

Differentiated HIV Testing & Linkage Services: Key WHO Updates

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WHO – Global HIV, Hepatitis and STI Programmes

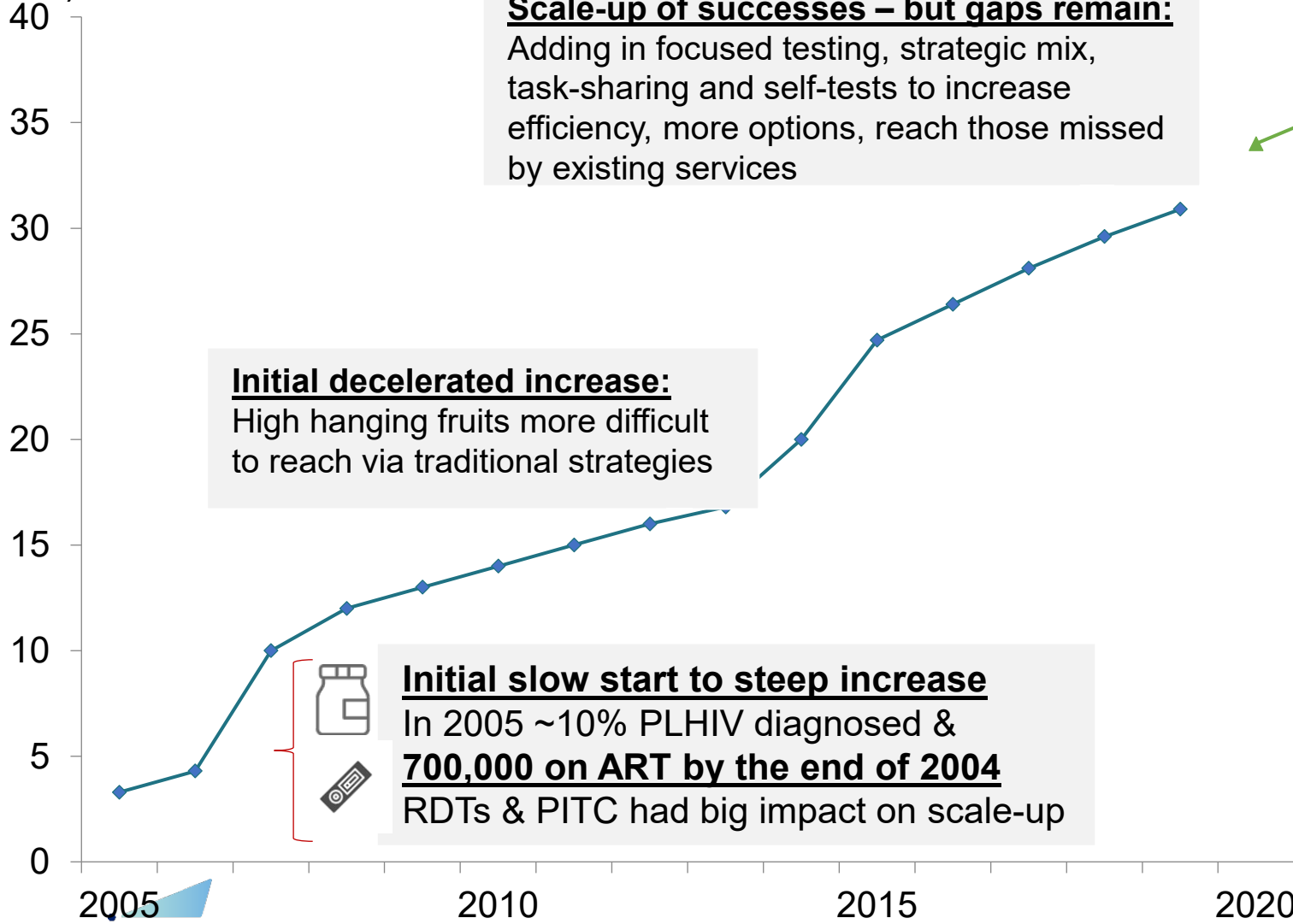
CQUIN 6th Annual Meeting

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Lessons learned from HIV testing scale-up

PLHIV Diagnosed (Millions)



Scale-up of successes – but gaps remain:
 Adding in focused testing, strategic mix, task-sharing and self-tests to increase efficiency, more options, reach those missed by existing services

Initial decelerated increase:
 High hanging fruits more difficult to reach via traditional strategies

Initial slow start to steep increase
 In 2005 ~10% PLHIV diagnosed & **700,000 on ART by the end of 2004**
 RDTs & PITC had big impact on scale-up



Countries achieving 90-90-90 & ART coverage high:
 84% PLHIV diagnosed
 27.5 million on ART
 480 million HIV RDTs procured
 More HTS options, DSD, decentralization achieving success

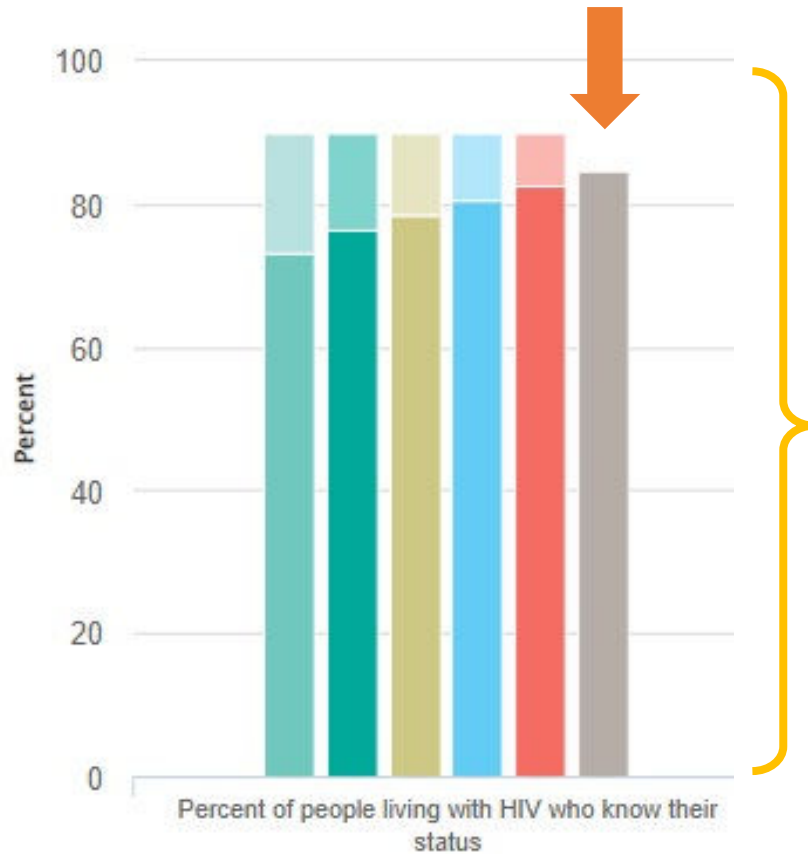
Epidemic shifts point toward HIV testing future with greater focus on enabling high impact prevention for last mile

How do we apply this principle and lessons learned for HIV testing for both case finding and prevention?



