

CROI 2016 Highlights on HIV testing services

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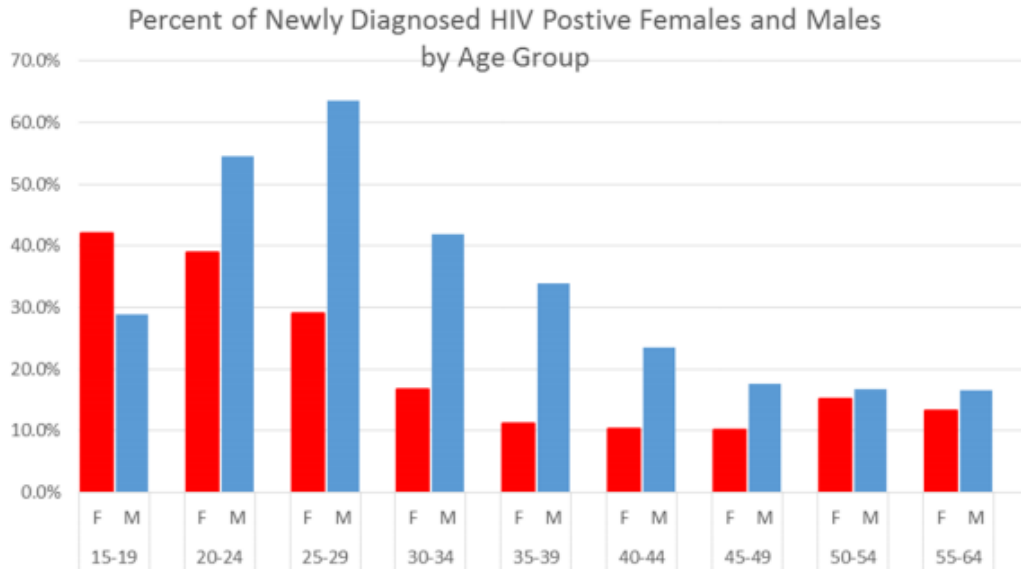


Overview

- HTS coverage and focusing to achieve 1st 90
 - Coverage
 - Index patient, couples and partner HTS
 - Reaching men
 - Migrants
 - HIVST
- Quality of HIV testing services

Coverage & Focusing HTS

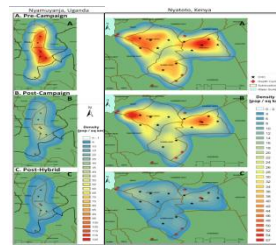
Botswana CBPP #983



HTS (n=29,658) 16-64 yrs of age

- 6,739 (23%) were identified as HIV+
- 27% (4634/16,879) women and 17% (2,105/12,779) men
- Age of highest HIV prevalence in women was 40-44 (55%) and 45-49 (40%) in men
- **Of 6739 HIV+ identified, 80% (5373) already knew their HIV+ status**
- **Need to focus on reach the undiagnosed & high risk groups**

Coverage

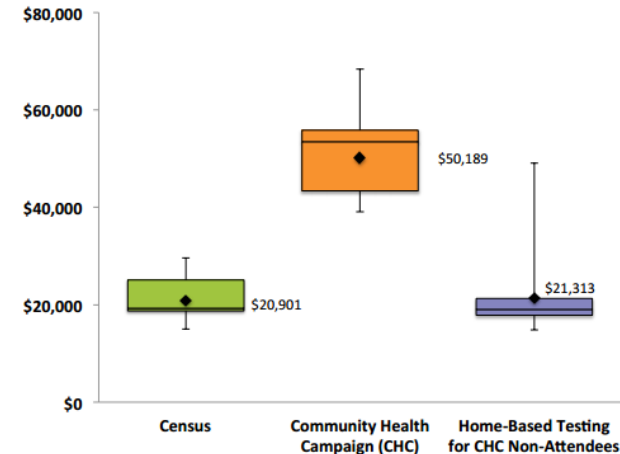


CROI #979 & 1062. Kenya/Uganda-Hybrid HTS (community census & mobilization, multi-disease campaign, home-based, men's health/urgent care & follow-up) – 88% tested \geq 1x w/ 9.7% HIV prev. in Y1 & Y2 inclu. transport, fisherfolk, & bar workers & **#892** reported improved HTS uptake for adolescents

Y1 - 94% adults HIV tested \geq 1x & HIV prev. of 9.7% & **Y2** -79% adults HIV tested (HIV-/unknown status). Reported multi-disease services contributed to high repeat HIV testing coverage (91%).

