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# Effect of a patient-centered phone call by a clinical officer at time of HIV testing or re-contact on linkage to care in rural Kenya


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## Background

- Linkage to care following HIV diagnosis is critical. Simple and effective interventions to improve linkage to care are needed for both newly HIV-diagnosed and prior diagnoses who have fallen out of care or never linked.
- SEARCH study has achieved over 90% population-level coverage of HIV testing after two rounds of annual community-wide testing
- In this setting, we tested whether a structured, patient-centered phone call from a clinical officer at time of a third round of community-wide HIV testing improved linkage to or re-engagement in HIV care among those not currently in care.

## Methods

- A nested randomized controlled trial (RCT) within the SEARCH study (NCT 01864603) during the third annual HIV testing campaign between August and December 2016.
- The RCT involved five Kenyan communities comprising approximately 5000 adults each (Nyamrisra, Ogongo, Kitare, Magunga, Kisegi) from a region with an HIV prevalence of 20.1% .
- HIV testing was done through a hybrid mobile HIV testing approach combining mobile, multi-disease community health campaigns (CHC) lasting two weeks per community with outreach delivered home-based HIV testing for those residents who did not attend CHC.
- Participants were eligible for the nested RCT if they were > *15 years of age, HIV-positive, and self-reported they had either never linked to HIV care* or *had dropped out of care for more than six months.*
- Adults newly diagnosed with HIV or known to be living with HIV but not in care were randomized to receive a phone call from a clinical officer or not.
- The phone call established a personal connection, reinforced HIV education and discussed potential linkage barriers.
- Participants in both arms received counseling and a linkage transport voucher.
- We compared the proportion linking by 7 and 30 days between intervention and control arms using Pearson chi-square tests and evaluated predictors of linkage using multivariable logistic regression.

## Results:

Table 1: Characteristics of 130 adult participants randomized to receive a phone call or not

| | Total n=130(100%) | Intervention n=68(52.6%) | Standard n=62(47.4%) | p-value |
|---|---|---|---|---|
| **Sex** | | | | |
| Male | 35(26.9%) | 18(26.5%) | 17(27.4%) | 0.903 |
| Female | 95(73.1%) | 50(73.5%) | 45(72.6%) | |
| **Age** | | | | |
| Median (IQR) | 31 (27, 40) | 30(26-41) | 31(27-38) | |
| 15-24 | 26(21.5%) | 15(23.9%) | 11(18.8%) | 0.577 |
| 25-34 | 62(42.3%) | 30(42.3%) | 32(51.6%) | |
| 35-49 | 28(21.5%) | 17(25.4%) | 11(17.2%) | |
| >=50 | 14(10.4%) | 6(8.5%) | 8(12.5%) | |
| **Marital status** | | | | |
| Married | 94(72.3%) | 53(77.9%) | 41(66.1%) | 0.284 |
| Single | 15(11.5%) | 7(10.3%) | 8(12.9%) | |
| Widowed, Divorced, Sep | 21(16.2%) | 8(11.8%) | 13(21.0%) | |
| **Phone Contact** | | | | |
| Yes | 27(20.8%) | 15(22.1%) | 12(19.5%) | 0.704 |
| No | 103(79.2%) | 53(77.9%) | 50(80.5%) | |
| **Education** | | | | |
| None | 8(6.2%) | 4(5.9%%) | 4(6.5%) | 0.806 |
| Primary | 98(75.3%) | 50(73.5%) | 48(77.4%) | |
| Secondary and above | 24(18.5%) | 14(20.6%) | 10(16.1%) | |
| **HH Member in care** | | | | |
| Yes | 37(24.6%) | 20(29.4%) | 17(27.4%) | 0.801 |
| No | 93(75.4%) | 48(70.6%) | 45(72.6%) | |
| **Occupation** | | | | |
| No Job | 24(20%) | 14(21.1%) | 10(18.8%) | 0.746 |
| Informal-High risk | 38(28.2%) | 20(28.2%) | 18(28.1%) | |
| Informal-Low risk | 62(47.4%) | 32(47.9%) | 30(46.9%) | |
| Formal | 6(4.4%) | 2(2.8%) | 4(6.3%) | |

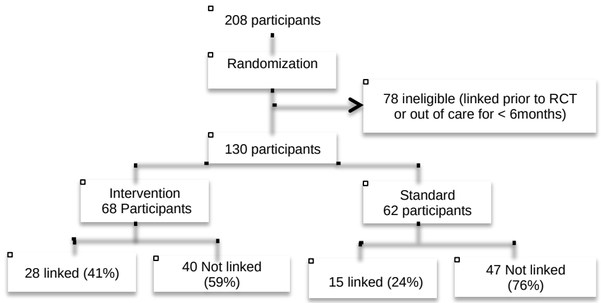



Figure 1: Study profile of 208 participants recruited into the study with the final linkage outcomes by 30 days of the interventions.

- **68% were newly diagnosed with HIV and 32% had prior diagnoses but were not currently in care**

| Outcome at: | Study arm | No. Linked/No. in arm (%) | Difference (95% CI); p-value |
|---|---|---|---|
| 30 days | Intervention | 28/68 (41.2%) | 17.0% (0.61%, 31.4%); **0.046** |
| | Control | 15/62 (24.2%) | |
| 7 days | Intervention | 24/68 (35.3%) | 15.1% (0.48%, 29.6%); **0.048** |
| | Control | 12/62 (19.4%) | |

Table 2:Difference in probability of linkage between participants who received the phone call and those who did not.

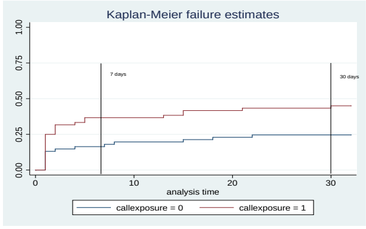



Figure 2:Kaplan-Meier estimates of the probability of linkage over time for 130 participants randomized to the intervention of receiving a clinical officer phone call at time of HIV-testing or re-contact (red) or the control (blue).

- **Participants in the intervention arm were more likely than those in the control to link to care by 7 days (35% vs. 19%, p=0.046) and 30 days (41% vs. 24%, p=0.048).**
- **Younger people (<35years vs. >35 years) (aOR 0.32; 95%CI 0.12-0.88; p 0.027) and individuals from households that did not have anyone else in active HIV care, (aOR 0.33; 95%CI 0.11-0.97; p 0.045) were less likely to link to care within 30 days of testing**

## Conclusions

- **In a setting where >90% of the population had been previously tested for HIV, a single structured, patient-centered phone call from a clinical officer shortly after HIV testing or re-contact significantly improved linkage to care.**
- **Nevertheless, the proportion linking to care in this hard to reach population remained below 50% at 30 days.**
- **Thus, innovative interventions in addition to this low-cost intervention are needed to facilitate linkage to care, especially among hard-to-engage individuals such as youth and those known to be living with HIV but who have not previously linked to care, groups that comprise an increasing proportion of those living with HIV but not yet in care.**


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