Understanding gap: Who is missing?

15% of all PLHIV remain undiagnosed (UNAIDS 2022)



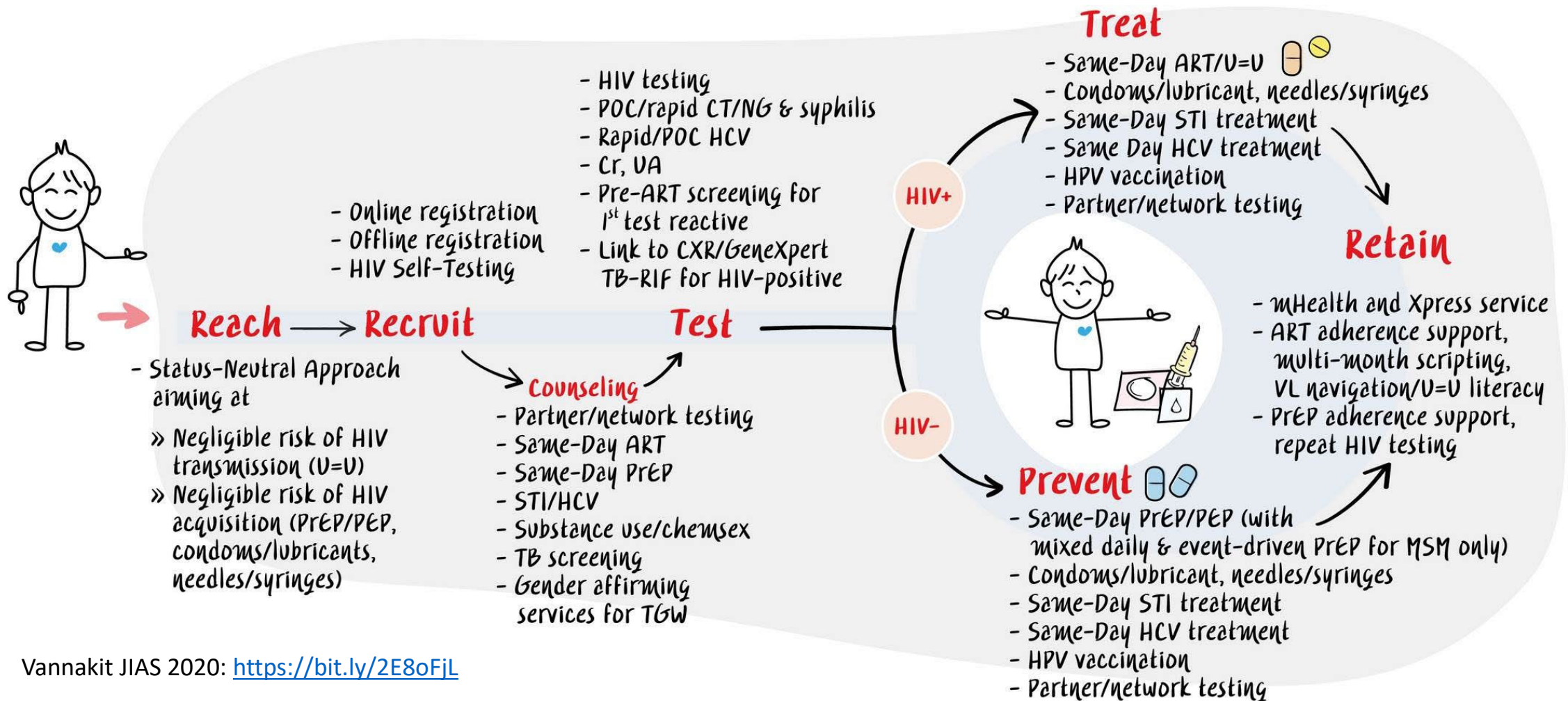
But large gaps remain and HTS needs to be prioritised to achieve 95-95-95

- **Midlife-older men in ESA**
 - Greatest absolute gap in diagnosis aged 35-49
 - Aged 25-39 highest transmission group
- **Key populations (KP) and their partners/contacts**
- **Adolescents & young people (age 15-24)** incl from KP and in high HIV burden settings
- **FP service attendees** in high HIV burden settings
- **Partners of PLHIV**
- **STI patients**
- **LTFU clients needing re-engagement** (including those affected by COVID-19 disruptions)



~75% of HIV transmission in SSA context driven by those with established infection

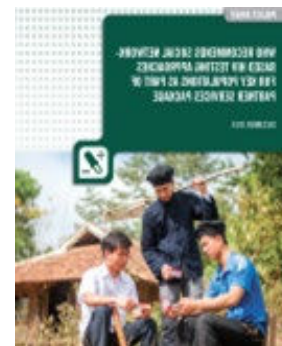
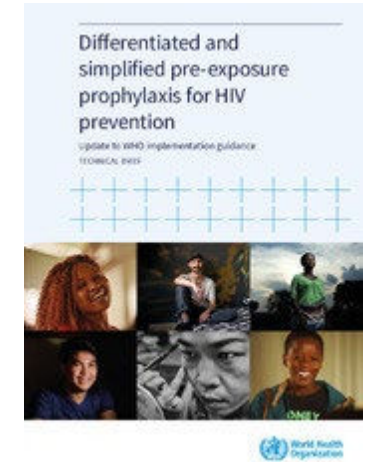
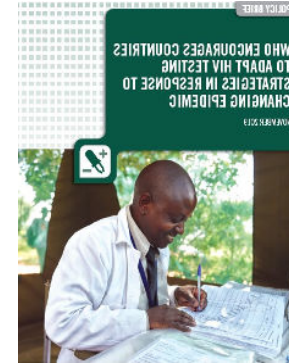
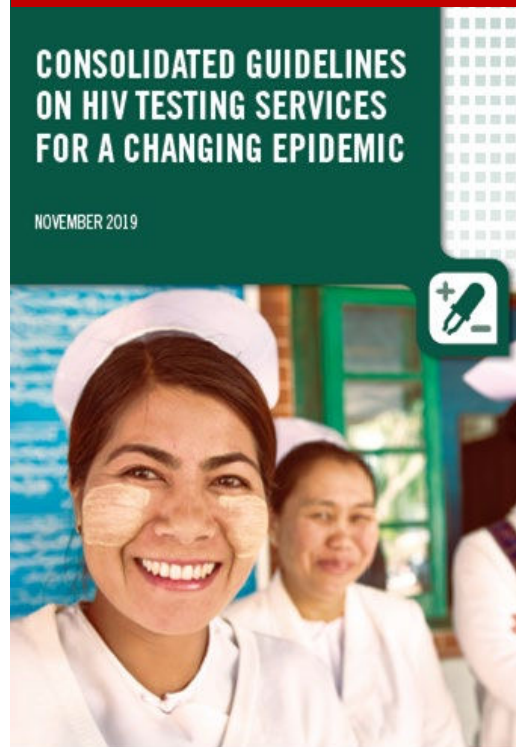
Push toward status neutral testing



