HIV Learning Network
The CQUIN Project for Differentiated Service Delivery

icap Global Health

Differentiated HIV Testing & Linkage Services: Key WHO Updates

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WHO – Global HIV, Hepatitis and STI Programmes

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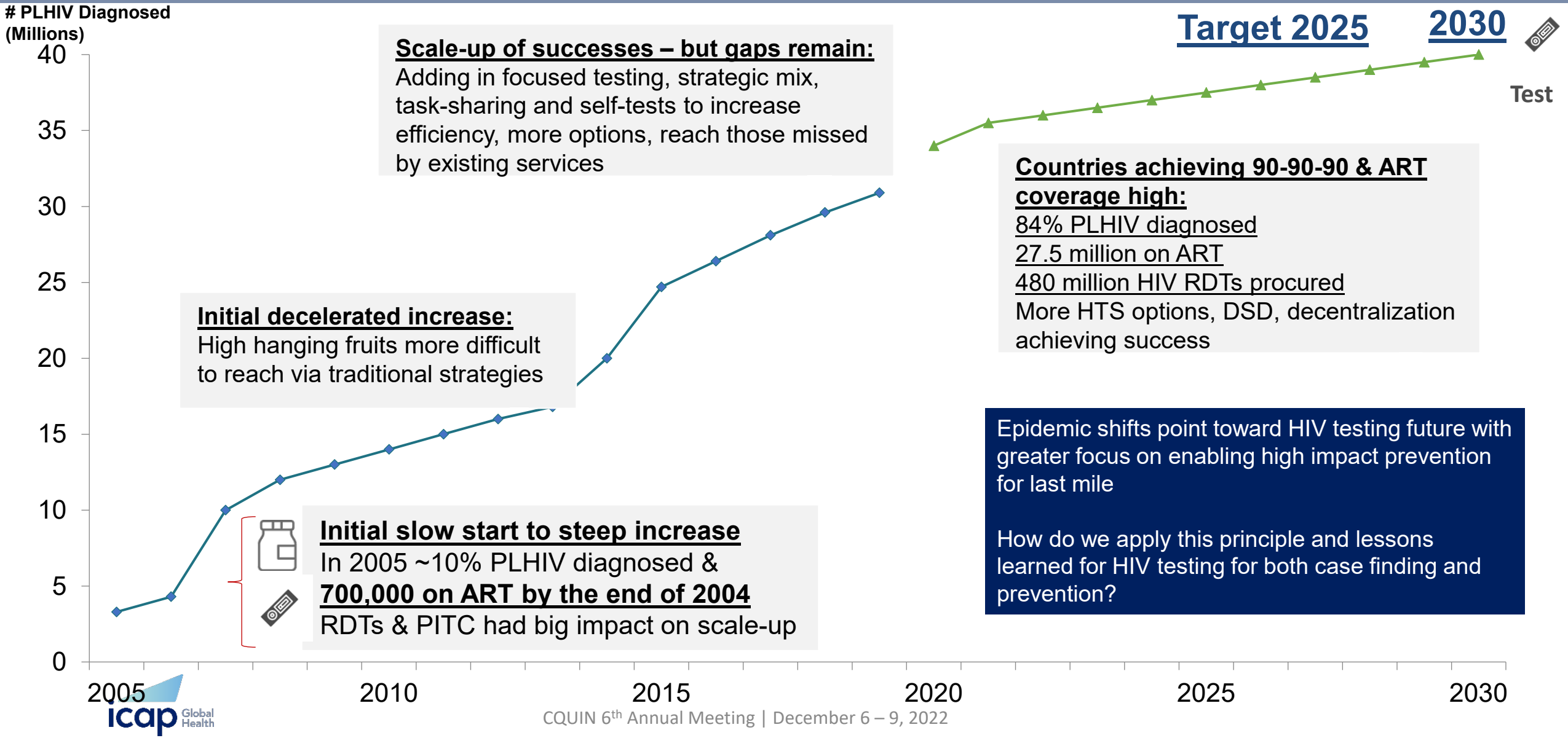
Lessons learned from HIV testing scale-up



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

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

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

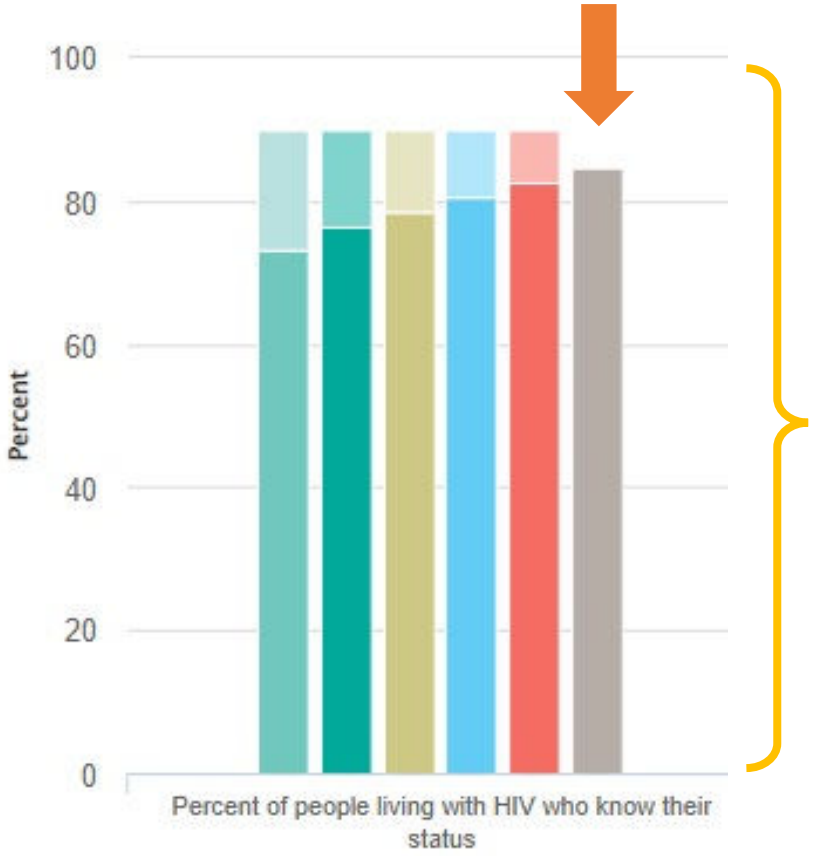
Epidemic shifts point toward HIV testing future with greater focus on enabling high impact prevention for last mile

