94% Population HIV Testing Coverage with Repeat Hybrid Mobile Testing in East Africa

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Background

- We previously reported 89% adult HIV testing coverage in 32 communities of 10,000 persons each in Uganda and Kenya using a hybrid mobile testing strategy (multi-disease community health campaigns [CHC], followed by home-based testing [HBT] for CHC non-attendees) in 2013-14 as part of a cluster-randomized HIV test and treat trial [SEARCH:NCT01864603])[1].

Study Objectives

- We repeated hybrid testing one year later and sought to determine:

1. Adult HIV testing coverage after two rounds of testing;
2. Repeat testing rates; and
3. HIV prevalence, disease stage and testing coverage in year 2 among the 11% untested in year 1 (2013-14)

Methods

Study Population

- From 2013-2014, we enumerated 146,516 stable adult (≥15 years) residents of 32 communities in eastern (N=10) and southwestern (N=10) Uganda and western Kenya (N=12) using a 2-4 week door-to-door census.
- 77,778 (53%) of the stable adults enumerated were residents of the 16 SEARCH trial intervention communities.
- "Stable" residence was defined as living in a community for ≥6 months



Figure 1. Map of the three regional sites of community enrollment in the SEARCH Trial.

1. Chamie, et al. A hybrid mobile HIV testing approach for population-wide HIV testing in rural East Africa: an observational study. Lancet HIV. 2016

Methods

- In 2014-15 (year 2), we repeated population-wide HIV testing using our hybrid approach in the 16 intervention communities.
- We offered new multi-disease services at CHCs, including urgent care and men's health education, and in Kenya, worked with the Ministry of Health to offer on-site medical male circumcision, family planning and cervical cancer screening.

Analysis

- We determined the proportion of stable adults that tested for HIV at least once during two rounds of hybrid testing (cumulative HIV testing coverage)
- We compared HIV prevalence and disease stage of adults who tested in year 2 *but not year 1* (i.e. incremental yield) vs. those tested in year 1, and
- We measured repeat testing in 3 high-risk groups: bar workers, transport workers (truck driving, motorcycle taxi driving, etc.), and fishing industry workers.

Results

HIV Testing Coverage

- **94%** (73,284/77,778) of baseline census-enumerated, stable adult residents tested for HIV at least once during two rounds of hybrid testing.
- In Year 2, we tested **79%** (59,382/75,362) of eligible stable adults (alive and HIV-/unknown) with 46,633 (79%) tested at CHCs vs. 12,749 (21%) at HBT.
- If 10,085 adults (13%) reported to have moved out of community by an informant during HBT are excluded, year 2 testing coverage was **91%** (59,382/65,277).
- Among 89,635 stable & non-stable census-enumerated adult residents, 78,534 (**88%**) have tested at least once during two rounds testing.

Results continued

Repeat HIV Testing

- Of 62,004 baseline (Year 1) stable HIV- adults eligible for repeat testing (i.e. alive in Year 2), 51,099 (**82%**) re-tested in year 2
  - 56% of baseline stable HIV- adults who tested via HBT in Year 1, came to CHCs for testing in Year 2
  - 14% of baseline stable HIV- adults who tested via CHCs in Year 1, were tested via HBT in Year 2
- In qualitative data, new multi-disease services were a motivating factor for year 2 CHC participation.



Reaching the 11% of adults untested for HIV in Year 1

- Of 8,742 (11%) stable adult residents who did not test in year 1, 4,337 (**50%**) tested in year 2 and had similar HIV prevalence to those who tested in Year 1 (Table)

Table. Comparison of HIV prevalence, and CD4 and viral load metrics among adults who tested HIV+ in Year 1 vs. adults who did not test in Year 1 but tested HIV+ in year 2.

	Adults who tested HIV+ in Year 1 (N=6,682)	Adults who did not test in year 1, but tested HIV+ in year 2 (N=421)	p value
HIV Prevalence	6,682/68,947 (9.7%)	421/4,337 (9.7%)	0.97
Median CD4+ cell count at diagnosis (IQR)	515 (356-698)	451 (292-633)	<0.001
Mean log HIV RNA (SD)	3.3 (1.3)	3.0 (1.4)	<0.001
Median HIV RNA (IQR)	2.7 (2.7-4.4)	2.7 (1.6-4.3)	<0.001

Results continued

Repeat HIV Testing of Key Populations

- Among HIV- key populations from year 1 who had not died or moved away, 95% of bar workers, 85% of transport workers, and 89% of fishing industry workers tested in both years 1 and 2.





Conclusions

- With a repeat hybrid mobile approach, we achieved near universal HIV testing coverage (94%) over 12-15 months in 16 rural communities in Kenya and Uganda.
- Offering new multi-disease services contributed to high repeat HIV testing coverage (91%).
- The hybrid mobile approach successfully reached transport, fishing and bar workers at high HIV risk for repeat testing.

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