

## **Tales from Two Cities**

HIV and STI research highlights  
from Brisbane and Chicago

### **Remarks:**

International AIDS Society and  
STI & HIV World Congress Leadership

### **Speaker order:**

IAS/Nyaradzo M Mgodzi – U. Zim

IAS/Roger Pebody – Aidsmap

STI/Charlie Petersen – UIC

STI/Dr. Anu Hazra – UC, HBH



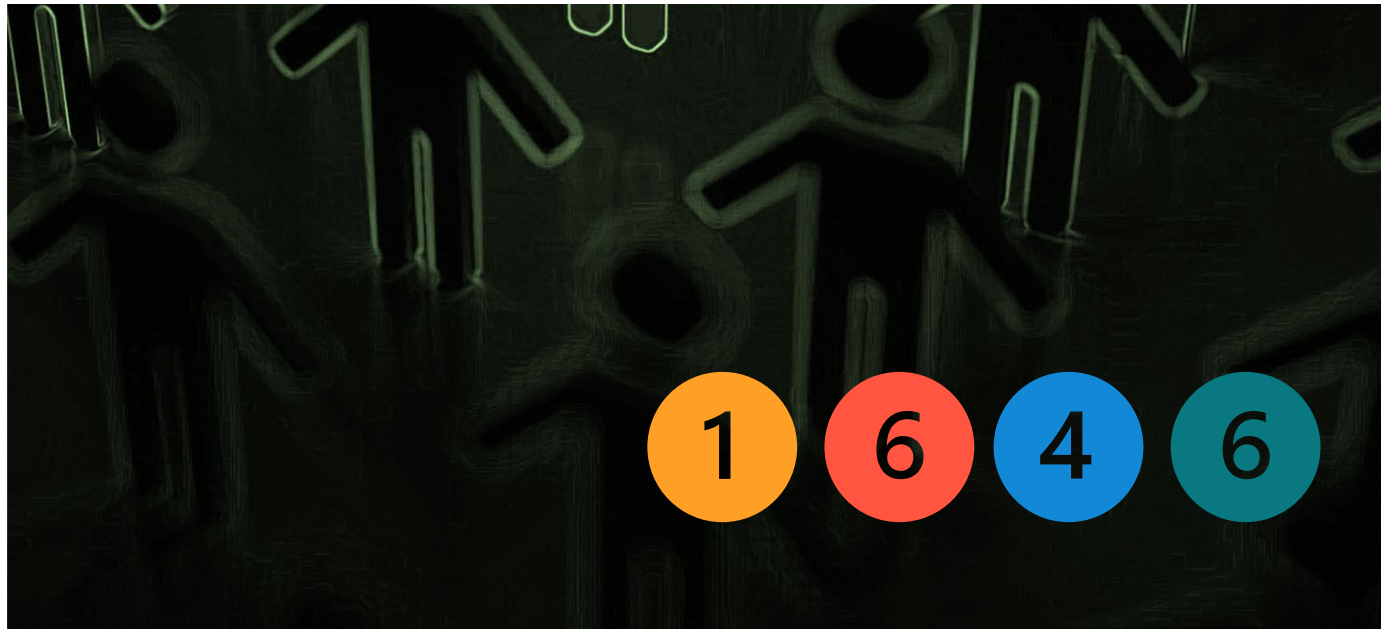


HIV prevention research - a new forum  
for advocacy on the latest

[avac.org/project/choice-agenda](http://avac.org/project/choice-agenda)



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## Tales from Two Cities Playlist

- Down Under  
KUJAN
- Brighter Days  
Cajmere (feat Dajae)
- Padam Padam  
Kylie Minogue
- My Kind of Town (Live)  
Frank Sinatra
- Take Me to Church  
Sinéad O'Connor

# How do People Who Use/Inject Drugs Fit into PrEP Research and Service Delivery?

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September 6, Wednesday, 2023  
9:00 AM – 10:30 AM Eastern

**REGISTER** [tinyurl.com/pwudprep](https://tinyurl.com/pwudprep)

Webinar brought to you by The Choice Agenda and  
International Network of People who Use Drugs

The Choice Agenda presents

# Tales from Two Cities

HIV and STI research highlights  
from Brisbane and Chicago



**August 3 9 AM eastern**

Register & more info  
[tinyurl.com/talesfromtwocities](https://tinyurl.com/talesfromtwocities)



# The latest in HIV and STI Prevention

## Highlights from IAS 2023

PL0403

Nyaradzo M. Mgodzi (MBChB, MMed)

University of Zimbabwe

Faculty of Medicine and Health Sciences

[nmgodi@uz-ctrc.org](mailto:nmgodi@uz-ctrc.org)



 **IAS 2023**



University of Zimbabwe - Clinical Trials Research Centre  
Saving Lives Through Innovative Research Strategies

23 – 26 July · Brisbane and virtual

[ias2023.org](http://ias2023.org)



**UNIVERSITY OF ZIMBABWE**  
Faculty of Medicine and Health Sciences



**Track C  
Epidemiology  
and prevention  
science**

**Katherine Gill, South Africa  
Skye McGregor, Australia  
Nyaradzo Mgodzi, Zimbabwe  
Richard Gray, Australia**







IAS 2023

# Track C emerging themes

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Towards HIV elimination

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Challenges associated with highly efficacious LA PrEP and treatment

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Colliding epidemics

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Sexual reproductive Health and STIs

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Human-centred approaches – integrated and differentiated services



**IAS** 2023

# Towards HIV Elimination

Providing a social network approach to HIV testing could help reach the “first 95” and contribute to the goal of eliminating HIV as a global health threat.

**Session:** OALBC06



IAS 2023

# OAC01: Progress towards HIV elimination, are we there yet?

Still a long way to go to achieve targets in a range of settings

Australia has achieved **91-92-98** – ongoing progress not guaranteed (Gray)

Unplanned treatment interruptions impacted mortality in the South Africa IeDEA-SA cohort (Moolla)

Variable		Adjusted hazard ratio (95% CI)
Interruption status	No interruption	1 (reference)
	Early interrupters	2.32 (2.06-2.61)
	Late interrupters	1.90 (1.68-2.15)

Male gender, age, and lower baseline CD4 count, and increased duration of interruption, were also associated with increased mortality.



IAS 2023

# OAC01: Progress towards HIV elimination, are we there yet?

High HIV incidence among people who inject drugs in South Africa - NACOSA (Artenie)

Province the primary association for increased incidence risk

People who received OST or higher number of harm reduction packs tended to have a lower risk of HIV

Low number re-tested a limitation

- Impact of ART initiation timing on virological failure, mortality, and loss to follow up, using Universal Health Coverage data (Teeraananchai).
- VF was higher in the treatment >3 months group, mortality lowest in the same day treatment initiation group, and LTFU highest in the same day and lowest in the >1-3 months treatment initiation group.

HIV incidence rate by province

Province	HIV incident cases	Time-at-risk (py)	Rate (/100py)
Gauteng	207	1093.51	18.9 (16.5 – 21.6)
KwaZulu-Natal	64	374.54	17.1 (13.3 – 21.7)
Eastern Cape	10	159.03	6.3 (3.2 – 11.2)
Western Cape	19	563.12	3.4 (2.1 – 5.2)



# PL05: Towards elimination

## IAS 2023

East and Southern Africa are on track to meet elimination targets (57% reduction), but other regions lag or are seeing substantial increases (Grulich)

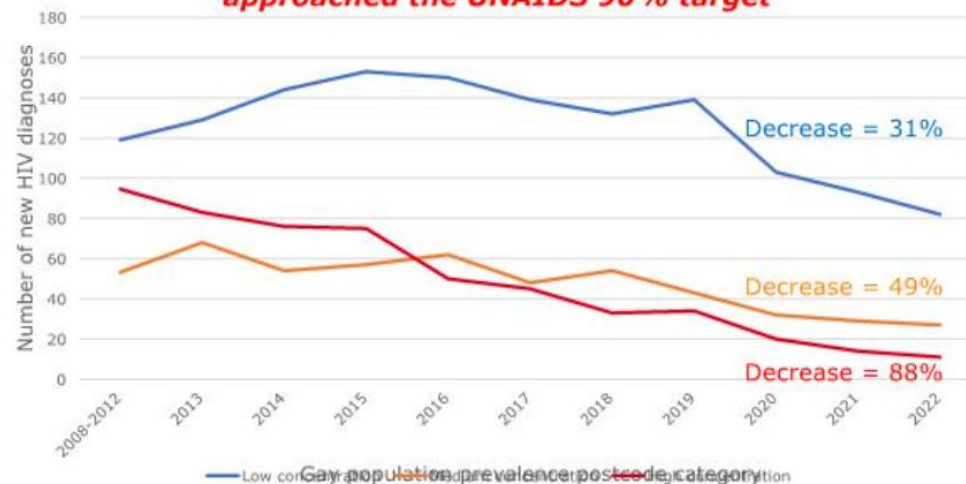
88% reduction in inner Sydney, but 31% in outer suburbs: different patterns of access to prevention

With zero risk of vertical transmission in context of U=U, what is the role for neonatal PEP? (Laufer)

Transmissions without neoPEP in context of detectable viral load only.

People should be empowered to make decisions about chest/breastfeeding in this context, while ensuring risks were clear

**In central Sydney, in 2022, the decline in HIV diagnoses approached the UNAIDS 90% target**



We have to improve lactating-parent autonomy, but above all, **“Our duty is giving infants born to mother living with HIV the greatest chance of HIV free survival”**





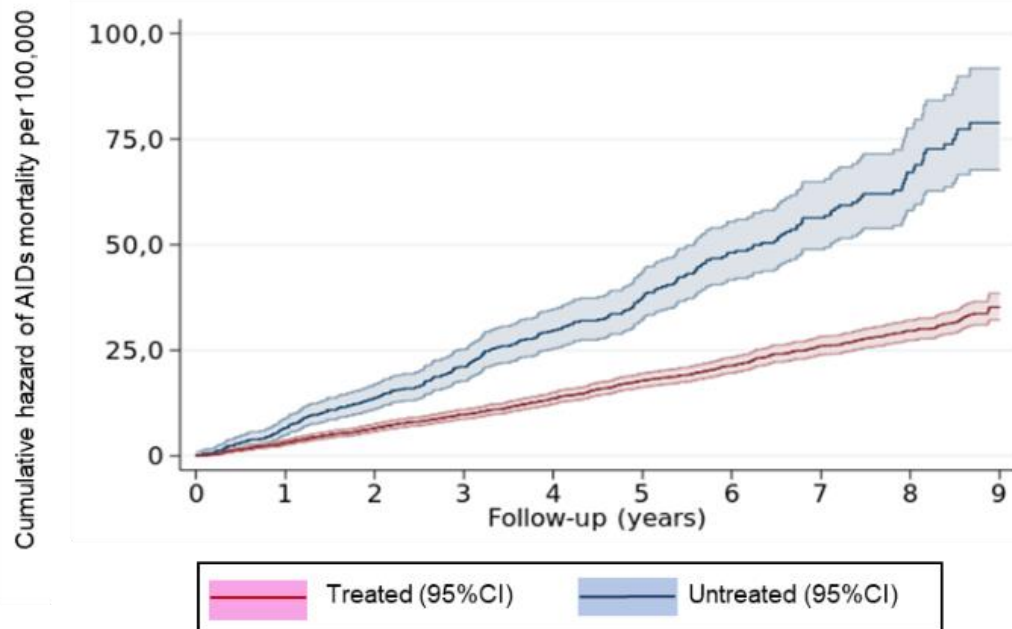
# The effect of primary health care on AIDS incidence and mortality: A cohort study of 3.4 million Brazilians

IAS 2023

## Session title: "Achieving HIV prevention and treatment at scale"

The benefits of community based primary health care programs at scale was demonstrated by Priscilla Pinto who showed that Brazil's Family Health Strategy had a substantial impact on AIDS incidence and mortality using data from a linked longitudinal cohort of > 3.4 million

Table 1. AIDS incidence and mortality rates according to Family Health Strategy (FHS) coverage, Brazil, 2007–15



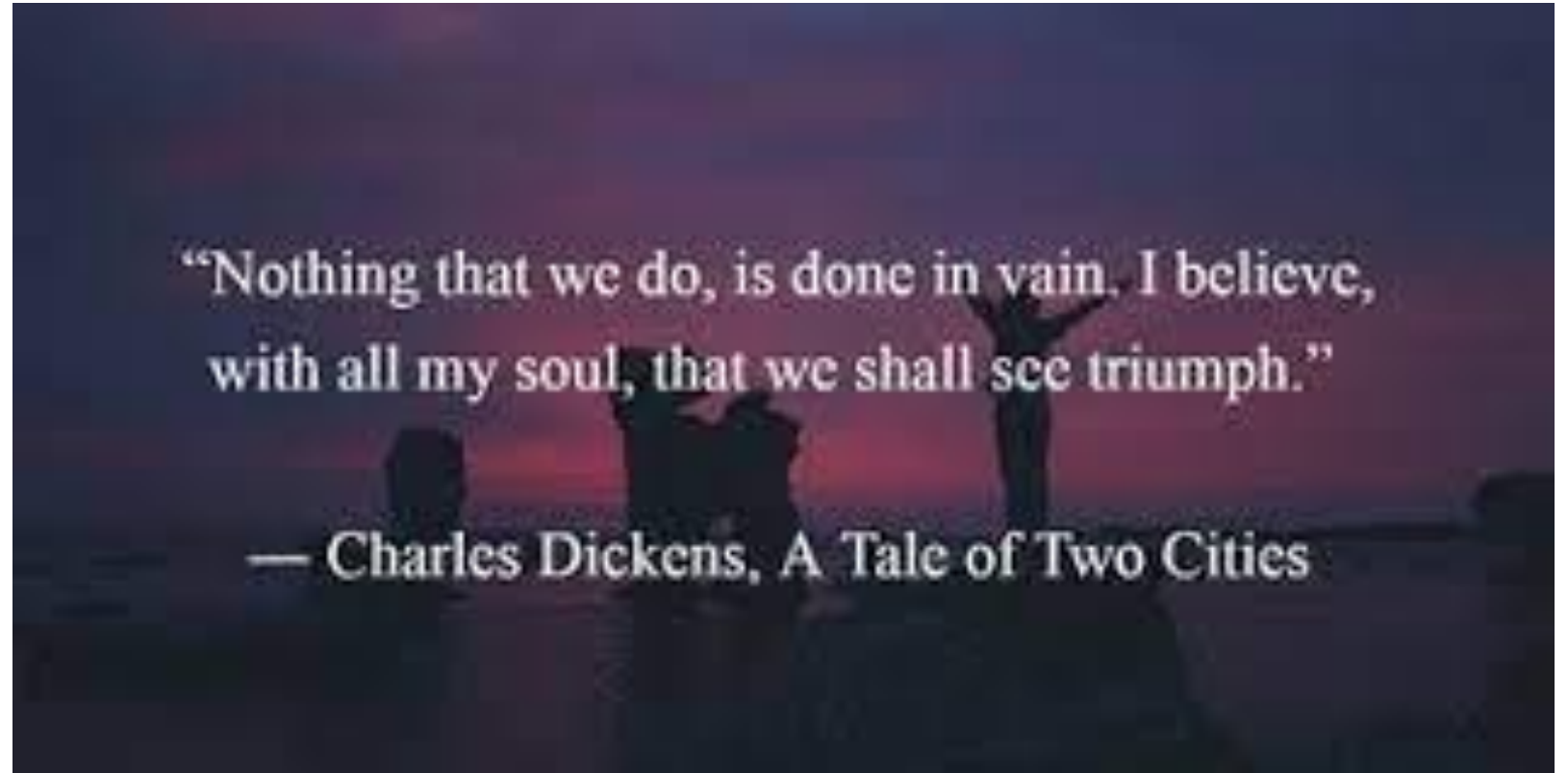
Outcome	Untreated N=605,890	Treated N=2,829,178	Total N=3,435,068
AIDS incidence	25.57 (23.71-27.58)	13.21 (12.65-13.80)	15.00 (14.45-15.58)
AIDS mortality	8.28 (7.25-9.45)	3.88 (3.58-4.20)	4.51 (4.22-4.83)