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

Source: WHO forecast 2020; UNAIDS 2021; WHO 2005; CHAI 2015; WHO, UNICEF, PEPFAR, GFTAM 2018; GAM reporting 14 October 2020

Understanding gap: Who is missing?

15% of all PLHIV remain undiagnosed (UNAIDS 2022)



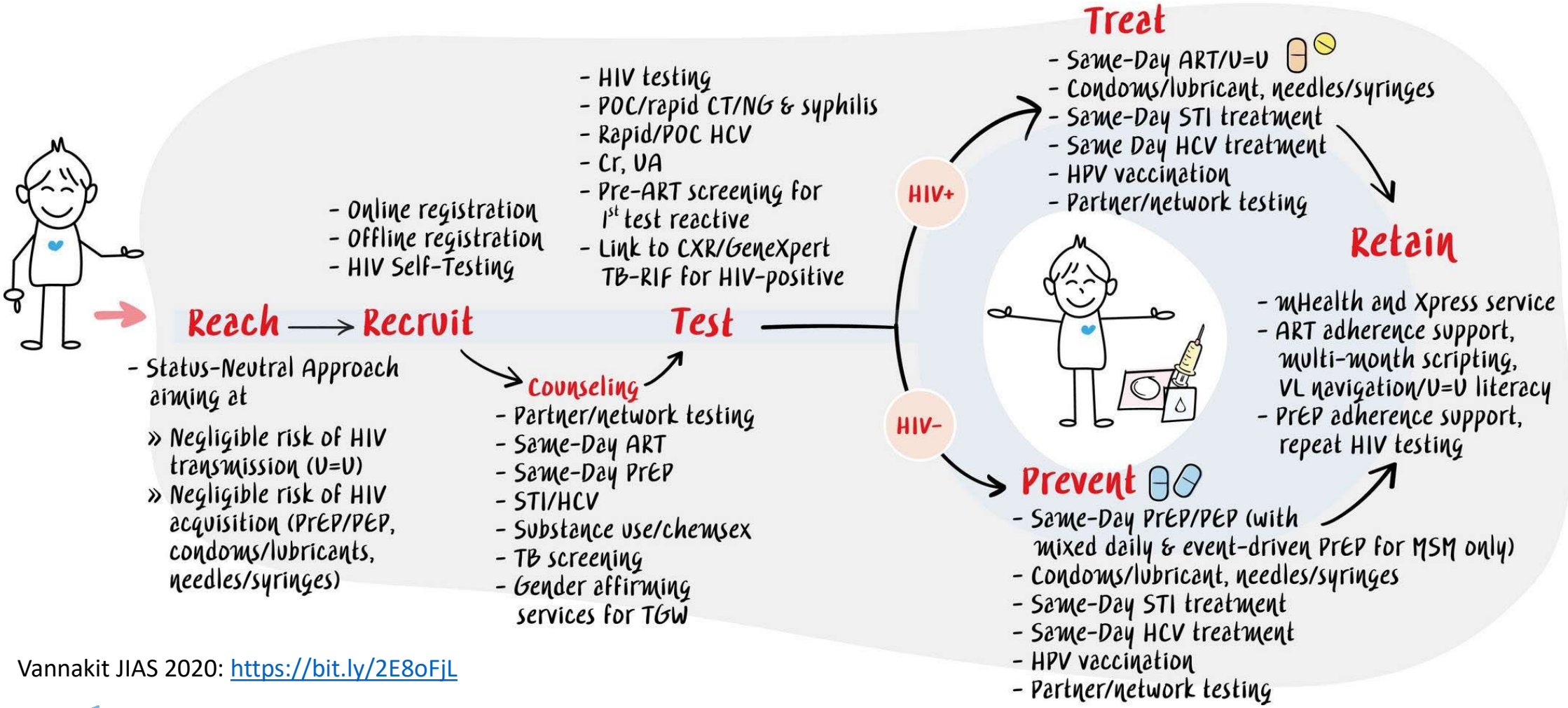
But large gaps remain and HTS needs to be prioritised to achieve 95-95-95

