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# HIV PREVENTION: REVOLUTION THROUGH INNOVATION

IAS 2019 POST-CONFERENCE WEBINAR

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# HIV Prevention Updates - IAS 2019

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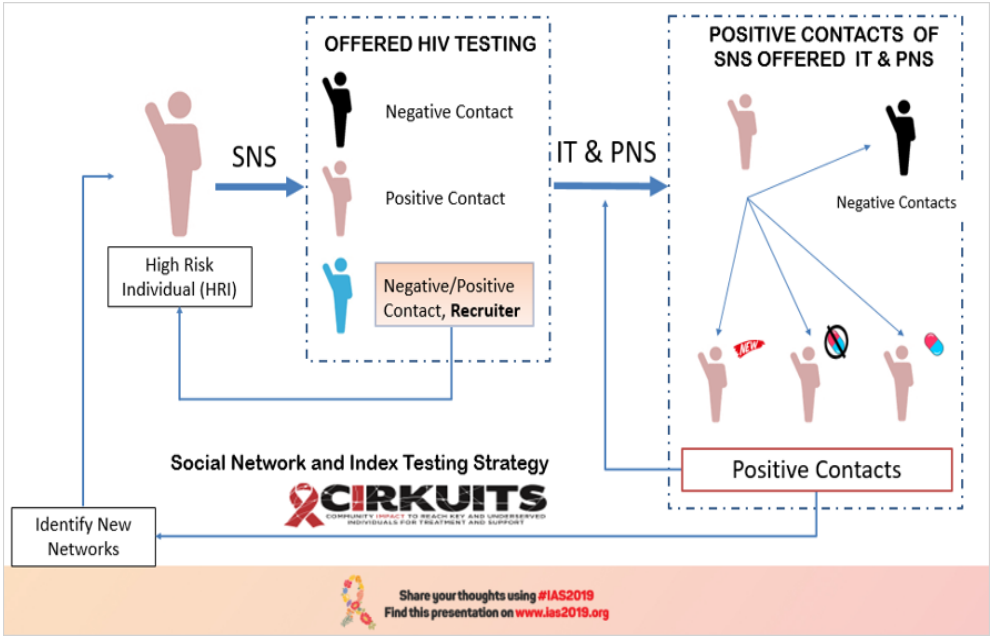
# HIV Testing

# Reaching the untested

## Social Network and Index Testing Strategy




- Intervention in Zambia to increase testing among those less likely to test
- **21 Community liaison** officers and **157 lay counsellors** were recruited, trained and deployed to offer index testing
- Index clients identified through **SNS** or **clients in ART care**

**RESULTS**

- Index testing among men (25-50 years):
  - Elicitation Ratio – 1:1.8
  - HIV Positivity yield – 41%
  - Index ART Linkage – 81%
- Index testing among adolescents and young people (10-24 years):
  - Elicitation Ratio 1:1.4
  - HIV Positivity yield: 32%
  - Index ART Linkage: 85%
- Of the 3,567 HIV positives:
  - 41% were women, 25+ years
  - 36% were men, 25+ years
  - 15% were adolescent girls and young women
  - 5% were adolescent boys and young men
  - 3% were under 10 years old