FHS coverage	AIDS incidence n=3,435,068 RR <sup>a</sup> (CI 95%)	AIDS mortality n=3,435,068 RR <sup>a</sup> (CI 95%)
<20%	1	1
100%	0.76 (0.68-0.84)	0.68 (0.56-0.82)



IAS 2023

# Towards HIV Elimination



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IAS 2023

# Highly efficacious LA PrEP and treatment

Challenges





IAS 2023

# SY11- HIV testing in the context of long-acting PrEP

## Summary



- **Resistance risk with acquiring HIV on dapivirine is low**
  - Low systemic drug levels
  - Equivalent rates of resistance in active and placebo arm of trials
  - Efficacy of ring against NNRTI-resistant strains unknown



- **Resistance risk with acquiring HIV on CAB-LA is high when HIV diagnosis is delayed**
  - Drug concentrations at the sites of transmission may be insufficient to block transmission but concentrations elsewhere (e.g. blood, lymph nodes) are sufficient to select resistance
  - Secondary transmissions have not been reported but will be important to monitor

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VL testing still suboptimal in high burden countries

88% (22 of 25) had VL testing coverage <90%

32% of the countries reported ≤50% viral load testing coverage

## HIV VL COVERAGE

National policy on routine viral load testing for monitoring ART and implementation status among adults and adolescents living with HIV in low- and middle-income countries, July 2022



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Source: REPORT ON THE GLOBAL ACTION PLAN ON HIV DRUG RESISTANCE 2017-2021

**As numbers on CAB increase**  
via CATALYST and other implementation studies...

- Will national algorithm-based testing continue to result in detection delays & inadvertent CAB-LA initiations/reinjections?
  - What alt testing approaches may be better? At what cost?
- What are most common scenarios of complex/delayed diagnoses emerging?
  - Which test/combination of tests are best for adjudicating/definitively diagnosing such cases?
  - What are characteristics/frequency of LEVI syndrome?
- What are 1<sup>st</sup> vs. 2<sup>nd</sup> line ART considerations subsequent to CAB monotherapy among those with HIVDR?
- Does systematic clinical/behavioral assessment of AHI reduce inadvertent CAB-LA starts? ...as well as inadvertent reinjection among those significantly delayed in returning?

Jason Reed

Working zone



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# SY05 Estimating HIV incidence in the era of long-acting PrEP

Conducting clinical trials in an era of highly effective agents will be a challenge given it is no longer ethical to use a placebo control

Several approaches to estimating the background HIV incidence using a “counterfactual placebo” were presented by Deborah Donnell

All approaches rely on assumptions and there are several practical challenges that will need to be overcome

Estimate counterfactual placebo incidence rate

1. Placebo data from external trials
2. HIV incidence in registrational cohort
3. Cross-sectional incidence assessed using recency assay during screening for enrollment in “untreated” participants
4. Estimating placebo incidence using reliable predictor(s) of HIV exposure risk

Estimate efficacy of active control to counterfactual placebo

5. Using adherence-efficacy relationship of active control
6. Using immune biomarkers of effective vaccine/mAb as mediators of prevention efficacy (monoclonal Ab and vaccine)



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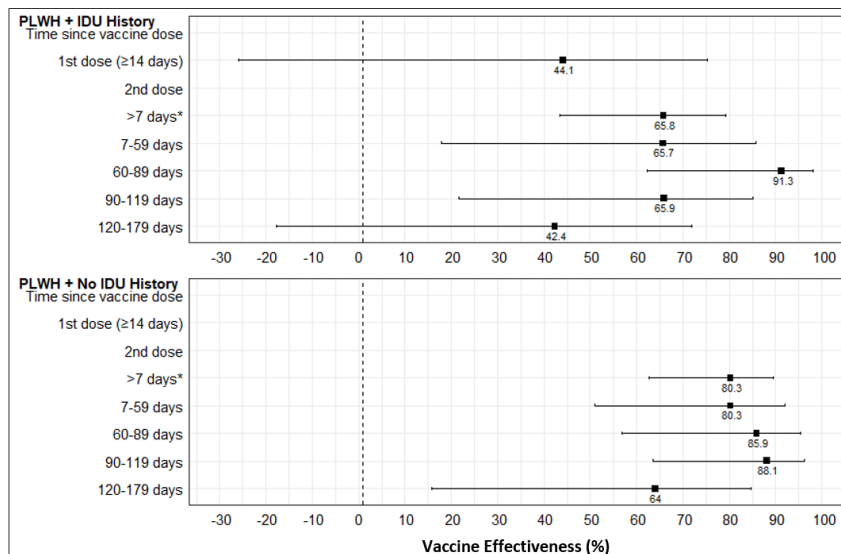
# Colliding epidemics

# OAC02 Colliding epidemics: Prevention of HIV and co-infections

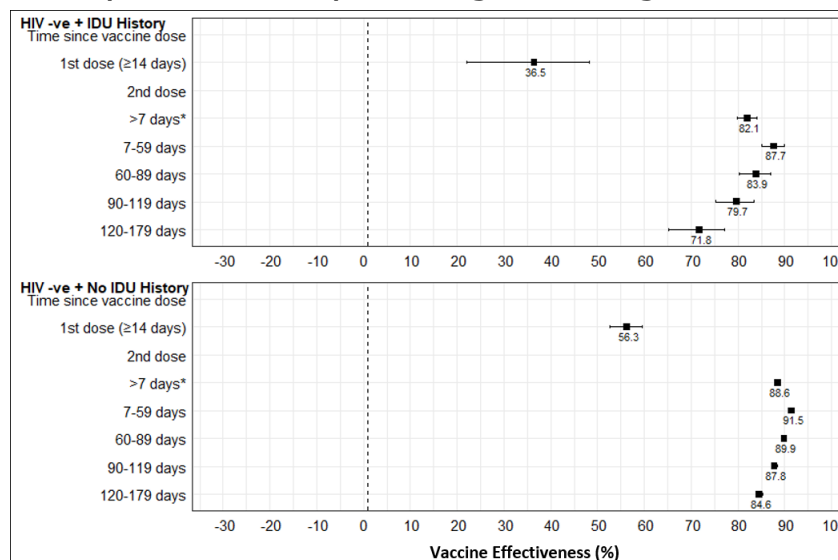
This session focused on the impact of other infectious diseases and public health interventions on people living with HIV or at-risk of HIV infection. The presentations really demonstrated the importance of person centred and integrated care.

Joseph Puyat's presentation highlighted the potential need for flexible and adaptable guidelines for COVID vaccinations among people who inject drugs and those living with HIV who have faster waning of vaccine effectiveness (though lot of uncertainty) and hence may need more frequent boosters.

VE by IDU history among PLWH



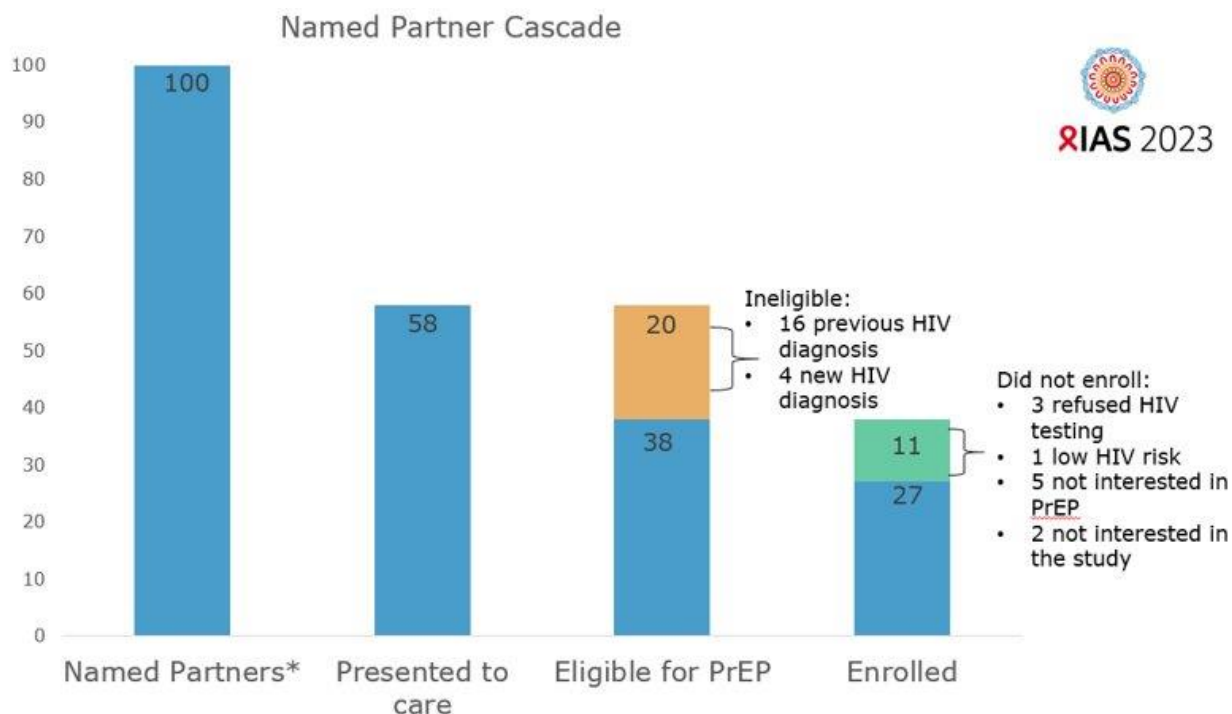
VE by IDU history among HIV-negative individuals



# OAC02 Colliding epidemics: Prevention of HIV and co-infections

Claire Pederson described an intervention study of the integration of a HIV PrEP service and assisted partner notification program in STI clinics in Malawi. **One of the recipients of the MSD/IAS Prize for Research in Long-Acting HIV Prevention and Treatment: Annual prize at the conference.**

This program was able to reach people at risk of HIV and provide them PrEP and efficiency find people living with HIV but not taking ART, including those to not be part of a priority population.



> 50% of partners were not characterized by priority population definitions

\*from 86 index participants



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# Human-centred approaches

CAB- LA is acceptable for teens in Southern Africa and provides another critical option in HIV prevention choice for young African women.

**Session:** OALBC06

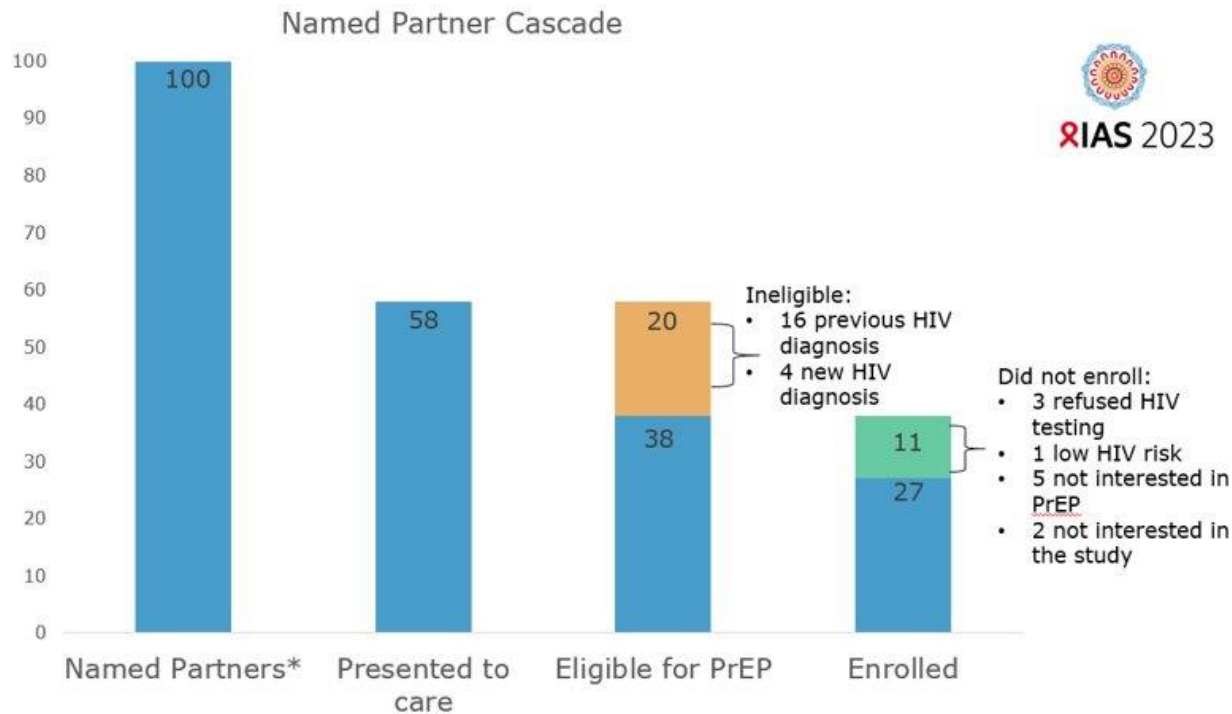


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# Integration of PrEP services and assisted partner notification into an STI clinic in Lilongwe, Malawi

Claire Pedersen (Winner of a prize! IAS )

Colliding epidemics: Prevention of HIV and co-infection. OAC2 Monday 24/723 1600.



