Uptake and linkage to care after HIV self-testing for partners at antenatal care services in Uganda

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Grantee Final Report

Accepted by 3ie: February 2019

Note to readers

This impact evaluation has been submitted in partial fulfilment of the requirements of grant TW2.2.28 issued under Thematic Window 2. This version is being published online as it was received. A copy-edited and formatted version will be available in the 3ie Impact Evaluation Report Series in the near future. All content is the sole responsibility of the authors and does not represent the opinions of 3ie, its donors or its board of commissioners. Any errors and omissions are the sole responsibility of the authors. All affiliations of the authors listed in the title page are those that were in effect at the time the report was accepted. Any comments or queries should be directed to the corresponding author, Rhoda Wanyenze at rwanyenze@musph.ac.ug.

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Suggested citation: Wanyenze, R, Buregyeya, E, Matovu, J, Kisa, R, Kagaayi, J, Vrana-Diaz, C, Malek, A, Musoke, W, Chemusto, H, Mukama, S and Korte, J, 2019. *Uptake and linkage to care after HIV self-testing for partners at antenatal care services in Uganda, 3ie Grantee Final Report.* New Delhi: International Initiative for Impact Evaluation (3ie).

Funding for this impact evaluation was provided by 3ie's donor, the Bill & Melinda Gates Foundation.

Acknowledgements

We acknowledge the International Initiative for Impact Evaluation (3ie) for funding this evaluation. The Uganda Ministry of Health (MOH) provided support during planning, study implementation, and led the dissemination of the findings to stakeholders. The MOH was instrumental in facilitating an easy and quicker uptake of study results for policy use, especially following release of policy on HIV self-testing by the World Health Organization, and subsequent need for adoption of these policy guidelines by Uganda. The districts and government health facilities that participated in this study provided adequate support in mobilizing health workers to work with the study teams, to implement this evaluation. Mildmay Uganda (MUg) teams at the district level are appreciated for facilitating a smooth entry into the study districts and health facilities, which enabled a smooth roll out of the evaluation. The MUg team together with the health facilities provided stand by counselors trained in counseling and support for gender-based violence.

Special thanks go to the research team from Makerere School of Public Health, Mildmay Uganda, and the Medical University of South Carolina for working very hard to ensure that this evaluation was well-done. The study coordinator, counselors and research assistants, who ensured that study procedures were followed, and data collected appropriately, and health workers at the three antenatal units are equally appreciated.

Finally, the study participants who consented to participate in this study, women and their partners are greatly appreciated.

Summary

Couple testing is a critical intervention to the attainment of the United Nation's 90–90–90 targets towards ending HIV by 2030. However couple testing was only at 16% in Uganda in 2011 (Byamugisha et al. 2011). The WHO strongly recommends HIV self-testing (HIVST) as an approach with potential to improve uptake of couples and partner HIV testing (The World Health Organization 2016). In this study we proposed to deliver HIVST kits to partners through pregnant women at antenatal care (ANC) to eradicate several supply and demand barriers to couple testing.

Methods

We implemented a phased cluster randomized controlled trial among pregnant women attending ANC in Mpigi Health Centre Level 4 (HCIV), Entebbe and Nakaseke Hospitals to 1) determine the uptake of HIV testing in the male partner; and 2) assess the linkage to care among HIV positive partners across the two study arms. We randomized clinic days to intervention or control. Women in the control arm were given health education and encouraged to bring their partners to test at the facility. Women in the intervention arm were additionally given HIVST kits to deliver to their partners. We conducted structured interviews with women at baseline, month one and month three post-enrolment and with the men at one month and three months post women's enrolment. We also conducted a long term follow up sub study on HIV positive men and discordant couples at six and up to 24 months post enrolment. The primary outcomes were self-reported HIV testing, linkage to care post-test as defined by self-reported registration at an HIV clinic, and strategies for coping with discordant status reported by either the woman or male partner across Month 1 and 3 follow-ups; and up to 24 months respectively. We conducted key informant interviews with health care providers and in-depth interviews with selected women, their male partners, family members, HIV positive men and discordant couples who used the kits. We collected cost data to estimate the cost impact of HIVST relative to public health benefits, and the corresponding cost to the medical system required to test an additional partner and detect each additional case of HIV. All primary outcomes were based on intention-to-treat.

Results

We recruited a total of 1618 women; 333 women in 59 clusters (20.6%) from Nakaseke, 558 women in 108 clusters (34.5%) from Mpigi, and 727 women in 180 clusters (44.9%) from Entebbe. The mean age (SD) for the pregnant women was 25.2 (SD=5.5) years and the majority were cohabiting (1,258 of 1,618, 79.0%). The male partners' mean age (SD) was 32.2 (SD=8.1). Overall, the intervention and control randomized groups were comparable, with no statistically significant differences observed between groups besides male religion, which may be due to small sample sizes in certain categories.