Vannakit JIAS 2020: <https://bit.ly/2E8oFjL>

Latest WHO HIV testing services guidelines

Currently being updated for
2023-2024



Source: WHO 2019: <https://www.who.int/publications/i/item/WHO-CDS-HIV-19.31>



WHO 5Cs encourage all testing to include:

Consent

Confidentiality

Counselling (pre-test information and post-test messages)

Correct results and

Connection (linkage)

Adapting National HIV Testing Algorithms

POLICY BRIEF

WHO ENCOURAGES COUNTRIES TO ADAPT HIV TESTING STRATEGIES IN RESPONSE TO CHANGING EPIDEMIC

NOVEMBER 2019



WHO recommends all countries currently using two consecutive reactive tests for an HIV-positive diagnosis to move forward using three consecutive reactive tests for an HIV-positive diagnosis. This is increasingly important as treatment-adjusted HIV prevalence and national HTS positivity continues to decline over time.

- **Ensure that the testing strategy has a positive predictive value $\geq 99\%$ (PPV)**
 - Meaning of the persons classified as HIV+, $\geq 99\%$ will truly be living with HIV
 - PPV depends on positivity rate among testing population
- **Quality assured assays, such as WHO prequalified, should be used:**
 - **$\geq 99\%$ sensitivity:** fewer than 1 '*false negative*' for 100 truly positive
 - **$\geq 98\%$ specificity:** fewer than 2 '*false positive*' for 100 truly negative
 - Either rapid diagnostic tests (RDTs) or enzyme immunoassay (EIA, CLIA, ECL)

Supportive policies essential for HIV testing services

• Critical enablers



• Task-sharing HIV testing services with lay providers (**WHO recommended**)

- High uptake
- Accurate
- Often preferred
- Low cost

WHO recommends:

- Initiatives to protect and enforce privacy
- Prevent discrimination
- Promote tolerance



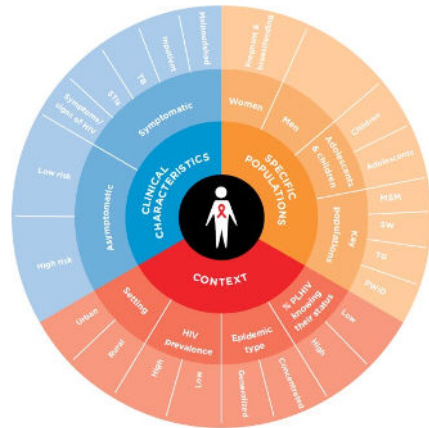
Strategic principles for HIV testing services

HTS approaches need to consider three dimensions for implementation:

1. **Mobilizing** and creating demand for testing
2. Testing **service delivery**
3. **Linkage** to post-test services



Approaches are then adapted based on the context, population and epidemic

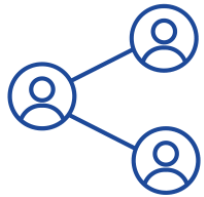


	Mobilizing and creating demand	HTS implementation	Linkage to care
When	Continuous, intermittent or focused	Time of day and frequency	Time period for linking and frequency of monitoring
Where	Location of mobilization activities	Health facility, other facility, community	Location of linkage activities
Who	Who does the mobilizing? Who is the focus for messages and mobilization?	Who does the HIV testing? Who is the focus for testing?	Who supports linkage to prevention or ART initiation?
What	What package of services and demand creation interventions?	What HTS approach?	What linkage intervention?

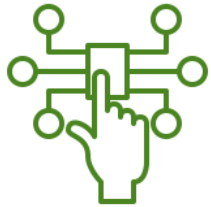
Demand creation for HIV testing services



WHO good practices that increase uptake of HIV testing services:



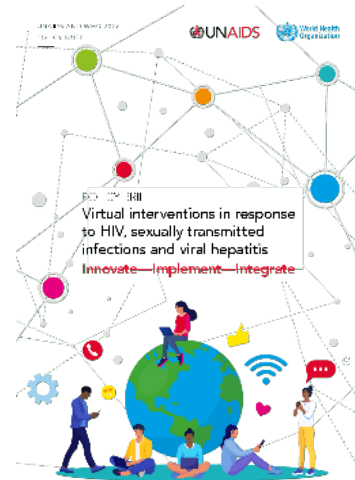
Peer-led approaches



Virtual and digital tools

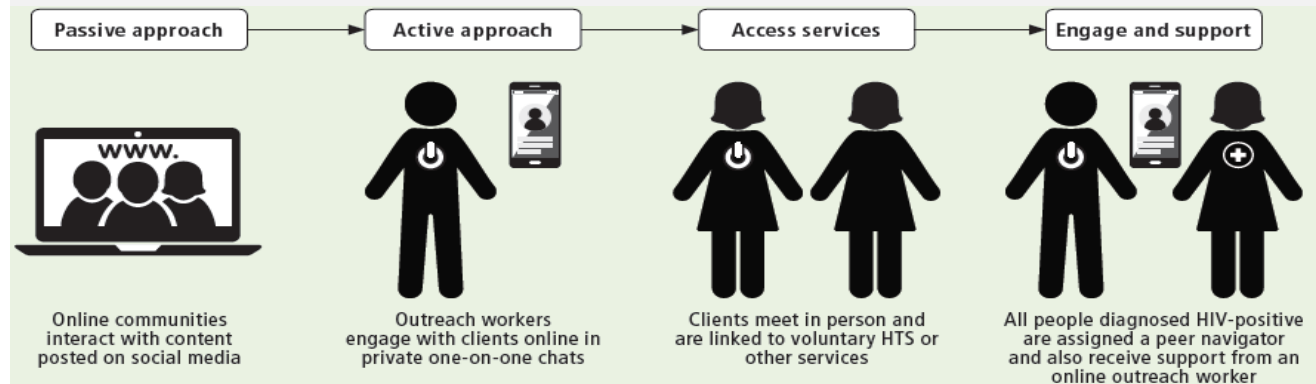


Videos



Experience from FHI360 (March 2016 to January 2019)

- Using online platforms, peer outreach workers counselled **6367 online users**, of **76%**(4879) tested.
- **75% of those contacted had never been in contact with a peer or outreach worker** and 1/3 self-assessed as being at substantial risk for HIV.
- Overall, **431 (10%) individuals were diagnosed with HIV**. This ***HIV positivity is higher than among key populations*** seeking testing through other referrals (10% versus 6%).