- **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

Maheu-Giroux 2021: https://www.thelancet.com/journals/lanhiv/article/PIIS2352-3018(20)30315-5/fulltext; Eaton AIDS 2022; Fraser AIDS 2022

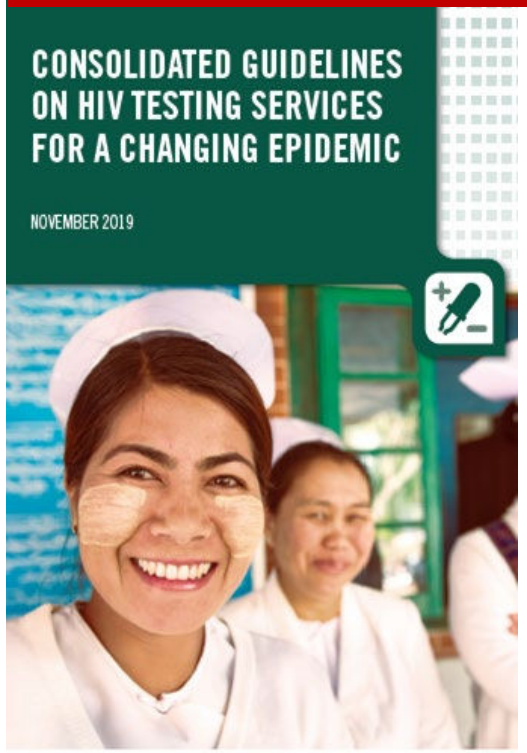
Push toward status neutral testing

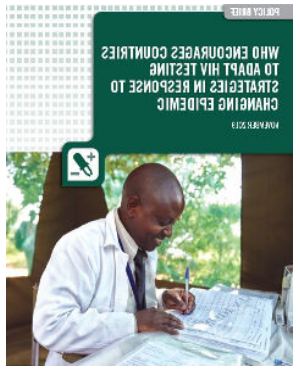


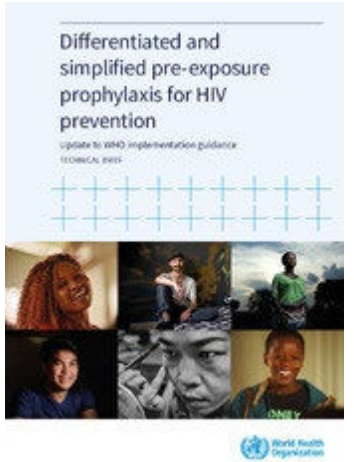
Vannakit JIAS 2020: https://bit.ly/2E8oFjL

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

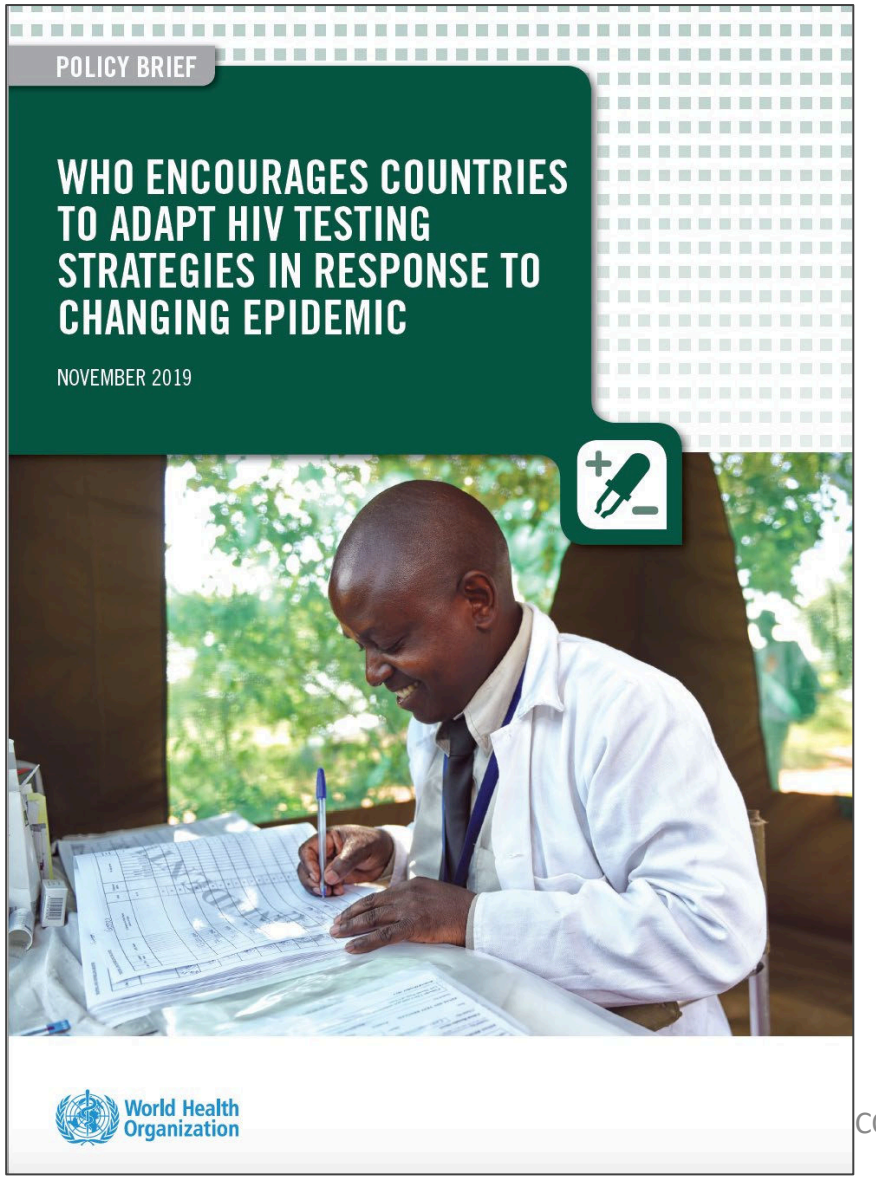
Guiding principles for HIV testing services