We observed a dramatic increase in male partner testing in the intervention arm, with nearly four times higher proportion of male partners testing. Overall, considering reports of testing from either the women and men's reports across month one and month three, 626 out of 816 (76.7%) tested for HIV in the intervention group versus 278 out of 742 (37.5%) in the control group.

Furthermore, 562 (73.3%) in the intervention arm tested as couples compared to 186 (30.8%) in the control arm. Over the entire follow-up period, based on the woman's and man's report, 42 HIV positive men were identified in the intervention and 11 in the control group. Based on Month 1 and Month 3 follow-up, we observed 10/42 men in the intervention and 5/11 in the control group linked to care, respectively (p=0.09). In extended follow-up in Phase 3 of the study, focusing on men who tested positive in the intervention arm, we found that 21/42 men eventually went for confirmatory testing.

***Qualitative results**:* We conducted eighty-five qualitative interviews to explore six thematic areas: a) motivation to test; b) anticipated fears and barriers to HIVST; c) strategies used by women in delivering HIVST kits to their partners; d) experiences in using HIVST kits; e) social consequences of HIVST; and f) positive outcomes/benefits of HIVST. Although women initially had fears about how to introduce the HIVST kits to their partner, they affirmed that the kits encouraged men to test for HIV and helped the women to learn their male partners' HIV status. They and their partners found it easy to use the kits but were also sceptical about the ability of a simple test kit to test for HIV. Women who enjoyed a good relationship with their partners introduced the kits on the same day but many women took some time to consider innovative strategies to use. HIVST was reported to increase the number of men escorting their wives to the health facility and testing for HIV, besides improving the quality of their relationships.

In phase 3, we conducted 25 in-depth interviews to explore coping mechanisms of HIV discordant couples after learning about their HIV discordant status and seven (7) in-depth interviews to explore factors that facilitated or inhibited HIV-positive men from linking to HIV care. Our findings on coping mechanisms show that although individuals in HIV discordant relationships were initially scared of separation; no separation happened as anticipated. Also, although some participants had developed suicidal ideations, no suicides were reported. Two main factors enabled individuals in HIV discordant relationships to cope with their HIV sero-discordance: a) post-test counseling support from health professionals and b) psycho-social support from relatives and close friends.

With regard to linkage to HIV care, we found that post-test counseling played a key role in supporting initiation and retention in HIV care among those that were still in care at the end of the follow-up period. However, lack of HIV status disclosure to sexual partner was a deterrent to continued retention in care among those that had initiated HIV care. HIV-positive men that did not link to HIV care cited two main reasons for their failure to do so: a) they were not yet ready to commit to life-long antiretroviral therapy – influenced by misconceptions about antiretroviral therapy from their close friends (e.g. that taking HIV drugs makes one to become fat and black); and b) the feeling that they were still healthy and did not need to initiate HIV treatment at the time. This last observation coincides with men's beliefs that health care-seeking, when one is still strong, projects men as weak and less resilient. This keeps men away from HIV treatment programs until they have developed advanced HIV disease.

Costing results

The total cost of the intervention was $15,717.27 and $5,826.1 for the control. In the intervention arm, the biggest cost driver was HIV self-testing kits (60.2% of the total cost)

followed by above-site costs (20.6%) of the intervention while above-site costs were the biggest cost driver in the control arm (55% of total cost) followed by facility personnel time costs (27% of total cost).The cost per partner tested was $30.3 for the intervention and $31.2 for control, while the cost per HIV-infected person identified was $462.3 for the intervention and $582.6 for the control. Comparing intervention to control, the incremental cost per additional partner tested (incremental cost-effectiveness ratio (ICER) was $29.8 and the ICER per additional partner testing HIV-positive was $412.1. In the sensitivity analysis, reducing the unit cost of self-testing test kits by half reduced cost per partner tested, and cost per HIV-positive partner identified, by 30% (to $21.2 and $323.3, respectively). The ICERs of partner testing and identifying HIV-positive partners were reduced by 48% (to $15.6 per extra person tested and $215.3 per extra HIV-positive person identified). The ICER for identifying HIV-positive partners and cost per HIV-positive person identified were also sensitive to the proportion of partners who tested HIV-positive. Doubling this proportion reduced the ICER and cost per HIV-positive partner identified by another 50% (ICER = $107.6 per incremental HIV-partner identified).

The costing results are based on phase one data; we did not collect any additional follow-up costing data in the subsequent phases.