Messaging matters: Brief pre-test information advised over lengthy pre-test counselling (WHO good practice)

Source: UNAIDS/WHO 2022; WHO 2019; FHI 360 2019

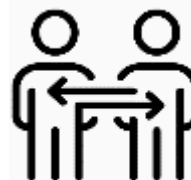
WHO-recommended HIV testing approaches



Facility-based: Offering HIV testing in a facility, e.g. VCT, in-patient and out-patient clinics, ANC, **TB**, **STI**, **family planning/contraceptive services**



Community-based: Offering HIV testing in natural setting of the community, e.g. outreach, CBOs, workplace, clubs, bars.



Provider-assisted referral (i.e. index testing or assisted partner notification): Assisting individuals with HIV by contacting their sexual and/or drug injecting partners and offering them HIV testing services; and offering HIV testing to biological children.



Social network-based approaches: whereby key populations offer HTS to their social, sexual and drug injecting partners at risk of HIV. Includes HIV+ and HIV- key populations (*new WHO guidelines looking beyond KP)



HIV self-testing: Offering self-test kit for individual, and/or their partner, enabling them to collect their sample (oral or blood), perform test, and interpret results in private. All reactive results need confirmation.

MOBILIZING

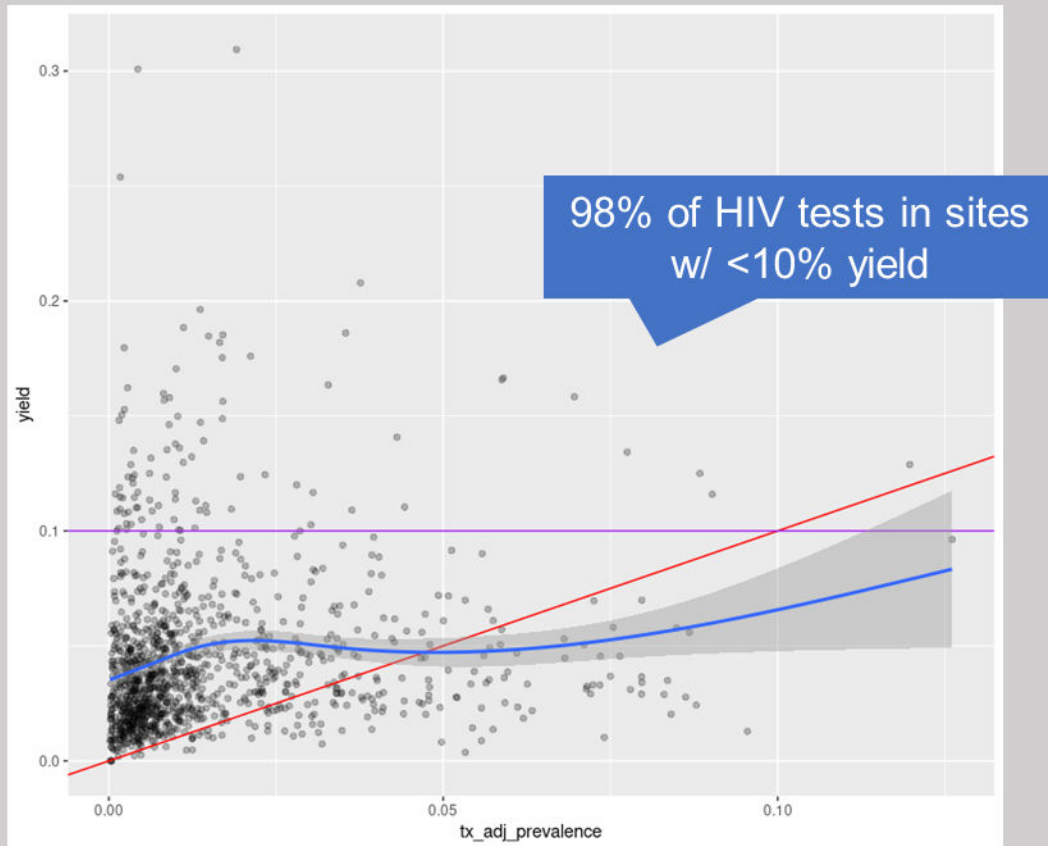
TESTING

LINKING

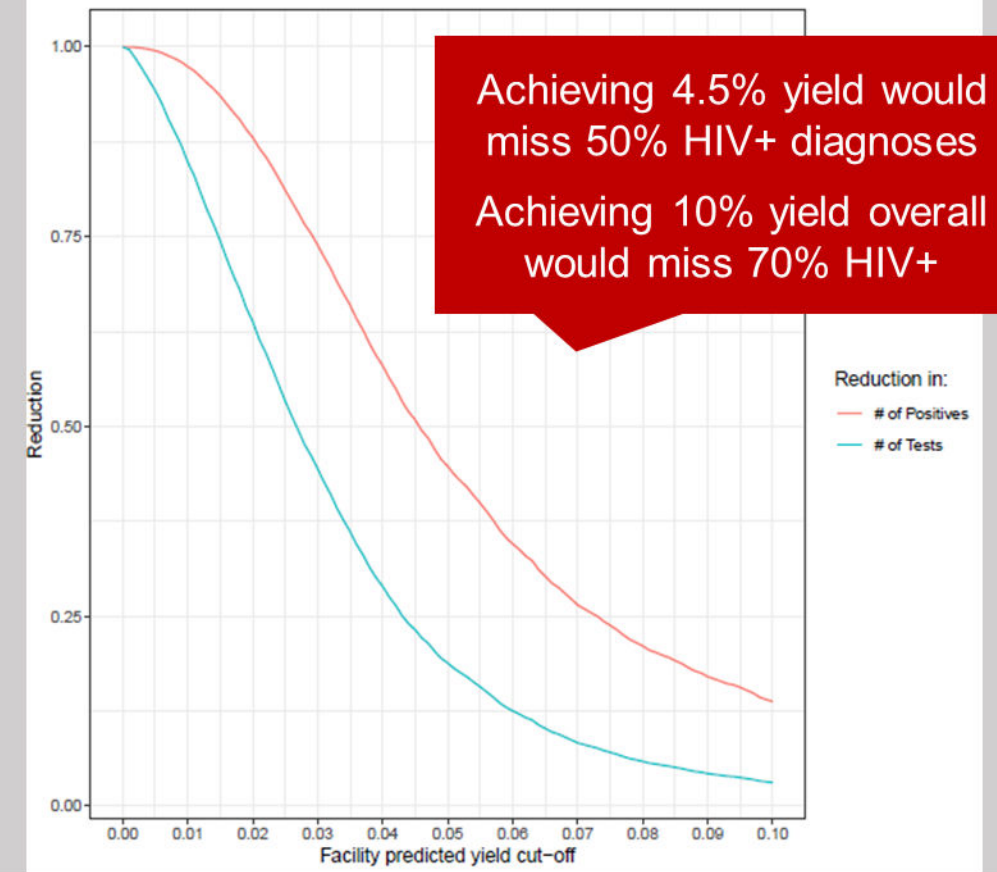
Finding the balance of targeted testing is challenging, and can have significant impact on achieving global goals