WHO 5Cs encourage all testing to include:

- Consent
- Confidentiality
- Counselling (pre-test information and post-test messages)
- Correct results and
- Connection (linkage)

Source: WHO 2019

Adapting National HIV Testing Algorithms



WHO recommends all countries currently using two consecutive reactive tests for an HIV-positive diagnosis to move torward 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 ≥99% (PPV)**
  - Meaning of the persons classified as HIV+, ≥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:**
  - **≥99% sensitivity:** fewer than 1 *'false negative'* for 100 truly positive
  - **≥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:

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

Source: WHO 2019

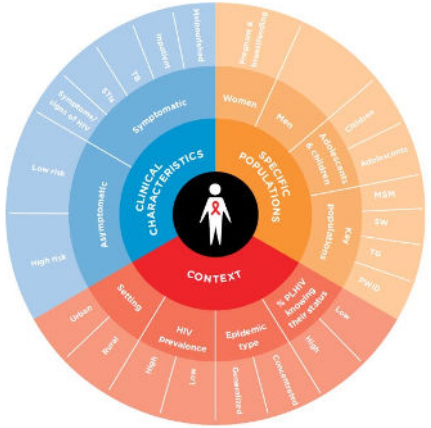
Strategic principles for HIV testing services

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

	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?

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



Source: WHO 2019; IAS 2018

Demand creation for HIV testing services

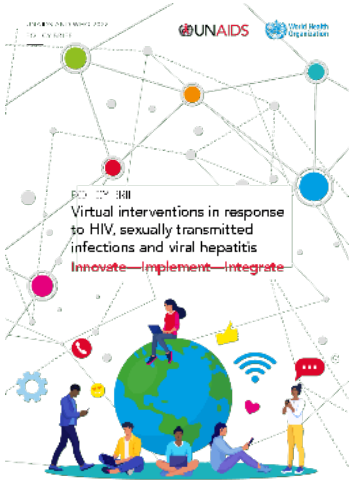
MOBILIZING

WHO good practices that increase uptake of HIV testing services:

Peer-led approaches

Virtual and digital tools

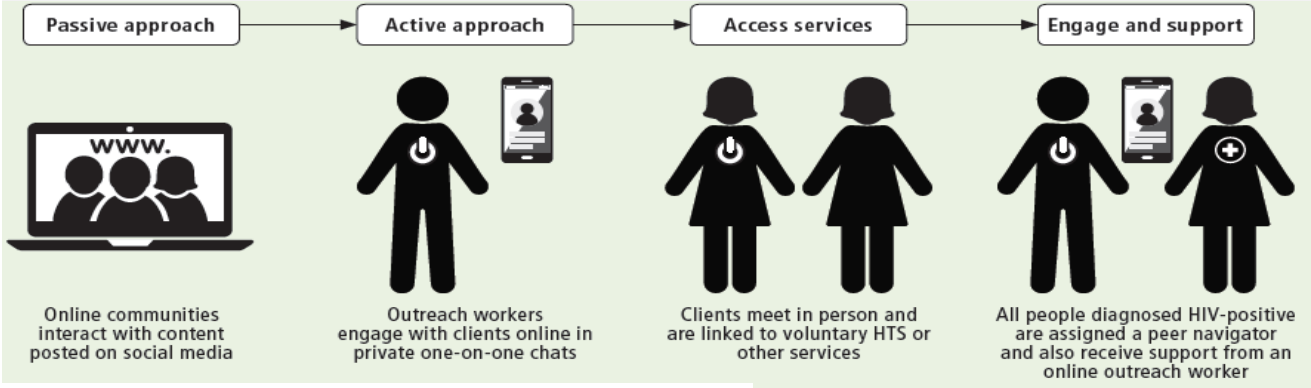
Videos



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

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%).



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

WHO-recommended HIV testing approaches

TESTING

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.