Mwango, MOAD0203

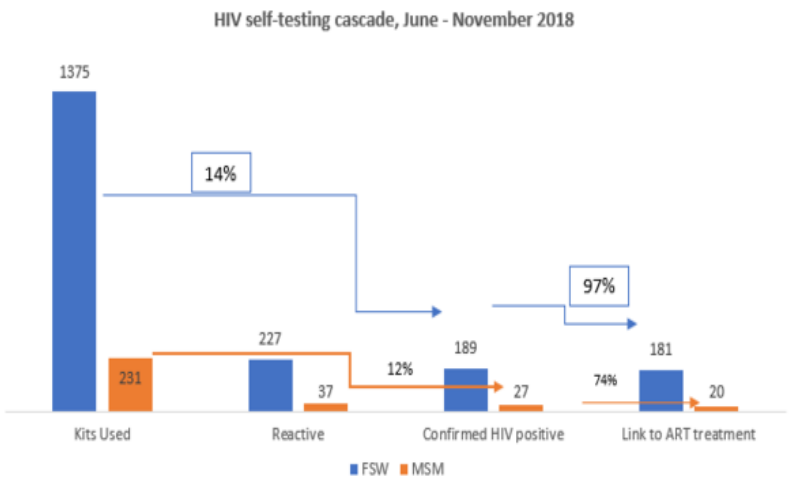
# Engaging men in HIV testing and care

- Rapid oral or blood-based HIV self-testing kits are now available in many settings.
- HIV self-tests have potential to improve uptake of testing and engagement in care among harder-to reach groups.
- Implementation study of multi-venue community-based HIV self test (HIVST) distribution targeting men in KwaZulu-Natal.
- Choice of 2 HIVST options: oral-fluid or blood-based testing.
- 4,495 test kits distributed, 92% to men.
- Take-away self-testers: 4% HIV positive, 81% linked to care, 73% started ART.
- Rapid HIVST distribution with non-intensive staff support is a feasible, acceptable approach to identify HIV+ men and link them to care and ART in South Africa.

Shapiro, WEAC0202

# Peer distribution

**Burundi: HIVST introduced December 2018**




- Peer outreach has the potential to reach key populations who may not be in touch with facility-based health services.
- Peer outreach workers distribute Oraquick HIVST; 2,321 kits distributed December 2018-March 2019.
- 22% of HIV diagnoses in FSW June 2018-March 2019 by HIVST, 35% in MSM.
- Challenge: delay between reactive and confirmatory result.
- HIVST improves uptake of HIV testing among key populations who rarely or never tested.
- More widespread implementation of HIVST with high-risk populations could accelerate progress toward 95-95-95 goals.

Gashobotse, WEAC0203

# Oral PrEP

# Impact of PrEP: Prevenir

**Increased incidence of sexually transmitted infections (STIs) in Prevenir**

| | Incidence rate per 100 p.y. (95% CI) | Increase in incidence per year | P value |
|---|---|---|---|
| Anal gonorrhoea | 27 (24-29) | +48% | <0.001 |
| Any STI | 86 (82-90) | +38% | <0.001 |

- **Prevenir:** prospective cohort (Paris), 3,057 enrolled to daily or on-demand PrEP.
- 15% changed dosing pattern.
- No difference in adverse events or lab abnormalities by regimen (3 discontinuations due to GI adverse events).
- 2,208 person-years follow-up.
- 2 infections (0.09/100 person-years) in men who had discontinued PrEP.
- Estimated 143 HIV infections averted.
- Incidence of viral hepatitis: 1.04 /100 person-years