Other PITC compared to treatment-adjusted prevalence at sub-national level



Reductions in number of tests and positives based on Other PITC yield targets



Source: Special analysis sub-set of countries, Oct 2021, Other PITC by SNU2 yield and testing, correspondence Ian Fellow, Jeff Eaton, Ray Shirashi, Stephanie Behel, Rachel Golin, Jessica Rose, Mike Grillo, Mary Mahy, Rachel Baggaley, Cheryl Johnson, Vincent Wong

Importance of maintaining sufficient HTS & PITC coverage in key places



- But be more focused there are clear missed opportunities and ensure does not drop and undermine global goals
- Leading up to and during COVID-19 we learned that reductions in PITC led to reductions in HIV diagnoses and ART initiations
- **Key areas of focus:**
 - Other PITC still critical for achieving global goals
 - Offering testing for all STI clients – often not done even in high HIV burden settings
 - Offering testing for all people with TB esp in high HIV burden settings – usually done but some gaps
 - Offering testing in FP in high burden settings (post ECHO push) – virtually never done - need to find ways to do this (HIVST while waiting could be an easy approach)
 - Opportunities for ethical acceptable partner testing as part of these clinical settings
 - ANC is a given - but in the high incidence settings re-testing including in PN period
 - “Screening in” tools (not screening out) to nudge testing & reduce missed opportunities as well as HIVST

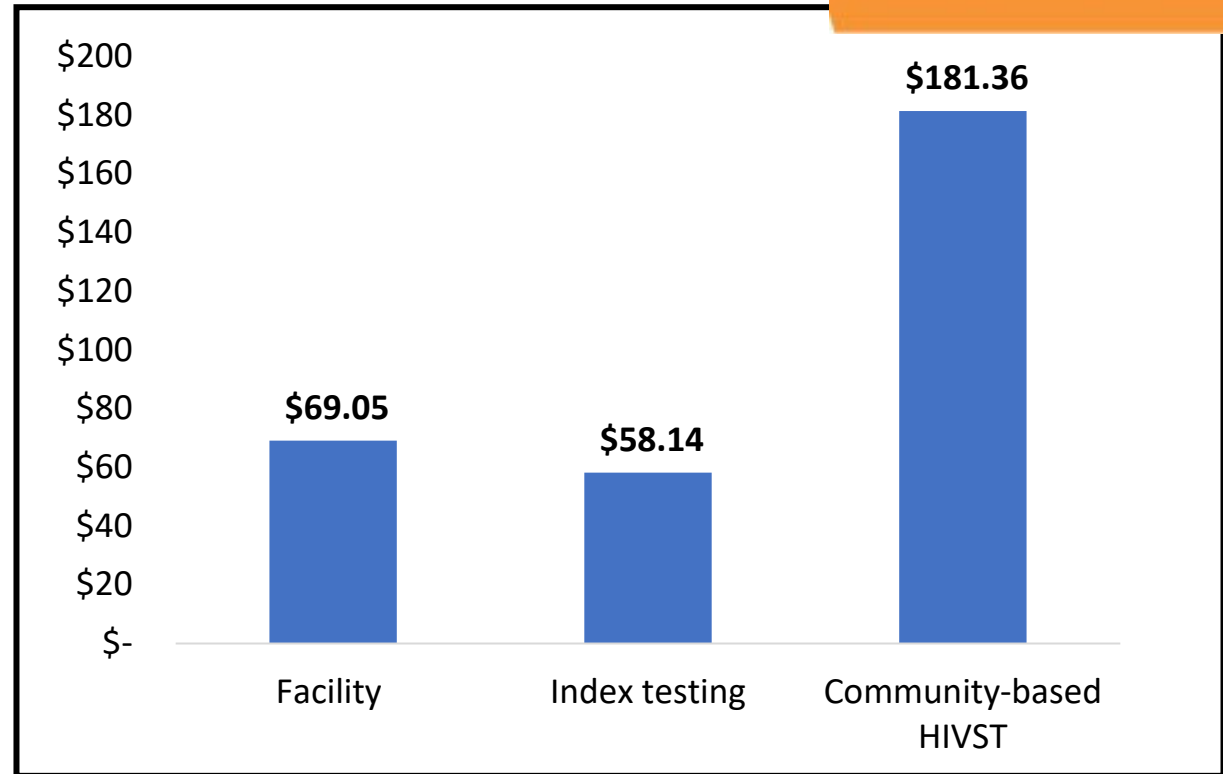
Resulting reduction in testing would yield only modest cost savings, likely to be offset by the need to identify the missed PLHIV through other, more expensive channels



HR and commodity costs for current standard of care compared with screening in OPD

Based on national testing volumes, 2018

	Standard of Care	Screening in OPD	Screening tool savings
Total # of tests (A1)	10.5M	8.9M	1.6M
Total cost	\$23.6M	\$22.1M	\$1.5M
Commodities	\$13.7M	\$11.7M	\$2.0M
Human resources	\$9.9M	\$10.4M	-\$0.5M



Innovative and efficient approaches for screening adults that INCREASE diagnoses are required. HIV self-tests can be used as highly sensitive screening tools that can drive efficiencies in facility-based HTS while increasing access, testing coverage, and identifications.

Source: CHAI 2021, WHO webinar 2021, forthcoming WHO guidance 2023

Supporting linkage and engagement post HTS

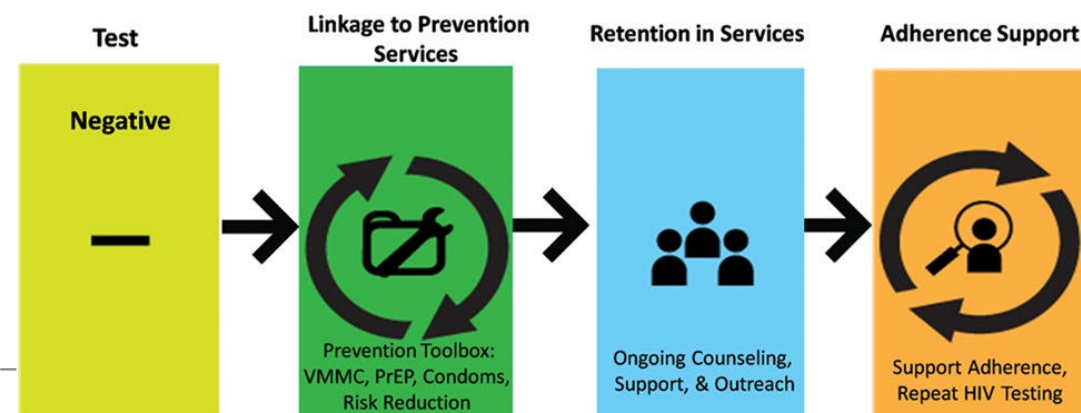


- **streamlined interventions** to promote rapid initiation: enhanced linkage with case management, support for HIV disclosure, partner services, staff training and co-location of services (*moderate-quality evidence*)
- **peer support** (including peer counselling) and navigation approaches for linkage (*moderate-quality evidence*); and
- **quality improvement** approaches using data to improve linkages (*low-quality evidence*).