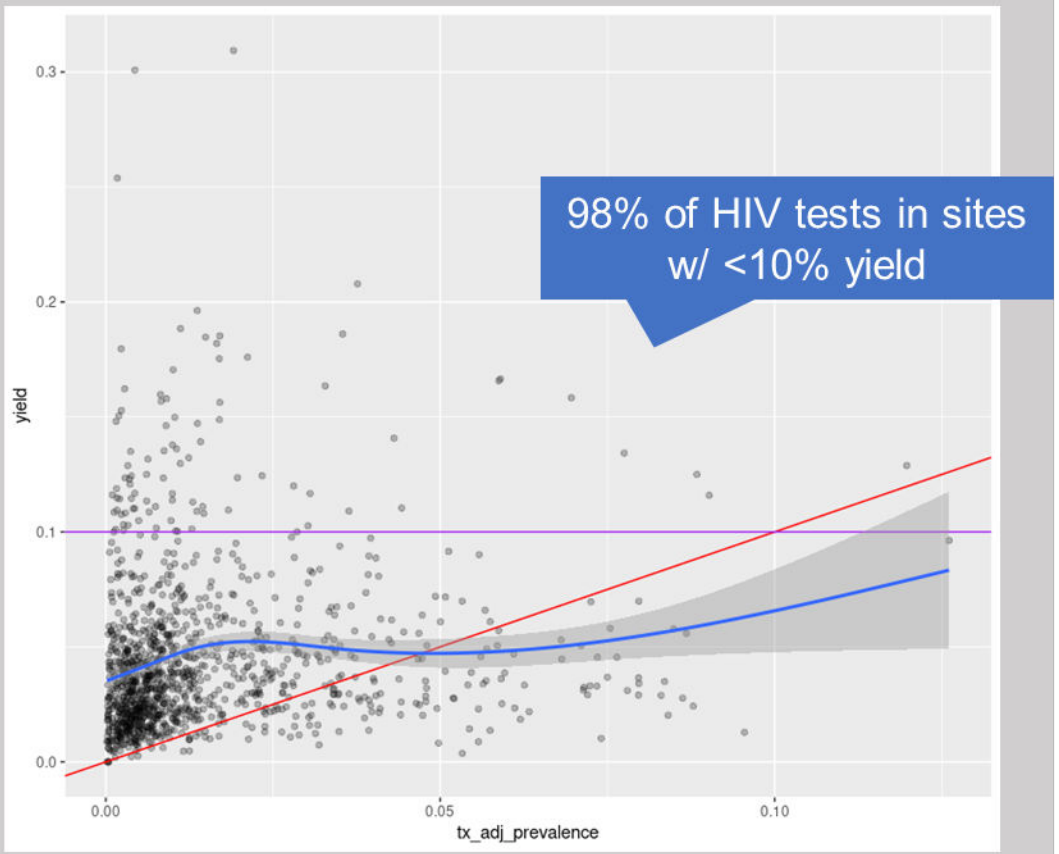
MOBILIZING | TESTING | LINKING

Source: WHO 2019

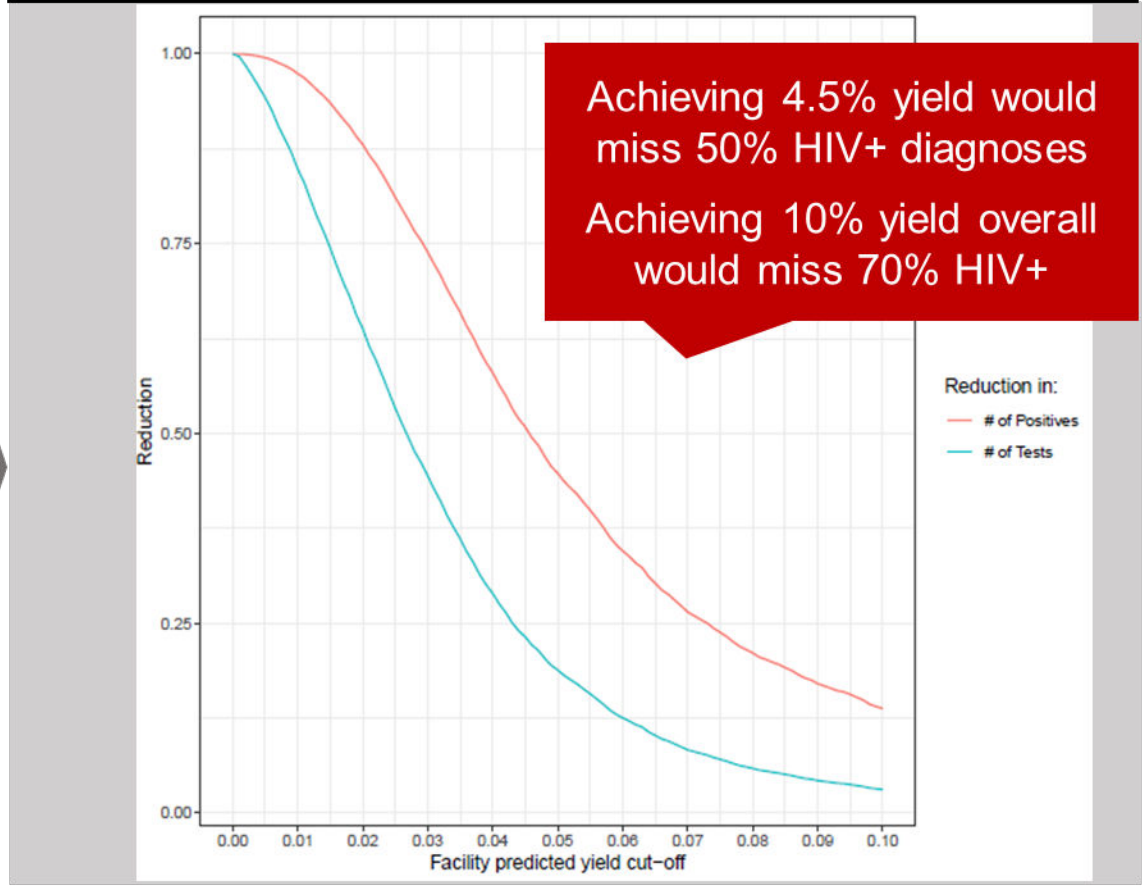
Finding the balance of targeted testing is challenging, and can have significant impact on achieving global goals