Conclusion

Our results demonstrate an enormous increase in partner and couple HIV testing when oral self-testing is available at home. However, our results do not show that men testing positive through HIVST are as likely to link to care in comparison to men who test positive at a clinic. We recommend that the government consider this model of HIVST as an effective approach to improving male and couple testing. We further recommend additional interventions to enhance linkage to care for partners who test HIV positive through HIVST. Reducing the cost of test kits and targeting the intervention to settings with higher HIV prevalence is important for cost-effectiveness of HIVST.

Contents

List of figures and tables

Abbreviations and acronyms

AIS	AIDS Indicator Survey
AIDS	Acquired Immune Deficiency Syndrome
ANC	Antenatal Care
ARVs	Anti-Retroviral Drugs
CAO	District Chief Administrative Officers
DHT	District Health Teams
DHOs	District Health Officers
HCT	HIV Counseling and Testing
HTS	HIV testing Services MOH: Ministry of Health
HIV	Human Immune Deficiency Syndrome
HIVST	HIV Self-Testing
Mug	Mildmay Uganda
PCR	Polymerase Chain Reaction
PITC	Provider Initiated Testing and Counseling
PMTCT	Prevention of Mother To Child Transmission.
UNAIDS	Joint United Nations Program on HIV/AIDS
VHT	Village Health Team
WHO	World Health Organization

Section I. Introduction

Uganda is one of the three countries that accounts for 48% of all new HIV infections in sub-Saharan Africa (UNAIDS 2014). Twenty-one countries, including Uganda, are committed to a global plan to eliminate HIV by 2030 and the United Nations 90–90–90 targets towards ending HIV. The first 90% is focused on ensuring that all people with HIV know their status by 2020, however, testing remains low among certain populations, including men (UNAIDS 2016). HIV transmission from mother to child is the second most common route of HIV infection after heterosexual transmission in Uganda (Uganda Ministry of Health et al. 2011). However, only 8% of pregnant women attending ANC tested HIV positive in 2014 (Uganda AIDS Commission & Uganda Ministry of Health 2015). Furthermore, couple testing is only at 16% (Byamugisha et al. 2011), and partner testing has remained persistently low over the years, even though studies have reported that pregnant women who are aware of their partner's HIV status have beneficial outcomes including improved prevention of mother to child transmission (PMTCT) and higher rates of health facility delivery. Therefore, approaches that increase uptake of HIV testing services (HTS) among partners of pregnant women may improve PMTCT and other maternal health outcomes.

The World Health Organization (WHO) has recommended HIV self-testing (HIVST) as an approach with the potential to improve uptake of couples and partner testing services (The World Health Organization 2016), acting as an entry point into couples or partner HTS. HIVST refers to a process in which a person collects his or her specimen (oral fluid or blood), performs a test, and interprets the result, often in private or with someone they trust (The World Health Organization 2015). It is an emerging approach that can extend HTS to people who may be unable or reluctant to attend existing HTS and to people who frequently retest (The World Health Organization 2016). HIVST could reach individuals at high risk for HIV infection who experience barriers to the conventional HTS, since HIVST offers a private, autonomous and confidential alternative to facility-based tests (Mavedzenge et al. 2013).

1.2 Study justification

Although WHO and the Uganda PMTCT policy recommend couples and/or partner HIV testing at ANC, couple testing through provider initiated testing, and counseling for pregnant women (Matida et al. 2011; Hensen et al. 2012; World Health Organization 2007), only 16% of couples have been tested together (Byamugisha et al. 2011). This HIVST study is positioned to provide strong and timely evidence to inform the national and global HTS guidelines. The revised Uganda HIV testing policy guidelines, which were launched in January 2017, recommend HIVST only under study and pilot projects and indicate a need to make adjustments to these provisions based on findings from ongoing studies including this ANC partner testing study (Uganda Ministry of Health

2010). Findings from this pilot could thus inform decisions on HIVST and adjustments to the new policy. Furthermore, Uganda is faced with scarcities in human resources for health, and HIVST could substantially reduce the burden on health care workers to reach and test the male partners and other family members of ANC clients.

1.3 Primary research hypothesis

We hypothesised that the intervention group (HIVST) would have significantly higher male partner testing rates than the comparison group.

1.4 Study objectives

There were 5 research objectives: 2 were primary and 3 secondary.

Primary objectives

1. To determine the uptake of HIV testing and the number of new HIV infections identified in the two study arms
2. To assess the linkage to care among HIV positive partners across the two study arms.