Molina, TUAC0202

# Sexually transmitted infections (STIs) in the era of PrEP

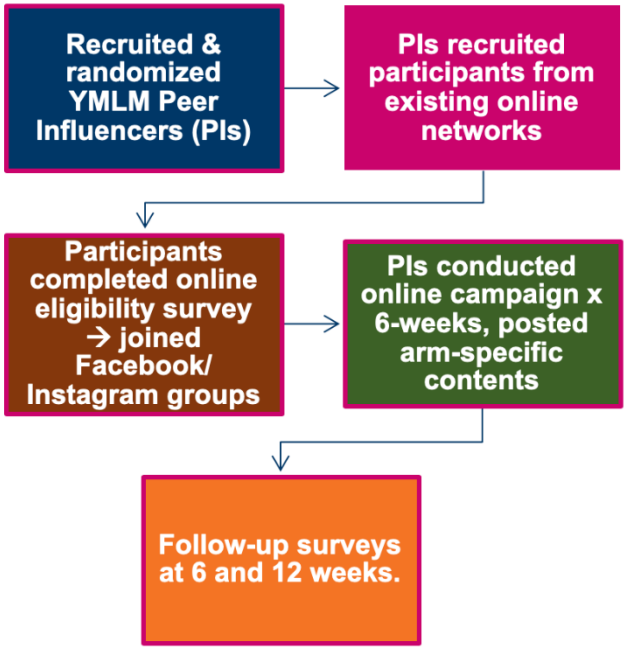
- Is PrEP associated with increases in STIs?
  - Concurrent increases in STIs; rates of bacterial STIs increasing over time; however, rises pre-date PrEP use.
  - Some but inconsistent evidence of risk compensation.
  - PrEP availability is uncovering the hidden epidemic of STIs in some populations.
- Implications for STI control:
  - Improve and move beyond syndromic STI management.
  - Integrate point of care STI tests and revise WHO syndromic algorithms for women.
  - Make sensitive STI diagnostic tests affordable e.g. Xpert.
  - Increasing investment in PrEP programmes could benefit STI control.
  - Expedited partner treatment.
  - Evaluate innovative STI interventions such as post-exposure, on-demand doxycycline in PrEP users.
  - Invest in STI vaccines – especially important with growth of gonococcal resistance.

Celum, WESY0102

# PrEP programme design

A peer-based online social network intervention to facilitate PrEP adoption among young Black/Latinx men who have sex with men in New York City

## METHODS




## RESULTS

N=155 enrolled

### Feasibility:

- Rapid recruitment/enrollment
- >90% Retention at 12 weeks
- >85% liked, commented, loved ≥ 1 post
- Each post viewed by ~40-50% of participants

### Acceptability:

- 82% would continue participating,
- 78% reported high satisfaction
- 75% would recommend friends to participate

