needle and syringe programmes
OST	Opioid substitution therapy
PEPFAR	United States President's Emergency Plan for AIDS Relief
PLHIV	People living with HIV
PrEP	Pre-exposure prophylaxis
PWIDs	People who inject drugs
SDGs	Sustainable Development Goals
TaSP	Treatment as prevention
TGW	Transgender women
TRIPS	Trade-Related Aspects of Intellectual Property Rights
VF	Virologic failure
YEAH	Youth Empowerment against HIV/AIDS

## Executive Summary

The convening of the 20<sup>th</sup> International AIDS Conference (AIDS 2014) in Melbourne, Australia on 20-25 July 2014 represented a historic opportunity to highlight the diverse nature of the Asia Pacific region's HIV epidemic while serving as the stage for continuing the conversation on supporting the global response to HIV/AIDS. Building on the excitement of recent scientific advances and the political momentum from AIDS 2012 in Washington, D.C., delegates in Melbourne debated on a variety of important research and policy issues.

Some of the major themes and outcomes of AIDS 2014 included:

- ✓ Key populations (KPs), namely men who have sex with men (MSM), sex workers, PLHIV, transgender people and people who use drugs
- ✓ Adolescents living with HIV or at risk of HIV
- ✓ Targeted, rights-based and evidence-based approaches in the global response to HIV/AIDS, specific to the needs of a population (e.g., pre-exposure prophylaxis for certain MSM populations) or a region
- ✓ Recognition that we have the biomedical tools to end the AIDS epidemic
- ✓ Legal, social, political and economic barriers must be addressed and overcome if these tools are to be implemented (e.g., intellectual property laws, discrimination/criminalization/stigmatizing laws, funding, population-specific research gaps)
- ✓ Advances in HIV cure research
- ✓ Excitement around new antiviral treatment options that can cure the hepatitis C virus
- ✓ The growing body of evidence on the implementation of novel prevention interventions
- ✓ The Melbourne Declaration.

Despite successful interventions and country-level programmes in the HIV/AIDS response, including the reduction in new infections, reduction in AIDS-related deaths and increase in treatment coverage, AIDS 2014 delegates recognized that more concerted efforts are needed to meet the needs of those living with HIV and those at higher risk of infection. Notably, one of the key take-home messages was that a one-size-fits-all approach may not be suitable for all settings, especially given the diversity of the epidemic's geographical hotspots and KPs. Therefore, interventions and policies require strategies that are target-based in order to have optimal impact. In the context of advocacy, there was recognition that greater support of KPs is needed, especially in countries where discriminatory policies and legislation are hindering prevention and treatment efforts.



## Introduction

The International AIDS Conference arrived in Australia for the first time, marking a special opportunity to bring to the forefront the diverse issues related to the Asia Pacific region's HIV epidemic, and the unique responses to this epidemic. Notably, the Asia Pacific was the host of an International AIDS Conference in 2004 when it was held in Bangkok, Thailand.

The 20<sup>th</sup> International AIDS Conference (AIDS 2014) was held at the Melbourne Convention and Exhibition Centre from 20 to 25 July 2014, bringing together delegates from more than 200 countries, including 750 journalists. Nearly 14,000 participants attended this biennial conference, which serves as the premier gathering for those working in the field of HIV/AIDS, including scientists, health care providers, policymakers, people living with HIV (PLHIV), and other stakeholders committed to ending the HIV epidemic. AIDS 2014 was the setting for dozens of affiliated events and satellite sessions (see sidebar: AIDS 2014 statistics).

This year, the theme of AIDS 2014, *Stepping up the Pace*, recognized that the world is at a critical juncture in its response to HIV, given the momentum of scientific advances, clinical innovations and evidence-based public health interventions. Nonetheless, political will and advocacy must ensure that HIV remains on top of the global agenda. If we are to reverse the trajectory of the epidemic, the pace must be further increased.

The HIV/AIDS community has witnessed renewed optimism in recent years with significant advances in HIV cure and vaccine research, greater coverage of people receiving antiretroviral treatment (ART), decreasing rates of HIV incidence, and growing evidence on treatment as prevention (TasP) and pre-exposure prophylaxis (PrEP). However, this progress has not been universal; many regions are struggling to address their HIV epidemics against a backdrop of ever-increasing infections and difficulties in funding, implementation and political challenges. In Melbourne, *Stepping up the Pace* reminded delegates of the urgency to energize and revitalize efforts to increase investments, collaborative research and political commitment. This can be done through controlled and coordinated action, including significant programme scale up in resource-limited settings, commitment to evidence-based interventions, and more effective interventions in "hotspots" where key populations (KPs) are being left behind. Crucially, there is the need to engage KPs by addressing the stigma and discrimination that they encounter, including punitive government policies. *Stepping up the Pace* reflects the crucial opportunity that AIDS 2014 provided for mobilizing stakeholders, joining forces and building on the present momentum necessary to change the course of the epidemic.

As in previous International AIDS Conferences, PLHIV spoke at a broad cross-section of sessions, including plenaries. AIDS 2014 featured a large Global Village and hosted 265 events.

The conference garnered significant global media coverage, and participants utilized technology and social media platforms (e.g., Twitter) to maximize the impact of their participation.

This report provides a concise summary of key findings and lessons learned from AIDS 2014 for those working in HIV and related fields, and for policymakers worldwide. The conference's programme focused on using recent scientific developments to scale up treatment and biomedical prevention efforts, identifying and addressing the challenges in developing a cure for HIV, and highlighting stigmatization, discrimination and poverty in a variety of settings. Highlights within each of the three conference programme areas (Science, Leadership and Accountability, and Community) are presented, along with an analysis of the implications of conference outcomes on HIV practice, policy and research. A formal evaluation of AIDS 2014 based on delegate feedback is underway. Findings will be available in the AIDS 2014 Evaluation Report, scheduled for release in December 2014, and available on the International AIDS Society (IAS) and conference websites ([www.iasociety.org](http://www.iasociety.org) and [www.aids2014.org](http://www.aids2014.org), respectively).

### AIDS 2014 Statistics

13,435 participants  
460 scholarship awardees  
651 media representatives  
750 volunteers  
172 countries represented  
500+ sessions, workshops and  
programme activities

This report focuses on the most important themes and stories from AIDS 2014. We encourage readers to broaden their understanding of the conference by using the many hyperlinks provided in the report, particularly the links to session pages on the Programme-at-a-Glance, <http://pag.aids2014.org>, which provides video recordings of key sessions, rapporteur summaries and presentation slides (when available) for all plenary sessions, as well as many other sessions.

## What were the main objectives of AIDS 2014?

1. To engage, inspire, innovate and advocate – in partnership with affected communities, government, scientists, clinicians and all stakeholders – working towards the end of AIDS through prevention measures and comprehensive care and treatment for all.
2. To broaden the understanding that the same barriers that have fuelled the epidemic over the past 30 years still exist today and must be broken down. These include stigma, discrimination and repressive policies, attitudes and practices. And they impede the application of scientifically proven prevention and treatment options and violate the human rights of those affected.
3. To raise awareness that progress in responding to the AIDS epidemic is being achieved at different speeds: in many countries, both developed and developing, the HIV response has made great advances while in many others, new infections continue to rise due to funding, structural, policy and political challenges.
4. To place the focus on global HIV epidemic hotspots and on scale-up efforts within KPs, including men who have sex with men (MSM), sex workers, PLHIV, transgender people and people who use drugs. It is clear that many people are still being left behind in HIV prevention, diagnosis, treatment and care. Solutions require partnerships with people living with HIV and with disproportionately affected populations.
5. To acknowledge the pivotal role that the HIV response has played in transforming global health over the past three decades and to build on this momentum by: increasing funding for innovative HIV scientific research and programmes; involving a new generation of young scientists, community leaders, politicians and advocates; and involving the cross fertilization of experience and expertise from other disciplines.
6. To assist in fostering the current debate around a post-2015 Millennium Development Goals (MDGs) scenario for HIV and AIDS, including the cross-cutting issues of criminalization, gender-based violence, sexual health rights and stigma and discrimination. The intention is to ensure that HIV/AIDS remains a key focus of international development.

### *Melbourne Declaration*

The [Melbourne Declaration](#) affirms that non-discrimination is fundamental to an evidence-based, rights-based and gender-transformative response to HIV and effective public health programmes.

In light of the wave of discriminatory laws and policies in more than 80 countries, especially those targeting gays, lesbians, and transgender people, as in Russia, Nigeria and Uganda, the global community of HIV professionals remains concerned about the impact of such laws on universal access of care and treatment of people living with HIV.

The AIDS 2014 programme sought to promote scientific excellence and inquiry, encourage individual and collective action, foster multi-sectoral dialogue and constructive debate, and reinforce accountability among all stakeholders. The conference featured abstract-driven sessions, a daily plenary session, a variety of symposia sessions, professional development workshops and independently organized satellite meetings. In addition, the programme included a number of activities, such as the Global Village and the Youth Programme, which are integral aspects of the International AIDS Conference.

The AIDS 2014 Programme and Coordinating Committees of international experts and professionals, constructed a balanced and representative conference programme for the benefit of both delegates and the wider community of HIV professionals worldwide.



## Track A: Basic Science and Translational Research

Track A covered research into the interaction between host and pathogen with the intention of informing novel approaches to HIV prevention, reduction in long-term morbidities, eradication and a functional cure. A key objective of this track was to allow cross fertilization and rapid communication of critical advances or insights in basic science. Overall, Track A featured exciting advances in HIV cure and vaccine research, as well as basic and translational research in the immunovirology of HIV/SIV infection. In terms of the take-home message on a cure, it was clear that early start of antiretrovirals (ARVs) reduces the size of the HIV reservoir, but several approaches will be needed in order to target all viral sanctuary sites, given the complexity of latency.

### HIV cure research: challenges, complexities and advances



*Françoise Barre-Sinoussi, Sharon Lewin, Deborah Persaud*

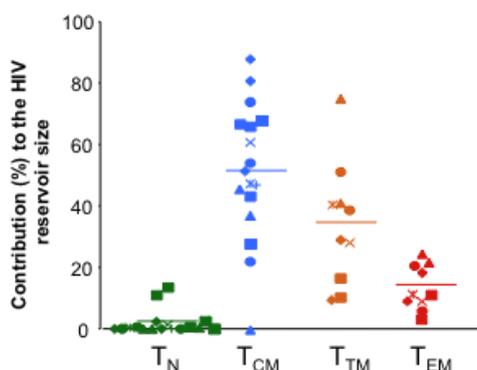
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Multiple sessions (including a pre-conference symposium) were dedicated to the latest research in HIV reservoirs, latency and eradication – and the complementary role that preventive and immunotherapeutic vaccine strategies would play in the quest for a functional HIV cure. On the opening day of the conference, Anthony Fauci (National Institute of Allergy and Infectious Diseases, USA), declared in a special afternoon session that “breath-taking advances in treatment and prevention allow us to consider the possibility of a world without AIDS”. Jintanat Ananworanich (formerly of the Thai Red Cross and now with the U.S. Military HIV Research Program) commented in her opening plenary that “an HIV cure is possible” and that “one day we will have a vaccine that could prevent HIV infection”.

Despite recent advances in these areas, significant knowledge gaps and challenges remain. Deborah Persaud (Johns Hopkins University, USA) updated delegates on the recent plasma viral rebound in the “Mississippi Child” after 27 months of remission in the absence of antiretroviral therapy (ART); she illustrated that much remains to be learned regarding the effects of early treatment initiation on long-term HIV control<sup>1</sup>. The sobering findings presented by Persaud showed the reappearance of HIV in a girl now aged four, who maintained an undetectable HIV viral load off therapy for more than two years. This suggests that HIV infection may become established in long-lived central memory immune cells much sooner after initial exposure to the virus than previously thought, and that HIV may reappear without warning in people with absolutely no indicators of infection. In turn, lifelong infection (and reservoirs) with HIV may in some cases become established within hours of exposure to the virus.

Although improvement in our knowledge of HIV latency and reservoirs was a hallmark of AIDS 2014, several challenges and complexities for eradication were identified. In addition to Persaud’s data, Carine van Lint (University of Brussels, Belgium) showed the complex epigenetic and non-epigenetic mechanisms of viral latency. Further, work presented by Melissa Churchill (Monash University, Australia) provided insight into where HIV hides by showing how anatomical HIV reservoirs can differ in their relevance to the pathogenesis of latency and their ability to be safely eliminated<sup>2</sup>. Churchill also described how neuronal cells permissive for viral replication and latency (e.g., astrocytes) may require different approaches in drug penetration because it would be unfavourable to induce cell death in the central nervous system. Sarah Palmer (University of Sydney, Australia) outlined the challenges in quantifying the latent reservoir and assessing replication competence while arguing for novel, standardized methods that are urgently needed. Nicholas Chomont (Vaccine & Gene Therapy Institute of Florida, USA) also underscored how we are beginning to appreciate the extensive heterogeneity of T-cell subsets (Figure 1), particularly in terms of their contribution to the total

reservoir and their persistence, as well as their susceptibility to being reactivated by therapeutic approaches<sup>3</sup>. He also presented data suggesting that early initiation of combination ART (cART) did not prevent latency establishment, although the size of the reservoir in each T-cell subset was reduced.