48% of named partners in a priority population

\*from 86 index participants



# PL05: Towards elimination

## IAS 2023

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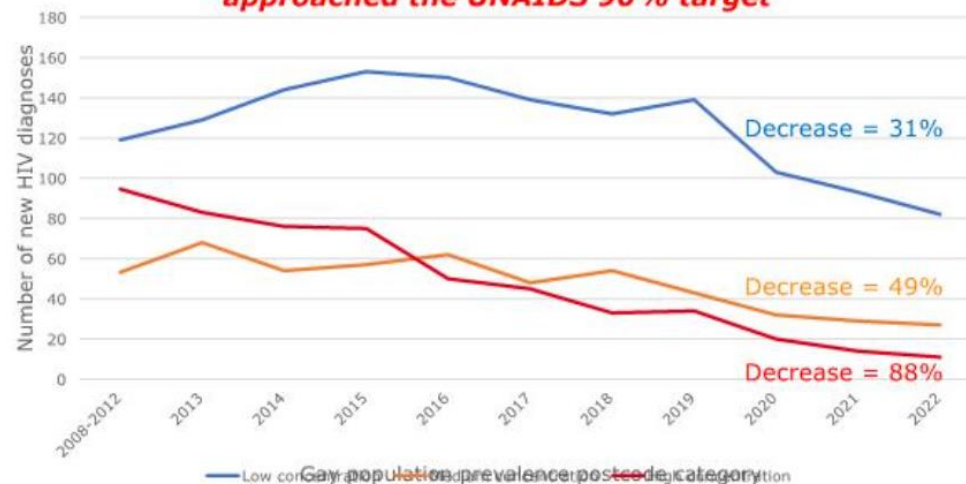
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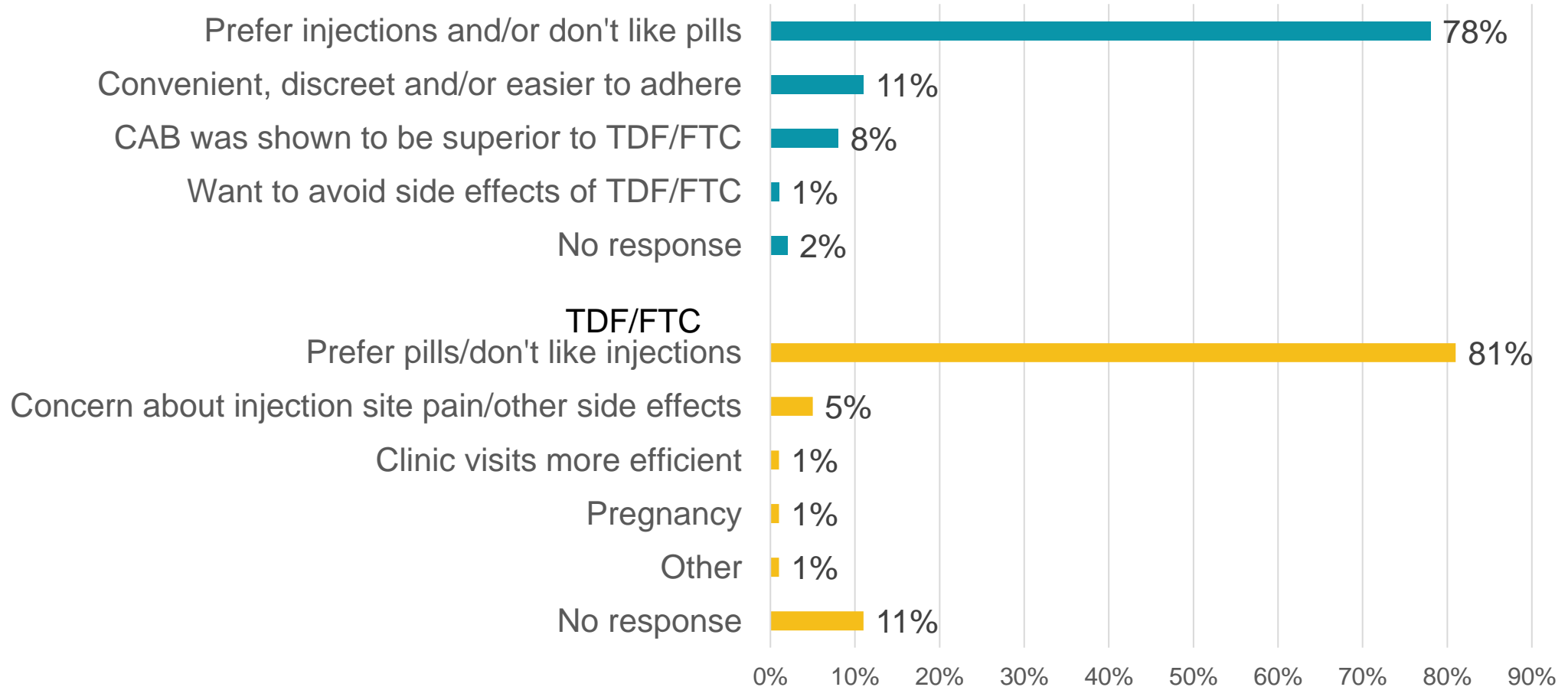
# OAI BX02 HIV prevention: Novel approaches and promising findings



IAS 2023

Sinead Delany-Moretlwe presented results related to the choices and preferences of women participants related to using injectable cabotegravir or oral PrEP. CAB was chosen by 78% of women in the HPTN 084 trial of injectable cabotegravir (CAB) in women but there was a wide disparity of preferences and women were happy with their choice.

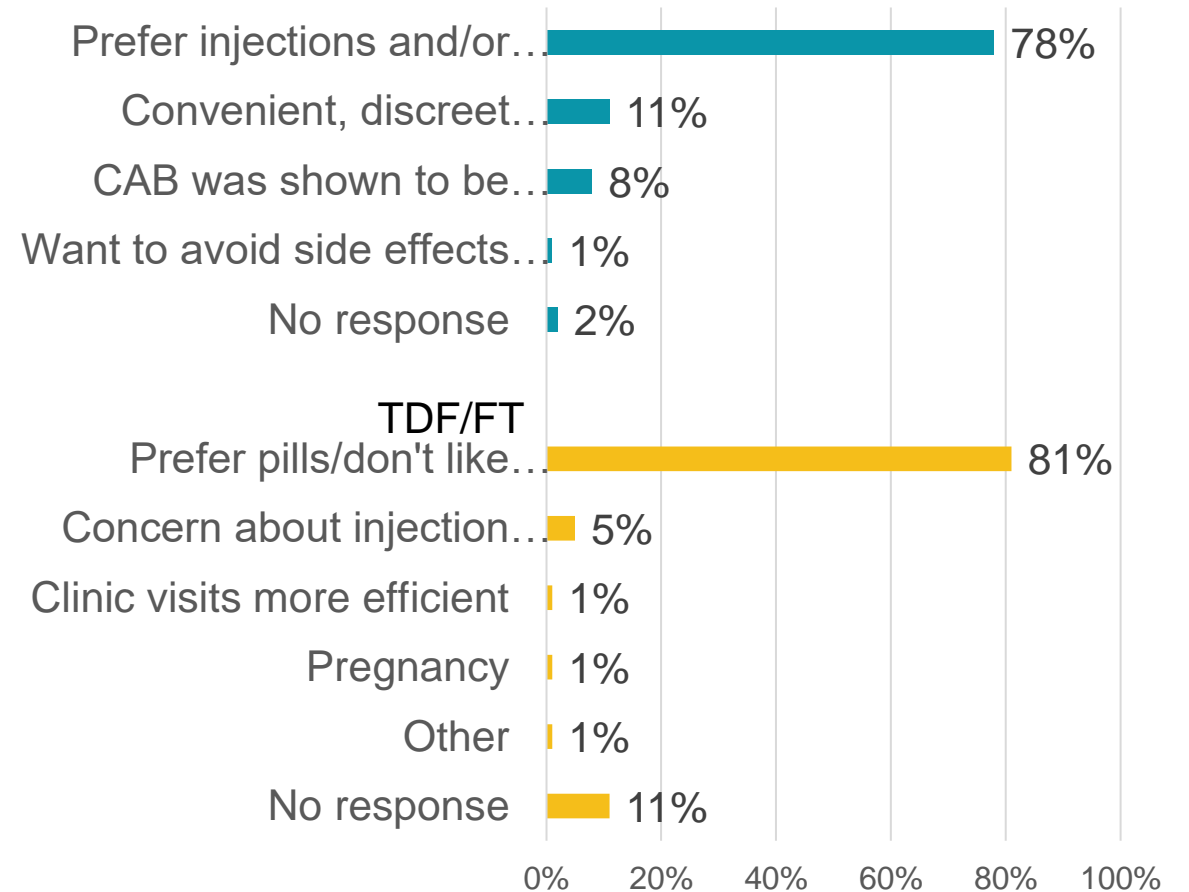
CAB n=1931





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# AMP trials provide proof-of-concept that bnAbs can prevent HIV infection



The NEW ENGLAND JOURNAL of MEDICINE

## Two Randomized Trials of Neutralizing Antibodies to Prevent HIV-1 Acquisition

Lawrence Corey, M.D., Peter B. Gilbert, Ph.D., Michal Juraska, Ph.D., David C. Montefiori, Ph.D., Lynn Morris, Ph.D., Shelly T. Karuna, M.D., Srilatha Edupuganti, M.D., Nyaradzo M. Mgodzi, M.B., Ch.B., M.Med., Allan C. deCamp, Ph.D., Erika Rudnicki, M.S., Yunda Huang, Ph.D., Pedro Gonzales, M.D., et al., for the HVTN 704/HPTN 085 and HVTN 703/HPTN 081 Study Teams\*



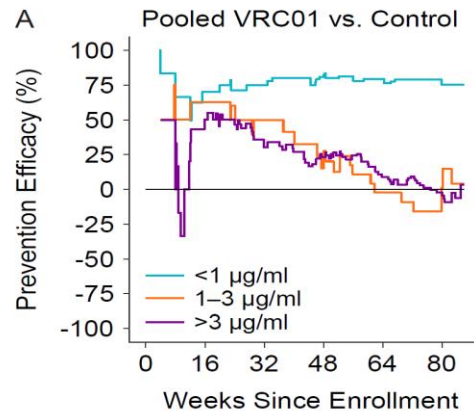
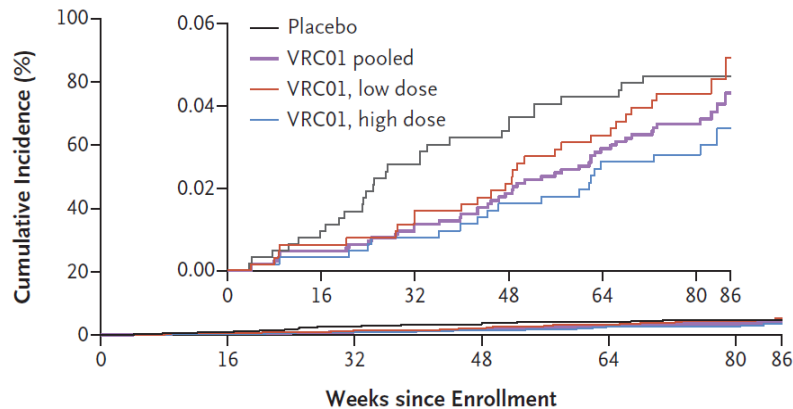
### HVTN 704/HPTN 085 HVTN 703/HPTN 081

REGIMEN	MSM & TG in the Americas	Women in sub-Saharan Africa	TOTAL	
VRC01 10 mg/kg	900	633	1533	10 infusions total - given every 8 weeks  Study duration: ~22 months
VRC01 30 mg/kg	900	633	1533	
Control	900	634	1534	
Total	2700	1900	4600	

## Proof of concept

- HIV prevention with 1 bnAb is possible
- VRC01 protected only against acquisition of highly neutralization-sensitive viruses
  - Prevention efficacy of 75% (45 – 88%)
- Established putative marker of protection: PT80

Incidence of HIV-1 Infection in HVTN 703/HPTN 081



The NEW ENGLAND JOURNAL of MEDICINE

ORIGINAL ARTICLE

### Two Randomized Trials of Neutralizing Antibodies to Prevent HIV-1 Acquisition

L. Corey, P.B. Gilbert, M. Juraska, D.C. Montefiori, L. Morris, S.T. Karuna, S. Edupuganti, N.M. Mgodzi, A.C. deCamp, E. Rudnicki, Y. Huang, P. Gonzales, R. Cabello, C. Orrell, J.R. Lama, F. Laher, E.M. Lazarus, J. Sanchez, I. Frank, J. Hinojosa, M.E. Sobieszczyk, K.E. Marshall, P.G. Mukewerere, J. Makhera, L.R. Baden, J.I. Mullins, C. Williamson, J. Hural, M.J. McElrath, C. Bentley, S. Takuva, M.M. Gomez Lorenzo, D.N. Burns, N. Espy, A.K. Randhawa, N. Kochar, E. Piwowar-Manning, D.J. Donnell, N. Sista, P. Andrew, J.G. Kublin, G. Gray, J.E. Ledgerwood, J.R. Mascola, and M.S. Cohen, for the HVTN 704/HPTN 085 and HVTN 703/HPTN 081 Study Teams\*

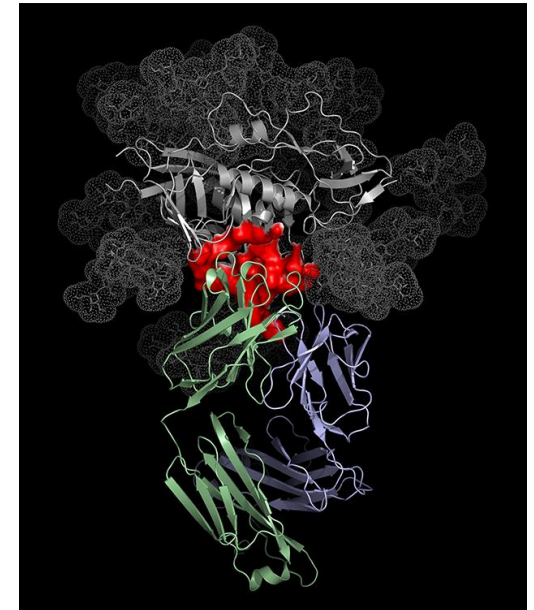
# AMP trials - summary



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- HIV bnAbs are safe and generally well tolerated.
- VRC01 protects against acquisition of HIV-1 to viruses that are highly sensitive to the antibody.
- More resistant viruses break through.
- The study validates the TZM-bl target cell assay which may be predictive of protection.
- AMP established putative marker of protection: PT80.
- Future bnAb trials will require trispecific Abs or combinations of more potent antibodies with better coverage to improve overall prevention efficacy.
- Trials of these antibodies are already under way.

VRC01



*Gray: gp120*

*Red: CD4 binding site (CD4bs)*

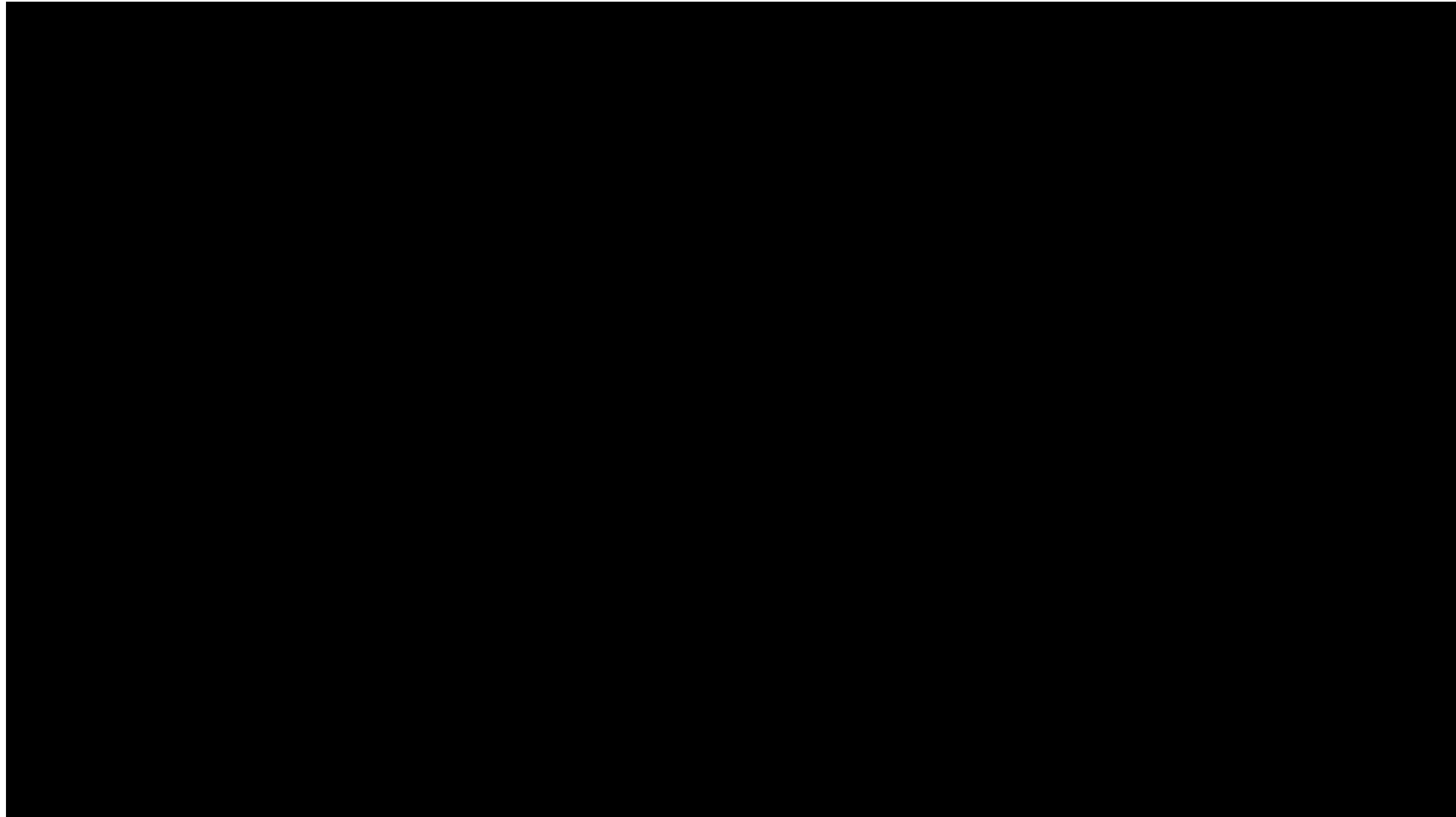
*Purple & Green: VRC01 attached to the CD4bs*

*Corey et al., NEJM 2021; Takuva et al., JAIDS, 2022; Gilbert et al., Nat Med 2022*



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# Multiple antibody neutralization against HIV



Thanks to Lisa Donohue for this video.