***Involving the community is critical for programmatic success***

Patel, MOPDD0203

# Sexual and reproductive health integration

**Tutu Teen Truck: HIV testing, PrEP and contraception**

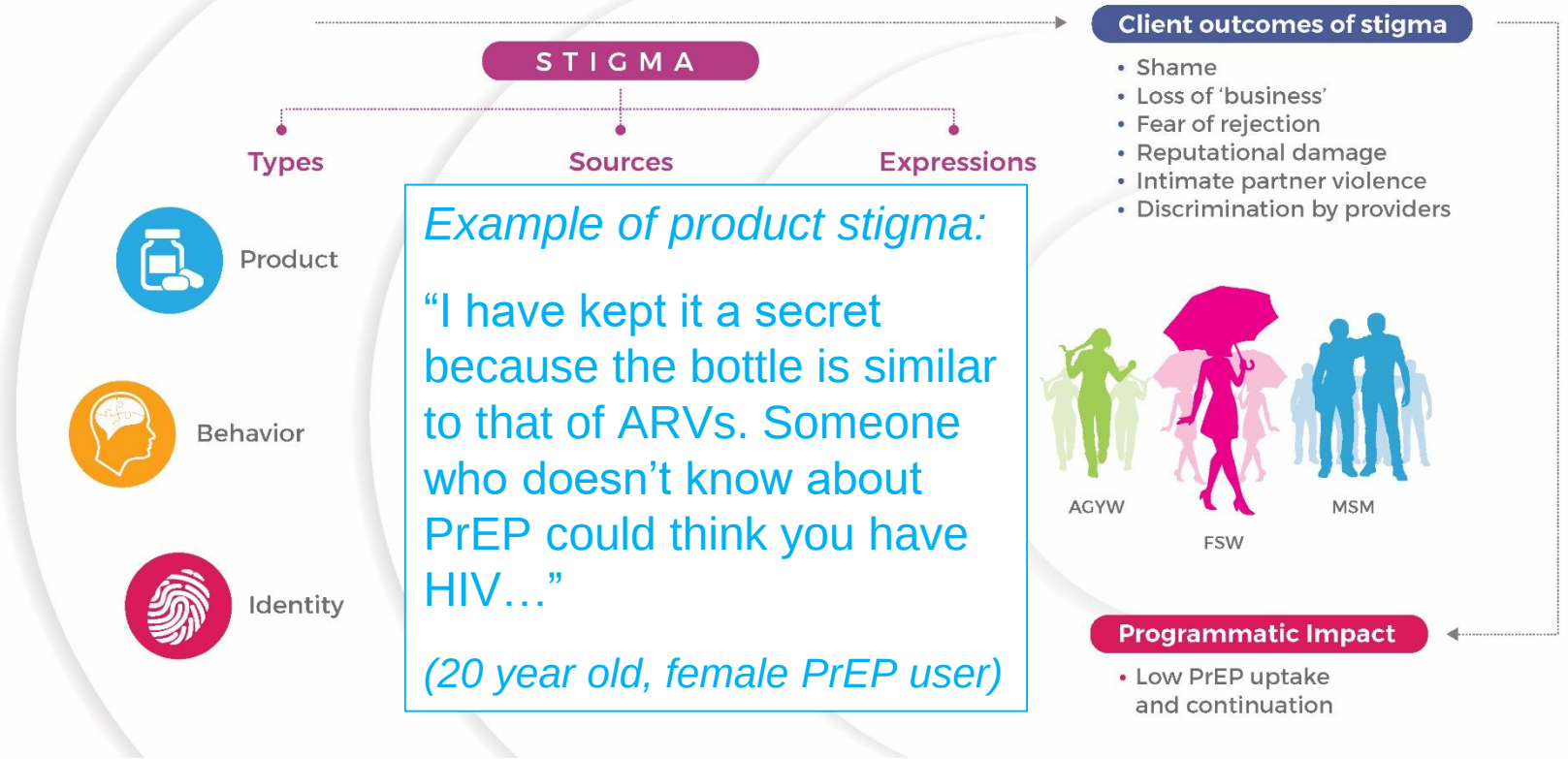

Photo: Desmond Tutu HIV Foundation

- ECHO study in 7829 women desiring contraception (63% < 25 years) showed very high efficacy of 3 modes (Depo Provera, copper intrauterine device or levonorgestrel implant) in sub-Saharan Africa.
- BUT: very high HIV incidence (3.81% per year), very high STI incidence despite syndromic management.
- High need for integration of HIV prevention, sexual and reproductive health rights (SRHR) services.
- POWER study: delivery of PrEP, contraception and HIV testing to adolescent girls and young women through mobile service
  - Initiation of PrEP and contraception correlated in this population
  - Adolescent girls and young women who were using contraception were significantly more likely to initiate PrEP on the same day compared to those who declined PrEP
- High-quality contraceptive services can be delivered in HIV contexts.

Onono, MOAX0103LB; Deese, LBPEB16
Rousseau, TUPEC479

# Impact on PrEP uptake

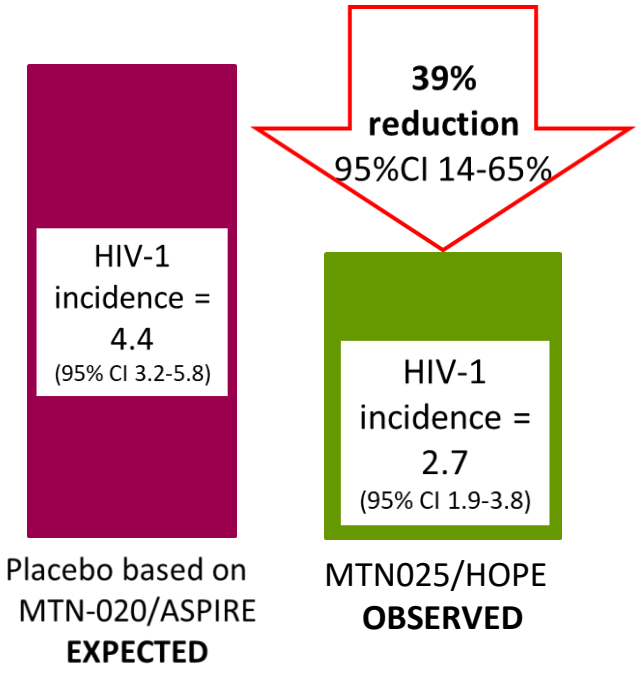
Qualitative research in Kenya to understand slow uptake to PrEP