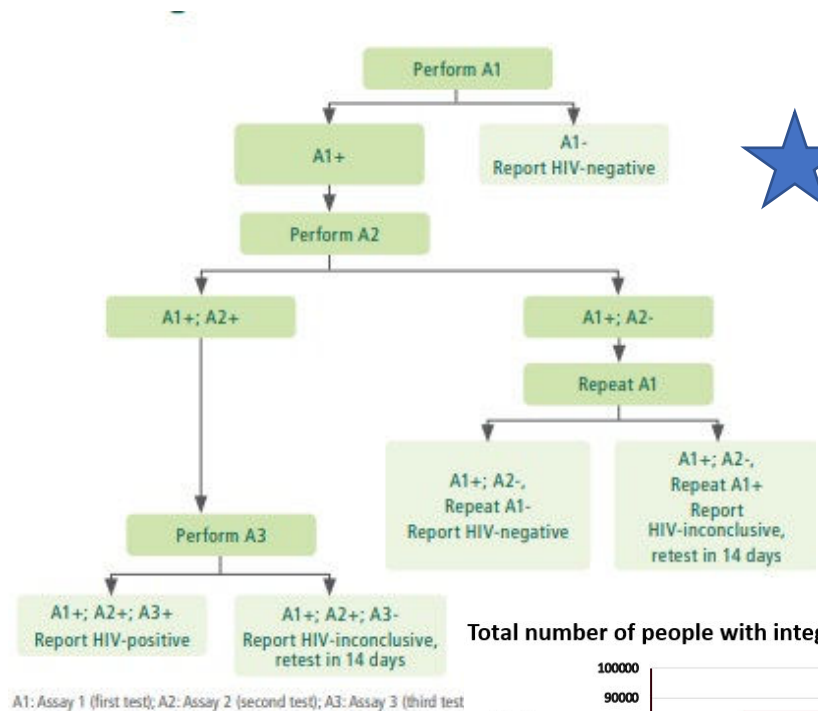
Other considerations to support linkage and to prevention include:

- **Moving away from western blotting** to EIA and RDT-based approaches (strong recommendation)
- **People centred-care** models (best practice)
- Support offer of **VMMC and PrEP through DSD and HIVST-supported delivery models**
- Consider **friendly, flexible, digital tools, peers and community** strategies (& re-engaging LFTU PLHIV)

Don't forget prevention!



WHO guidance on HIV testing to support CAB-LA



Zimbabwe is the first country in Africa to announce regulatory approval for long-acting injectable cabotegravir for HIV prevention

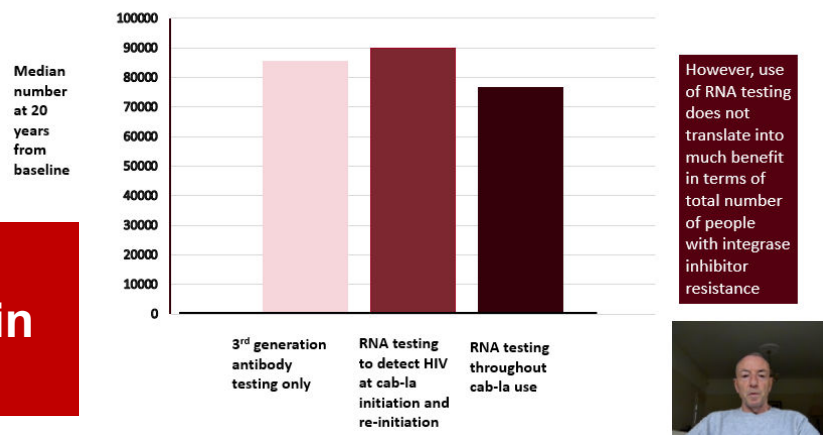
WHO recommends countries use the standard national algorithm

- Uses HIV rapid diagnostic tests
- Does not include or recommend NAT testing
- Reliably achieves positive predictive value above 99% when using products that meet WHO standards

Additional NAT pros and cons?

- Mathematical modelling showed that standard algorithms used in LMIC settings (RDTs) are sufficient with very minimal benefits from 4th generation or NAT testing.
- Insufficient availability to meet need
- Most products are not approved for adult diagnosis
- Costly, and would increase CAB-LA costs by at least 50%
- Discrepant results with serology need more complex protocols and testing for follow-up to be resolved
- Could theoretically detect infection earlier and prevent rare cases of resistance (evidence remains uncertain)

Total number of people with integrase inhibitor resistant HIV



WHO CAB-LA guidance launched in July 2022



WHO guidance indicates that while not required, programmes could include additional NAT testing but would need clear implementation plans, resources, and protocols for resolving discrepant results.

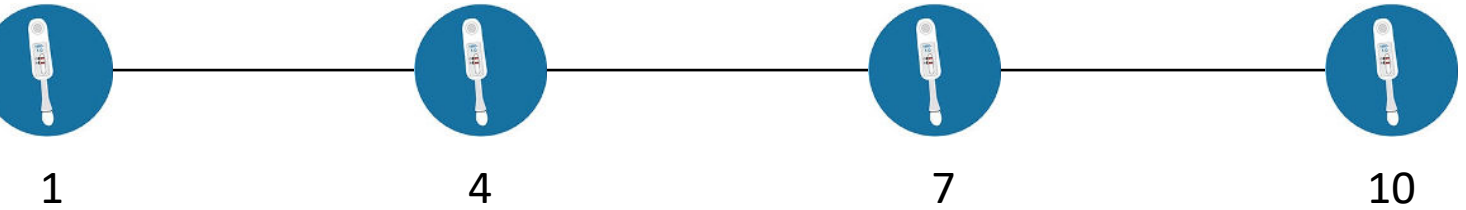
WHO guidance on HIV self-testing for PrEP delivery