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# PL04 The latest in STI and HIV prevention

## Nyaradzo Mgodzi Monoclonal antibodies for HIV Prevention

Future bnAb research:  
A human rights-based approach

The bnAb HIV prevention field is evolving faster than ever.

- Research must reflect diversity, equity, and inclusion
- Target highest prevalence regions and special populations
  - pregnant and breast-feeding persons, infants, adolescents, gender-diversity, women.
- Begin with the end in mind
  - access manufacturing, licensing, delivery methods.
- Research should be framed by a human-rights-based approach and
- Uphold justice and beneficence

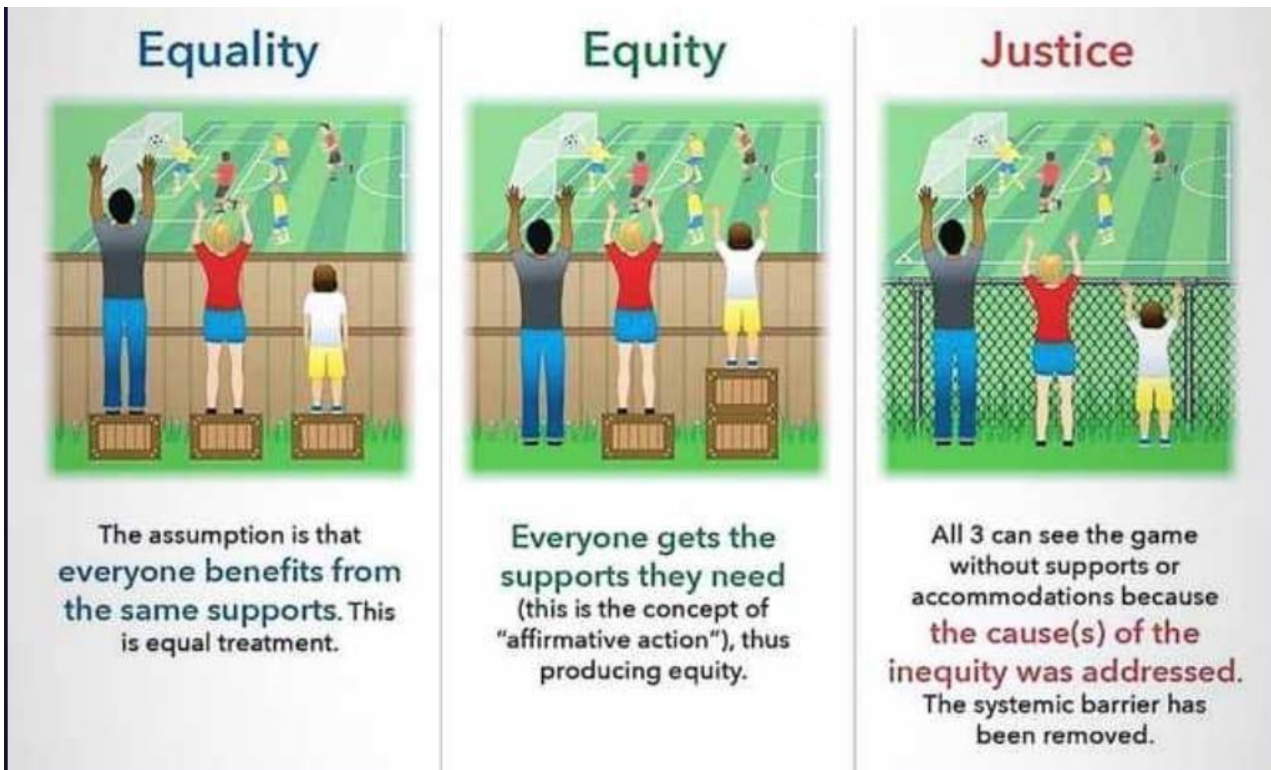


Image: Author unknown

***"Respect for all and harm to none."***

Aboriginal Proverb



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# Sexual reproductive Health STIs



Jean Michel Molina

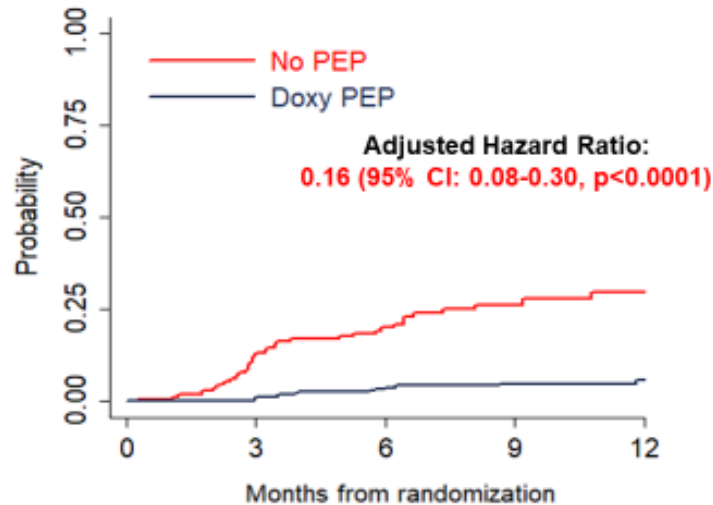
## Doxycycline Post-Exposure Prophylaxis for STIs: Time for Implementation?

### ANRS DOXYVAC Trial Time to First Chlamydia or Syphilis Infection

Preliminary results among 502 MSM on PrEP with a history of STI

Median follow-up: **9 months** (IQR: 6 to 12) in 501 participants

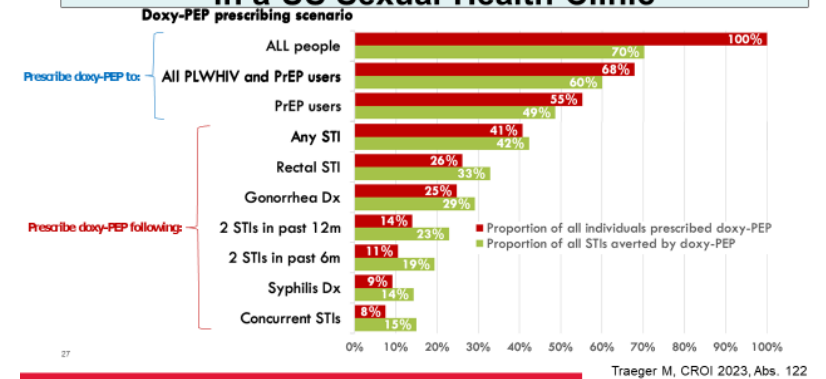
49 subjects infected  
**36 in No PEP arm**  
 (incidence: 35.4/100 PY),  
**13 in Doxy PEP arm**  
 (incidence: 5.6/100 PY)



Number at risk	0	3	6	9	12
No PEP	170	137	99	47	22
Doxy PEP	332	271	220	144	83

Molina JM, CROI 2023

### Doxy PEP Use vs STIs Averted in a US Sexual Health Clinic



### Summary

- **Short-term benefits of Doxycycline PEP among MSM**
  - Strong reduction of syphilis and chlamydia incidence
  - Impact on gonorrhoea likely to be limited
  - Well tolerated with high acceptability and adherence
- **Long-term uncertainties: Continue research**
  - Selection and clonal dissemination of more resistant STIs
  - Impact on the microbiome
- **Time for cautious DoxyPEP implementation?**
  - Identify the population who will benefit the most
  - Monitor AMR and impact on the microbiome
  - Involve community and all stakeholders





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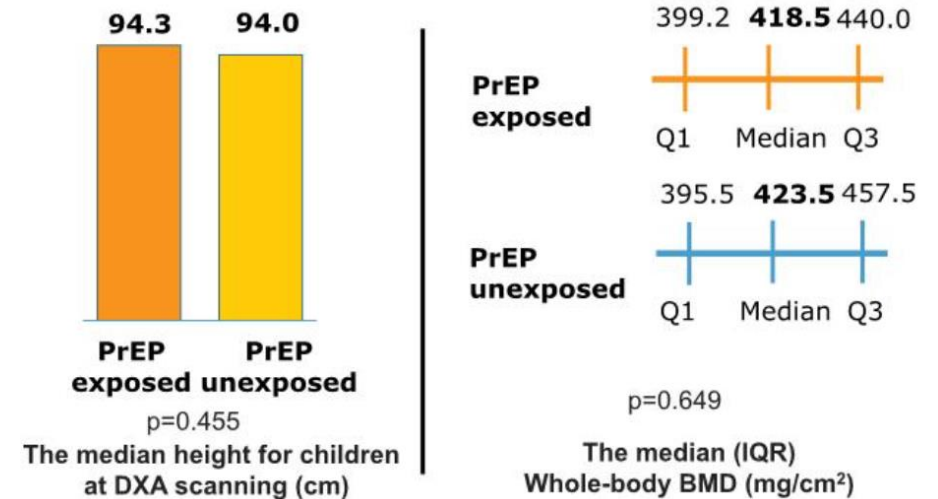
# OAC04: Strengthening sexual and reproductive health for diverse populations

No association between in utero PrEP use (self-report) and height and bone mineral density in infants, at 36 months, in Kenya (Wu)

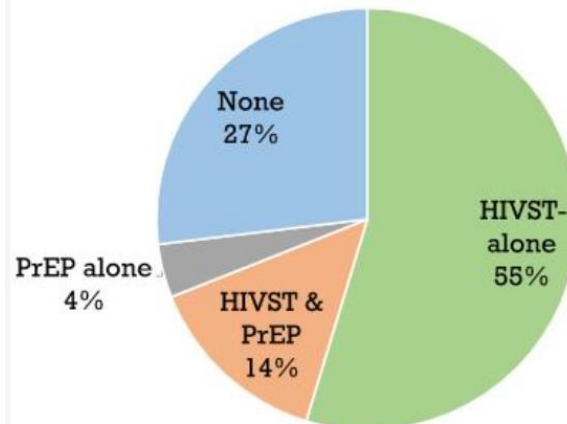
PrIMA trial in Kenya - cofactors of HIV self-testing and PrEP use among pregnant women at high risk of HIV

HIV self-testing was more acceptable than PrEP (69% vs 18%)

HIV self-testing increased awareness of partners HIV status from 4.7% to 82.0%  
Co-factors influenced the choice of prevention.



Distribution of HIVST & PrEP acceptance





# OAC04: Strengthening sexual and reproductive health for diverse populations

The iFACT3 study in Thailand (Akarin) examined drug-drug interactions among transgender women (FHT and PrEP)

No clinically significant difference in concentration of drugs

HIV Stigma Index 2.0 study (Lyons)

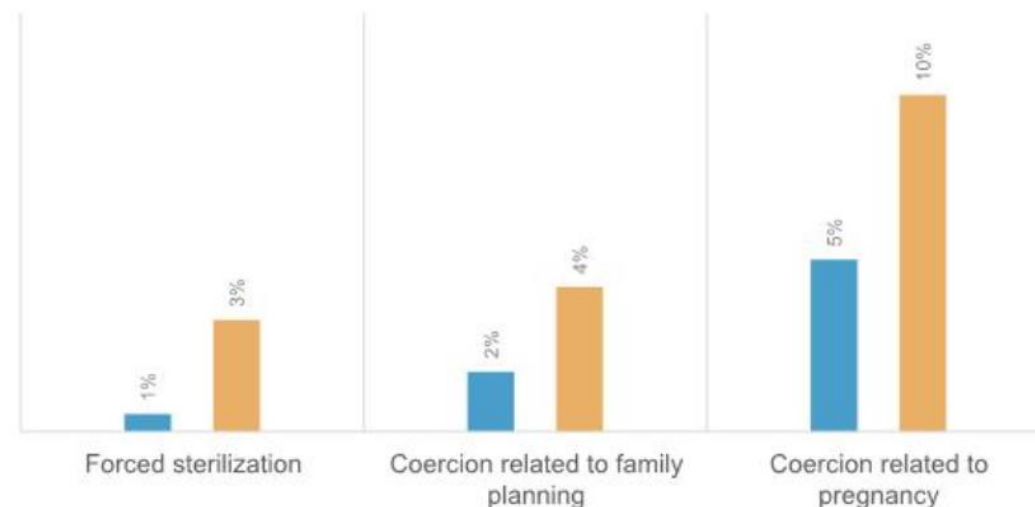
Significant impact of reproductive coercion in women living with HIV, across Eastern Europe and Central Asia, and Sub-Saharan Africa

Sex workers, migrants, women who inject drugs, and young women had greater odds of reproductive coercion.

Table 3. Summary of FTC-TP concentrations

PK parameter (fmol/10 <sup>6</sup> cells)	Week 9 (with FHT)	Week 12 (without FHT)	GMR (95%CI)	P
C <sub>2</sub>	6044.03 (37.9) [3537.57 – 13313.04]	6244.14 (33.7) [3318.73 – 11831.74]	0.97 (0.85 – 1.10)	0.61
C <sub>24</sub>	3492.81 (39.1) [1906.42 – 7125.03]	3850.55 (45.4) [1937.42 – 7899.05]	0.91 (0.75 – 1.10)	0.33

■ sub Saharan Africa ■ Eastern Europe and Central Asia





Thank  
you



 **IAS 2023**

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# Highlights from AIDS 2023

## 12<sup>th</sup> International AIDS Society Conference on HIV Science

Roger Pebody  
Managing Editor, [www.aidsmap.com](http://www.aidsmap.com)

The Choice Agenda, 3 August 2023

## A perfect storm for stigma: gay and bisexual men's experiences of mpox

Krishen Samuel | 27 July 2023 | Estimated reading time 6 minutes



Dr Anthony Smith at IAS 2023. Photo by Roger Pebody.

Qualitative research found that most Australian gay and bisexual men diagnosed with mpox (previously known as monkeypox) had highly distressing experiences due to severe symptoms, long isolation periods and stigmatising healthcare providers. Dr Anthony Smith from the Centre for Social Research in Health at the University of New South Wales presented the results at the [12th International AIDS Society Conference on HIV Science \(IAS 2023\)](#) this week.

Following the acute illness, there were also longer-term physical and social effects. While cases of

- Qualitative study, 13 gay/bi men
- *“It would be the worst pain I have ever experienced in my life... I was in tears.”*
- Health services: inadequate pain management, judgement regarding sexual behaviour and traumatic experiences
- *“It’s still giving me trouble in terms of like social anxiety, nightmares, flashbacks. Every time I’m near the hospital, my heart rate goes up and I almost have a panic attack.”*

## What's happened to services for key populations in Uganda following the Anti-Homosexuality Act?

Edith Magak | 1 August 2023 | Estimated reading time 4 minutes



US Ambassador to Uganda Natalie Brown at IAS 2023. Photo by Roger Pebody.

Before the discussion around Uganda's Anti-Homosexuality Act, drop-in centres providing HIV prevention and treatment services to key populations saw an average of 40 clients per week. However, as the discussion continued in Ugandan media, the number of clients decreased significantly.

By the time the first version of 'one of the world's harshest anti-gay laws' was debated and approved in the Ugandan Parliament in mid-March 2023, drop-in centres only saw an average of

- 84 PEPFAR-supported centres for key pops
- Drastic reduction in client flow, temporary closures, increased assaults, etc.
- Response: telehealth, home delivery, security, flexibility
- “We are concerned about protecting the human rights of all Ugandan citizens. We want to ensure our investments in health, especially in HIV and AIDS, reach the intended beneficiaries, like key populations.” – Ambassador Natalie Brown

## Coercive reproductive healthcare practices reported by many women living with HIV

Human rights threatened in Africa, eastern Europe and central Asia

Bakita Kasadha | 26 July 2023 | Estimated reading time 3 minutes



Dr Carrie Lyons at IAS 2023. Photo by Roger Pebody.