Average HTS cost per person was \$20.51 (\$17.06 – \$32.08 [SD = \$3.84]), inclu. POC CD4 at \$16 per test (represents 5-13% of total HTS cost). Cost tested at CHCs was \$13.83 vs. \$31.71 via HBT.
Cost per HIV+ \$231 (range: \$87 – \$1,245 [SD=\$336]) varied due to HIV prevalence (e.g., **HIV prevalence of 23.56% vs.1.62%**).

Figure 1. Mean cost per community by intervention component of the hybrid mobile multi-disease testing approach in 12 SEARCH communities



Definitions of Partner Notification

Passive Referral: client is encouraged to disclose HIV exposure to partner(s) by themselves

Contract Referral: client is encouraged to disclose HIV exposure to partner(s) by themselves until a specific time period, following which the provider contacts partner(s) and offers HTS while maintain anonymity of the index case

Provider Referral: provider contacts the partner(s) immediately and directly following diagnoses and interview with index-case

Assisted Partner Notification Services

Table 2: Effectiveness of aPS

Outcome	Immediate Arm(N=550 index cases)	Delayed Arm(N=569 index cases)	IRR (95% CI)
	Number (Rate per index)		
Number tested [§]	392 (0.713)	85 (0.149)	4.83 (3.66-6.39)
Number newly tested [§]	81 (0.147)	4 (0.007)	14.80 (5.35-40.93)
Number newly HIV + [§]	136 (0.247)	28 (0.049)	5.00 (3.18-7.86)
Newly enrolled in HIV Care	88 (0.160)	19 (0.033)	4.43 (2.64-7.43)

IRR=Incidence Rate Ratio. CI=Confidence Interval. IRR estimated using generalized estimating equations Poisson regression with independent correlation matrix and index cases as offset variable

[§] Number tested at enrollment in the Immediate arm compared to the number tested between Index and Partner enrollment in the Delayed arm

Effectiveness of Partner Services for HIV in Kenya: A Cluster Randomized Trial

Peter Cherutich, Matthew R. Golden, Beatrice Wamuti, Barbara A. Richardson, Kristjana H. Asbjörnsdóttir, Felix A. Orieno, Betsy Sambal, Matt Dunbar, Carey Farquhar, for the aPS Study Group