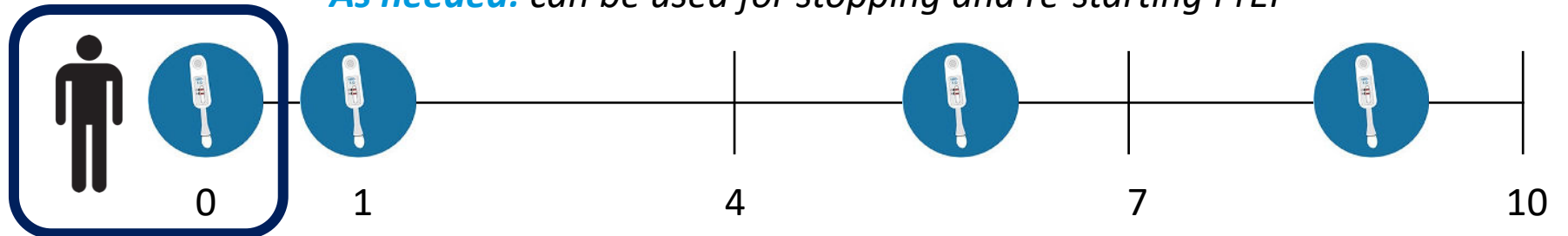
HIVST for PrEP initiation

HIVST for PrEP continuation

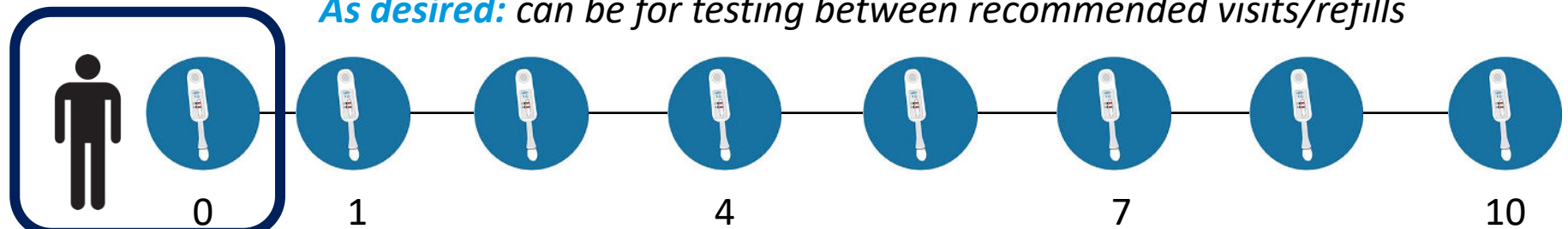
As prescribed: every 3 months (often linked to refilling)



As needed: can be used for stopping and re-starting PrEP



As desired: can be for testing between recommended visits/refills



Months since PrEP initiation

Slide adapted, courtesy of Katrina Ortblad

Differentiated and simplified pre-exposure prophylaxis for HIV prevention
update to WHO implementation guidance
TECHNICAL BRIEF



Source: WHO 2022
<https://www.who.int/publications/item/9789240053694>

HIVST and simplified HTS for expanding PrEP and PEP options



Dapivirine vaginal ring

Safe, effective (when used as prescribed), acceptable, **women-initiated method**

WHO recommendation and guidelines in 2021

HIVST could be an option as **no systemic absorption of PrEP**



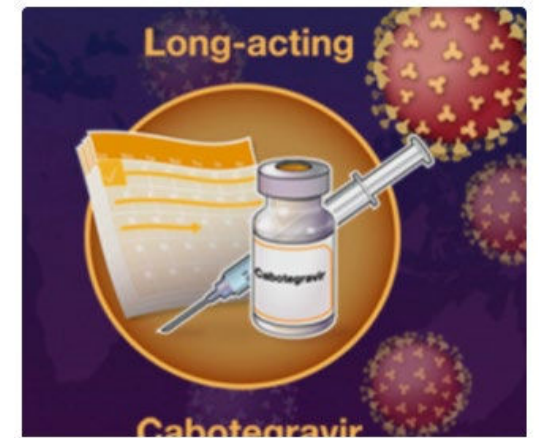
9 December 2021 | Statement

WHO continues to support its conditional recommendation for the dapivirine vaginal ring as an additional prevention option for women at substantial risk of HIV

Long-acting injectable cabotegravir

Very limited implementation experience outside of clinical trials

Specific HIV testing considerations (more on this for the future!)



21 December 2021 | Departmental news

US FDA approved cabotegravir extended-release – the first long-acting injectable option for HIV pre-exposure prophylaxis

Re-engagement needs and strategy from HTS perspective?



Limited evidence on effective strategies

Greater recognition that linkage to care is not linear

PLOS MEDICINE

ATIS and Behavior
https://doi.org/10.1371/journal.pmed.1004364

SUBSTANTIVE REVIEW

Re-Engagement into HIV Care: A Systematic Review

Natalia Blanco^{1,2}, Mario-Claudio C. Lacroix¹, Emily Koeh³, David J. Riedel¹, Caroline Ngero⁴, Sylvia Adobayo⁵, Emille Luderman⁶, Kristen A. Stafford⁷

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Abstract
Identifying evidence-based interventions that can optimize the re-engagement into care of people living with HIV is necessary to achieve and sustain HIV epidemic control. We conducted a systematic review of interventions for re-engagement into HIV care to examine the accumulated evidence and to identify similarities and differences across studies. Between January and March 2020, we searched MEDLINE, Embase, CINAHL, and PsycINFO databases for publications from 1996 to 2020. We screened 745 abstracts and selected 123 publications for full-text review. For the nine included studies, the intervention centered on (1) integration of clinic and HIV surveillance data; (2) additional or different levels of support provided by healthcare workers; or (3) multi-component intervention. Empiricists of the interventions, mixed results were found for re-engagement into care or ART re-initiation. None of the studies led to an improvement in viral suppression. Re-engagement in HIV care is critical for long-term HIV and national program success. Standardizing definitions for out-of-care and re-engagement would facilitate the comparison of interventions. Rigorous study designs to assess strategies to enhance HIV re-engagement are warranted.

Keywords: HIV · Out-of-care · Re-engagement into care · ART re-initiation

POLICY FORUM

The revolving door of HIV care: Revising the service delivery cascade to achieve the UNAIDS 95-95-95 goals

Peter Ehrenkrantz^{1,2}, Sydney Rosen^{3,4}, Andrew Boulle^{5,6}, Jeffrey W. Eaton⁷, Nathan Ford^{8,9}, Matthew P. Fox^{10,11}, Anna Grimsrud¹², Brian D. Rouse¹³, Isckanji Sikazwe¹⁴, Charles D. Holmes¹⁵

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Summary points

- Antiretroviral therapy (ART) for human immunodeficiency virus (HIV) prevents illness and death from HIV disease and transmission of HIV infection. To encourage global scale-up of ART, the Joint UN Programme on HIV/AIDS (UNAIDS) issued the “95-95-95” targets for the HIV “cascade of care.” These targets state that by 2020, 95% of individuals living with HIV will know their HIV status, 95% of people with diagnosed HIV infection will receive ART, and 95% of those taking ART will have achieved suppression of the virus.
- While tremendous progress has been made toward achieving these targets, substantial gaps remain. The challenge of closing the final gaps requires reevaluation of the cascade itself.
- The 95-95-95 HIV care cascade depicts a linear and unidirectional continuum of care with one starting point (HIV diagnosis) and one ending point (treatment discontinuation or death). This simplification of the cascade overcomplicates the complex cycle of engagement, disengagement, temporary disruptions, reengagement, and transitions in care experienced by many people living with HIV (PLHIV).