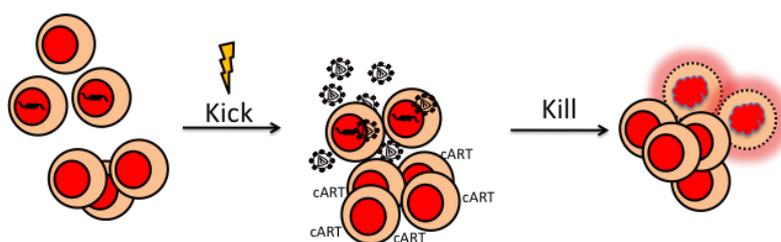


**Figure 1.** Different T-cell subsets and their contribution to the HIV reservoir size

(Source: Chomont et al. *Nat Med* 2009)

In 2012, the IAS identified developing assays to measure the size of the reservoir as a key scientific priority in a consensus-based strategy published in *Nature Reviews Immunology*<sup>4</sup>. At a pre-conference symposium, Chomont also presented data on a new, nested, PCR-based test called TILDA (Tat/Rev Induced Limiting Dilution Assay), which measures the size of the reservoir of latently infected CD4 T-cells. Furthermore, the test itself is rapid (taking less than two days), sensitive (to 1.4 cells/million), affordable (around \$300) and only requires a 10mL sample of whole blood. Until now, reservoir measurements have been limited to expensive and complex specialized labs<sup>5</sup>.

Throughout the week, multiple speakers emphasized that a functional HIV cure, defined as sustained virologic remission in the absence of ART, will require combination approaches. In particular, initiating early ART will be critical to reduce the reservoir in the hope of increasing the probability of eradication, followed by a combination approach of “kick and kill” (Figure 2). This would entail using anti-latency agents to reactivate the reservoir, followed by killing strategies, such as eliminating CCR5+ cells by gene therapy. The ability to boost humoral and T-cell immunity by using vaccines and immunotherapies could be another arsenal in sustaining HIV remission.



**Figure 2.** Kick and kill approach towards HIV eradication. This strategy aims to reactivate HIV (kick) to produce viral proteins and/or virus particles that may lead to the elimination of infected cells due to virus-induced cytopathic effects or recognition of the infected cell by the immune system (kill).

(Source: Ole Sogaard)

Hailed as a breakthrough study at AIDS 2014, Ole Sogaard (Aarhus University Hospital, Denmark) presented results from a Phase I/II non-randomized trial of six study participants, showing that the HDAC inhibitor, romidepsin, safely activated latently infected cells and induced transient quantifiable plasma viremia (Figure 3). Interestingly, an alternative to the “kick and kill” strategy was proposed whereby latency can be maintained via permanent silencing. Eric Verdin (University of California, San Francisco, USA) described how an shRNA library screen identified host proteins/pathways that



contribute to latency modulations. Notably, mTOR pathway inhibitors blocked reactivation from viral latency. Hiromi Imamichi (National Institutes of Health, USA) described persistent release of HIV transcripts (described as “zombies”) from infected cells harbouring defective proviruses during highly active antiretroviral treatment (HAART)<sup>6</sup>. These transcripts may play a role in driving immune activation, and if this is determined to be the case, interventions to block their release will be important in minimizing the detrimental effects of activation in people living with HIV. Kazuo Suzuki (St Vincent’s Centre for Applied Medical Research, New South Wales, Australia) also presented exciting data that showed short hairpin RNAs targeting HIV-1 promoter region as a strategy to sustain latency.



Ole Sogaard

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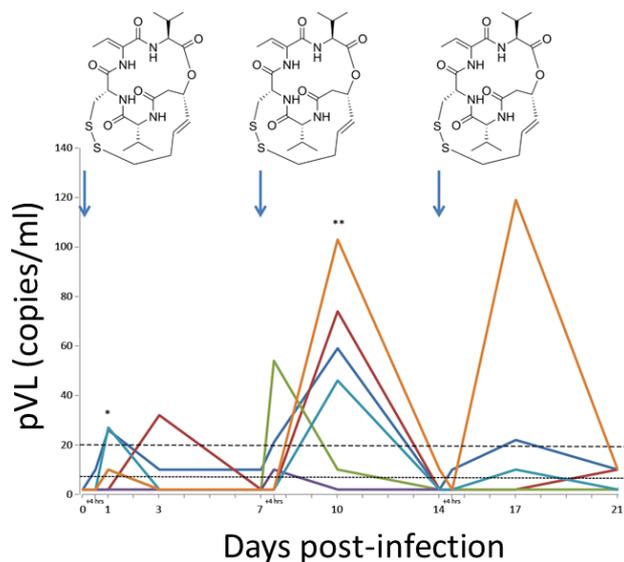


Figure 3. Romidepsin impact on plasma viral load post infection

(Source: Ole Sogaard)

Track A also showcased advances in tracking viral genomes to study and quantify viral reservoirs, with two hallmark studies in particular. Jake Estes presented a new technique of sensitive *in situ* detection of SIV viral RNA and viral DNA, which is useful not for just characterizing viral reservoirs, but also in terms of determining the anatomical location of latent genomes. Furthermore, Brandon Keele presented a novel approach of identifying and quantifying viral reservoirs with ultra-deep barcoded SIV<sub>mac239</sub>.

AIDS 2014 also featured a popular workshop with the title, “HIV Cure 101”, a knowledge-translation and community-engagement session. Lively discussions focused on the importance of having clear communication between researchers, advocates and community leaders, and the willingness of the community to participate meaningfully in cure research. It was emphasized that the ultimate goal of an HIV cure can only be accomplished via science-community partnerships.

## The Holy Grail: search for an efficacious HIV vaccine continues

Beyond the hot topics of latency and efforts towards an HIV cure, vaccine research was another key theme at AIDS 2014, with more data being presented on the development of broadly neutralizing antibodies (bNAbs). Antonio Lanzavecchia (Institute of Research in Biomedicine, Switzerland) provided a comprehensive overview of the current state of the field in HIV vaccine research<sup>7</sup>. As one of the current objectives in the field is to generate a vaccine that elicits a humoral response, many bNAbs have been identified among people with HIV; in particular, there has been progress in the past few years in identifying highly potent versions. Since these very potent bNAbs are rare, research is focusing on how they evolve and how they can be induced in sufficient concentrations to confer protection in people who become vaccinated. Lanzavecchia noted that researchers are also looking at whether a vaccine could generate both neutralizing antibodies and a broad T-cell response to increase its chances of success. The technology to test vaccine candidates has evolved rapidly over the past decade.

It is also believed that bNAbs can be generated if vaccines are designed to contain an array of envelope immunogens that elicit progressive levels of somatic hypermutation. Advances in our understanding of the HIV envelope structure were also discussed at the conference in the context of contributing to immunogen design. The potential of non-neutralizing antibodies to contribute to protection through antibody-dependent cellular cytotoxicity, complement-mediated cytotoxicity and phagocytosis was also addressed. Last, continued study of T-cells, especially tissue-resident T-cells, was highlighted as being important as we move forward.

Penny Moore (National Institute for Communicable Diseases, South Africa) described how the challenges in Nab developmental pathways differ by epitope. For example, CD4bs NAbs are highly mutated away from their common ancestor, and maturation takes years (Liao *et al*, *Nature*, 2013). However, V1V2 NAbs require B-cell receptor along with CD4H3 (although these take only months to develop, they are rare)<sup>8</sup>. An abstract-driven session, titled “Avant Garde ART”, featured five speakers outlining interesting avenues for novel therapeutic intervention. Notable among these was a presentation by Jia Guo describing the engineering of a promising single-gene bi-specific antibody-like immunoadhesin, which encodes PGT128 (anti-glycan-V3) and Hu5A (anti-CD4), and neutralized 100% of viral isolates tested. Richard Koup (Vaccine Research Center, Bethesda, United States) also described how non-HIV-specific CD8 T-cells in germinal centres can be harnessed to kill HIV-infected CD4+ T-cells using bi-specific antibodies containing anti-CD3 and anti-gp120 domains.

## More basic science

Exciting new data on HIV virology and pathogenesis were presented at AIDS 2014, especially in advances in molecular techniques to evaluate genomic diversity, assess HIV drug resistance, and detect viral genomes and transcripts in tissue specimens. An oral abstract session described the characterization of novel HIV restriction factors, host cellular proteins necessary for HIV replication, and possible new HIV targets for therapeutic intervention.

Use of CMV vectors to promote a novel mechanism of HIV control by enhancement of restriction factors and reducing infectivity was also described. In addition, reverse chronic immune activation using HDAC inhibitors as an additional mechanism will be explored in the future<sup>9</sup>.

Finally, the importance of fostering cross-disciplinary collaboration and meaningful community engagement in HIV research emerged as a major theme throughout many of the conference sessions. As Jean-Francois Delfraissy (National Agency for AIDS Research, ANRS, France) said: “We need more basic science; in particular, we need to accelerate interaction between HIV research and other areas.” He also highlighted the equal importance of implementation science and community-based and global health research.

Track A also featured important advances in understanding genital, mucosal and tissue immunology from human and non-human primate models, including new opportunities for intervention. Cellular immunity featured prominently, with data confirming important protective roles for CD4+ T-cells, CD8+ T-cells and natural killer (NK) cells during infection.

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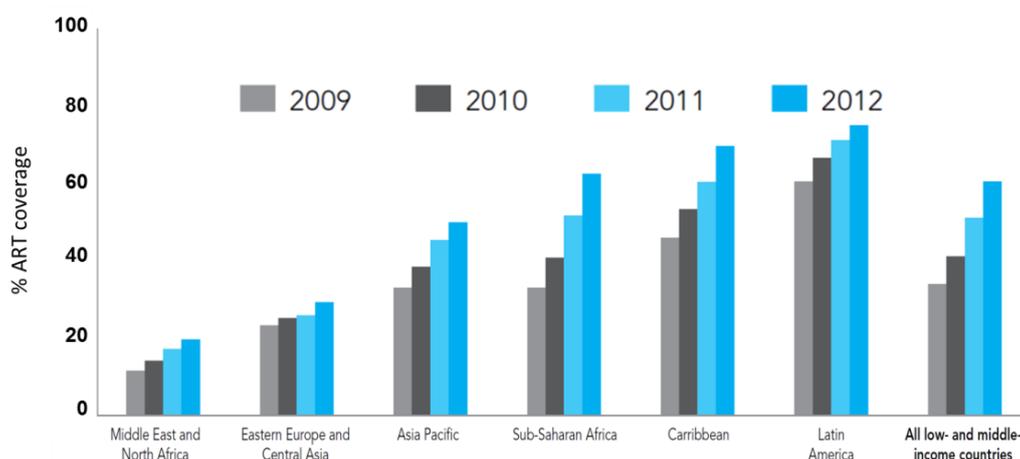


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## Track B: Clinical Research

At AIDS 2014, Track B focused on sustaining the implementation required to achieve the long-term goals of HIV care, treatment and therapeutic prevention. It highlighted the latest research findings into new ART drugs and strategies, novel adjuvant therapies for HIV infection, and strategies for promoting long-term health in HIV through optimization of the prevention, screening and management of non-communicable diseases (NCDs). Track B also focused on the complexities and controversies related to long-term management of virologically suppressed individual and the impact of therapies on HIV reservoirs, pharmacokinetics, drug interactions, adherence to treatment, treatment simplification and drug resistance. In addition, it explored the pathogenesis of co-morbidities, and the interactions between HIV and other chronic NCDs more broadly.

Approaches to treatment, care and support among all people at risk of, vulnerable to, or living with HIV were addressed (including people who use drugs and sex workers). Also, innovations related to the implementation of models of HIV care in resource-limited settings were highlighted. Importantly, Track B attempted to bridge the gap between the basic science and prevention tracks. Across sessions, presenters underscored the good news on the treatment front in terms of ART coverage across regions, and in increasing coverage rates, particularly in resource-limited settings (Figure 4).

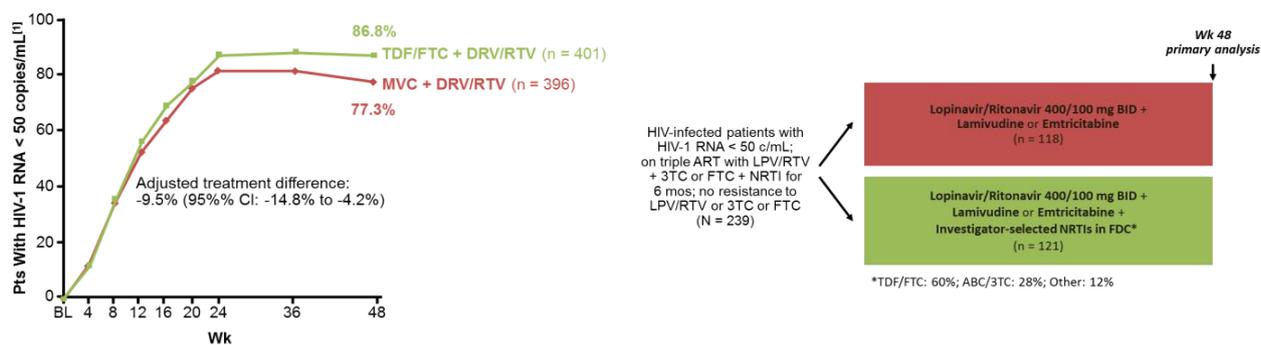


**Figure 4.** Coverage of people eligible who are receiving ART (based on 2010 WHO guidelines)

(Source: UNAIDS)

## New strategies in treatment

Although limited data on new HIV products were presented at AIDS 2014, there was a general sense that long-acting formulations have the potential to change the treatment paradigm; there is much less interest in identifying new molecules within the nucleoside reverse transcriptase inhibitors (NRTI) drug class. Simplification strategies, particularly on the role of nucleos(t)ide-sparing, two-drug regimens (containing ritonavir-boosted protease), was a topic of discussion at AIDS 2014. In antiretroviral-naïve subjects, NRTI regimens may decrease pill burden, toxicities, costs and drug-drug interactions. H Stellbrink presented data from the MODERN study<sup>1</sup>, a multicentre, double-blind, Phase III study, in which CCR5-tropic, HIV-1-infected, antiretroviral-naïve adults with HIV-1 RNA >1,000 copies/mL, without reported viral resistance, were randomized 1:1 to receive maraviroc (MVC) 150mg QD or TDF/FTC 200/300mg QD each with DRV/r 800/100mg QD for up to 96 weeks. At Week 48, subjects in the arm dosed with MVC once daily showed inferior efficacy to TDF/FTC + DRV/r (Figure 5). From the OLE study, a randomized, open-label Phase III non-inferiority trial<sup>2</sup>, J Gatell presented data showing that for patients with virologic suppression for ≥6 months on LPV/r plus lamivudine (3TC) or emtricitabine (FTC) plus one NRTI, efficacy of switching to LPV/RTV plus 3TC or FTC was non-inferior to continuing triple-therapy regimens at 48 weeks.