Were, MOAD0302

# Dapivirine Ring

# Dapivirine ring: MTN-025/HOPE



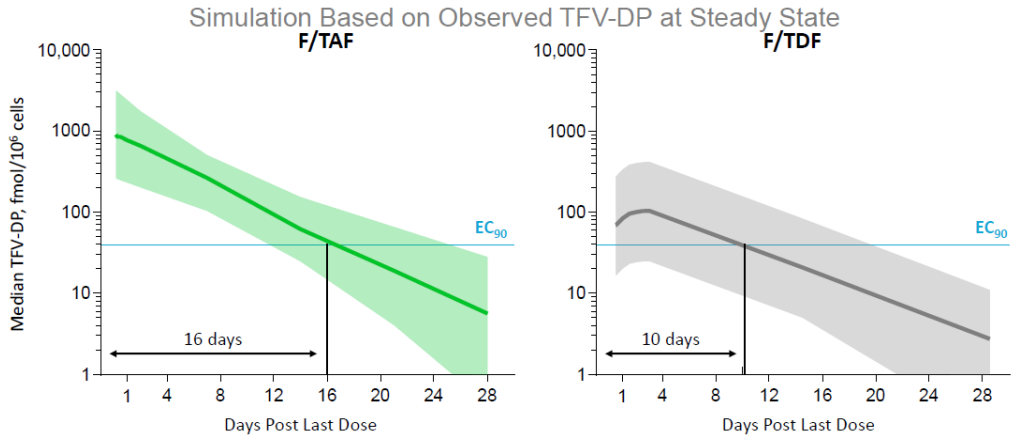

- MTN-025/HOPE – open-label extension study of dapivirine ring for HIV prevention, to assess adherence and safety
- Population: HIV-negative women previously enrolled in MTN-020 ASPIRE.
- Enrolled in Malawi, South Africa, Uganda, Zimbabwe.
- 12-month follow-up, 1,456 women.
- 73% of women accepted ring at all follow-up visits.
- Observed HIV incidence lower than the placebo group in ASPIRE.

Baeten, TUAC0203

# New prevention products in the pipeline

# DISCOVER trial: TAF/FTC as PrEP

- DISCOVER: randomised comparison of TDF/FTC (*Truvada*) vs TAF/FTC (*Descovy*).
- TAF/FTC non-inferior but a trend towards fewer infections in the TAF arm – why?
- Post-hoc analysis:
  - No differences in sexual behaviour or adherence between arms.
  - Faster achievement of optimal drug concentrations in the TAF/FTC arm.
  - Higher proportion in TAF arm achieved TFV-DP levels in PBMCs >EC90 by week 4 (98% vs 64%).
  - F/TAF achieved $EC_{90}$ within 1–2 hrs of first dose vs 3 days of daily doses of F/TDF.