Women with HIV are at an increased risk of reproductive coercion by healthcare professionals across sub-Saharan Africa, eastern Europe and central Asia. Sex workers, women who use drugs and migrants who are also HIV positive are more likely to receive sub-standard and stigmatising reproductive care. This was reported by Dr Carrie Lyons from the Johns Hopkins School of Public Health at the [12th International AIDS Society Conference on HIV Science \(IAS 2023\)](#) in Brisbane, Australia.

- Stigma Index data, 2021-2022
- Experiences in past 12 months
- 11 African countries + 5 eastern European and central Asian countries
- Forced sterilisation (1%, 3%)
- Coerced family planning (2%, 4%)
- Coercion related to pregnancy (5%, 10%)
- Higher risks for migrants, sex workers, drug users.

## The amber light: the World Health Organization's position when an HIV viral load is "suppressed but not undetectable"

Gus Cairns | 24 July 2023 | Estimated reading time 9 minutes



Dr Lara Vojnov at IAS 2023. Photo by Roger Pebody.

The risk of transmission by someone who has a viral load too low to be quantified by some viral load tests, but where the test still detects HIV's presence, is "almost zero or negligible" in the words of the World Health Organization (WHO), the [12th International AIDS Society Conference on HIV Science \(IAS 2023\)](#) in Brisbane, Australia heard yesterday.

Dr Lara Vojnov, Diagnostics Advisor in WHO's Global HIV, Hepatitis and STI Programme, was

- Two key elements
- *Lancet* systematic review of viral load and transmission risk (esp with low level viraemia)
- Consideration of how to apply U=U message globally, in settings with diverse testing methods



## The risk of sexual transmission of HIV in individuals with low-level HIV viraemia: a systematic review

Laura N Broyles, Robert Luo, Debi Boeras, Lara Vojnov



### Summary

**Background** The risk of sexual transmission of HIV from individuals with low-level HIV viraemia receiving antiretroviral therapy (ART) has important public health implications, especially in resource-limited settings that use alternatives to plasma-based viral load testing. This Article summarises the evidence related to sexual transmission of HIV at varying HIV viral load levels to inform messaging for people living with HIV, their partners, their health-care providers, and the wider public.

**Methods** We conducted a systematic review and searched PubMed, MEDLINE, Cochrane Central Register of Controlled Trials, Embase, Conference Proceedings Citation Index-Science, and WHO Global Index Medicus, for work published from Jan 1, 2010 to Nov 17, 2022. Studies were included if they pertained to sexual transmission between serodiscordant couples at various levels of viraemia, the science behind undetectable–untransmittable, or the public health impact of low-level viraemia. Studies were excluded if they did not specify viral load thresholds or a definition for low-level viraemia or did not provide quantitative viral load information for transmission outcomes. Reviews, non-research letters, commentaries, and editorials were excluded. Risk of bias was evaluated using the ROBINS-I framework. Data were extracted and summarised with a focus on HIV sexual transmission at varying HIV viral loads.

**Findings** 244 studies were identified and eight were included in the analysis, comprising 7762 serodiscordant couples across 25 countries. The certainty of evidence was moderate; the risk of bias was low. Three studies showed no HIV transmission when the partner living with HIV had a viral load less than 200 copies per mL. Across the remaining four prospective studies, there were 323 transmission events; none were in patients considered stably suppressed on ART. Among all studies there were two cases of transmission when the index patient's (ie, patient with previously diagnosed HIV infection) most recent viral load was less than 1000 copies per mL. However, interpretation of both cases was complicated by long intervals (ie, 50 days and 53 days) between the transmission date and the most recent index viral load result.

**Interpretation** There is almost zero risk of sexual transmission of HIV with viral loads of less than 1000 copies per mL. These data provide a powerful opportunity to destigmatise HIV and promote adherence to ART through dissemination of this positive public health message. These findings can also promote access to viral load testing in resource-limited settings for all people living with HIV by facilitating uptake of alternative sample types and technologies.

**Funding** Bill & Melinda Gates Foundation.

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### Introduction

Viral load testing is the gold standard for monitoring the response to HIV antiretroviral therapy (ART) with the goal of durable suppression of viraemia to both promote health and longevity and decrease the risk of transmission. As access to ART and viral load monitoring has increased, data from various settings show that a small minority of people living with HIV on ART have viral loads that are detectable but below the threshold for virological failure (ie, 1000 copies per mL).<sup>1,2</sup> The clinical significance and management of this low-level viraemia has been an ongoing topic of debate. At the individual level, low-level

viraemia has been associated with virological failure, HIV drug resistance, and worse clinical outcomes; however, data on these outcomes in patients taking integrase inhibitors are scarce.<sup>3,4</sup>

From a public health perspective, low-level viraemia can also have implications in disease transmission risks and thus affect messaging for people living with HIV, including undetectable–untransmittable (U=U) campaigns.<sup>5</sup> Although it is generally accepted that HIV viral loads of less than 200 copies per mL are associated with zero risk of sexual transmission and this threshold is used for U=U messaging in many high-income settings,<sup>6</sup>

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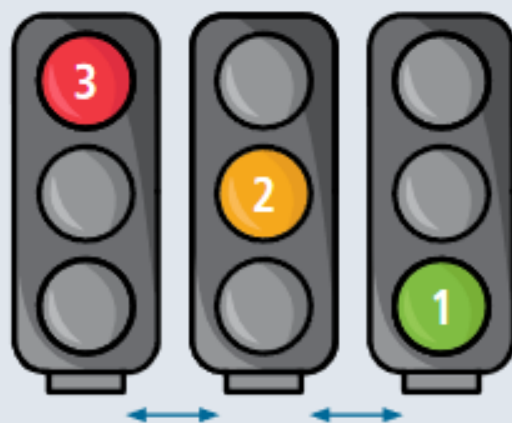
- *Lancet*: 7762 couples in 8 studies
- 2 transmission events with viral load <1000 copies/ml
- (617 and 872 copies/ml, both taken ~50 days before transmission)
- “There is almost zero risk of sexual transmission of HIV with viral loads of less than 1000 copies/ml”

# THE ROLE OF HIV VIRAL SUPPRESSION IN IMPROVING INDIVIDUAL HEALTH AND REDUCING TRANSMISSION

POLICY BRIEF



Unsuppressed    Suppressed but detectable    Undetectable



- 1 Undetectable (not detected\*):** no measurable virus. Zero risk of transmission to sexual partner(s); minimal risk of mother to child transmission.
- 2 Suppressed (detected but  $\leq 1000$  copies/mL):** some virus replicating and present: could be due to missing doses, recent treatment initiation or drug resistance. Almost zero or negligible risk of transmission to sexual partner(s).
- 3 Unsuppressed ( $>1000$  copies/mL):** significant virus replicating and present: could be due to missing doses, recent treatment initiation or drug resistance. Increased risk of falling ill and/or passing virus on to sexual partner(s) or children.

The ultimate goal for all people living with HIV is to reach and sustain **undetectable** viral loads. Taking antiretroviral therapy as prescribed will support this goal, prevent transmission to their sexual partner(s) and/or children, and improve their own clinical well-being.

\* Not detected by the test or sample type used.

## Social network intervention increases HIV self-testing among African fishermen by 50%

Edith Magak | 27 July 2023 | Estimated reading time 3 minutes



Dr Carol Camlin at IAS 2023. Photo by Roger Pebody.

An approach relying on the social connections between men is a promising method for engaging hard-to-reach populations of men in HIV testing, prevention, and treatment. A randomised controlled trial, presented at the [12th International AIDS Society Conference on HIV Science \(IAS 2023\)](#) in Brisbane, Australia, this week showed a 50% increase in HIV testing among fishermen in Kenya and a 53% increase in linkage to health facilities.

In Africa, men have a higher likelihood of being unaware of their HIV status compared to women.

- Mobile men, high HIV prevalence, low use of health services
- Use social connections between men to promote HIV self-testing, PrEP and ART

## Here is what transgender women across Asia want in PrEP

Edith Magak | 31 July 2023 | Estimated reading time 4 minutes



Warittha Tieosapjaroen at IAS 2023. Photo by Beau Newham.

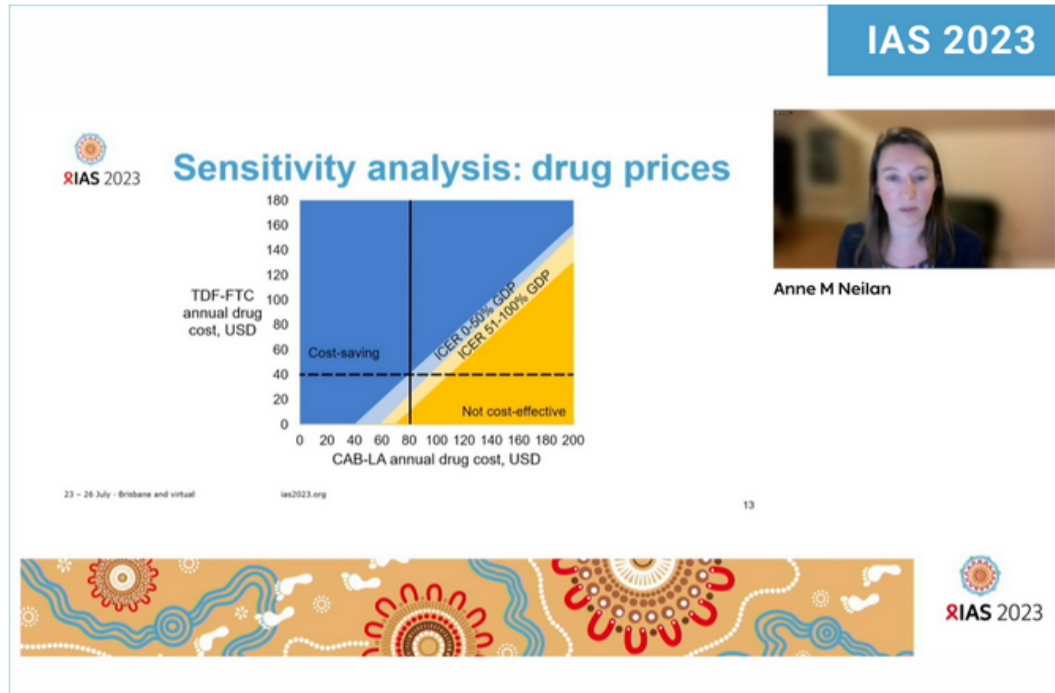
If PrEP were free, injectable, had no side effects, could be accessed through peer-led community clinics every 6-12 months, and STI testing was offered as an additional service at the clinics, the uptake among transgender women in Asia could increase to up to 87%. This was reported by Warittha Tieosapjaroen from the Melbourne Sexual Health Centre at the [12th International AIDS Society Conference on HIV Science \(IAS 2023\)](#) in Brisbane last week.

As of 2021, 15.6% of people living with HIV were in the Asia-Pacific region, with 260,000 new

- Online survey, ~1500 trans women in 11 Asian countries
- 48% had unmet PrEP need.
- Cost much more important than any other issue in discrete choice experiment
- Most wanted PrEP service:
- Free injectable PrEP with no side effects
- Access at peer-led community clinic that provides STI testing
- 6-12 monthly visits

## Two modelling studies ask: will injectable PrEP ever be cost-effective at achievable prices?

Gus Cairns | 1 August 2023 | Estimated reading time 10 minutes



Dr Anne Neilan presenting the South African study at IAS 2023.

Two studies of switching from oral to injectable PrEP (regular medication to prevent HIV infection) in upper middle-income countries have found that the price of injectable long-acting cabotegravir (CAB-LA) would have to drop to considerably less than \$100 a year for it to be cost-effective in terms of stopping more infections, and saving more money in future healthcare costs, than using oral tenofovir/emtricitabine (TDF/FTC) pills. The studies were presented at the [12th International AIDS Society Conference on HIV Science \(IAS 2023\)](#) in Brisbane, Australia.

- South Africa and Brazil
- Price needs to be much less than \$100 annually
- Compares \$40 oral PrEP
- Compares voluntary license estimate \$250
- Brazil analysis considers how many people can be reached with a fixed budget

## Injectable HIV treatment unlikely to be arriving soon in the global south

Roger Pebody | 2 August 2023 | Estimated reading time 6 minutes



Dr Carolyn Bolton Moore at IAS 2023. Photo by Roger Pebody.

While there is a path to injectable PrEP becoming available in the next five years, the widespread use of injectables to treat people living with HIV in low- and middle-income countries is unlikely in the near future. The combination of injectable cabotegravir and rilpivirine has only been approved by a handful of countries, it's not clear whether rilpivirine will be available as a generic, and the regimen has complexities which make it less attractive than the preferred oral regimens.

Classroom

But injectable HIV treatment could have a future in the global

- How much better than oral ART?
- Practical challenges
- Cost
- Lack of generic rilpivirine
- Guidelines with a public health approach: one size fits all

## Pitavastatin lowers risk of cardiovascular events in people living with HIV

Primary prevention study enrolled people with HIV who would not normally be prescribed a statin

Liz Highleyman | 24 July 2023 | Estimated reading time 9 minutes



Professor Steven Grinspoon at IAS 2023. Photo by Roger Pebody.

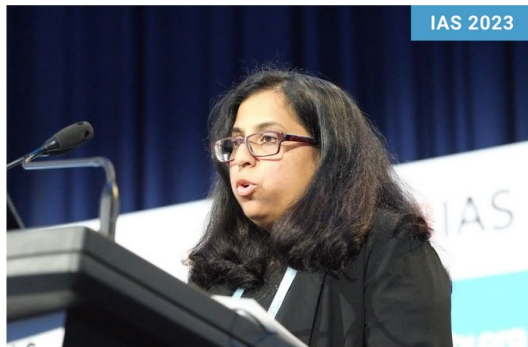
A widely used statin medication reduced the risk of heart attacks, strokes and other cardiovascular events when given to people with HIV who are at low to moderate risk for cardiovascular disease, according to results from the REPRIEVE study presented at the [12th International AIDS Society Conference on HIV Science \(IAS 2023\)](#) in Brisbane, Australia. The findings suggest that statin use

- The big clinical study at IAS 2023
- Large RCT with diverse global participation
- 7769 people with HIV aged 40-75, at low to moderate risk of cardiovascular disease
- Major cardiovascular events: 4.8 per 1000 person-years (pitavastatin) vs 7.3 per 1000 person-years (placebo) – 35% reduction.
- Lowers LDL cholesterol and inflammation
- Guidelines likely to change

Diabetes

## Integrase inhibitors raise the risk of diabetes regardless of weight gain

Keith Alcorn | 31 July 2023 | Estimated reading time 5 minutes



Dhanuzhi Rupasinghe at IAS 2023. Photo by Roger Pebody.

Integrase inhibitors increase the risk of developing type 2 diabetes regardless of how much weight is gained while taking one, a large international cohort study has found.

People with HIV taking an integrase inhibitor as part of their HIV treatment had a 48% higher risk of developing type 2 diabetes. More research is needed to understand the mechanism that raises diabetes risk in people taking integrase inhibitors, say researchers who carried out an international cohort study to look at the relationship between HIV treatment, weight gain and

Cardiovascular disease

## Diagnosis and treatment for high blood pressure need to be funded as part of HIV treatment programmes

High blood pressure more likely to develop in people taking an integrase inhibitor and tenofovir alafenamide

Keith Alcorn | 26 July 2023 | Estimated reading time 7 minutes



Professor Francois Venter at IAS 2023. Photo by Roger Pebody.