**Figure 5. Two studies highlighting the effects of simplification from NRTIs**

(Sources: MODERN Study, left, and OLE study, right)

In the SAILING sub-analysis<sup>3</sup>, Demarist and colleagues presented data as part of a *post hoc* analysis on dolutegravir (DTG) versus raltegravir, and reported no virologic failure with DTG and NRTIs. In this study, treatment-experienced, Integrase Strand Transfer inhibitors (INSTI)-naïve patients with HIV-1 RNA  $\geq 400$  copies/mL and  $\geq 2$  class resistance (N=715) were randomized to receive either DTG 50mg QD + background regimen (n=354) or raltegravir 400mg BID + background regimen (n=361).

As in previous conferences, AIDS 2014 showcased data from cohort studies that offered insight into virologic failure (VF). Hull presented data from the Canadian National Cohort showing that switching after suppression was associated with risk of VF<sup>4</sup>. This study involved a retrospective analysis of correlates of VF among suppressed patients who switched ART for reasons other than VF (N=2,807). In the multivariate model, switching ART was associated with increased risk of VF (P<0.001). Interestingly, females and patients with injecting drug use history were at increased risk of VF with switch (P<0.001). Given these findings, authors advocated for closer follow up of patients switching for non-virologic reasons (e.g., switching may serve as a marker for problems with adherence). In the Spanish VACH cohort, HIV-1 RNA 20-50 copies/mL was not predictive of virologic failure after suppression to less than 20 copies<sup>5</sup>. In modified analysis, there was no difference in the rate of VF among those with consistent HIV-1 RNA <20 and those with HIV-1 RNA <20c/mL and transient increases to 50c/mL. However, transient HIV-1 RNA increases to >200 were significantly associated with VF (P=0.0157), while a trend toward increased risk of VF with blips between 50-200 copies/mL (P=0.09) was noted.

Retrospective analysis in the D:A:D cohort study<sup>6</sup> provided interesting evidence into the relationship between body mass index (BMI) and cardiovascular disease (CVD). In patients without a history of CVD, short-term gains in BMI one year after ART initiation were associated with an increased risk of CVD and diabetes. An increased risk of CVD was observed in patients with normal or mid-range BMI before starting ART, while an increased risk of diabetes with BMI gain following ART initiation was observed in all BMI categories. Of note, authors cautioned that patients at high risk of CVD were excluded from analysis.

## Young women, children and the era of TasP

South Africa has the highest number of HIV-infected children in the world, as well as high pregnancy rates in adolescents and young adults. Of further concern, there is also slow uptake of early infant diagnosis in South Africa. An interesting study from Cape Town shed light on these trends by analyzing 1,477 mother-infant pairs attending three facilities between January 2009 and June 2012. Compared with HIV-positive pregnant South African women older than 24, younger HIV-positive women were less likely to know their HIV status, less likely to start ART during pregnancy, more likely to transmit HIV to their infants, and had a higher risk of mortality. The authors called for more interventions targeting young women with HIV, both for their own health and to reduce vertical transmission of HIV<sup>7</sup>.

In terms of paediatric sessions, AIDS 2014 showcased a wide range of clinical work. One notable study looked at the impact of starting treatment early based on measuring virus in the peripheral blood<sup>8</sup>. Four Canadian infants who began triple combination ART (cART) within the first 48 hours of life had undetectable HIV DNA in peripheral T-cells and undetectable or low levels of replication-competent HIV in peripheral blood. The findings add to evidence that treating HIV-exposed infants in the first days of life could limit the size of certain HIV reservoirs in infants who do become infected.

The Melbourne conference was also a platform for debating the implications of treatment as prevention (TasP). Of particular interest, a French-funded trial in rural South Africa had 70% of HIV-positive people in care within six months, and 79% of those in the intervention arm starting cART<sup>9</sup>. Study investigators are expanding the trial, with follow up continuing until June 2016.

## Retaining people living with HIV in care

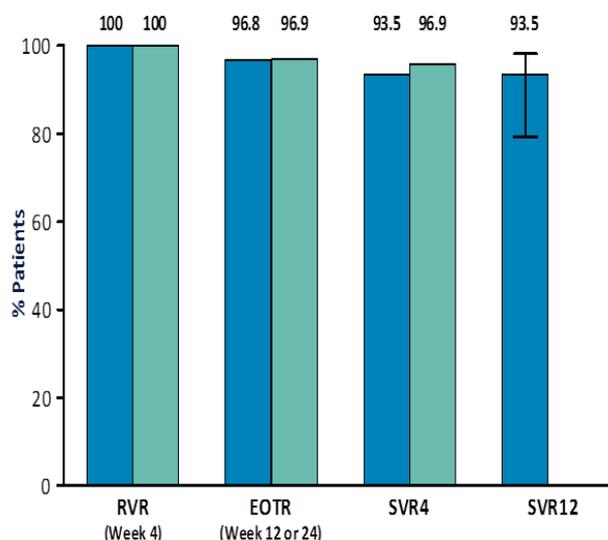
Despite the tremendous efforts in increasing ART coverage across regions and populations, the actual retention in care of people living with HIV and receiving therapy remains a grave challenge for treatment programmes. It is particularly problematic in pregnant women on Option B+. A study presented at the conference showed that half of the HIV-positive women in a South African study group missed clinic visits or dropped out of care after starting ART during pregnancy<sup>10</sup>. Although retention of children is improving, there are challenges in engaging adolescents to stay on treatment.

## Hepatitis C virus infection: new treatments, but what about access?

Hepatitis C virus (HCV)-HIV co-infection is a leading cause of morbidity and mortality in HIV-infected patients. Although fibrosis has long been appreciated for its clinical relevance, it is becoming more evident that HIV seems to also have a role in pathogenesis. At AIDS 2014, speakers and delegates highlighted the excitement around several interferon-free HCV regimens, direct acting antivirals (DAAs) (that seek to avoid toxicities associated with interferon) in late-stage clinical development, demonstrating high efficacy rates, including in co-infected people. However, the majority of individuals eligible for treatment are not receiving therapy. Globally, the case is similar for HBV, which is under-diagnosed and under-treated in most settings.

Two noteworthy HCV studies presented at the conference included Turquoise and Photon-2. The Turquoise study<sup>11</sup> was a 12-week three-DAA regimen comprising ABT-450/ritonavir, ombitasvir and dasabuvir + ribavirin that demonstrated SVR12 rates  $\geq 95\%$  in Phase III trials in non-cirrhotic genotype 1 HCV-monoinfected populations. High SVR 12 rates were observed in both the 12-week arm (93.5%) and the 24-week arm (95.0%) (Figure 6).

Efficacy appeared consistent with that observed in HCV-monoinfected patients. The regimen was well tolerated and adverse events were generally mild to moderate, with no serious events. Bilirubin elevations were observed in people receiving atazanavir, and no study discontinuations were reported due to toxicity. Virologic suppression was maintained in most patients or achieved without change of antiretroviral therapy or discontinuation of the HCV treatment regimen.



**Figure 6.** Results: ITT virologic response rates

(Source: Turquoise study)



PHOTON-2<sup>12</sup>, an open-label, non-randomized, Phase III trial, demonstrated the efficacy of sofosbuvir (an HCV nucleotide NS5B polymerase inhibitor) plus ribavirin for 12 or 24 weeks in people co-infected with HIV and genotype 1, 2 or 3 HCV in the United States and Puerto Rico. High SVR12 rates (84% to 89%) were reported, and are comparable with those reported in HCV-monoinfected patients. In addition, sofosbuvir plus ribavirin was well tolerated with low rates of discontinuation due to adverse events;  $\geq$ Grade 3 hyperbilirubinemia was observed in patients receiving atazanavir. Notably, there were no S282T mutations detected in patients with virologic failure, and no negative effect on control of HIV viraemia was observed.

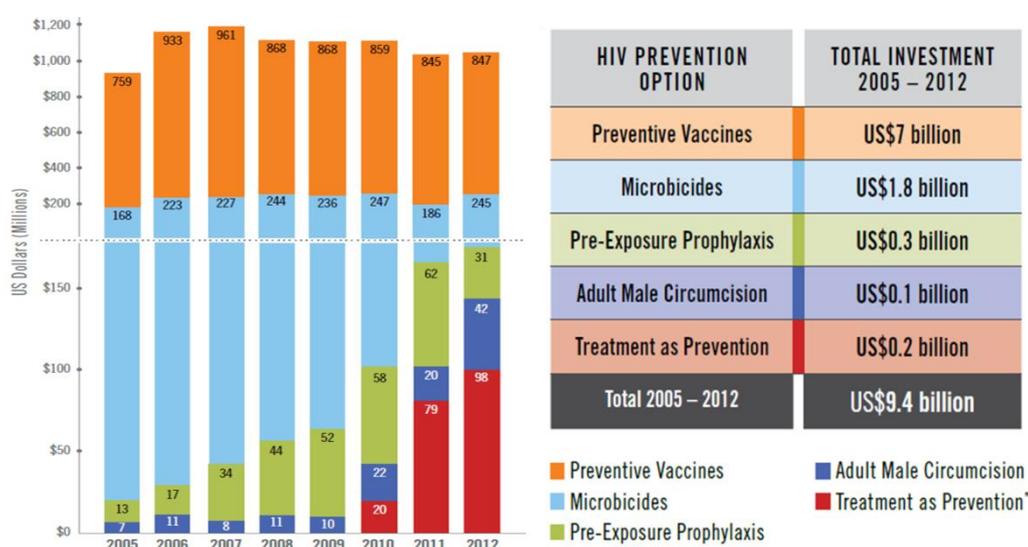
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## Track C: Epidemiology and Prevention Research

In recent AIDS conferences, biomedical prevention has garnered increasing prominence, and AIDS 2014 was no exception. Track C showcased important data on the dynamics of the HIV epidemic, and the design, implementation and evaluation of prevention interventions and programmes. In the closing rapporteur session, Frederick Altice (Yale University, United States of America) described this year's data on HIV prevention as much more "confirmatory" in nature. Track C also included dynamic discussions on ethical and human rights issues related to epidemiological and prevention research.

Some of the key prevention highlights at the conference specifically included: a) *The Lancet* series on HIV and sex workers, including adolescents; b) more data validating use of PrEP; c) further support for treatment as (for) prevention; d) voluntary medical male circumcision; e) numerous modelling studies; and f) the inclusion of voices of KPs. Despite the important milestones in prevention research in recent years, the amount of funding appropriated for microbicides, PrEP and male circumcision is much less than that for vaccine research (Figure 7).



**Figure 7.** Constrained resources in a promising era

(Source: [www.hivresourcetracking.org](http://www.hivresourcetracking.org))

## Emerging prevention technologies: What does the future hold?

- New oral PrEP strategies
- New delivery systems
- New techniques in male circumcision and task shifting

*Stepping up the pace*, the theme of AIDS 2014, will require a new focus on key populations and geographical concentration of HIV, as well as intensified efforts to expand coverage of interventions on the prevention front. In a plenary session, Kenneth Mayer (Fenway Health and Harvard University, USA) described the latest developments in HIV prevention technology<sup>1</sup>. Mayer underscored that modelling data suggest that even with optimal treatment coverage globally, the HIV epidemic would continue, and that a range of prevention options would have to be scaled up. In terms of PrEP, Mayer



Kenneth Mayer

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stressed that adherence to a daily regimen can be challenging for many, and suggested episodic, on-demand strategies or long-acting release agents, which may be more effective or suitable. He also talked about microbicide candidates (topical gels or films that can be applied to the vagina or rectum to protect against HIV), intravaginal rings that slowly release ARV drugs, long-acting injectable drugs, and monoclonal antibodies that might offer an alternative to ARV drugs. Importantly, new prevention technologies will only succeed in so far as social, political and economic issues are tackled, particularly community support for prevention and the cost effectiveness of new strategies.