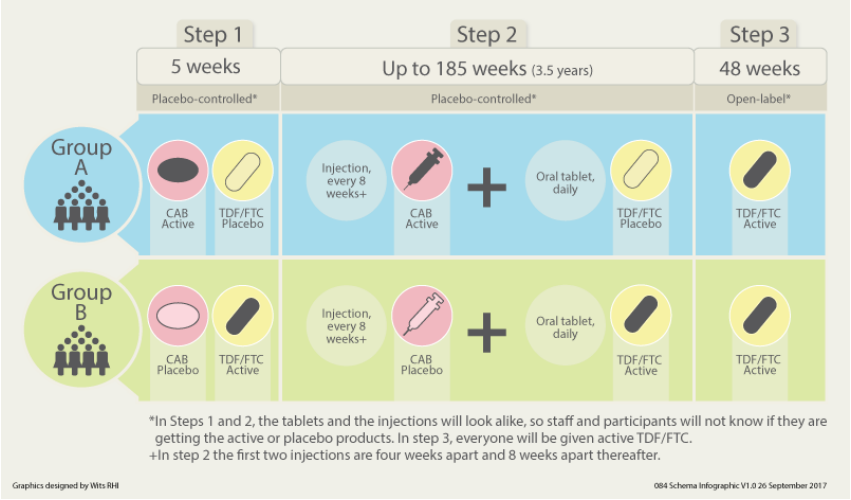



Spinner, TUAC0403LB

# Long-acting injectable antiretrovirals for prevention:

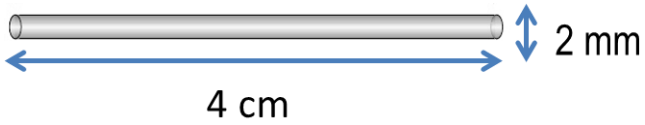
- Long-acting cabotegravir (CAB LA) – integrase inhibitor, injectable half-life 45-60 days.
- HPTN 083 and 084: phase 2b/3 studies evaluating the safety and efficacy of CAB LA compared to TDF/FTC for PrEP in HIV-negative men who have sex with men/transgender women (083) and cisgender women (084).
- Randomized, placebo-controlled studies.
- 5-week induction phase: oral CAB or TDF/FTC.
- Phase 2: two injections 4 weeks apart, then every 8 weeks, 3.5 years follow-up.
- Completion of recruitment projected in April 2020.
- HPTN 084: 3,200 women at higher risk of HIV infection in southern and eastern Africa.
- Does a long-acting injectable have a prolonged sub-therapeutic pharmacokinetic tail if dosing is interrupted / terminated?

**Long-acting cabotegravir: dosing schedule in HPTN 083 and 084**




MOSY05

# Islatravir implant




**Implant dimensions**

- Islatravir (formerly MK-8591) is a nucleoside reverse transcriptase translocation inhibitor (NRTTI) with long half-life (120-177 hrs in PBMCs), achieves similar concentrations in plasma and rectal, vaginal tissues.
- High barrier to resistance due to multiple sites of action.
- Safety and tolerability of two islatravir-eluting implants (54 and 62mg) tested in 12-week placebo-controlled phase 1 study in 16 HIV-negative subjects.
- Both implants had concentrations above PK threshold at 12 weeks; 62 mg implant will continue to release through 52 weeks.
- Potential advantages of implants: removable, consistent and predictable drug delivery.
- BUT an implant requires a surgical procedure, is regulated as both drug and device, difficulty in moving to generic marketplace.

Matthews, TUAC0401LB  MOSY05

# Broadly neutralising antibodies (bnAbs):

- Antibodies that have been shown to neutralize a wide range of HIV isolates.
- First generation products: monoclonal antibodies targeting CD4 binding site of HIV gp120.
- VRC01 being evaluated in 2 phase 2b randomised trials (**Antibody-Mediated Prevention, AMP** studies):
  - HVTN 704 / HPTN 085: 2,700 men who have sex with men and transgender women in the Americas
  - HVTN 703 / HPTN 081: 1,900 women in sub-Saharan Africa
- Next generation products: monoclonal antibodies targeting multiple sites:
  - VRCO7-523LS - 5- to 8-fold increased potency *in vitro* compared to VRC01.
- Trispecific antibodies: Combining multiple bnAbs with specificities against different epitopes into a single molecule has the potential to:
  - Improve efficacy
  - Simplify prevention and treatment regimens
  - Streamline the regulatory pathway to a licensed drug
- The goal of these studies is to identify the best regimens for moving to a licensure trial.

MOSY0502

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  - Track D: Social Behavioral and Implementation Science

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maisha! National AIDS Control Council

# Thank you