The development of high blood pressure (hypertension) after starting antiretroviral treatment in sub-Saharan Africa is common but can be managed with monitoring and low-cost generic drugs, Professor Francois Venter of the University of the Witwatersrand told the 12th International AIDS

Weight gain & lipodystrophy

## Switches away from integrase inhibitors do not reverse weight gain, studies find

Pressure needed for studies of new weight loss drugs in people with HIV

Keith Alcorn | 27 July 2023 | Estimated reading time 9 minutes



Dr William Short presenting the DEFINE study findings at IAS 2023. Photo by Roger Pebody.

Switching from an integrase inhibitor to another regimen did not reverse weight gain in two studies that tested alternative regimens, researchers reported at the 12th International AIDS Society Conference on HIV Science (IAS 2023) this week in Brisbane, Australia. Indeed, people who switched away from integrase inhibitors continued to gain weight at a similar rate to those who stayed on an integrase inhibitor-based regimen.



## First person may be cured of HIV after stem cell transplant without CCR5 mutation

Liz Highleyman | 20 July 2023 | Estimated reading time 9 minutes



Geneva, Switzerland. olrat/Shutterstock.com

A man dubbed the 'Geneva patient' appears to be the latest person cured of HIV after a stem cell transplant for cancer treatment. Unlike the other five known cases, however, he received stem cells from a donor who does not have a rare mutation that prevents HIV from entering cells. The man continues to have undetectable HIV 20 months after stopping antiretroviral therapy (ART).

"What has happened to me is wonderful and magical," the Geneva patient said in a press statement. "We can now focus on the future."

- Transplant for cancer treatment
- Stopped ART 20 months ago – remission?
- Transplanted cells do not have mutation in CCR5
- Mutation renders cells resistant to most HIV strains
- As he does not have these resistant cells, greater risk of viral rebound?
- Less media interest than previous cases



*HIV & AIDS – sharing knowledge, changing lives*

**Thank you**

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[www.aidsmap.com](http://www.aidsmap.com)

# STI / HIV 2023 WORLD CONGRESS

COMMUNITY ADVOCACY /  
IMPLEMENTATION UPDATES

DEPARTMENT OF  
MEDICINE  
COLLEGE OF  
MEDICINE



Project WISH



*Charles (Charlie) Peterson*

Pronouns: he/him; él; il

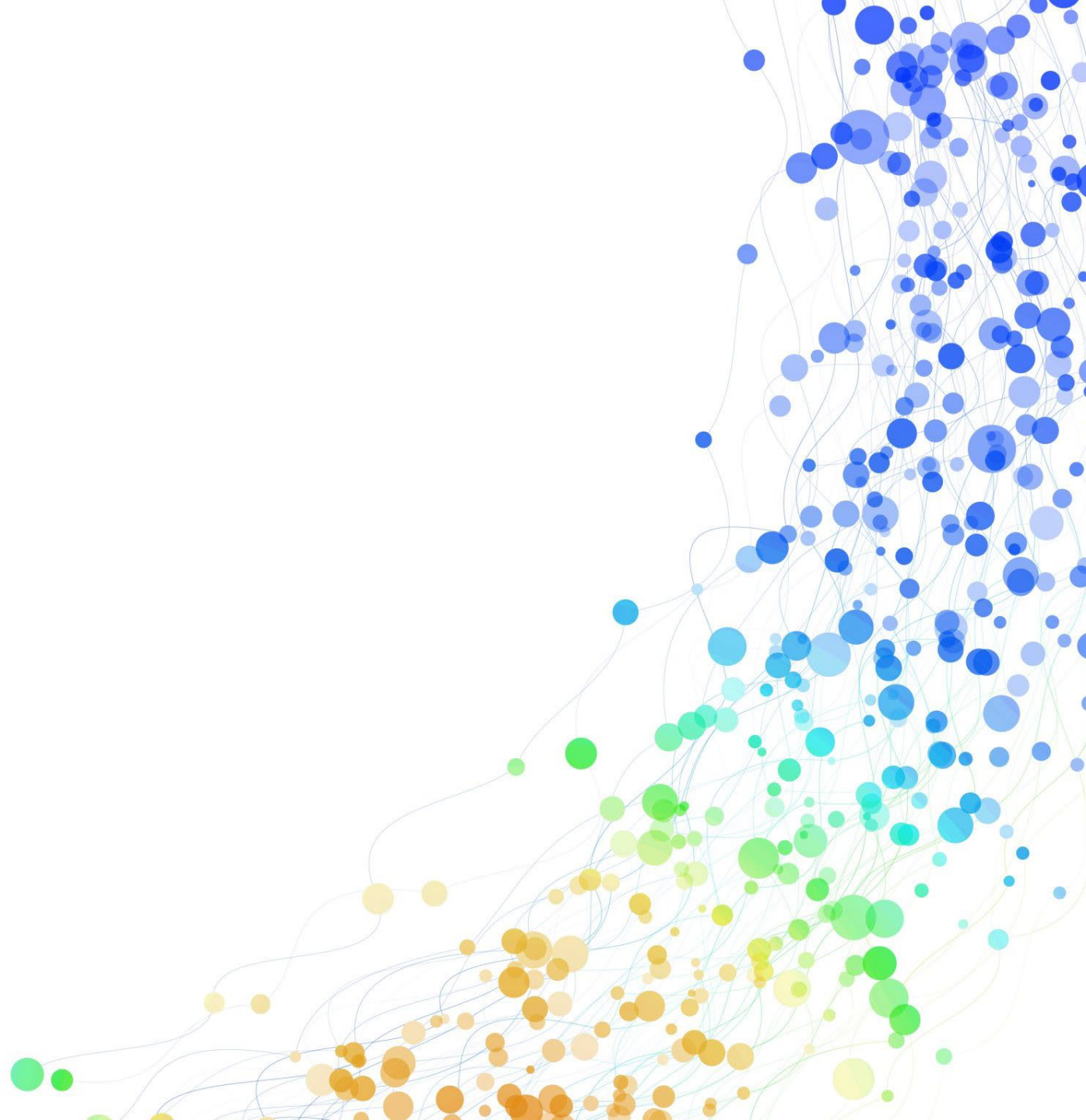
Manager, Community Engagement &  
Clinical Research Education

University of Illinois at Chicago (UIC)

LOCAL  
ENGAGEMENT

GLOBAL  
IMPACT

*2023 Theme*



GENERAL  
CATEGORIES

Diversity, Equity, & Inclusion

Strengthening Communities

Innovation & Implementation

Care Improvement

# DIVERSITY, EQUITY, INCLUSION (DEI)

- Approach key communities with respect, intentionality, and purpose
- Recognize that you are encroaching on communities' safe spaces
- Acknowledge the intersectionalities, social inequities of health, traumas, and different lived experiences that communities may have
- Know that all people look for inclusive healthcare, where they feel seen and understood, where their needs are met, and lived experiences are affirmed
- Diversified community stakeholders provide many perspectives into and critical knowledge regarding key populations, thereby increasing the quality of healthcare initiatives

# DIVERSITY, EQUITY, INCLUSION (DEI)

- “We are more than a finger-prick”
- “We are not a checkbox”
- In healthcare settings, noticing inclusion from allies, from organizations, from people who come from our communities, helps inspire confidence and trust

# STRENGTHENING COMMUNITIES

- Joseph Tucker, MD, PhD, from University of North Carolina at Chapel Hill, talked about pay-it-forward models that work well in Asia
  - Increase community interconnectedness / connectedness
  - Help cover 20 - 60% of STI testing costs
  - Kindness spreads in social networks
  - Receive/Give model
    - Receive (free healthcare service)
    - Donate
      - Write a message on a postcard to motivate others to get tested
      - Give money





# STRENGTHENING COMMUNITIES

- Jagadīśa-Devaśrī Dācus from Northwestern University's Institute for Sexual and Gender Minority Health and Wellbeing (ISGMH) discussed key population-led approaches
  - Identified by the communities themselves: needs-based, demand-driven, and client-centered
  - Co-created between these communities and public health agencies, located in areas with high need, and offer stigma- and discrimination-free comprehensive services'



# STRENGTHENING COMMUNITIES

We need to shift the paradigm from community engagement to community leadership in the HIV response. Key populations cannot only be service recipients.

**Rena Janamnuaysook, transgender woman advocate**



Shift from community-driven to community led



## STRENGTHENING COMMUNITIES



Educate community and advocates on the importance of testing, different options available, and the pipeline



Trauma-informed approaches need to be used for underserved & underrepresented communities

## STRENGTHENING COMMUNITIES



Greater visibility helps others take STI messaging seriously



Follow the HIV model of incorporating community voice into messaging and advocacy



Add community members to planning councils to give greater voice

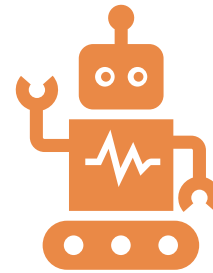


Add community input into trials to ensure clinical studies are inclusive

# INNOVATION & IMPLEMENTATION



**The current system puts nearly all the burden on the clinical healthcare system**



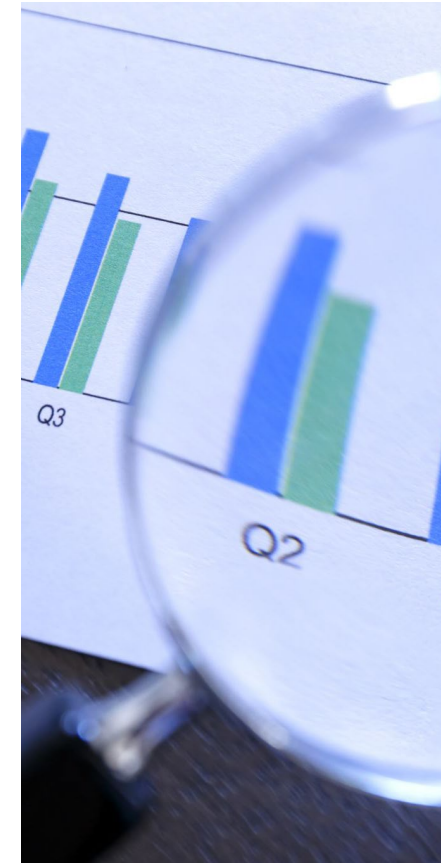
**Paradigm shift towards decentralization**

Self-testing / Point-of-care testing

Artificial intelligence applications (diagnostic / screening tools, chatbots)

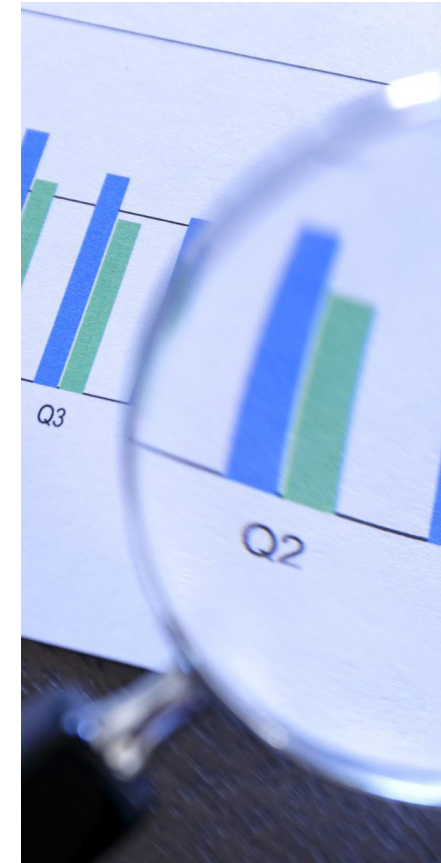
## INNOVATION & IMPLEMENTATION - SELF TESTING

- Joseph Cherabie, MD, from Washington University in St Louis, highlighted several self-testing benefits, namely
  - Convenience (more than 50% of patients preferred home kits and preference was irrespective of insurance status)
  - Speedy results
  - Reduction of person-to-person interaction
    - Stigma reduction



## INNOVATION & IMPLEMENTATION - SELF TESTING

- Potentially less time consuming, as it can quicken visits or can be done at home
- Increases screening rates
- Bypass systemic barriers (lack of internet/computer/phone, travel concerns)
- Targeting of key populations (areas of greater need)
- Lead-in to telehealth / tele-PrEP



# INNOVATION & IMPLEMENTATION - SELF TESTING

Remote options have the potential to help people navigate healthcare more easily in areas where same-sex relations are criminalized or there is heavy stigma





# INNOVATION & IMPLEMENTATION - SELF TESTING

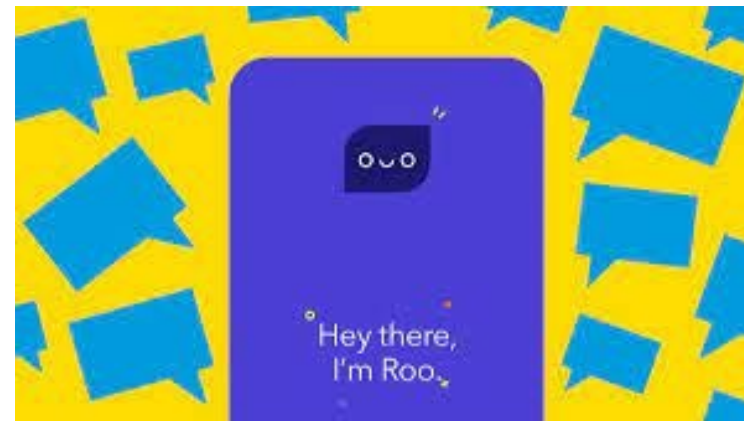
- A Preventx presentation showed that home testing led to the diagnosis of a similar number of STI infections (chlamydia, gonorrhea, Hep B, Hep C, HIV) to what clinic diagnoses would have been
- And that home testing kits (online postal self-sampling, OPSS) were being ordered a lot (2.2 MM kits), with a very high kit return rate ( $\sim$  1.8 MM)
- More options allow for greater reach, more testing and more diagnoses
- Trickle up effect (testing, data collection, etc), permitting better-informed healthcare industry decisions

# INNOVATION & IMPLEMENTATION - AI DIAGNOSTIC / SCREENING TOOLS

- Lei Zhang, PhD, from the Melbourne Sexual Health Centre, talked about AI screening tools for STI detection
- Yudara Kularathne, MD, spoke about HeHealth, occupying a similar niche
- Both platforms were:
  - Confidential, private
  - Accessible from mobile devices
  - Provided fairly good identification of STIs (71 - 83% accuracy / 86% and higher, respectively)
  - Continual AI learning/improvement
- HeHealth delivers personalized instructions based on local guidelines.
- While these apps are in their infancy, more data and more users lead to greater accuracy, making them a potentially invaluable tool in the future

# INNOVATION & IMPLEMENTATION - CHATBOTS

- Chatbots tap into artificial intelligence and can be used for initial conversations with clients
  - Planned Parenthood has developed Roo
  - This bot can answer questions about:
    - Sexual health
    - Relationships
    - Growing up



# INNOVATION & IMPLEMENTATION - CHATBOTS

- Tom Nadarzynski, PhD, from University of Westminster mentioned additional issues
  - Bots can be used to reach marginalized communities without judgement, without stigma
  - Offer a safe space to discuss private, vulnerable topics
  - Relevant, personalized answers
- CONS: systemic barriers (digital inequality, not human, not diagnostic, only accurate if human provides honest answers)



# CARE IMPROVEMENT

We must recognize  
that people are  
sexual beings.