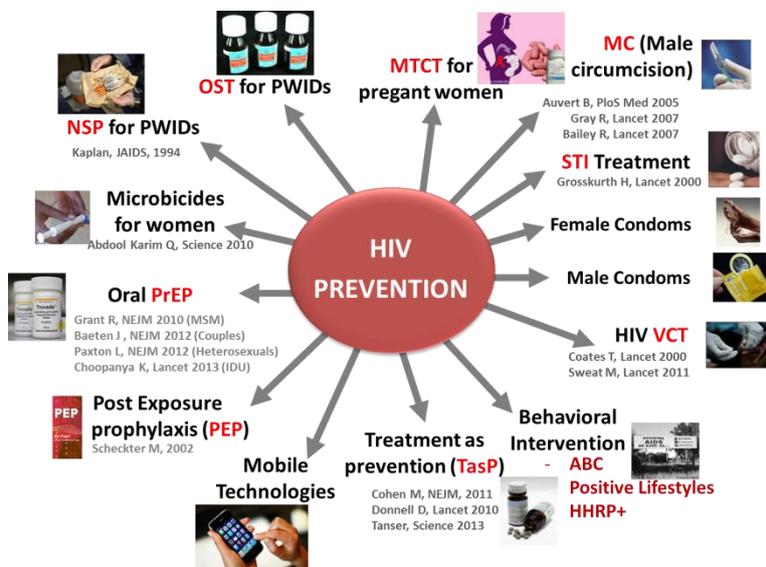


Figure 8. HIV prevention interventions

(Source: Kenneth Mayer)

## What about PrEP? More evidence from open-label extension studies

AIDS 2014 provided more evidence on the efficacy of PrEP in lowering HIV risk in certain populations. In the open-label (non-blinded) extension of the iPrEx study<sup>2</sup>, Bob Grant (Gladstone Institutes, University of California and San Francisco AIDS Foundation, USA) reported that MSM who enrolled in the trial were half as likely to pick up HIV infection if they started PrEP in the extension phase than if they did not, and 50% less likely to pick up HIV than men in the placebo arm of the original iPrEx trial. The initial findings from iPrEx four years ago showed that high-risk MSM randomized to a once-daily tenofovir/emtricitabine (TDF/FTC) pill had a 44% lower new HIV rate than MSM randomized to a once-daily placebo<sup>3</sup>. When iPrEx was completed, study investigators invited HIV-negative participants to take once-daily TDF/FTC PrEP or to continue care without taking the daily pill. Men in US PrEP safety trials could also join the iPrEx extension. Among men who did not start PrEP in this trial extension phase, 49% cited concerns about TDF/FTC side effects, 24% worried about the inconvenience of daily pill taking, and 14% preferred other methods of HIV prevention. Among men who started PrEP in this extension phase, HIV incidence was 1.8 per 100 person-years, meaning that about two of every 100 men got infected with HIV yearly. But this rate was 49% lower than in men who did not start PrEP in the extension phase, 53% lower than in the placebo arm of the original trial, and 51% lower than during the gap between the randomized trial and the extension phase. Men with higher blood levels of TDF (indicating better pill-taking adherence) had lower HIV incidence.

The need for interventions, such as oral PrEP, is pressing as epidemiological data from MSM and transgender women in regions worldwide are indicating an increase in the rate of new infections. Beatriz Grinsztejn (Brazil) described how although recent data reveal decreasing HIV incidence overall, this is not the case in communities of MSM and transgender women<sup>4</sup>. Strategies are required urgently to identify and provide these communities with access to HIV testing, treatment and care.

## Special issue of *The Lancet*

In a highly publicized collaboration between scientists and community leaders, the special issue of *The Lancet* on HIV and sex workers was launched at a symposium at AIDS 2014. This special issue marked the first time that a community person was included as a guest editor. A sex worker was a co-author of each of the papers in the issue. *The Lancet's* Richard Horton, in moderating the session, acknowledged that “even at this conference, individuals from this community have been prevented from leaving their own countries to attend”.

## “Unacceptable inequality”: AIDS deaths rising among adolescents

The need to prioritize adolescents in the global response to HIV/AIDS was one of the major themes at AIDS 2014. Notably, Susan Kasedde (UNICEF, United States of America) flagged adolescents as the only age group in which AIDS-related deaths are increasing<sup>5</sup>. Kasedde stressed the need to invest more (and more effectively) in adolescents, to deliver better services and collect better data to inform these, to empower and engage adolescents and to accelerate an evidence- and rights-based response. She also acknowledged that, through a combination of laws and social judgement that constitute obstacles to healthy adolescent development, we have created an environment that systematically fosters fear, violence and inequality that has to be changed. She presented a range of projects that have been successful in addressing the sexual and reproductive health and rights of adolescents as part of an effective HIV response.

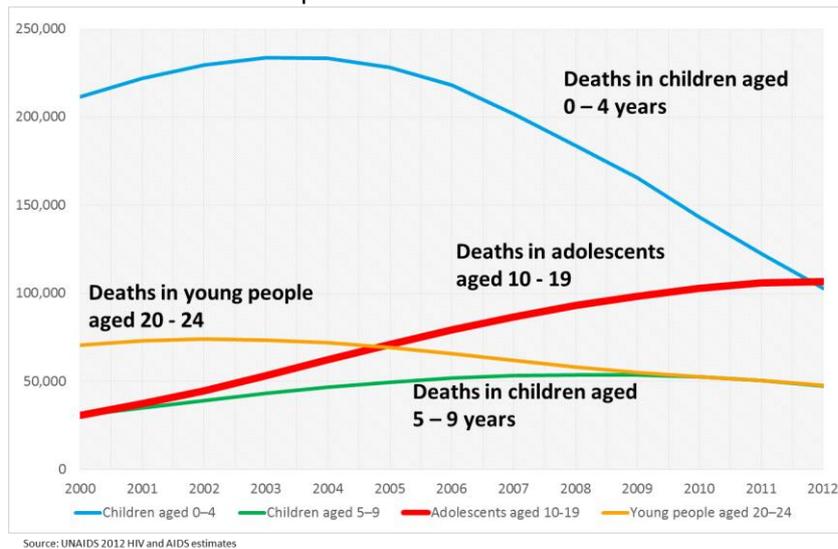


Figure 9. Trends in mortality in children and adolescents

(Source: UNAIDS)

## Option B+: greater ART access, but retention not optimal

Option B+, the policy of offering lifelong triple ART to all pregnant or breastfeeding women living with HIV in order to prevent mother-to-child transmission, was pioneered by Malawi’s Ministry of Health. A triple-drug antiretroviral regimen should be taken throughout pregnancy, delivery and breastfeeding and for the rest of a woman’s life, regardless of CD4 count or clinical stage. Malawi’s policy of offering lifelong ART resulted in a sevenfold increase in women receiving ART in 15 months, but high rates of loss to follow up were reported (estimated at 23.5% per year). Rates of loss to follow up were higher in mothers aged 24 years and younger and in those who initiated ART while breastfeeding or during the first year of the programme. In comparison, 9% of adults who started treatment on general health grounds were lost to follow up during the same period<sup>6</sup>. Data from Uganda indicated the importance of



lay health providers in scaling up Option B+ interventions (where a mentor mother “task shifting” programme was reported to increase psychosocial support, HIV testing of mothers and their infants, and retention on ART)<sup>7</sup>.

## Do harm-reduction programmes work? Data from Ukraine and Greece

Although needle and syringe programmes (NSPs) and opioid substitution therapy (OST) continue to prevent and control HIV where they are available, many interventions targeting people who inject drugs (PWIDs) are poorly scaled up in certain regions. Of concern, despite decreased HIV incidence globally, places with low NSP/OST coverage are associated with explosive HIV epidemics. Two presentations at AIDS 2014 provided significant evidence that harm-reduction programmes successfully prevent HIV infection among people who inject drugs. Olga Varetska (International HIV/AIDS Alliance Ukraine) presented data showing that HIV prevalence and incidence has dropped significantly among PWIDs in the context of a national harm-reduction programme that, among other interventions, offers clean syringes, condoms and HIV testing<sup>8</sup>. However, Varetska noted that the latest epidemic trends require prevention programmes to target sexual partners of PWIDs and to focus on sexual mode of HIV transmission when working with PWIDs to achieve significant results in suppressing HIV rates among the general population.

Results of the ARISTOTLE programme in austerity-stricken Greece, presented by Vana Sypsa (National Retrovirus Reference Center, University of Athens Medical School, Greece), also indicated that harm-reduction programmes work. In response to a surge in HIV infections in the aftermath of the economic crisis, ARISTOTLE operated from August 2012 to December 2013 (in 2011, countrywide, 266 people who inject drugs were diagnosed with HIV, a figure 16 times higher than in 2010). ARISTOTLE provided HIV screening, and a prevention, treatment and care package, for people living in Athens who had injected drugs in the previous 12 months and who were over 18 years old in an attempt to decrease HIV incidence in this population. In order to determine when someone acquired the virus, in addition to providing HIV testing, ARISTOTLE used a limiting antigen avidity assay to identify recent infections. Throughout the programme, 3,320 people participated over five “rounds”. Comparing incidence from round to round, Sypsa reported that there was at least a 78% decrease in incidence from the start to the end of the programme<sup>9</sup>.

## All prevention is local

To reach the new UNAIDS treatment targets of “90, 90, 90”, Salim Abdool Karim (Centre for the AIDS Programme of Research in Durban, South Africa), underscored that two key elements would be needed: a detailed understanding of the local epidemiology and a sense of implementation of scientifically proven interventions<sup>10</sup>. These interventions must be tailored to match changes in local epidemiology, and must prioritize key populations and “hot spots” of HIV transmission. Men who have sex with men (MSM), for example, have a disproportionate prevalence of HIV in every region of the world when compared with the general population: in sub-Saharan Africa for example, men who have sex with men are four times more likely to have HIV than the population as a whole. Studies conducted between 2004 and 2008 found HIV prevalence among MSM ranging from 6% in Egypt to 31% in a Cape Town township.

Karim also emphasised the need for a targeted effort on key populations, especially young women in sub-Saharan Africa, who are at vastly higher risk of acquiring HIV compared to young men.

Scale up of effective HIV prevention activities must take place in parallel with efforts to tackle the underlying social drivers of the epidemic in key populations, including stigma, legal barriers and social and gender norms, he emphasized. Stigma and legal discrimination fundamentally impede epidemic control at the very moment when the opportunity is emerging to drastically reduce new HIV infections.

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## Track D: Social and Political Research, Law, Policy and Human Rights

Track D focused on the spectrum of research and analysis around social, political, legal and human rights factors influencing HIV prevention, treatment, care and support. In addition, it covered the evaluation of policies, programmes, services and other interventions impacting on social, political, legal and human rights environments and outcomes. At AIDS 2014, there was a strong sense that biomedical interventions will only succeed if critical enablers (see below box “WHO as “critical enablers” for KPs”) are put into place in order to overcome structural barriers to HIV prevention, treatment and care<sup>1</sup>. The point was articulated in a number of sessions, highlighting the reality that despite the existence of biomedical tools that can help bring about the end of the HIV epidemic by 2030, not addressing these structural barriers, such as stigma and discrimination of KPs and vulnerable populations, will slow progress towards the end target. Notably, these barriers include not only discriminative laws in many countries, but also entail intellectual property policies that prevent access to HIV prevention, treatment and care services. While overcoming these barriers is not trivial, progress can be achieved; recent cases, such as the repeal of the anti-gay law in Uganda<sup>2</sup> following AIDS 2014, demonstrate that efforts led by activists, lawyers and researchers can bring about positive change.

### No one left behind: focus on key populations

KPs were at the epicentre of the conference, with Track D putting emphasis on the needs of these populations. In conjunction with AIDS 2014, WHO launched the *Consolidated guidelines on HIV prevention, diagnosis, treatment and care for key populations*<sup>3</sup>. With this document, all existing guidance relevant to five key populations (defined by the WHO as including MSM, PWIDs, people in prisons and other closed settings, sex workers, and transgender people) was brought together, and selected guidelines and recommendations were updated. These guidelines strongly advocate for the decriminalization of KPs. Discrimination against KPs fuels the HIV epidemic. UNAIDS estimates that as many as 50% of new infections occur in people from key populations<sup>4</sup>. Furthermore, stigma against KPs also has tremendous implications on their health-seeking behaviours<sup>5</sup>. It is important to address gaps in knowledge and strengthen research on KPs so as to foster evidence-based political and legal changes, advocating for raising the interest of the general population and policymakers. Importantly, the response cannot rely only on the goodwill of law enforcement authorities; laws must be changed and be enacted.



*Gottfried Hirnschall, WHO, at the launch of the Consolidated Guidelines on HIV Prevention, Diagnosis, Treatment and Care for Key Populations*

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## Critical Actions to support KPs

Laws, policies and practices should be reviewed and revised where necessary, and countries should work towards decriminalization of behaviours, such as drug use and/or injecting, sex work, same-sex activity and non-conforming gender identity, and toward elimination of the unjust application of civil law and regulations against people who use and/or inject drugs, sex workers, men who have sex with men and transgender people.

Countries should work towards implementing and enforcing anti-discrimination and protective laws, derived from human rights standards, to eliminate stigma, discrimination and violence against people from key populations.

Health services should be made available, accessible and acceptable to key populations based on the principles of medical ethics, avoidance of stigma, non-discrimination and the right to health.

Programmes should work toward implementing a package of interventions to enhance community empowerment in key populations.

Violence against people from key populations should be prevented and addressed in partnership with key population-led organizations. All violence against people from key populations should be monitored and reported, and redress mechanisms should be established to provide justice.

## Sex work

Issues affecting sex workers were given an important platform<sup>6</sup> at AIDS 2014. It was shown that sex workers, in their role as sex educators, can be critical role players in stopping the epidemic. *The Lancet*, in dedicating a special theme issue to HIV and sex workers<sup>7</sup>, shed light on significant barriers to effective HIV prevention and care for this population. Researchers estimate that HIV prevalence among female sex workers is substantially higher than in the general population<sup>8</sup>. Structural determinants tend to enhance risk to a greater extent, including such factors as criminalization, repressive policies, law enforcement strategies and gentrification of sex worker areas leading to displacement, as well as street sex work, which is the most risky and most likely to encounter violence<sup>9</sup>. Recurrent cases of police violence towards sex workers leading to death have been highlighted in India and Bangladesh<sup>10</sup>.