Conference on Retroviruses and Opportunistic Infections
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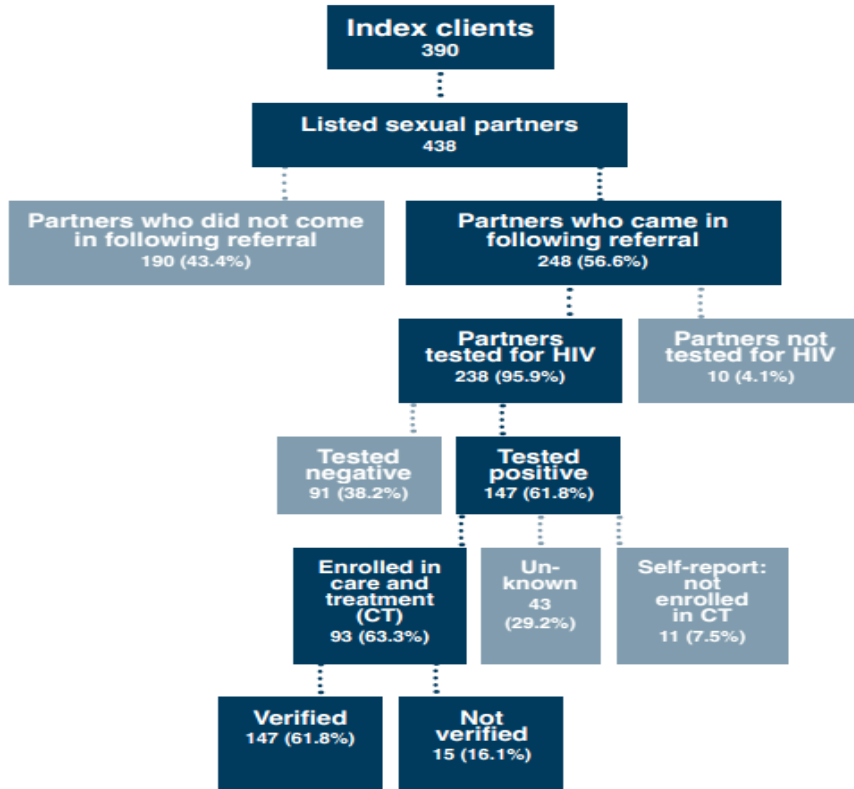
Intimate Partner Violence (IPV)

- At baseline 126 (11.3%) self-reported to be at moderate risk of IPV
 - 67(12.2%) immediate arm and 59(10.4%) delayed arm
- At 6 weeks, there were 37(3.3%) new IPV and 54(4.8%) repeat IPV
- Two of these were possibly study related
 - One in each study arm
 - However, these incidents occurred before notification of partner

Source: Cherutich et al CROI 2016

Less Assisted Partner Notification

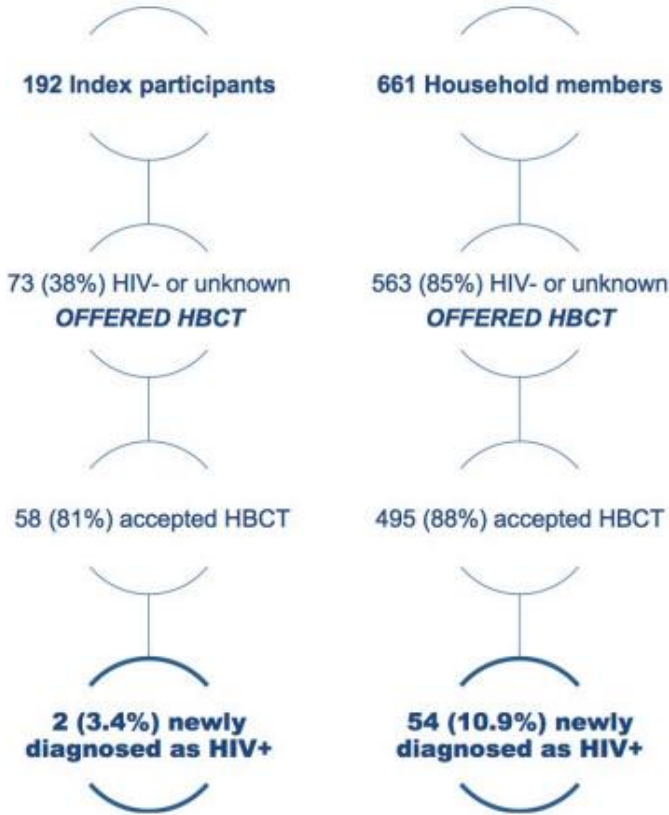
Tanzania Experience



57% of index partners successfully referred & 96% underwent HTS:

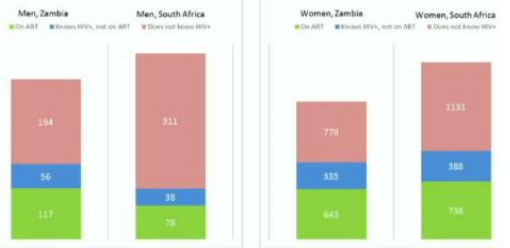
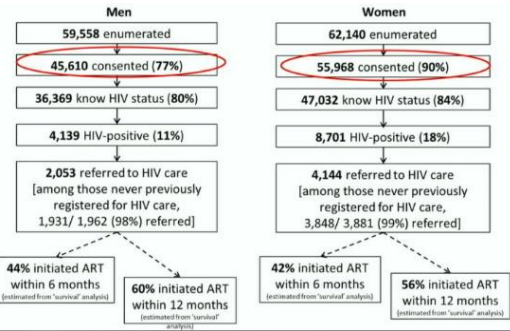
- 61.8% newly diagnosed HIV-positive
 - Male partners = 53.5%
 - Female partners = 67.9%
- 36% of partners were HIV-negative
- 63% of HIV-positive partners were enrolled into care & treatment
- No serious IPV reported

Index Patient HTS

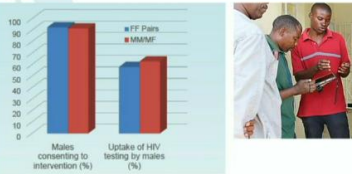


- **CROI# 988** . HB-HTS for IPs and household members reported overall new 10% HIV positivity
- 70% new diagnoses were among women & 22% (n=123) serodiscordant couples identified
- Approach was highly acceptable , advised that HBCT include support for disclosure of HIV status and importance of HIV care and treatment for all HIV+ persons.
- **CROI#1063** modelling reports that HB-HTS focused on identifying SDC & immediate ART could avert more infections than just HB HTS alone.

Where are the men?



Does having a male provider increase uptake among men?



- Overall low-uptake, PopART data reports men are less likely to know HIV+ status than women and lower consent rates.
- **“ManUp”** campaign offered (non-HIV specific services (including eye testing, VMMC)—outreach to find men where they are. Weekends and evenings had higher uptake of men
- Male provider may improve uptake—not statistically significant
- Couples and partner testing increased uptake of male partner testing in ANC and outside
- HIVST in Malawi had promising uptake among men
- Male-friendly or Male-only ART clinics to improve linkage?
- HIV services adapted to improve reach to men

Migrants

Distribution of delayed HIV diagnoses by geographical origin, EU/EEA



Reported 75% of migrant MSM and 50% of migrants acquire HIV post-migration (in Europe based on 2240 interviews)

Barriers to access HIV testing and care in migrants

Nature of barriers

- Socio-economic inequalities
- Legal
- Stigma and discrimination
- Cultural & linguistic
- Gender



HIVST

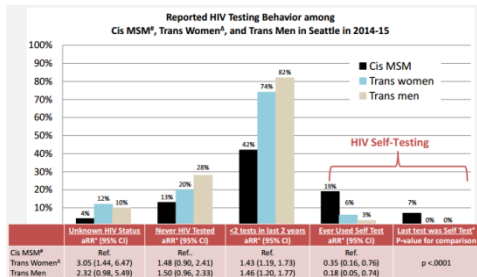
	Study group		
	Full Sample	ANC/PPC	FSW
Number of index participants completing follow-up	265	164	101
Distributed self-tests to at least one sexual partner	241 (91)	144 (88)	97 (96)
Total number of self-tests used by sexual partners *	447	144	298
Total number of sexual partners who self-tested HIV-positive	45 (10)	4 (3)	41(14)

#973 Women at (ANC, PPC) and FSW at drop-in centres provided HIVST to male partner(s) and social networks. Reported high uptake by women & male partner(s). HIV positivity 4.4% of ANC and PPC participants' male partners & 14% of FSW male partners. Sex < likely when partner tested HIV+ vs HIV - (18% vs. 62%, $p < 0.01$). Condom use among those reporting sex was > after partner tested HIV + vs. HIV - (100% vs. 44%, $p < 0.01$).