Additional steps  
suggested were to  
create  
environments  
where people feel  
comfortable  
discussing STIs

Integrate STI  
services with  
Primary Care,  
sexual/reproductive  
health, and HIV  
services

Facilitate POC  
diagnostics and  
other affordable  
technologies

# CARE IMPROVEMENT

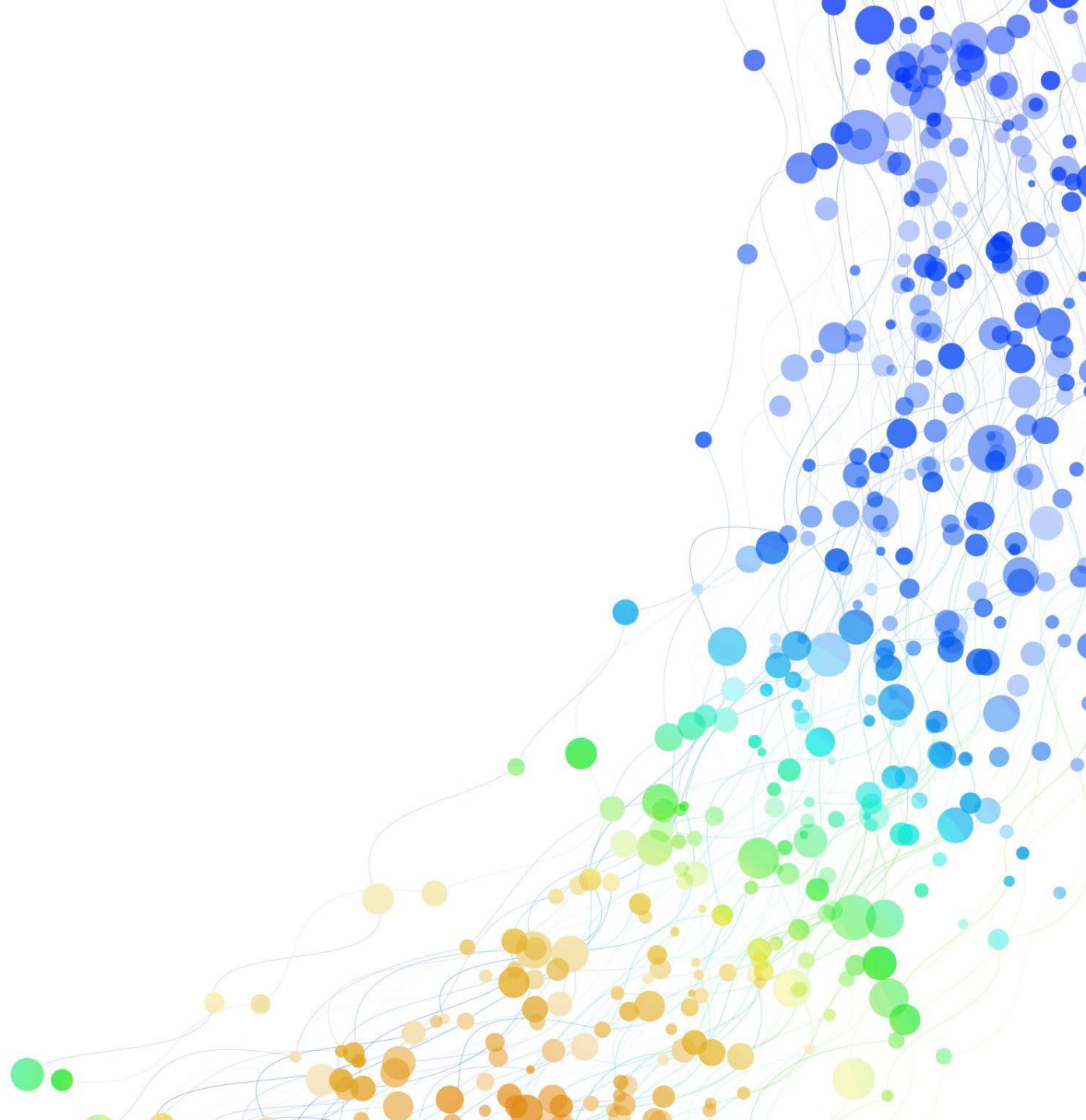
- STI testing should be targeted: racial/ethnic minorities, sexual/gender minorities, rural/remote areas, persons under- and uninsured (Alison Footman, PhD - AVAC)
- Make STI/HIV tests at locations like Emergency Departments opt-out.
- Acknowledge the traumas that lead to current medical distrust to not sound culturally tone-deaf (intergenerational, historical)
- Recognize that healthcare is not necessarily a priority for people, especially when living paycheck to paycheck
- Communities sometimes lack education (ambassadors/champions), which needs addressing
- The Community Group Design-a-Thon mentioned that a reframing or a gain-framing of STI messaging is needed. Essentially, move away from risk messaging, and reposition the discussion of STIs in discussions about sexual pleasure, sexual health, sex normalization and positivity

# DISCUSSION

*Questions / Answers*



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# STI & HIV 2023 WORLD CONGRESS: CLINICAL & BIOMEDICAL UPDATES

**Aniruddha (Anu) Hazra, MD**


Assistant Professor, Section of Infectious Diseases & Global Health

Director of STI Services, Chicago Center of HIV Elimination

Medical Director, DCAM Sexual Wellness Clinic

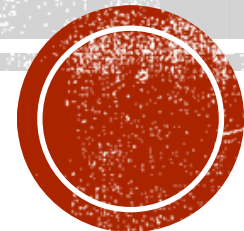
University of Chicago Medicine

Howard Brown Health Center

 @AnuHazraMD



AT THE FOREFRONT  
**UChicago**  
**Medicine**





# MINOCYCLINE FOR MYCOPLASMA GENITALIUM

- *M. genitalium* is a cause of non-gonococcal urethritis, cervicitis, PID, and adverse obstetric outcomes
- Main available classes of antimicrobials:
  - tetracyclines
  - macrolides
  - streptogramins
  - fluoroquinolones
- Macrolide-resistance exceeds 50% in many regions globally, and the prevalence of fluoroquinolone resistance mutations is >30% in some regions of the Asia-Pacific
- There is a need for alternative to quinolones if they fail or are contraindicated



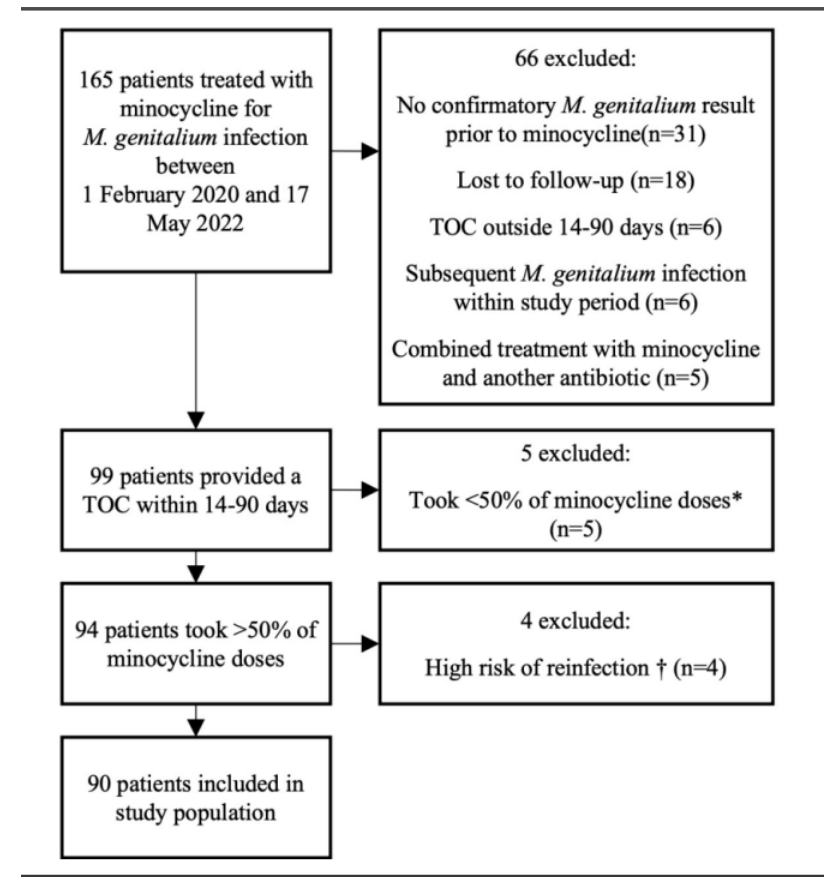
# MINOCYCLINE FOR MYCOPLASMA GENITALIUM

- Minocycline is a tetracycline which is widely available and affordable
- Limited data on the efficacy of minocycline for treating *M. genitalium* from case reports and a small series of 35 patients
- Retrospective review of patients with macrolide-resistant *M. genitalium* who were treated with minocycline at the Melbourne Sexual Health Centre (MSHC) between February 2020 - May 2022
- Microbial cure was defined as a negative TOC within 14-90 days after completing minocycline



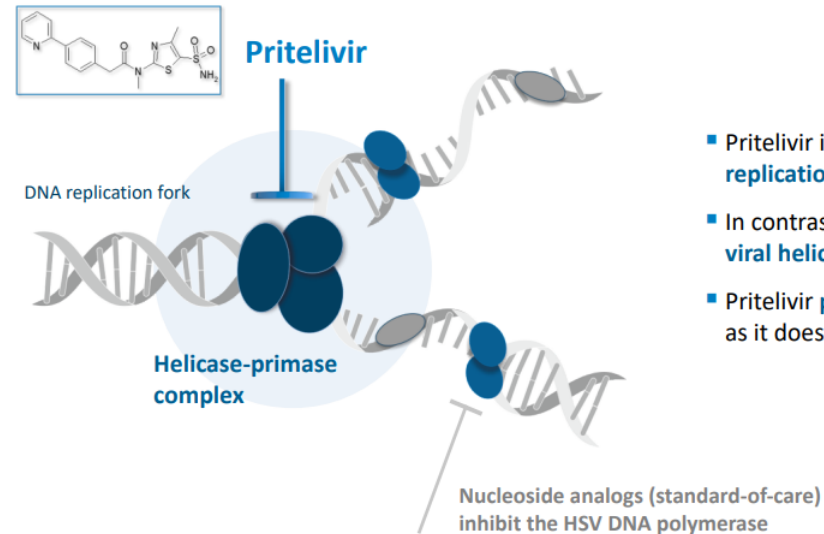
# MINOCYCLINE FOR MYCOPLASMA GENITALIUM

- 60/90 patients (66.7%, 95% CI: 56.0%-76.3%) experienced microbial cure within 14-90 days of completing minocycline
- >95% adhered to the 14-day regimen
- Predominantly mild adverse effects reported, most common was dizziness (9%)
- **Minocycline is a nonquinolone alternative, that will cure 2/3 macrolide-resistant infections**



# PRITELIVIR FOR RESISTANT HSV

- High prevalence of acyclovir resistant HSV (up to 25%) in immunocompromised people
- Remaining therapy is IV foscarnet, extremely toxic requires close monitoring
- Those that cannot tolerate foscarnet have no other options currently
- Pritelivir is a small molecule with novel MOA, inhibiting viral helicase-primase complex

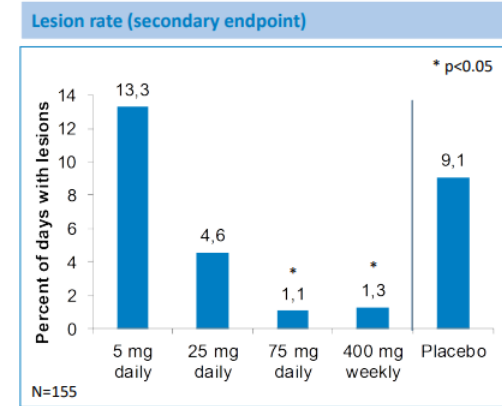
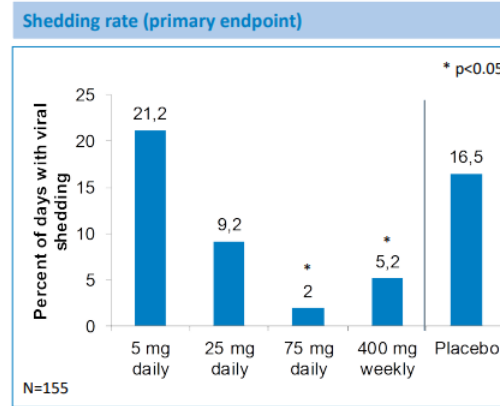


- Pritelivir is a small molecule inhibiting **viral replication of HSV-1 and HSV-2**
- In contrast to existing drugs, pritelivir targets the **viral helicase-primase complex**
- Pritelivir **prevents infection of uninfected cells** as it does not require activation by viral enzymes



# PRITELIVIR FOR RESISTANT HSV

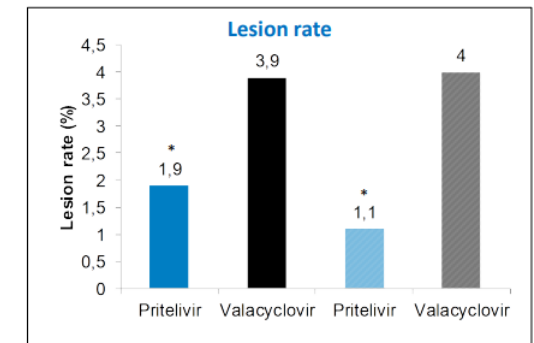
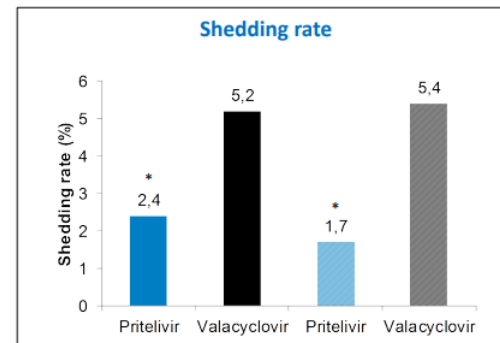
- In Phase 2 studies, Pritelivir reduced viral shedding and clinical lesions



**Shedding rate:** proportion of days with HSV-positive genital swabs

**Lesion rate:** proportion of days with lesion reported

- Demonstrated superiority to valacyclovir in suppression of HSV shedding



■ ITT ▨ PP \* p<0.05



# AIC316-03-II-01 (PRIOH-1): PHASE 3 (NCT03073967)

Trial on Efficacy and Safety of Pritelivir Tablets for Treatment of Acyclovir-Resistant Mucocutaneous HSV Infections in Immunocompromised Subjects

RANDOMIZED, OPEN-LABEL, MULTICENTER TRIAL

**Protocol amendment in preparation to replace foscarnet with standard of care**

Pritelivir 100 mg PO QD (following a loading dose) or  
foscarnet 40 mg/kg IV TID or 60 mg/kg IV BID (Part C)

**Primary endpoint:** All lesions healed at Day 28 (secondary endpoint: Day 42)



Immunocompromised subjects with mucocutaneous HSV Infections:

**Part C**

Acyclovir-resistant,  
pritelivir vs. foscarnet,  
randomization 1:1

**Part D (fully recruited)**

Acyclovir and  
foscarnet resistant  
or foscarnet intolerant

**Part E**

Acyclovir susceptible

**Part F**

Acyclovir resistant  
who failed on  
Standard of Care



# INCREASED GONORRHEA CULTURE SURVEILLANCE IN MASSACHUSETTS

- In 2022, Massachusetts DPH identified a novel strain of multidrug-non-susceptible *Neisseria gonorrhoeae* with:
  - reduced susceptibility to ceftriaxone, cefixime, and azithromycin
  - resistance to ciprofloxacin, penicillin, and tetracycline
- The identification of two non-susceptible cases prompted MDPH officials to recommend broadening surveillance further across the state



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**CLINICAL ALERT**  
January 19, 2023

## MULTI-DRUG NON-SUSCEPTIBLE GONORRHEA IN MASSACHUSETTS

- A novel strain of multidrug-non-susceptible *Neisseria gonorrhoeae* with reduced susceptibility to ceftriaxone, cefixime, and azithromycin, and resistance to ciprofloxacin, penicillin, and tetracycline, has been identified in a Massachusetts resident. Although ceftriaxone 500 mg IM was effective at clearing infection for this case, this is the first isolate identified in the United States to demonstrate resistance or reduced susceptibility to all drugs that are recommended for treatment.
- Enhanced surveillance has identified a second isolate that, based on its genome, likely has similarly reduced susceptibility to ceftriaxone and cefixime.
- Identification of this strain, the same as what was recently reported in the United Kingdom<sup>1</sup> and previously reported as circulating in Asia-Pacific countries, is a warning that *N. gonorrhoeae* is becoming less responsive to a limited arsenal of antibiotics.