TESTING

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

TESTING

- 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

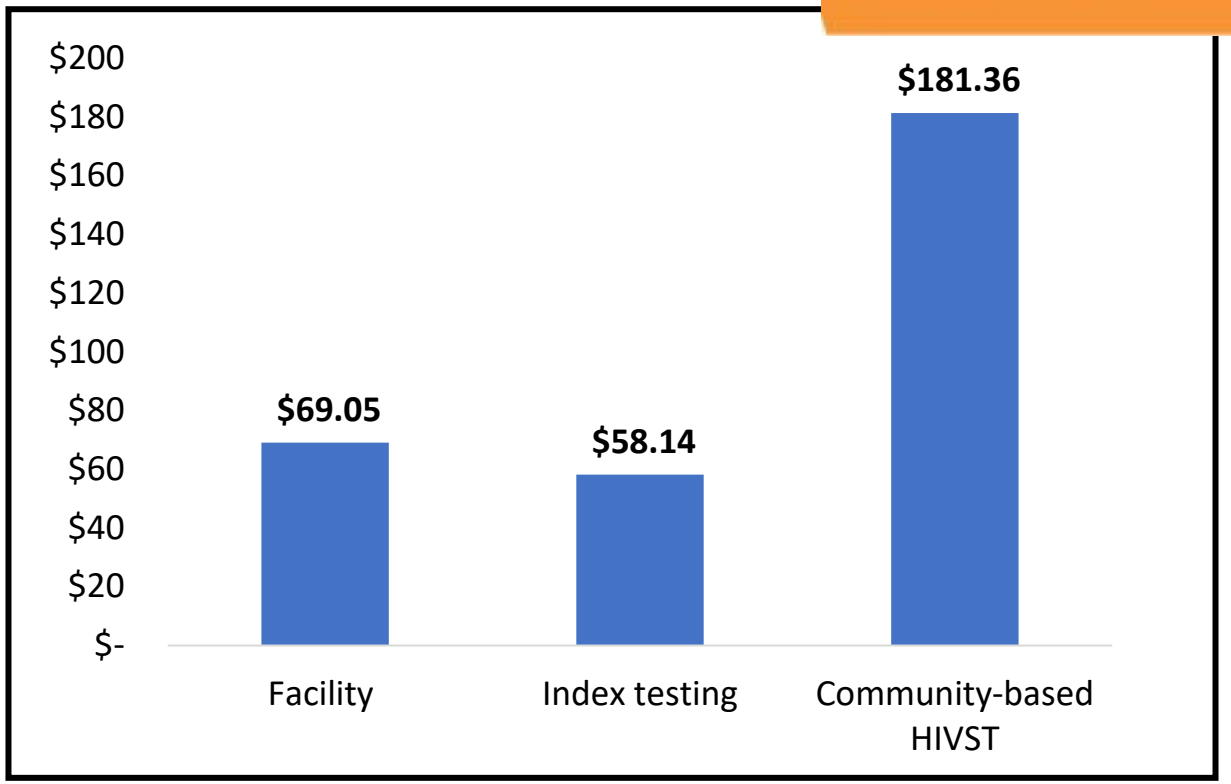
Resulting reduction in testing would yield only modest cost savings, likely to be offset by the need to identify the missed PLHIV through other, more expensive channels

TESTING

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

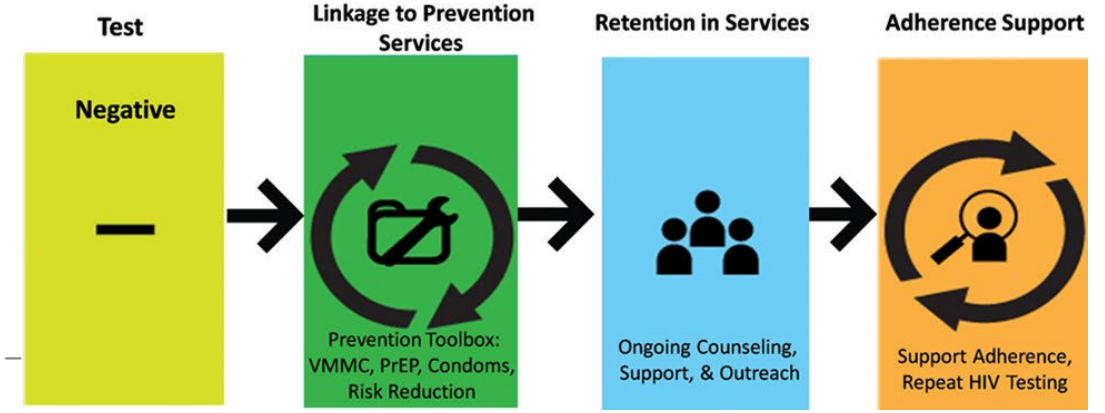
LINKING

- **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)