While condom use with clients is notably high in some settings, female sex workers report lower rates of condom use with regular partners, pointing to a potential blind spot in HIV prevention strategies, increased susceptibility for transmission, and additional behavioural, psychological and social barriers to partner condom use<sup>11</sup>.

Future HIV infections could be averted through structural interventions, safer work environments, decriminalized sex work, peer outreach and sex worker-led interventions<sup>12</sup>. Changing the global discourse from rescue and rehabilitation to empowerment and recognition of sex work as work seems critical to an effective HIV response among sex workers and their clients<sup>13</sup>. Protecting the rights of sex workers is key to enhanced prevention and condom use, as shown, for example, in stories from Bangladesh<sup>14</sup>.



Linda-Gail Bekker, IAS President-elect, speaking at the Lancet Special Session on HIV and Sex Workers

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**Figure 10.** Comprehensive HIV/STI programmes with sex workers

(Source: WHO)<sup>15</sup>

Substantial research is still needed as the epidemiology of HIV and structural determinants in sex work remain poorly understood, particularly among male sex workers for whom limited data exists<sup>16</sup>.

## Transgender and gender identities

Challenges faced by transgender people and their specific needs were highlighted throughout the conference, starting with the launch of the WHO guidelines<sup>17</sup>. These guidelines recognize transgender people as a specific separate population for the first time. They include a specific review of evidence, values and preferences and a specific brief on young transgender people. At the launch, Kate Montecarlo (Association of Transgender People in the Philippines, Philippines) praised WHO for these guidelines, which she thought could be used as strong advocacy tools by the transgender population around the world<sup>18</sup>. She decried the practice of aggregating data on transgender women with MSM, thus making invisible the extremely high HIV incidence and prevalence in this population. She called for supportive laws and legislation, including decriminalization of behaviours, community empowerment, health services made available, acceptable and accessible to members of key populations, and programmes to address violence. Transgender women (TGW) and MSM are different, and TGWs should be given specific attention, not just included in research and programmes targeting MSM<sup>19</sup>.



*Kate Montecarlo, Association of Transgender People in the Philippines, at the launch of the WHO guidelines*

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The abstract session, “Unpacking Risk and HIV in Transgender Communities”, documented two very different stories of the law and its impacts on transgender women: one showing the disabling legal environment faced by transgender and third sex people in the USA<sup>20</sup>, and the other showing how, as in Argentina, a legally enabling environment can have an important and beneficial public health impact<sup>21</sup>.

Gender and gender identities were thoroughly discussed at the conference, in sessions and workshops, from the point of view of gender equality, gender-based violence<sup>22</sup> and also gender fluidity. Many presentations showed that addressing and transforming gender inequalities has proven to be difficult though necessary all over the world<sup>23</sup>.

## MSM

Homophobic laws are driving MSM underground and preventing an effective HIV response in this population. Global and local studies on the impact of such laws demonstrated their detrimental impact on health care, for example, on numbers of MSM seeking services and on testing rates<sup>24</sup>.

In 2013, Russia enacted a law banning “propaganda of non-traditional sexual relations to minors”. It has already resulted in fines for MSM rights groups and generated violence against them. The PULSAR project, which is aimed at increasing healthy sexual behaviour among MSM in the Siberian city of Omsk, reported experiencing important difficulties due to the new law, showing that it has led to a drop in participation in the study, loss to follow up and a drop in related access to services<sup>25</sup>.

In 2014, Nigeria enacted a law mandating criminal penalties for same-sex relations, banning gay clubs and societies, and forbidding anyone from supporting such groups. An ongoing study on HIV prevention among MSM in the city of Abuja saw its number of monthly participants decrease from 63 to 15 after the enactment of the anti-gay law. About 73% of MSM interviewed said that they lost interest in the study because the new law criminalized their involvement in services provided to gay men. They expressed fear of persecution, extortion and blackmail<sup>26</sup>. Another presentation from the same study clearly showed the link between disclosure of sexual behaviour and viral load, demonstrating once again that discriminatory laws have a detrimental impact on HIV prevention, treatment and care. HIV-infected men who had discussed their sexual behaviour with a health care provider were more likely to be virally suppressed at baseline (31.2% vs. 15.7%) and, among those not already on treatment, more likely to complete treatment preparation and HAART initiation (85.2% vs. 56.9%)<sup>27</sup>.

Cultural barriers to HIV prevention were also tackled. A study of the perception of risks associated with HIV against the risks to come out as having sex with men in Jamaica clearly showed that fear of violence and discrimination fuels HIV<sup>28</sup>.

## HIV in prison: a forgotten epidemic

While there was an excellent session on HIV and people who live in prison, much more research is needed in this area. At least 30 million men, women and children globally go through prison systems each year, where high-risk behaviours and HIV transmission are highly prevalent<sup>29</sup>. The prevalence of HIV, sexually transmitted infections, hepatitis B and C and tuberculosis is two to 20 times higher, and up to 50 times higher, in prison populations than in the general population. The proportion of people who use and inject drugs in prisons can reach half the incarcerated population, especially among women in closed settings. Access to health services and, in particular, HIV and drugs services is largely absent.

## Empower young people against AIDS

Adolescents (10-19 years old) and young people (15-24) are the only age groups for which AIDS-related deaths kept increasing from 2001 to 2012<sup>30</sup>. Every day, 300 adolescents die due to AIDS<sup>31</sup>. While there are biological reasons for higher mortality, the disparities are also linked to adolescents' poorer access to health services, including HIV testing and treatment.

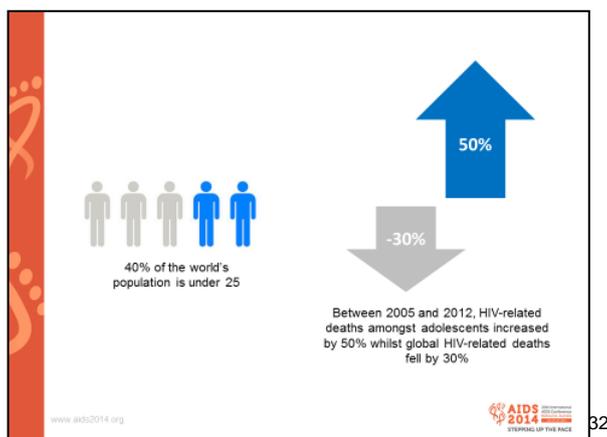


Figure 11. HIV-related deaths among adolescents

(Source: Melbourne YouthForce)

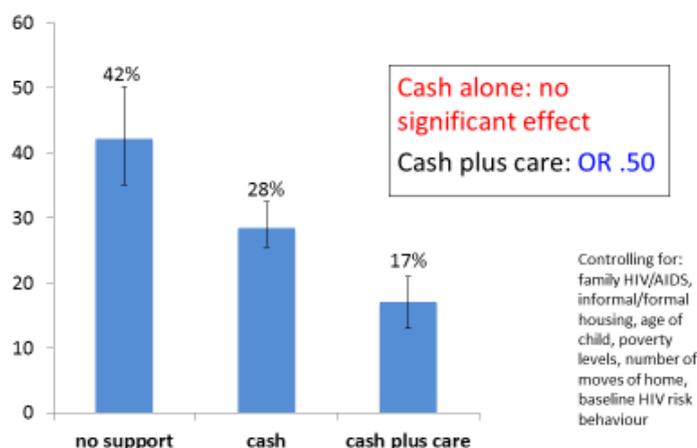
A comprehensive review of HIV- and sex-related laws and policies in 32 Asia Pacific countries identified numerous significant barriers to critical health information and services for young people<sup>33</sup>. The analysis revealed many specific barriers for youth to information and care access: seven countries restrict minors' access to harm-reduction programmes, and five countries allow parents or guardians to be told youngsters' medical test results without consent. But the study also revealed encouraging changes in relevant laws and policies. Four countries laid down principles allowing "mature minors" to consent independently to services, eight countries passed laws expanding minors' access to HIV testing, three other countries proposed such laws, and two countries have child-protection laws that establish legal rights to health care.

### Target adolescents

Given the dramatic mortality among adolescents, it is urgent that programmes are put in place that specifically target them and empower them to make their own sexual and reproductive health choices.

A study among adolescents in South Africa showed that combination social protection is key to HIV prevention. By combining unconditional economic support in the form of government cash transfers, school feeding and food gardens, and psychosocial support, the study reduced incidence of HIV risk behaviour by around half for both female and male adolescents engaged. Researchers found that the greater the economic and social disadvantages reported by adolescent girls, the greater the increase in female adolescent risk for transactional sex. Combination of economic and psychosocial support proved to have a much greater impact on HIV risk behaviours than economic support alone, in particular for male participants<sup>34</sup>.

### % boys with incidence of 1+ HIV risk behavior: Cash plus care = halved risk



Cluver, Orkin, Boves, Sherr (2014), AIDS.

Figure 12. The effect of cash and care strategies on male adolescents' risk behaviour

(Source: Lucy Cluver)

In Argentina, research showed that caring for one's own health is associated with successful transition of HIV-positive adolescents to adults. Certain behaviours, including non-compliance with medical regimen and lack of adherence to clinic appointments, were associated with unsuccessful transition. A support strategy was put in place for adolescents to transition to living as HIV-positive adults. In total, 86.4% of adolescents benefitting from the support strategy made a successful transition and had suppressed CD4 counts, demonstrating the value of such transition programmes<sup>35</sup>.

There is a need to invest more (and more effectively) in young people and adolescents, to deliver better services and collect better data to inform these, to empower and engage adolescents, and to accelerate an evidence- and rights-based response. A combination of laws and social judgements that constitute obstacles to healthy adolescent development create an environment that systematically fosters fear, violence and inequality, and that has to be changed.

## HIV and the law: structural changes matter

Laws can act either as enabling factors or as structural barriers for an effective HIV response. Studies provided examples of changes in the legal environment that could have a lasting impact on the HIV response globally and locally.

Laws against HIV stigma appear to have promoted accepting attitudes about HIV in a Nigerian study comparing four states with anti-stigma laws and four states without such laws<sup>36</sup>. In 2007, before anti-stigma laws were passed, the two groups of states did not differ significantly in proportions of people with stigmatizing attitudes (72.9% versus 71.1%). But by 2012, after the laws were in place, a significantly higher proportion of people in states with anti-stigma laws had accepting attitudes about HIV infection (67.6% versus 44.4%).

Meanwhile, current international trade-law negotiations by the European Union (EU) threaten access to affordable antiretroviral and anti-HCV drugs in developing and least-developed countries<sup>37</sup>. Negotiation documents show that the EU is currently pushing for extending intellectual property deadlines beyond the limits set by the 1995 Trade-Related Aspects of Intellectual Property Rights (TRIPS) Agreement, putting in jeopardy measures, such as parallel imports and compulsory licenses for life-saving HIV drugs.

Structural change tools were presented, such as the use of a feasibility study towards repealing an antiquated law that perpetuates HIV: the Deceased Brother's Widow's Marriage Act in Zambia<sup>38</sup>. Surveys of more than 270 chiefs, judges and other Zambian leaders by The SHARE II project and the Zambia Law Development Commission demonstrated broad support for the repeal of a law that allows men whose brothers die to "inherit" their brother's widow, a right that may expose either person to HIV infection and poses a grave risk of psychological harm to the widow.



*Michael Kirby, former justice of the High Court of Australia, speaks about how the law impacts the HIV epidemic*

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## Social and behavioural sciences in biomedical research

The (increasing) and crucial role of behavioural and social sciences in designing successful biomedical interventions was highlighted<sup>39</sup>. Researchers looked in particular at the issues that will shape the potential success of ARV-based prevention and discussed the social and behavioural aspects of these new prevention strategies<sup>40</sup>. They showed that the success of current prevention improvements is linked to the capacity to include behavioural and social sciences in the design of biomedical studies, as these interventions' acceptability and feasibility are key. Focusing on the importance of understanding user perspectives on ARV-based HIV prevention, researchers observed that what people do in "real life" is often very different to what happens in clinical trials, and this may undermine the effectiveness of ARV-based prevention<sup>41</sup>. They discussed the issue of risk compensation in ARV-based prevention, which is very difficult to assess in clinical trial settings and must be studied in "real life"<sup>42</sup>. Taking this into account, some researchers advocated for an immediate roll out of biomedical prevention in key populations, with appropriate studies to monitor and improve implementation with a strong social and behavioural component<sup>43</sup>.

A team looked at cross-cutting and site-specific challenges, as well as facilitators of community engagement in global HIV prevention trials in Canada, India, South Africa and Thailand. They found that empirically based identification of challenges to meaningful community engagement in global biomedical HIV prevention trials suggests the importance of developing and evaluating strategies to address individual and social-structural factors: involving communities early in trial planning processes, avoiding tokenistic participation by identifying appropriate roles for community stakeholders commensurate with time and expertise, mobilizing collaborative trial literacy activities and addressing distrust of clinical trials in the context of local vaccination cultures. They also supported the idea that financial support to sustain civil society organizations' infrastructures beyond episodic trials may foster capacity building, independent oversight and effective community engagement<sup>44</sup>.

## HIV and mental health

Psychosocial problems, particularly depression, among people living with HIV, were presented as adversely affecting treatment outcomes and success of prevention interventions<sup>45</sup>. Quality of life for HIV-positive people should be an important aspect of HIV care programmes. Discussions highlighted the need to integrate mental health care with HIV care services, especially in countries where mental health providers are not available in large numbers. For example, in South Africa, research showed a three-fold increase in suicide attempt incidence among AIDS-affected and abused adolescents<sup>46</sup>. It highlighted low mental health outcomes for children and adolescents affected by cumulated parental AIDS mortality and morbidity and those suffering abuse, food insecurity and violence. The study, carried out with 3,515 adolescents, reported that mental health distress associated with parental AIDS morbidity increases suicide behaviour among them. AIDS in the family impacts on coping among adolescents and other adversities, such as poverty and violence, compound the problem several fold.