Trauma, stigma, violence, poor support can be factors in those disengaging



RESEARCH ARTICLE

“I just keep quiet about it and act as if everything is alright” – The cascade from trauma to disengagement among adolescents living with HIV in western Kenya

Leslie A Grace^{1,2,3}, Faith Agot⁴, Peter Drotz⁵, Judith J. Torero⁶, Sabine Ekeke⁷, Josephine Akach⁸, Clementine Ouma⁹, David Njoroge¹⁰, Prisca Mutiso^{11,12}, J. Dennis Nyamberg¹³, Winesome M. Nyaradzo¹⁴, Chris Wainwright¹⁵, Brian R. Rait¹⁶, and Rachel C. Vreeland^{17,18,19}

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Abstract
Introduction: There are approximately 1.7 million adolescents living with HIV (ALHIV), ages 10 to 19, globally, including 110,000 in Kenya. While ALHIV experience poor retention in care, limited data exist on factors underlying disengagement. We investigated the burden of trauma among disengaged ALHIV in western Kenya, and its potential role in HIV care disengagement.
Methods: We performed in-depth qualitative interviews with ALHIV who had disengaged from care at two sites, their caregivers and health care workers (HCW) at 18 sites, from 2018 to 2020. Disengagement was defined as not attending clinic for 90 days past a missed scheduled visit. ALHIV and their caregivers were traced through phone calls and home visits. Interviewed barriers and indicators to adolescent retention in HIV care. Deductive questions elicited narratives surrounding traumatic experiences, and the ways in which these did or did not impact retention in care. Through thematic analysis, conceptual models for a cascade from adolescent experience of trauma to disengagement from HIV care.
Results: Interviews were conducted with 42 disengaged ALHIV, 36 caregivers and 26 HCW. ALHIV experienced a high burden of trauma from a range of domains including experiences at HIV disclosure or diagnosis, the loss of parents, school stigma and physical or sexual violence. A profusion of factors—trauma, stigma and isolation, and lack of social support—led to hopelessness and depression. These factors compounded with other, and resulted in complex mental health burdens, poor attendance and care disengagement. HCW approaches aligned with the factors in the model, suggesting that HIV care represents targets for intervention and provider of trauma-informed care.
Conclusions: Trauma is a major barrier underlying disengagement from HIV care among Kenyan adolescents. We describe a cascade of factors representing areas for intervention to support mental health and retention in HIV care. These included not only the provision of mental health care, but also preventing or addressing violence, trauma and stigma, and restoring social and family support surrounding vulnerable adolescents. In this conceptualization, supporting retention in HIV care requires a trauma-informed approach, both in the individualized care of ALHIV and in the development of strategies and policies to support adolescent health outcomes.
Keywords: child and adolescent retention in care; patient dropout; psychological trauma; mental health



Citation: Ehrenkrantz P, Rosen S, Boulle A, Eaton JW, Ford N, Fox MP, et al. (2021) The revolving door of HIV care: Revising the service delivery cascade to achieve the UNAIDS 95-95-95 goals. *PLOS Medicine* 16(5): e1004364. <https://doi.org/10.1371/journal.pmed.1004364>

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Competing Interests: The authors have declared that no competing interests exist.

Source: Ehrenkrantz 2021; Enan 2021; Blanco 2021; Palacio-Vier



Palacio-Vier et al. BMC Public Health (2021) 21:1036
<https://doi.org/10.1186/s12874-021-1443-9>

BMC Public Health

RESEARCH ARTICLE

Strategies to reengage patients lost to follow up in HIV care in high income countries, a scoping review

Miguel Palacios-Vier^{1,2,3}, María-Natalia Pérez-Luque⁴, Anabel Izuel⁵, Inés Rodríguez⁶, Luis Palacios⁷, Aniel del Lavado⁸, Anabel M. López⁹, Iqbal Ijaz¹⁰, Francisco Manuel Borrás¹¹, Steven Finkel¹², Alexander Sosa¹³, Peter Domingo¹⁴, Silvio de Lencastre¹⁵, Joseph M. Miro¹⁶, Jordi Casademunt¹⁷ and PICO Study Group

Abstract
Background: Despite remarkable achievement in antiretroviral therapy (ART), those lost to follow up (LTFU) might prevent the long-term success of HIV treatment and health. We conducted a scoping review to identify the strategies used to reengage LTFU in HIV care, their implementation and impact.
Methods: A scoping review was done following Arksey & O'Malley's methodological framework and recommendations from Arima Regis Institute. Peer-reviewed articles were searched for in PubMed, Scopus, and Web of Science and gray literature was searched for in Google and other sources of information. Documents were selected according to the information provided and 2021 re-engagement practices used in HIV units in high-income countries, published during the last 15 years. In addition, bibliographies of chosen articles were reviewed for additional articles.
Results: Twenty-eight documents were finally included, over 60% of them published in the United States less than 5 years. Database searches, phone calls and other real contacts were the most common strategies used to locate and track LTFU, while motivational interviews and strength-based techniques were used more often during reengagement visits. Outcomes like taking active voluntary status of engagement and viral load reduction were reported in outcome measures.
Conclusions: This review shows a recent and growing trend in developing and implementing patient reengagement strategies in HIV care. However, most of these strategies have been implemented in the United States and little information is available for other high-income countries. The evidence used to trace and contact LTFU are mainly acute research studies, but their impact and sustainability are widely different depending on the country studied.
Keywords: Chart studies, HIV, Lost to follow-up, Reengagement, Unlabeled

Programmes are new Focus on patient tracing and contact databases HTS services not considered



Post-test messaging good practices



- **Testing, prevention and treatment have evolved – and so have post-test counselling messages**
- **Messages need to be:**
 - **Clear and concise**
 - **Address re-engagement & support clients**
 - **Include referral and offer of rapid ART initiation**
 - **Include U=U information and messages**
 - **Discussion of partner services**
 - **Additional linkages (re-linking) to HIV prevention, care, support and other relevant services**



Key gap in messaging:

- WHO's 2019 review of studies and programme data found most messages did not explain that people who are on ART and virally suppressed will not transmit HIV to their partners
- Communicating this benefit is key and needs to be disseminated
- Integration opportunities for HIV & STIs

Conclusion

HTS progress – we've come a long way but the challenges remain

Must continue to adapt to the changing HIV epidemic

Need to shift to **status neutral approach** – balancing coverage, case finding & preventing new infections

Focusing on available data, priority populations, settings and approaches increasing critical to be efficient and effective

Greater use of virtual services and self-care/self-testing will continue to be critical

Many strategic HTS approaches

It's not 1-size fits all but about a strategic mix of patient-centered approaches which consider mobilization, testing service delivery and linkage

Ongoing monitoring and engagement with communities is essential

For more information on HIV testing services

WHO HIV Testing
Services Dashboard

WHO HIV Testing
Services Info App

WHO HTS GL

Questions?

Contact: Cheryl Johnson johnsonc@who.int