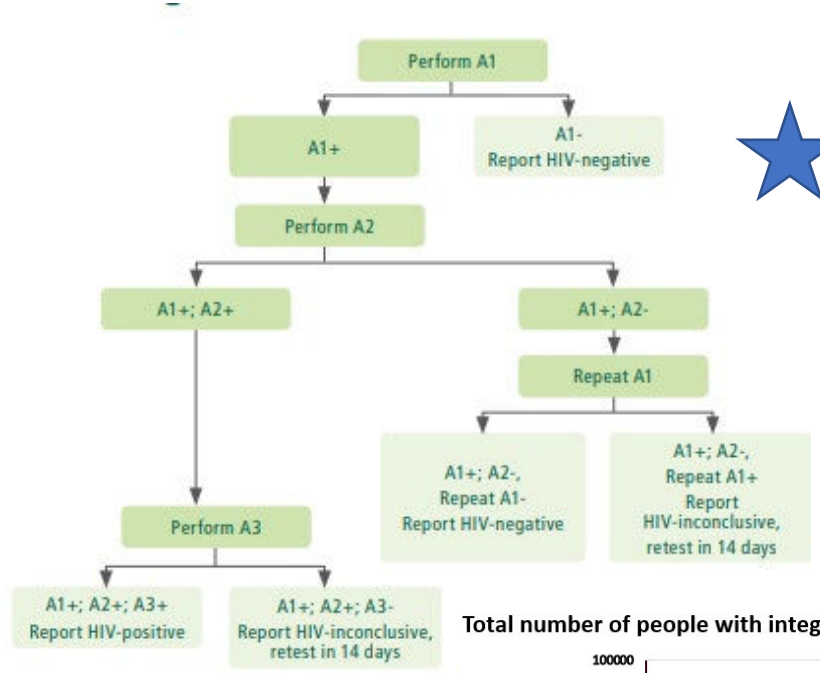
Don't forget prevention!



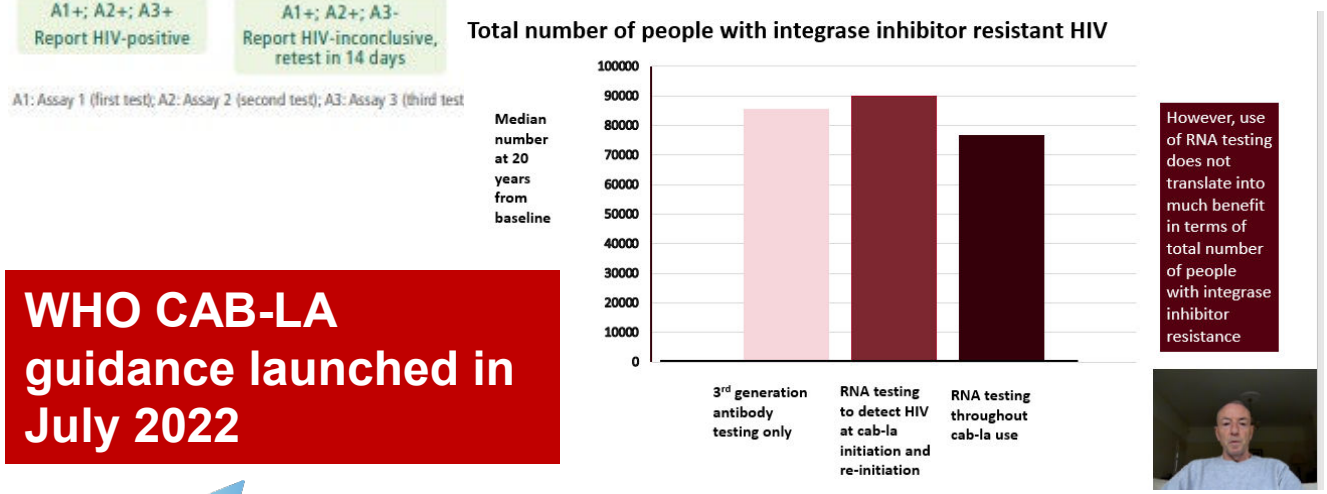
Source: WHO 2021; WHO 2019

WHO guidance on HIV testing to support CAB-LA

LINKING



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



WHO CAB-LA guidance launched in July 2022

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)

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.

Source: WHO 2022, https://www.who.int/publications-detail-redirect/9789240054097

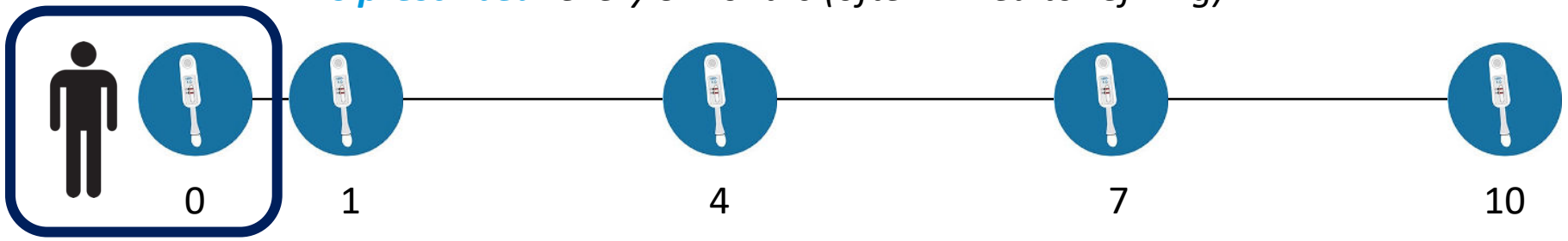
WHO guidance on HIV self-testing for PrEP delivery