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## Track E: Implementation Research, Economics, Systems and Synergies with other Health and Development Sectors

Track E was aimed at increasing understanding of how HIV prevention, treatment and care can be offered in a manner that is accessible and acceptable to individuals, families, communities and governments, and that makes effective and efficient use of human, financial and other resources. Track E placed HIV in the broader context of health systems and human development.

*“ART has averted 53 million deaths and this is worth every dollar spent.”*  
J Prasada Rao, UNAIDS

Given that the tools to end the HIV epidemic are available, the question at the centre of AIDS 2014 and essential to Track E was: how do we step up the pace? Every major funder of HIV programmes shared this view and insisted that to reach this goal, the response should focus on closely tailored responses, both geographically and sociologically. While investments in AIDS have risen, they are levelling off, and we are still far from the level of investments needed to reach global targets. Now, most spending goes to low-impact projects while only 10% of overall funding goes to MSM, sex workers and their clients, and injecting drug users<sup>1</sup>. Funders agreed that given the effectiveness of programmes targeting key populations, more resources should be invested in this direction.

### Investments on AIDS is expanded globally but considerable further investment is needed to reach 2015 target

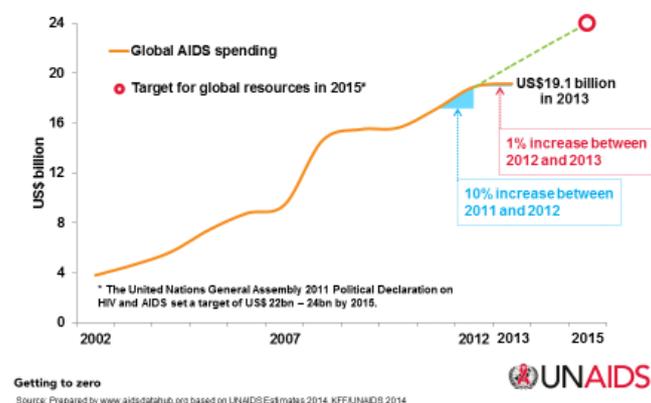


Figure 13. Further investments are needed to reach 2015 target

(Source: Rao/UNAIDS)

Donors and researchers agreed on recommendations for improved effectiveness: geographical approaches to set priorities for investments; focused investments on populations with the greatest need; reducing the costs of antiretroviral medicines and other essential HIV commodities, as has happened in South Africa; improved efficiency through alternative service delivery models, including community-based services; and eliminating parallel structures and reducing programme support costs to optimize investments, for example, by integrating HIV prevention in children into antenatal care and maternal and child health settings, or integrating HIV and TB service in primary care<sup>2</sup>.

## Effectiveness of current HIV investments

Shared accountability and responsibility is key in the current funding environment. Experts highlighted the need for increased domestic resources, given the flattening of international funding, to invest limited resources more strategically and efficiently at each level, and to have clear and transparent data to inform these investments. Since 2010, overall domestic resources exceed international

investments, in particular due to increased national investments in sub-Saharan Africa. Still, many more efforts, as well as smarter investments, are needed to fill the funding gaps.

Researchers showed that every 10% increase in spending to prevent or treat HIV infection has a substantial and highly significant impact, lowering HIV incidence by 1.1% and mortality by 0.8%<sup>3</sup>. A research team analyzed publicly available data on total HIV expenditures, HIV incidence and mortality in people living with HIV, the Human Development Index, gross domestic products and World Bank governance indicators. The analysis focused on 58 low- and middle-income countries from 2005 until 2012. It shows that statistical models consistently determined that greater HIV prevention and care investment is independently associated with lower HIV incidence and mortality. The researchers argue that their findings “support policies to maintain momentum in HIV investments as an exceptional opportunity to control the AIDS pandemic”.

The United States President’s Emergency Plan for AIDS Relief (PEPFAR) presented the new quality improvement process it is putting in place to better control the epidemic in each country to achieve a financially sustainable response, which would allow shifting towards greater host country financing. The aim is to standardize site monitoring of quality of care to support the framework of three PEPFAR guiding pillars: accountability, transparency and impact<sup>4</sup>. To do so, the US government created an interagency collaboration that supports PEPFAR teams in conducting site and above-site-level monitoring and real-time reporting, aggregation and analysis. These data are used to improve quality, as well as triangulate impact, expenditure and quality analyses to significantly increase the impact per dollar of PEPFAR programmes. To enhance transparency, all PEPFAR expenditure and programme data are now publicly available online.



Mark Dybul, Global Fund, during a Plenary Session

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According to Mark Dybul, Executive Director of the Global Fund to Fight AIDS, Tuberculosis and Malaria, innovation in science, epidemiology and delivery, combined with better, smarter investments, offer a new, historic tipping point: to end HIV/AIDS as a public health threat. The Global Fund 4<sup>th</sup> replenishment round, with \$12 billion in pledges, benefitted from a 30% increase over the 3<sup>rd</sup> round<sup>5</sup>. Regarding future funding, overseas development aid is projected to increase in 2014 and then stabilize, so new and innovative financing options are being considered. An example is the financial transactions tax, which the Global Fund strongly supports. The fund announced that it now focuses on strategic investments of resources targeting hot spots for greatest impact and shared responsibility through increased domestic funds via its new system of counterpart funding. However, some fear that this model may lead people who use drugs in middle-income countries to be even less likely to access services than they do now, given that less than 5% of domestic funding in priority countries is spent on harm reduction.

## Cost efficiency of treatment as prevention

Scaling up HIV treatment under the 2013 WHO guidelines will have a significant impact on the epidemic, but more research is needed on the resources required for implementation. The demand for antiretroviral therapy in low- and middle-income countries will exceed 16 million person-years by the end of 2016, rising almost 50% from 2013 to 2016, according to projections by WHO and collaborators<sup>6</sup>. Use of two antiretrovirals (efavirenz and tenofovir) will expand steadily. Tenofovir market share will rise from 50% in 2013 to 62% in 2016, while efavirenz market share will climb from 48% to 63%. Use of zidovudine (AZT), stavudine (d4T) and nevirapine will continue to fall. Uptake of second-line antiretroviral therapy will grow marginally, from 4.4% in 2013 to 5.0% in 2016.

To support decision making about how and when to increase eligibility and coverage, a research team developed an analytically derived epidemiological model examining the implications of various eligibility scenarios, models of care, retention rates and testing strategies on the costs of treatment



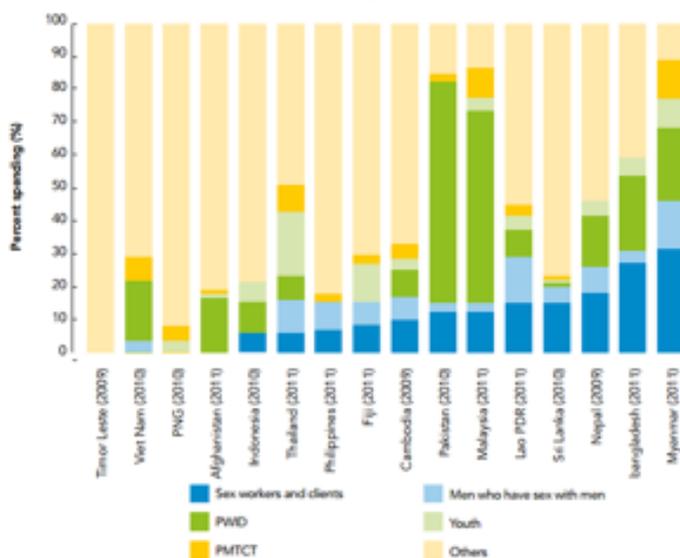
scale up; the team applied the model to data from Zambia, Malawi, Rwanda and Swaziland<sup>7</sup>. They concluded that in Zambia, Rwanda and Swaziland, the costs of treatment and care, testing, pre-ART, male circumcision and condoms at universal access in 2020 under the 2013 guidelines accounted for less than 60% of projected resources for HIV on average. Costs exceeded projected resources in Malawi. The incremental cost of universal access under the 2013 guidelines, when compared with the 2010 guidelines, ranged from 5% (Swaziland) to 21% (Malawi). Results illustrate that if programmes ran efficiently and there was no significant decline in available resources for HIV, scale up should be affordable in three of four countries. Malawi would, however, require additional resources. Overall, this supports a shift in policy debates from whether to scale up treatment to how to do so in the most efficient manner.

## Towards smarter programmes

Researchers demonstrated that scale up and ART coverage lead to effective results in health and savings in the long term. Yet funding is currently not sufficient to roll out such programmes everywhere they are needed, and many programmes have been inefficient and wasted large amounts of money. Available money has not been allocated to programmes that have the largest possible impact in each setting, and many implemented programmes have not been cost effective<sup>8</sup>. In Asia, prevention efforts are poorly targeted and tailored to the various epidemics, which is often concentrated geographically and by populations, therefore making investments ineffective. For example, 43% of the Philippines epidemic is among MSM in Manila, and 73% is in just three cities. Still, less than 10% of resources go to programmes targeting MSM. Investments should be made based on objectives using a mathematical approach taken to find the best and/or optimal solution to meet the objective according to the known epidemiology, costs and outcomes of programmes. Using allocative efficiency tools, such as the World Bank's Optima, substantial efficiency can be gained<sup>9</sup>.

## Inefficient allocations

- HIV prevention funding in Asia poorly targeted



Source: UNAIDS The Gap Report (2014); UNAIDS HIV and AIDS data hub for Asia Pacific based on AIDSinfo Online Database; Craig et al JIAS (2014) 17:18822

Figure 14. HIV prevention funding in Asia could be better targeted

(Source: Wilson/UNAIDS)

Studies on resource allocation and evaluation techniques were widely discussed. One assessment of technical efficiency of HIV prevention interventions in Kenya, Zambia, South Africa and Rwanda showed high potential to increase efficiency within the current health systems. Staff costs were found to be the largest proportion of unit costs across the datasets. A huge variability in staff composition across sites and countries was identified, making it an area for potential optimization and efficiency gains. A second area with potential is the second point in the cascade of care, the cost per client of “HIV test + positive result”, suggesting that sites that more effectively target their programmes will have lower costs<sup>10</sup>.

## Targeted responses

Researchers showed that the focus on key populations can drive strong reductions of new infections<sup>11</sup> and that the cost per infection averted is lower when focusing on key populations than the general population. A combination of HIV prevention interventions in Kenya could reduce the total number of new HIV infections by 40% during a 15-year period. With no additional spending, this effect could be increased by 14% – almost 100,000 extra infections – if the focused approach is used to tailor resource allocation. Researchers even showed that large reductions in new infections are not possible without a focus on key populations<sup>12</sup>. Other studies showed that the focused approach achieves greater effect than the uniform approach despite exactly the same investment<sup>13</sup>. In concentrated epidemics, scarce funding should therefore be directed as a priority towards most-at-risk populations. Through prioritization of the people and locations at greatest risk of infection, and adaptation of the interventions to reflect the local epidemiological context, targeted responses could substantially increase the efficiency and effectiveness of HIV investments.

Research on the efficiency of investments specifically targeting adolescents was presented at AIDS 2014. Improvements in HIV testing and antiretroviral adherence, and a drop in mortality, followed the launch of new HIV services tailored to adolescents and young adults in Port-au-Prince, Haiti<sup>14</sup>. Workers from the GHEKIO project planned adolescent-focused services by opening the country's first adolescent HIV clinic, creating the first adolescent community advisory board, assigning community health workers to make follow-up home visits to adolescents, organizing peer support groups, and offering HIV counselling and testing to all adolescents seeking primary care. Coincident with these changes, HIV diagnoses among 15- to 24-year-olds rose steadily, antiretroviral adherence rates improved from 45% to 70%, mortality dropped from 13% to 7%, and unwanted pregnancy rates fell from 25% to 8%.

Targeting key populations will involve substantial legal and social changes to put in place critical enablers without which the response will not be effective in ending the AIDS epidemic. Researchers demonstrated that few states have adequately budgeted for human rights programming as part of national AIDS programmes, and no sustainable funding stream exists to maintain and scale up HIV and human rights work essential to put these critical enablers in place<sup>15</sup>. Donors are retreating on funding commitments for HIV and human rights, as well as adjusting their strategies to integrate HIV programming into public health, sexual and reproductive health and rights, health systems strengthening and lesbian, gay, bisexual and transgender rights portfolios. While some of these integration efforts may open up new funding doors for work on HIV and human rights, overall, organizations working at the intersection of AIDS and rights are facing serious funding challenges. Concerted action is needed to ensure that adequate resources are available to sustain and scale up work on HIV and human rights.

## A sexual and reproductive health approach to HIV

The tendency to include HIV in the broader scheme of sexual and reproductive health, and its rationale, was made clear, in particular for young people and adolescents and when it comes to contraception. In his opening speech, UNAIDS Director Michel Sidibé reminded the audience that “people have sex” and always will<sup>16</sup>, and programmes should adjust to their needs rather than try to direct them. WHO recognizes the right to full and pleasurable sex lives and the HIV response should take this into account to be successful.



Michel Sidibé, UNAIDS, at the Opening Session

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Expanding from this inclusion of HIV and sexual and reproductive health was the successful workshop on occupational health and safety standards of sex workers aimed at ensuring working conditions that facilitate wellbeing and reduce HIV risk. The New Zealand and Australian models were discussed, as was the role of the International Labour Organization (ILO). In New Zealand, the Department of Labour established occupational safety and health guidelines for the industry. The right to refuse work was one of the key additions of these guidelines. Peer education outreach is central to successful prevention and occupational health. Presenters asked that the ILO include sex work and promote “decent work” in this trade, conditions that cannot be met without decriminalization of sex work<sup>17</sup>.