### **MDPH recommends that clinicians take the following action:**

- Ensure compliance with recommended treatment of ceftriaxone 500 mg IM as a single dose for persons weighing <150 kg, (1 gram IM for persons weighing ≥150 kg), per 2020-21 CDC guidelines.<sup>2</sup>
- Perform gonococcal culture from genital and extragenital sites for symptomatic patients, in addition to routine nucleic acid amplification testing (NAAT). Clinicians should consult with local clinical microbiology laboratories to determine how best to optimize gonococcal culture, for example by using non-nutritive swab transport systems (e.g., Amies agar gel).



# INCREASED GONORRHEA CULTURE SURVEILLANCE IN MASSACHUSETTS

- **1<sup>st</sup> Case:**

- A patient presented to primary care with dysuria and no known STI exposure.
- The clinician performed gonorrhea testing via urine culture and NAAT.
- Per state regulation, isolates were sent to the State Public Health Laboratory (SPHL) where minimum inhibitory concentrations (MICs) demonstrated resistance and reduced susceptibility to all currently recommended drugs for treatment.

- **2<sup>nd</sup> Case:**

- Identified as a result of enhanced surveillance activities following the first case.
- MDPH collaborated with local laboratories and CDC to undertake a retrospective molecular analysis on remnant NAATs.
- Based on genomic analysis, it likely has similarly reduced susceptibility to ceftriaxone and cefixime.





# INCREASED GONORRHEA CULTURE SURVEILLANCE IN MASSACHUSETTS

- Enhanced surveillance included:
  - Perform gonococcal culture from genital and extragenital sites for symptomatic patients, in addition to routine NAAT
  - Obtain risk history, including travel history, for all gonorrhea-positive cases
  - Perform test of cure using NAAT or culture, 14 days after initial treatment, at all previously positive mucosal sites
  - Perform test of reinfection with NAAT 3 months after treatment for patients previously treated for gonorrhea
- 224 cases with positive gonorrhea cultures were reported to MDPH between January 19 and May 18, 2023



# INCREASED GONORRHEA CULTURE SURVEILLANCE IN MASSACHUSETTS

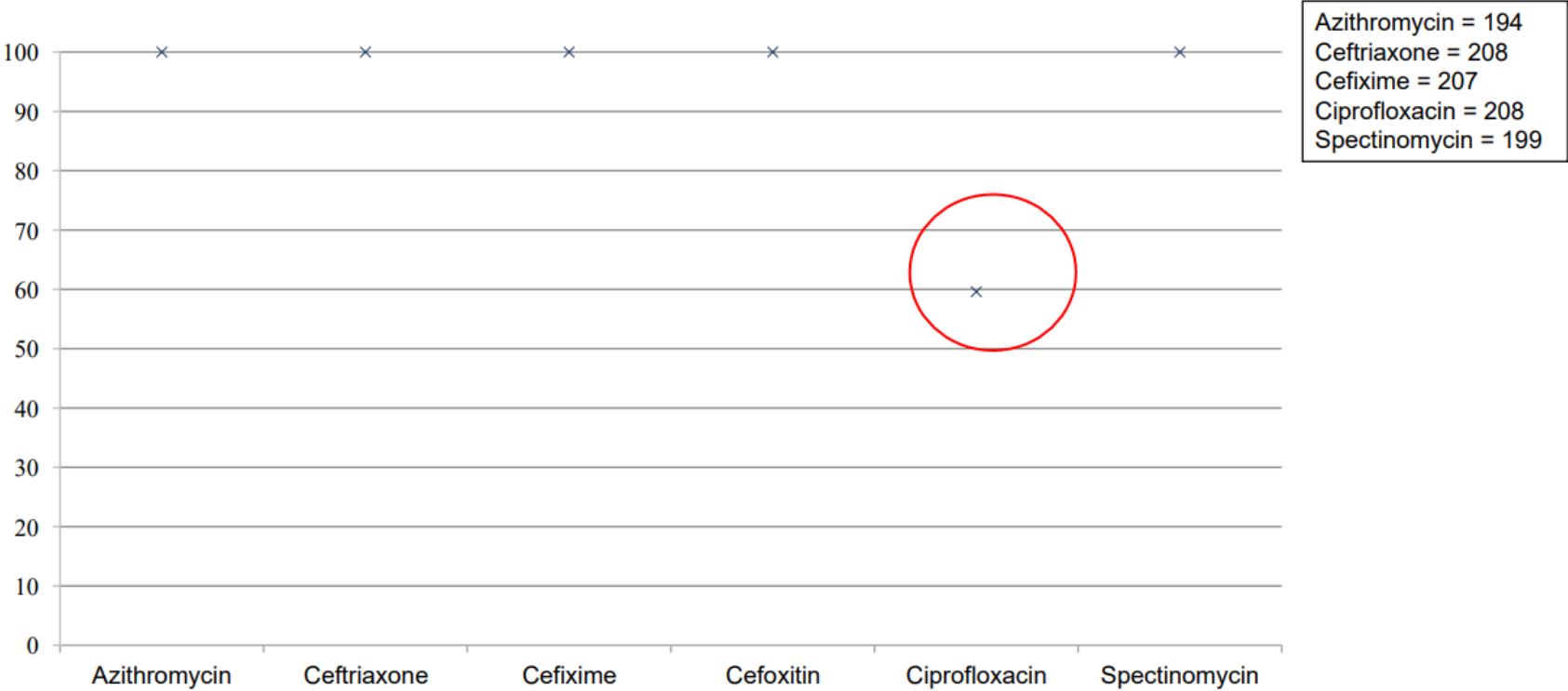
	Cases with only NAAT n= 2,721 (%)	Cases with positive culture n= 224 (%)	Chi-square p-value
<b>Age Categories</b>			0.3228
Younger than 15 years	7 (0.3%)	0 (0.0%)	
15-19 years	366 (13.4%)	23 (10.3%)	
20-24 years	691 (25.4%)	47 (21.0%)	
25-29 years	522 (19.2%)	46 (20.5%)	
30-39 years	709 (26.1%)	64 (28.6%)	
40-44 years	185 (6.8%)	17 (7.6%)	
45+ years	241 (8.9%)	27 (12.0%)	
<b>Reported Sex/Gender*</b>			<0.0001
Male	1,813 (66.6%)	187 (83.5%)	
Female	904 (33.2%)	37 (16.5%)	
Individuals of Transgender Experience	3 (0.1%)	0 (0.0%)	
Missing gender	1 (0.0%)	0 (0.0%)	
<b>Race/ethnicity</b>			<0.0001
Non-Hispanic White	431 (15.8%)	84 (37.5%)	
Non-Hispanic Black	422 (15.5%)	48 (21.4%)	
Hispanic	384 (14.1%)	54 (24.1%)	
Non-Hispanic Asian	31 (1.1%)	13 (5.8%)	
Non-Hispanic Other, AI/AN, Native Hawaiian PI	141 (5.2%)	9 (4.0%)	
Unknown	1,312 (48.2%)	16 (7.1%)	

\* Chi-square test only includes males and females.



# INCREASED GONORRHEA CULTURE SURVEILLANCE IN MASSACHUSETTS

## Results: Antibigram

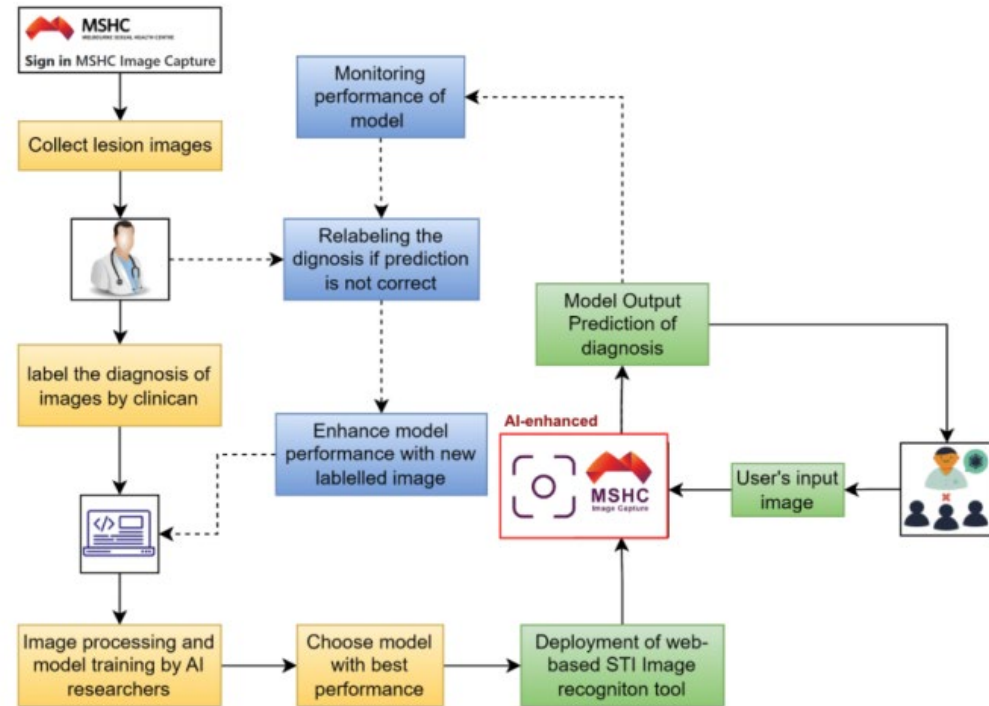


# INCREASED GONORRHEA CULTURE SURVEILLANCE IN MASSACHUSETTS

- Since the clinical alert in January 2023, culture-positive symptomatic gonorrhea cases were distributed across the state and largely represented male individuals residing in moderately high or highly vulnerable census tracts.
- The majority of culture-positive cases were reported by ID/Sexual Health and ER/Urgent Care
- Number and gender of sex partners and travel history were inconsistently documented.
- Susceptibility testing revealed significant ciprofloxacin resistance but no further cephalosporin, macrolide, or aminoglycoside resistance.



# ROLE OF AI IN STI SCREENING

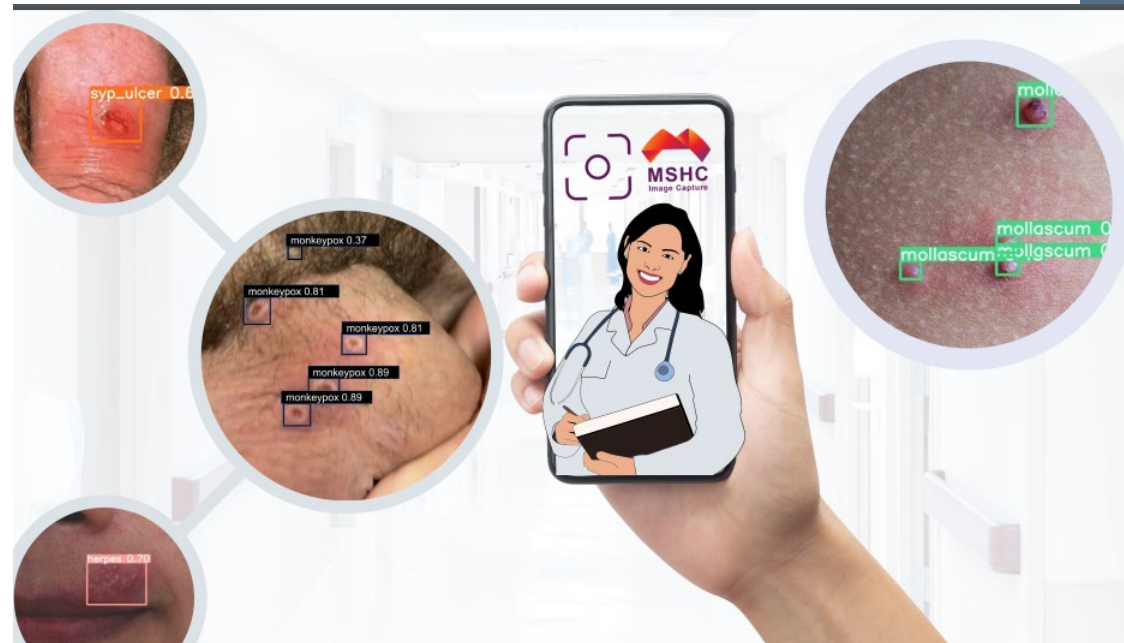


# ROLE OF AI IN STI SCREENING

AI Model Achieves 71-83% Accuracy and Improving . .

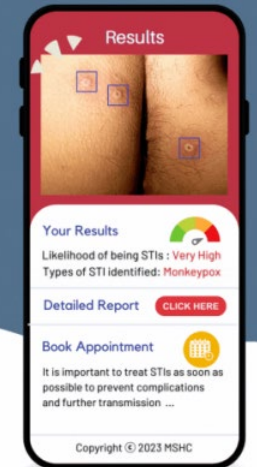
**AI tool can identify**

1. HERPES
2. GENITAL WARTS
3. SYPHILIS
4. MPOX
5. MOLLUSCUM CONTAGIOSUM
6. PEARLY PENILE PAPULES
7. DERMATOSIS (NON-STI SKIN LESIONS)



Labels and scores shown in the image insets:

- syp\_ulcer 0.6
- monkeypox 0.37
- monkeypox 0.81
- monkeypox 0.81
- monkeypox 0.89
- monkeypox 0.89
- herpes 0.70
- molluscum 0
- molluscum 0
- molluscum 0



Results

Your Results

Likelihood of being STIs: Very High

Types of STI Identified: Monkeypox

Detailed Report [CLICK HERE](#)

Book Appointment [CLICK HERE](#)

It is important to treat STIs as soon as possible to prevent complications and further transmission ...

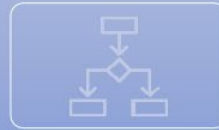
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**Instant AI Diagnosis:  
Real-time results  
at your fingertips!**



# DOXYPEP ADHERENCE IN CISGENDER WOMEN

- Doxycycline PEP did not reduce incident STIs among cisgender women in Kenya
- Some HIV PrEP studies lacked efficacy due to adherence
- Each quarterly visit participants reported on past 14 days
  - marked when she had sex and when she took doxyPEP



## Design:

Open-label 1:1 randomized trial

Intervention: 200mg doxycycline hyclate within 72 hours of sex

Standard of Care: Quarterly STI testing and treatment



## Population:

449 nonpregnant cisgender women, aged 18-30, taking HIV PrEP, in Kisumu, Kenya during 2020-2022



## Approach:

Quarterly follow-up with STI (endocervical) NAAT testing and treatment and surveys.



# DOXYPEP ADHERENCE IN CISGENDER WOMEN

## Self-Reported Adherence

- 77% (579/755) coverage of last sexual exposure
- In 72.8% of the quarterly surveys, >80% of sexual acts were covered
- 64% (134/211) participants reported full coverage in at least 80% of weeks
- 78% of weekly SMS reported full coverage

## Hair Drug Testing (subset of 50 participants assigned to doxyPEP)

- 56.0% (28/50) of participants had doxycycline detected at least once
- 29.0% (58/200) of all quarterly visits had doxycycline detected

**Doxycycline hair testing indicated that 44% assigned to doxycycline PEP may not have taken any doxycycline.**





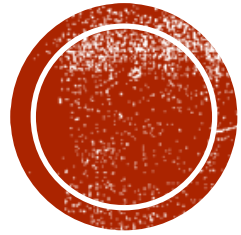
# DÉJÀ-VU ALL OVER AGAIN?

Striking similarities between HIV PrEP and DoxyPEP

- Novel biomedical intervention w/significant impact in priority populations
- Concerns of anti-microbial resistance/misuse
- Equity concerns regarding utilization and uptake
- Data in cisgender women are lacking

So what's different now?

- Signals of higher interest in Black and Hispanic/Latinx men
- **WE SHOULD KNOW AND DO BETTER**



# QUESTIONS?



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