LINKING

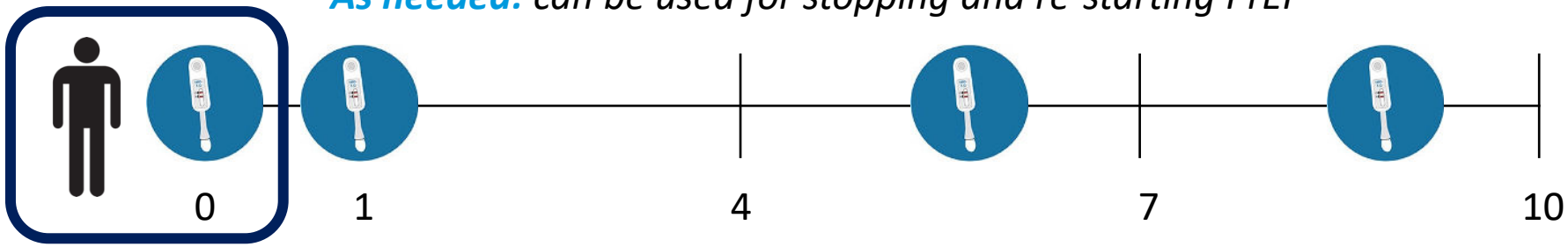
HIVST for PrEP initiation

HIVST for PrEP continuation

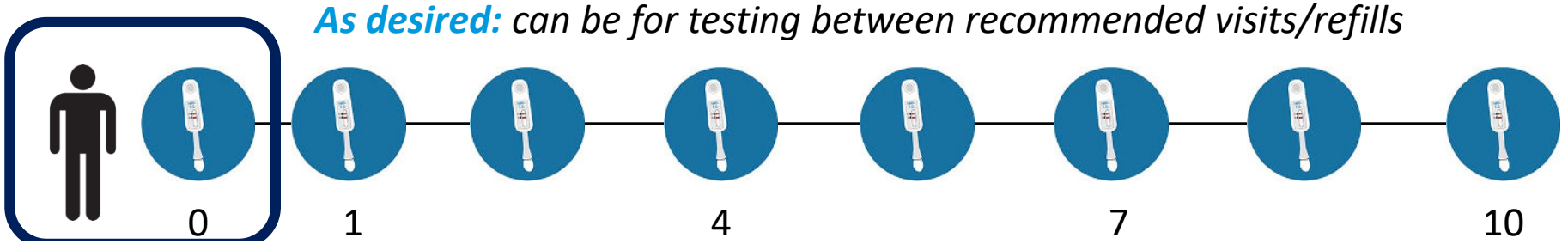
As prescribed: *every 3 months (often linked to refilling)*

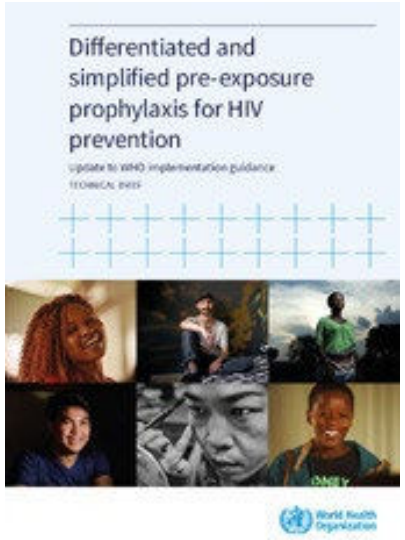


As needed: *can be used for stopping and re-starting PrEP*



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





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

Months since PrEP initiation

Slide adapted, courtesy of Katrina Ortblad

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HIVST and simplified HTS for expanding PrEP and PEP options

LINKING

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**

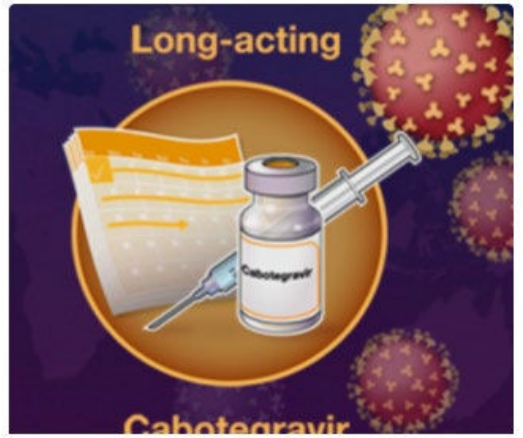
9 December 2021 | Statement

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?

LINKING

Greater recognition that linkage to care is not linear

PLOS MEDICINE

POLICY FORUM

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

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 Program 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 reconsideration 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 oversimplifies the complex cycle of engagement, disengagement, temporary disruptions, reengagement, and transitions in care experienced by many people living with HIV (PLHIV)

Limited evidence on effective strategies

AIDS and Behavior

SUBSTANTIVE REVIEW

Re-Engagement into HIV Care: A Systematic Review

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 765 references and selected 125 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. Irrespective 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 longitudinal 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

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

JIAS

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

Abstract

BMC Public Health

RESEARCH ARTICLE Open Access

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

Programmes are new

Focus on patient tracing and contact databases

HTS services not considered

World Health Organization

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

Post-test messaging good practices

LINKING

- **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

Source: WHO 2019

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?

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