## Implementing best practices: ownership by CBOs

Building an implementation evidence base that focuses on collecting data on efficacious interventions in real world settings would be extremely valuable to end the epidemic at a faster pace. AIDS 2014 highlighted the efficiency of programme implementation through local ownership by community-based organizations (CBOs). Researchers showed that this is not about delivering messages to communities to get them to do things: to have tests, take pills, use condoms. It rather is about empowerment: listening to, talking with, learning from affected communities. It is about funding community-led organizations and networks, as well as developing practice-based evidence tools.

The *MaxART* programme aims at strengthening community-based and facility-based interventions towards immediate access to ART in Swaziland, so as to pursue the treatment revolution<sup>18</sup>. HIV testing and treatment rates climbed in Swaziland after the country implemented this programme for 2.5 years. *MaxART* set out to treat everyone who met national guidelines for starting ART, aiming both to improve the health of all treated people and to lower rates of HIV transmission. Swaziland’s aggressive evidence-based approach to HIV testing and care could offer a model to similar countries with high HIV prevalence.

A study from Kenya looked at how to improve performance, resource mobilization and sustainability of community-based HIV programmes within the context of the development of a community-based programme activity reporting system<sup>19</sup>. Conclusions were that programmes should consider enhancing community monitoring and evaluation systems for a sustained community-based response.

Researchers also described factors associated with the improvement in institutional capacity of community-based organizations among high-risk population groups in India<sup>20</sup>. The systematic capacity strengthening of CBOs showed results on performance. However, results were much better for urban CBOs, which have memberships of 1,500 or more. Hence future capacity-building initiatives must give special attention to smaller CBOs and those in rural areas.

## Impact of targeted interventions at the community level

While it has been known for some time that circumcision can reduce HIV transmission by up to 60%, the first-ever results of a study of the impact of circumcision on HIV transmission<sup>21</sup> demonstrated substantial benefits for the community. Since 2008, in the township of Orange Farm in South Africa, HIV incidence in young women who had sex only with circumcised male partners had a 20% lower HIV incidence than in women who ever had sex. This is the first real-life demonstration that male circumcision lowers HIV incidence in women.

A Kenyan programme aimed at involving more men in prenatal care of women showed success in a 2013 study in Nyanza province, Kenya<sup>22</sup>. During and after the programme, more women delivered

children at the antenatal clinic, more HIV-positive pregnant women entered HIV care, and more women who entered care started antiretroviral therapy faster. In the same periods, median days from eligibility for antiretroviral therapy to starting therapy dropped. The researchers believe this approach has the potential to reduce maternal and perinatal morbidity and mortality in HIV-affected regions and to identify HIV-infected men and HIV-discordant couples.

Another study reported that all components of a condom-promotion programme for long-distance truck drivers in India improved consistent condom use with female sex workers, according to results of a 505-trucker survey<sup>23</sup>. India's HIV-targeted Avahan programme provides condom education and counselling, as well as condoms, to long-distance truck drivers, a key bridging population that may pick up HIV from female sex workers and transmit the virus to other sex partners, including spouses. Researchers found that consistent condom use with female sex workers was significantly higher in truckers who got Avahan services than in those who did not.

## Synergies in access to medicines

Access to drugs for treatment of hepatitis C virus (HCV) was a hot topic at AIDS 2014. HCV drug pricing was strongly questioned and criticized (e.g., it costs US\$84,000 in the USA for a 12-week course). Community activists and researchers highlighted the possibility of low-income countries using compulsory licences in this particular case, as done previously for HIV drugs. They denounced the high pricing of treatment in middle-income countries, where most of the epidemic is found and where most patients cannot get access to drugs through compulsory licencing. This session also focused on innovative funding and drug access mechanisms, such as those used by the Medicines Patent Pool and UNITAID.

Philip Read (WHO) told the conference that more people who inject drugs now die of heroin overdoses than of AIDS-related causes, and that 60% of overdoses occur in front of another person. WHO recommended that people who inject drugs should be provided with emergency packs of the heroin antidote naloxone<sup>24</sup> for use by friends or by the users themselves in case of accidental overdose.



*Elliott Ross Albers, International Network of People who Use Drugs, speaking on behalf of the drug user community.*

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## Social media and new technologies in the HIV response

Strategies for support of treatment adherence, anti-stigma campaigns and clinical research can make substantial progress using the new information technologies that are now available in most settings. Accurate clinical data reporting is essential not only for individual patient care, but also for gathering data that can inform regional and national policy planning. A simple, low-cost mobile phone application called DHIS 2.0, and presented at AIDS 2014, was found to greatly improve quality of HIV data reported from public health facilities in Nigeria<sup>25</sup>. Given its success, this programme will now be extended progressively.



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## Community, Leadership and Accountability<sup>1</sup>

There was a strong sense among many delegates that AIDS 2014 represented one of the most inclusive International AIDS Conferences so far. Notably, sex workers and transgender women were visible and heard, and young people were omnipresent. The content reflected their involvement in conference planning, and one hopes that it will pave the way for reinforcing wider involvement in the response. “Nothing about us without us” was the community call most often heard in halls of the conference venue.

The election of the first openly gay IAS President, Dr Chris Beyrer, was recognized as a step in this direction<sup>2</sup>. Furthermore, community delegates made it clear that PLHIV need ownership of their services and full decriminalization of all behaviours and activities, celebration of human rights and sexual rights. This call was echoed by leaders, including Michel Sidibé<sup>3</sup>, who urged world leaders to “stop public hypocrisy on sex and promote universal sexual and reproductive health, education and rights”, making it clear that “the post-2015 agenda should explicitly embrace human rights”.



Chris Beyrer, IAS President, at the Closing Press Conference

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According to the Global Village Lead Rapporteur, Clive Aspin, AIDS 2014 was unique as, for the first time, the voice of transgender people was heard, and their specific needs were discussed extensively. Nonetheless, transgender people, in the course of their daily lives, continue to experience tremendous stigma and discrimination to a greater extent than others<sup>4</sup>.

Speaking on behalf of PLHIV at the Closing Session, Australia’s John Manwaring<sup>5</sup> called people from communities affected by HIV to be fearless advocates. “Every day, those of us living with HIV have to contend with fear and the irrational, often cruel, reactions it incites. But as I’ve heard people speak over this past week, I have realised an undeniable truth: we are more powerful than we know,” Manwaring said.

*“When those of us living with HIV come out into the light and share our stories, we dispel the fear, the stigma, and the hate. In their eyes, we are no longer stereotypes and statistics; we are human.”*

**John Manwaring**

AIDS 2014 delegates and their friends gathered on Federation Square on 22 July 2014 to remember the 35 million people who have been lost as a result of HIV- or AIDS-related causes, and to celebrate the triumphs of science, medicine, policy and community in the fight against HIV and AIDS at the International AIDS Candlelight Vigil.



Candlelight vigil

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## The Global Village

The AIDS 2014 Global Village, the hub of community-activities, was a diverse and vibrant space that covered an area of 6,500m<sup>2</sup>. Here, communities from all over the world gathered to meet, share and learn from each other. It was a space that showed conference participants how science translates into community action and intervention. The Global Village, open to conference delegates and the public, was lively and engaging, with the 20 networking zones vibrant with great discussion and ideas. Youth, indigenous populations and KPs were particularly visible throughout the week, taking full advantage of the AIDS 2014 platform. Activities held in the Global Village included 47 sessions, 30 performances, 24 film screenings and 22 art exhibitions, as well as the 65 NGO and 15 marketplace booths.



*Real Hot Bitches perform at the Global Village Opening*

© IAS/ Elisabetta Fino



*Thoko Njoloma with her condom dresses at the Global Village*

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## No one left behind? Community vs. communities

The language has improved: the term, “key populations”, is considered to be more appropriate than such descriptions as “vulnerable” or “at-risk”. And while substantial progress has been achieved in terms of involving KPs in the HIV response, some delegates, representing particular groups, felt left behind. Analyzing the concept of KPs in a dedicated session<sup>6</sup>, some community members and researchers expressed concerns that the current definition of KPs leaves out some people who are truly affected by HIV, such as indigenous populations, women and girls. They expressed fear that approaching populations separately may be too restrictive as, in reality, affected populations are interlinked. As the Community Lead Rapporteur, Len Tooley, noted: “Like threads woven together to create a fabric, each of us is enmeshed within a network of interwoven and overlapping communities ... Like pulling a loose thread from an elastic band, locating a person’s experience in relation to only one of the communities to which they belong can ... distort our understanding of how that ‘community’ works in concert with the other fibres of one’s experience<sup>7</sup>.” To be effective, the response must be inclusive of all populations, as well as reflect the unique needs and significance of each of these populations.

*“Hindus, Buddhists, Christians, Sikhs, Atheists, and Muslims all faced the same problem. Many of us got HIV because we did not have the means to protect ourselves.”*

**Ayu Oktariani**



*Asia-Pacific community representatives  
at the Opening Session*

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Indigenous populations, one of the populations disproportionately affected by HIV, were at the forefront of the Melbourne conference, bringing many stories from the Asia Pacific region and Canada to light. Notably, they joined forces at the International Indigenous Conference on HIV/AIDS held in Sydney on 17-19 July 2014<sup>8</sup>.

At AIDS 2014, indigenous delegates spoke as one voice, calling upon global health institutions to include them explicitly in the list of KPs. A workshop on indigenous leadership in the HIV response examined experiences of indigenous engagement in Australia, Mexico,

New Zealand, Guatemala, Canada and Chile. Importantly, it highlighted the need for intergenerational indigenous leadership to design culturally sensitive and effective programmes targeting indigenous youth, as well as underscoring how colonial laws and traditional approaches are not particularly appropriate for indigenous people in effectively addressing HIV<sup>9</sup>.

## Towards an AIDS-free generation: empowerment of young people

Adolescence and young adulthood represent some of the most critical, influential years of life for defining oneself. AIDS 2014 discussions underscored the fact that while more strategic investments are needed to promote health in young people and adolescents, they are stepping up as leaders to revolutionize sexual education in order to achieve an AIDS-free generation. Given the reality that young people have sex, programme designs must revisit old assumptions about sexual activity and drug-using behaviours, such as the myth that all young people wait to reach the age of majority before engaging in sexual activity and/or taking drugs. Overall, there is a dramatic need for better sex education around the world.



*Youth celebrate World AIDS Day 2013*

© IAS/Samantha Sagona

As Ayu Oktariani from the Indonesia Positive Women Network underlined in her Community Welcome, young people around the world are not given the information and tools they need to prevent HIV<sup>10</sup>. Peer educators should be trained to spread relevant and culturally sensitive sex education. Y-PEER Jordan highlighted the importance of this in their Global Village presentation on their experience in refugee camps where young people have increased vulnerability to HIV<sup>11</sup>.

Global health leaders recognize the right of young people to take decisions for their own health. Empowerment, involvement in decision making and law reform are critical to ensure that young people

and adolescents have access to HIV services, as well as harm reduction, without mandatory consent from their parents and tutors. Parents' consent is a barrier to HIV prevention and care for many who cannot discuss their behaviour with their parents, even more so if this behaviour is not culturally accepted (e.g., young MSM). The conference gave opportunities for young people to address this directly with leaders and advocate for change. For example, the Deputy Health Minister of Myanmar, Thein Thein Htay, visited the Youth Networking Zone and engaged with young delegates.

The increase in mortality of adolescents living with HIV, described at AIDS 2014, showed that the global community is not addressing the needs of adolescents appropriately. Leaders must ensure that adolescents living with HIV not only survive, but thrive. There is hope that the UNAIDS-UNICEF *All In*

initiative<sup>12</sup>, launched in Melbourne on 20 July 2014, will pave the way for a tailored and adolescent-sensitive approach that adequately addresses HIV prevention, care and treatment needs among adolescents.

At the other end of the spectrum, ageing is a growing concern in the community, in particular for same sex partners when legal provisions do not enable them to care for or be taken care of by, their partners<sup>13</sup>.

## *Youth Empowerment*

Youth Empowerment against HIV/AIDS (YEAH) took a leading role in community engagement during AIDS 2014. Using art as social advocacy, YEAH conceived and produced many of the large-scale installations throughout Melbourne, bringing youth-focused issues, challenges and vision of an HIV-free generation to the attention of the local community and international visitors.



*Princes Bridge installation*

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## **Address “the epidemic of hate” against MSM and TGW: decriminalize**

At least 76 countries criminalize some form of same-sex intimacy, affecting an estimated 2.79 billion people. Laurindo Garcia, an HIV-positive activist from the B-Change Foundation, gave a powerful community address on the response to HIV among MSM and TGW<sup>14</sup>. He spoke about the fears of speaking openly about pleasure, desire and sexual health, and told delegates that tackling moral judgements about sex and sexuality is vital for promoting HIV prevention. He noted that the past two years have seen an intensification of criminalization, violence and hate speech against MSM and TGW. These developments stand in stark contrast to narratives of scientific progress within the HIV prevention field. India re-criminalized sodomy<sup>15</sup>, Nigeria and Russia passed “anti-gay” laws, and Uganda’s Constitutional Court repealed the 2014 law, but same-sex relations are still forbidden.