#971 trans pops viewed HIVST positively but HTS & HIVST uptake was lower compared to MSM. Important to promote HIVST for trans people.

#970 reported 52% of MSM in China surveyed purchased HIVST—most under 30 yr & 93% met sex partner online. Reported 4.5% prevalence—all cases received confirmation & diagnosed HIV+

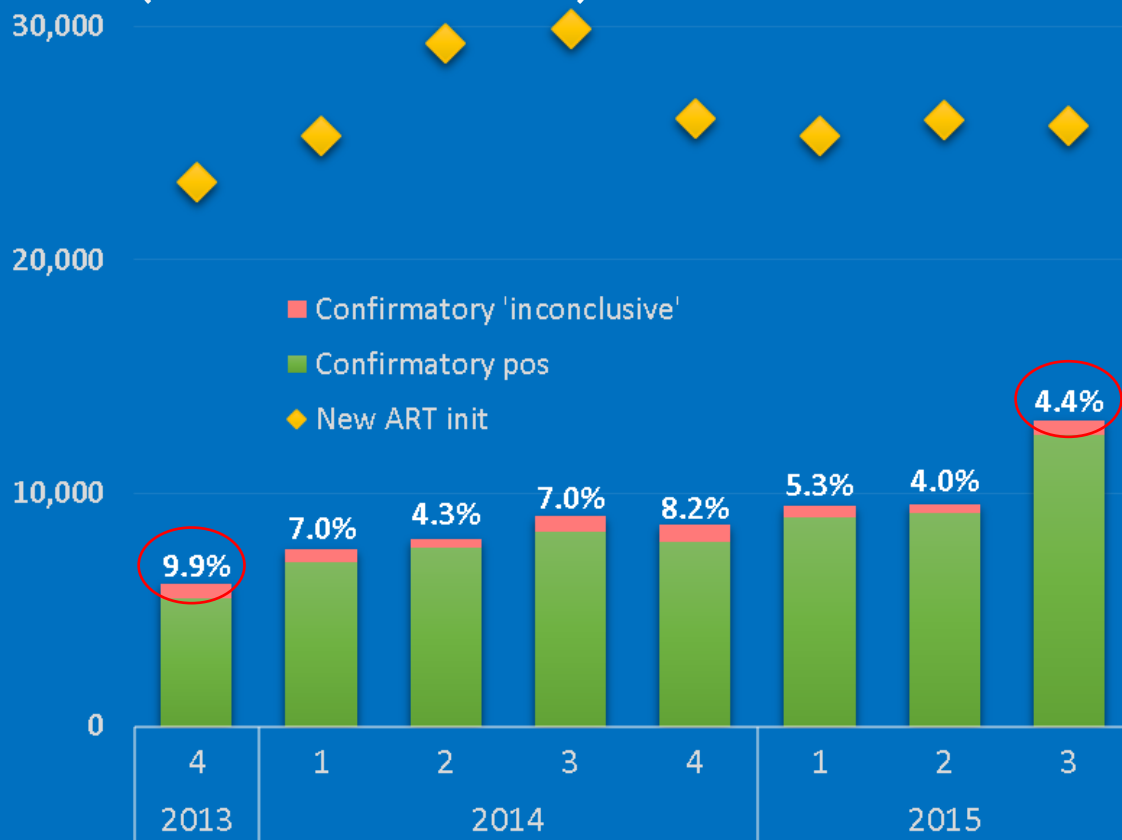
Notes: Frequencies presented with percentages in parentheses except where noted
 ANC-antenatal clinic, PPC-postpartum clinic, FSW-female sex worker.
 *-5 participants in ANC/PPC tested twice. 2 ANC/PPC participants and 15 FSW participants had indeterminate results and were not included in analyses



**Quality testing
&
Importance of retesting before ART
initiation**

Malawi Confirmatory Testing

(2nd encounter)



- 1,470 (4.6%) of 32,083 parallel tests in 'previous positives' not concordant positive (2015)
- Includes all clients with documented and/or self-reported past positive test

Source: A. Jahn CROI 2016

Weakly Reactive HIV Rapid Diagnostic Test Results Shouldn't be Reported as Positive

Background: HIV rapid diagnostic tests (RDTs) are used to detect HIV infection. However, weakly reactive results can be reported as positive, leading to false positives. This study evaluated the performance of HIV RDTs in a high-prevalence setting.

Methods: A cross-sectional study was conducted in a high-prevalence setting. HIV RDTs were performed on 1000 individuals. The results were compared with those of a reference test (Western blot).

Results: The overall sensitivity of the HIV RDTs was 98.5%. The specificity was 99.5%. The positive predictive value (PPV) was 99.5%. The negative predictive value (NPV) was 98.5%. The overall accuracy was 99.0%.

Conclusion: HIV RDTs performed well in a high-prevalence setting. Weakly reactive results should be reported as positive.

Quality testing & Retesting before ART initiation

- **CROI #513** reported “weak reactive lines” more likely to be “false positives” & confirmed HIV- in Uganda.
- **CROI #516** reported that in Mozambique of all 0.76% of PLHIV with full confirmatory retesting were reclassified HIV-negative and 0.2% had indeterminate.
- **CROI #786** in South Africa modelling reported without confirmatory EID testing, ~30% infants testing HIV+ & initiating ART could be HIV-uninfected in low-MTCT settings, & FP infants could comprise substantial fraction of program costs. Confirmation of HIV+ EID results are cost-saving compared to EID without confirmation.
- **CROI #510** in South Sudan reported high FP rate w/ EIA-testing algorithm alone. Suggests need to incorporate more specific assays in surveillance (equivalent of diagnostic algorithm) to confirm HIV status & ensure accuracy of HIV prevalence data.

Low Prevalence of HIV in HIV Diagnostic in Children Clinical Management (11)

Background: HIV infection in children is a global health problem. Early diagnosis and treatment are crucial for improving outcomes. This study evaluated the performance of HIV RDTs in a low-prevalence setting.

Methods: A cross-sectional study was conducted in a low-prevalence setting. HIV RDTs were performed on 1000 individuals. The results were compared with those of a reference test (Western blot).

Results: The overall sensitivity of the HIV RDTs was 98.5%. The specificity was 99.5%. The positive predictive value (PPV) was 99.5%. The negative predictive value (NPV) was 98.5%. The overall accuracy was 99.0%.

Conclusion: HIV RDTs performed well in a low-prevalence setting. Weakly reactive results should be reported as positive.

The Value of Confirmatory Testing in Early Infant HIV Diagnosis (EID) Programs

Background: Early infant HIV diagnosis (EID) programs are essential for reducing HIV transmission. However, false positives (FP) can be a significant problem. This study evaluated the value of confirmatory testing in EID programs.

Methods: A modelling study was conducted. The impact of confirmatory testing on the number of false positives and the cost of EID programs was evaluated.

Results: Confirmatory testing significantly reduced the number of false positives and the cost of EID programs. The cost of confirmatory testing was offset by the savings from reduced FP.

Conclusion: Confirmatory testing is a cost-saving measure in EID programs.

Evaluation of an EIA-based Testing Algorithm in Antenatal Survey Using Dried Blood Spot Specimens from South Sudan

Background: Antenatal surveys are used to estimate HIV prevalence. However, false positives (FP) can be a significant problem. This study evaluated the performance of an EIA-based testing algorithm in an antenatal survey.

Methods: A cross-sectional study was conducted in an antenatal survey. HIV EIA tests were performed on 1000 individuals. The results were compared with those of a reference test (Western blot).

Results: The overall sensitivity of the HIV EIA tests was 98.5%. The specificity was 99.5%. The positive predictive value (PPV) was 99.5%. The negative predictive value (NPV) was 98.5%. The overall accuracy was 99.0%.

Conclusion: The EIA-based testing algorithm performed well in an antenatal survey. Weakly reactive results should be reported as positive.