Garcia suggested that developing new prevention technologies is of little use if MSM and TGW cannot access and use basic prevention services while they face an “epidemic of hate”. Garcia said that he wished that there was an “intolerance vaccine”, a “violence condom” and “post-hate prophylaxis” that could help people behave more respectfully towards each other, protect people from violence and allow them to treat the effects of discrimination. Garcia’s point was that public health interventions are undermined by stigma, violence, criminalization and a lack of rights for MSM and TGW. He demanded that health professionals



*Laurindo Garcia, Philippines, speaks about issues MSM discrimination at a plenary session*

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and community leaders protect and support MSM and TGW, and encouraged all to spread empathy. In this context, community-based support is more important than ever. An important and timely Middle East and North Africa Region MSM Health and Human Rights Coalition was launched to fight discrimination and promote awareness and to address the rising infection rate in discriminatory legal and social environments<sup>16</sup>.

## Sex work is work: decriminalize



*Activists holding red umbrellas, the symbol of sex workers' resistance to discrimination*

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Sex workers asked to be recognized as sex educators for the general population and be allowed to do so by their status and working conditions. At the Global Village, the Can Do Bar from Chiang Mai showed how sex workers can empower themselves to bring change, promote training and promote safe sex and best practices for both workers and their clients. Sex workers asked that their activity be decriminalized and considered as any other professional activity, giving them access to social security and health services, allowing them to practice in the safest way possible, enjoying the same protection and rights as everybody else.

## The war on drugs is over: decriminalize

The networking zone for people who use drugs was very busy putting in place advocacy plans in preparation for the United Nations General Assembly Special Session taking place in 2016. The Special Session is a major opportunity to end the war on drugs. Throughout AIDS 2014, activists, researchers and leaders from the Global Commission on Drug Policy and the Global Commission on HIV and the Law reminded delegates and media that it is well proven that criminalizing drug use – injecting drug use, in particular – fuels the HIV epidemic. Activists expressed worries regarding the lack of impact of evidence in designing public health programmes in many countries, calling them “data-free zones”. They raised attention about the public health risks introduced by Russia’s ban on methadone for drug users in Crimea<sup>17</sup> and expressed fear that the conflict in Ukraine is leading to restrictions on access to life-saving methadone. According to the Eurasian Network of People Who Use Drugs, out of 800 people taken off OST in Crimea, 20 had already died<sup>18</sup>. At the Closing Session, Eliot Ross Albers (International Network of People who Use Drugs) told the audience that what brings key populations together is “the devastating impact that stigma can have upon our lives, whether it be in the form of denial of access to vital health care services, to employment, to the right to enter certain countries, to family life, or the denial of our agency, and pathologization of our behaviour”. He called for the boycott of ICAAP 2015 in solidarity with Bangladeshi sex workers and requested the support of other criminalized communities, the AIDS movement, human rights defenders and advocates to “ensure that ending the architecture of global prohibition is firmly on the table at the UN General Assembly Special Session on Drugs in 2016”<sup>19</sup>.

## Community engagement in science and ownership of services: nothing for us without us

Community members asked researchers to guarantee their full engagement in HIV research, and that they advocate together for the decriminalization of key populations’ behaviours because criminalization is also an impediment to research. To service providers, they demanded that ethics be

at the centre of decisions taken, that community members be in charge of setting the pace for the roll out of new prevention strategies, and that HIV services be combined with other requested services, such as HCV testing and care, making them more efficient. Many sessions highlighted the poor response of many clinicians to KPs and the impact that this has on treatment uptake. Increased collaboration between clinicians and KPs, through community-led groups included in service networks and research, as well as appropriate training of all health workers and service providers, would increase their understanding of KPs and increase access to services. One particularly strong message came from the sex workers' consensus statement, claiming that such approaches as rapid self-testing and PrEP, now being pushed for by researchers, would not work in the context of sex work and that researchers should associate themselves more closely with their work<sup>20</sup>.

A community skills development workshop interestingly presented an ethical decision-making tool for care workers called "Difficult Decisions". It is aimed at helping service providers care for key populations and their families appropriately, for example, questioning stigma and preconceived ideas about who has the ability, or right, to parent. It showed how ethical decisions can differ from following the law, organizational policy, religion, culture or societal norms<sup>21</sup>.

## Positive Lounge

The AIDS 2014 Positive Lounge provided an exclusive rest, relaxation and networking space for PLHIV delegates. Over six days, 3,712 PLHIV accessed the lounge. A total of 30 volunteers from Australian PLHIV organizations assisted by providing information, peer support, reception, massage/bed bookings and IT support. All volunteers received specific briefing to cover issues of confidentiality, peer support, stigma and discrimination, equality, diversity and respect for PLHIV accessing the lounge.

## When will we end the epidemic? Post-MDG targets

Community, researchers and leaders agreed that we can end the epidemic and that this can be done by rolling out existing tools and putting an end to stigma and discrimination. The timeline for this was much discussed in the context of setting the post-2015 United Nations development agenda<sup>22</sup>. In September 2015, world leaders will agree on Sustainable Development Goals (SDGs) to follow on from the eight Millennium Development Goals (MDGs) targeted for achievement in 2015. The UN open working group reporting back to the General Assembly is recommending the ambitious goal of ending the AIDS epidemic by 2030<sup>23</sup>. However, Helen Clark (UNDP) warned delegates that there will probably not be an HIV-specific SDG, so she encouraged all the role players in the response to work together to continue the momentum generated by MDG 6, as well as maintain the funding and the partnerships it has mobilized until now<sup>24</sup>. Still, under the umbrella of future SDGs, there will be substantial opportunities to act on social determinants of HIV, through overarching goals, such as ending poverty, promoting gender equality and providing universal health coverage.

UNAIDS proposes removing the AIDS epidemic as a public health threat by 2030 through the "90-90-90" strategy, which entails getting "90% of people living with HIV tested, 90% of people living with HIV on treatment and 90% of people on treatment having suppressed viral loads by 2020". As Michel Sidibé said<sup>25</sup>: "Now, more than ever, we must concentrate our limited resources on where most infections occur and on where most people die ... The world needs a new 'catch-up' plan for the 15 countries that account for 75% of new HIV infections." This new vision for 2030 encompasses the following: "voluntary testing and treatment reaching everyone, everywhere; each person living with HIV reaching viral suppression; no one dies from an AIDS-related illness or is born with HIV; and people living with HIV live with dignity, protected by laws and free to move and live anywhere in the world", and AIDS no longer represents a major threat to any population or country.

To do so, 73% of people living with HIV should have fully suppressed viral loads by 2020, greatly reducing HIV transmission and substantially reducing deaths from AIDS, which requires a fast-paced



increase in treatment coverage given that today, approximately 37% of people living with HIV are receiving treatment. Community members highlighted the funding gap remaining and that must be filled to end the epidemic, as well as the disparities between global policies and how they translate into local realities<sup>26</sup>. For example, a study by APN+ found that numerous Asian countries were still using stavudine, an ARV with severe side effects<sup>27</sup>. In the same session, the International Treatment Preparedness Coalition (ITPC) presented an international survey on the impact of WHO 2013 treatment guidelines in which only 24% of respondents declared that WHO-recommended second-line regimens were widely available for those in need in their countries, and 73.2% reported that there was no access to third-line treatments in their countries<sup>28</sup>. ITPC also reported on drug stock outs happening in Nepal and Morocco.

*“Within the drug using community, we have a treatment gap of 96%. What is the reality for PrEP when only 4% of us get basic treatment?”*

*Eliot Albers*

In addition, community delegates reminded donors that they should not fund only programmes for the poorest countries as the number of people accessing treatment does not reflect the end of the epidemic in every country. Per capita income does not tell the whole story of people's experiences, such as the difficulties that key populations can face in middle-income countries. Eastern Europe is the second worst region globally for ART access, with only 25% of people who need treatment having access to it. Yet because the World Bank classifies many of the countries in the region as “middle income”, they are about to lose much of the aid funding that currently supports ART access, putting people living with HIV at risk of treatment interruptions or unwanted regimen changes.

While activists recognize that country ownership and sustainability are important, they question the ability of international donors to ensure that the funding being transferred is going to the most important populations. They recommend adapting the metrics and measures of success, focusing more on protection of human rights and number of imprisonments avoided, not just the numbers of condoms distributed. In this context, community delegates worked together to develop an advocacy agenda to link HIV, gender-based violence and sexual health into the post-2015 agenda<sup>29</sup>.

## Community achievements: the Red Ribbon

Ten community-based organizations received the 2014 Red Ribbon Award for their inspiring work in reducing the impact of the AIDS epidemic. Awardees were from the Democratic Republic of the Congo (DRC), Guyana, Indonesia, Iran, Kenya, Lebanon, Malawi, Nepal, Ukraine and Venezuela. They represented many aspects of the community response to HIV, such as the prevention of sexual transmission of HIV among young people and men who have sex with men in the context of sex work in the DRC, harm reduction and HIV in the prison system in Iran, and counselling, information and support for women living with HIV in Bolivia<sup>30</sup>. The Red Ribbon Awards special session showed the importance of the work of community organizations, especially regarding populations that are marginalized, criminalized and stigmatized.



*Red Ribbon awardees*

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## Country response success stories

Community delegates<sup>31</sup>, funders and researchers<sup>32</sup> discussed country ownership of the HIV response. Delegates heard about exemplary Asia Pacific country programmes that involved close cooperation between affected communities and authorities. Australia was presented as exemplary, its HIV response being characterized by strong community involvement and true partnership with health authorities from the beginning of the epidemic<sup>33</sup>. According to presenters, there always was a meaningful involvement of people living with HIV, and affected communities and affected communities in Australia are able to access the tools they need and non-judgemental health care.

Dr Khuat Thi Hai Oanh's<sup>34</sup> (Center for Supporting Community Development Initiatives, Vietnam) presentation of Vietnam's harm-reduction programmes clearly showed the positive effect of evidence-based policies and the need for more. Presenting the life-saving impact of harm-reduction measures taken in Vietnam over 10 years, she made a compelling case for promoting harm reduction. She called on funders to support harm reduction, expressing



Center for Supporting Community Development Initiatives (SCDI), Vietnam

(Source: Khuat Thi Hai Oanh)

concern about the sustainability of harm-reduction programmes in middle-income countries and asking that naloxone be made available widely and that the cost of Hepatitis C treatment be decreased.

She raised the issue of compulsory treatment for drug dependence in east and south-east Asia, advocating for community-based voluntary treatment for drug dependence.

Finally, the momentous changes happening in the region and their impact of the HIV response were addressed<sup>35</sup>. The case of the Myanmar transition was highlighted. Hope is rising as its government's contribution to the HIV response has significantly increased since 2011. With the easing of sanctions, international role players are also scaling up programmes and more resources have become available. Substantial challenges remain to ensure that adequate human resources are available for scaling up of HIV interventions and strengthening of health systems, and that key laboratory services and supply chain management systems are improved. Also, not all patients can access services due to limited transport infrastructure, security concerns in conflict areas and bureaucratic processes.

## Successful private sector involvement

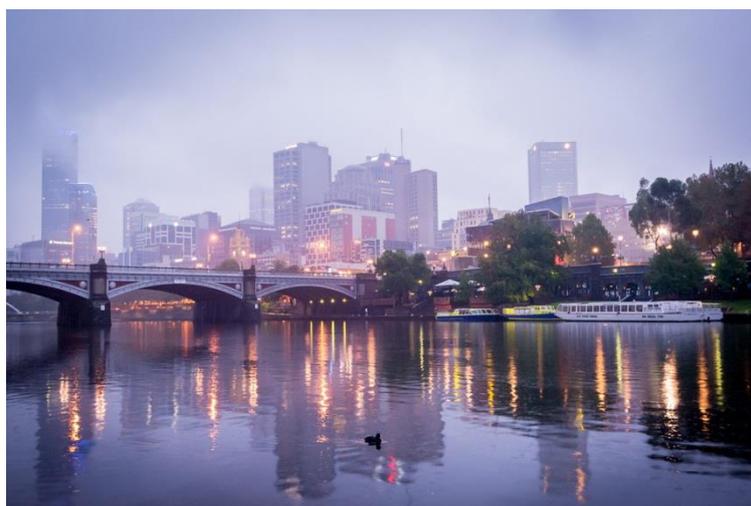
Extractive industries and the subsequent improved infrastructures induce significant employment-driven migrations<sup>36</sup>. Evidence suggests a correlation between the execution of these large capital projects and HIV prevalence, particularly in communities close to project sites. Therefore, companies and governments can play a key role in responding to HIV and AIDS within their workforces and in the communities that surround extractive industries. Companies presenting at AIDS 2014 have understood that it makes business sense for the industry to invest adequately in HIV and the health of its workers and of the population around the mining area. It reduces absenteeism, benefits payments, recruitment costs, training costs and medical costs, and protects the skills of the workers<sup>37</sup>. By improving the health of the community, companies invest in sustainable development. Companies contribute not only by implementing their own programmes, but also by contributing to the Global Fund. To put their programmes into place, they should collaborate with local land owners, government and the local community. One important issue raised was migrant workers' adherence to treatment.



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*Melbourne skyline from the Yarra River*

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*“The past three decades of HIV/AIDS have taught us that the disease doesn’t discriminate but that people and governments do. A renewed engagement with decision makers across the continent on the issue of human rights will be unavoidable if we are to move towards ending AIDS in sub-Saharan Africa and build on the huge gains that we’ve made over the past 15 years. It is my hope that the Durban 2016 conference will drive momentum towards a reinvigoration of the HIV/AIDS response in Africa.”*

Olive Shisana, AIDS 2016 Local Co-Chair

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[www.iasociety.org](http://www.iasociety.org)

International AIDS Society  
Avenue de France 23  
CH-1202 Geneva  
Switzerland  
Tel: +41 22 710 08 00  
Fax: +41 22 710 08 99  
[info@iasociety.org](mailto:info@iasociety.org)