Secondary objectives

3. To assess the acceptability of partner/couple HIV-self testing among HIV positive and negative women attending ANC (document proportion of women accepting to take the HIVST kits home, those that eventually deliver them, partners/family members testing; HIV positive partners/family members receiving confirmatory HIV testing).
4. To document the disclosure rates and positive/negative outcomes (positive outcomes including partner support for women and negative outcomes including social harms) of partner HIV testing across the two arms
5. To determine the cost-effectiveness of HIVST for male partner testing during ANC

2.0. Section II. Background

Uganda is among the 22 high-HIV burden countries, accounting for 90% of pregnant women needing antiretroviral drugs (ARVs) for prevention of mother to child HIV transmission (PMTCT) (World Health Organization 2011). The standard of care in Uganda does not yet include HIVST, but includes a universal opt-out system for clinic-based rapid HIV testing by women enrolled in antenatal care. Over 90% of women agree to receive HIV testing services in ANC (Mumtaz et al. 2013; Uganda AIDS Commission 2011). HIV testing services in couples and partners increases HIV testing among men, reduces the risk of HIV acquisition and transmission by pregnant women and their partners (Msuya et al. 2008), improves women's and infant's utilization of services (Bajunirwe & Muzoora 2005), and retention in care and adherence to antiretroviral drugs (ARVs) (Conkling et al. 2010). Men play an important role in terms of women's risk of acquiring HIV (Msuya et al. 2008), and prevention, in terms of condom use in the couple relationship (Farquhar et al. 2004; Desgrées-Du-Loû et al. 2009). Men also play a role in women's utilization of services, including testing for HIV (Maman et al. 2001; Bajunirwe & Muzoora 2005; Baiden et al. 2005; Peltzer et al. 2008) and obtaining the follow-up results (Peltzer et al. 2008). Male partners influence women's treatment decisions, regarding delivery in a health facility and whether she receives medication and adheres to it (Conkling et al. 2010; Peltzer et al. 2008). Thus, involvement and testing of male partners enhances the outcomes for women and their infants.

In addition, partner testing is an efficient and effective way of identifying additional people with HIV, who also can benefit from treatment. Couples and partner HTS help more people know their HIV status, particularly men, who in generalized epidemic settings are substantially less likely to test than women. Thus, mothers attending antenatal care (ANC) are encouraged to bring their partners to be tested. However, in countries with high HIV prevalence, Uganda inclusive, HIV testing rates for men are generally lower than for women, because HTS is conducted mainly at ANC and other clinics, where the routine offer of HIV testing is generally the norm (The World Health Organization 2015). In most countries the proportion of couples and partners who test together is less than 20% (World Health Organization 2014).

This study was implemented in three Mildmay Uganda supported health facilities: Entebbe and Nakaseke hospitals, and Mpigi HC IV in the central region of Uganda. Uganda is located in the East African region, bordering Kenya in the east, Tanzania and Rwanda to the south, South Sudan to the north and the Democratic republic of Congo to the west (UNAIDS 2014). The HIV prevalence in Uganda is 7.3% in the general population, 8.3% among women and 6.1% among men. The central region of Uganda has a higher overall HIV prevalence of 10.9%.

2.1 The HIV self- testing intervention

This pilot intervention involved delivery of HIV self-testing kits to partners through eligible pregnant women, who received ANC services at the 3 study sites. ANC clinic days were randomly allocated to two arms: arm one (standard of care), which included education for women to encourage their partners to test at the health facility; and arm two (intervention), which included providing women up to 4 HIVST to deliver to their male partners and other adult family members in the household. While the primary study outcome was male partner testing, we also collected information on testing by other adult members of the household.

Arm 1 (standard of care): As the women waited to receive health services, facility staff provided routine health education about encouraging their partners to come for HIV testing. We conducted screening to identify eligible women for the study. We conducted baseline interviews with eligible women who consented as they waited for clinicians' review. At month one and three post-baseline assessment, we conducted follow up interviews with both the women and their male partners.

Arm 2 (HIVST): On top of the general health education, women in this arm were provided with additional information on HIVST. We gave each woman one to four kits depending on how many adults, including their sexual partner, lived in their house. We conducted follow up interviews at month one and three to assess the use of kits and do confirmatory testing.

We conducted study activities in two phases: Phase 1, planning and preparatory phase, and Phase 2 project implementation as described below.

Phase 1: Planning and preparatory phase

a) Adaptation of HIV self-testing protocols;

While engaging the facility nurses at each of the facilities, the study team developed data collection tools, reviewed the ANC clinic flow and identified stages for integration of the HIV self-testing study.

Development of HIV self-testing materials: The study team worked with the HIVST manufacturer, MUg and the MOH to develop education and information materials to be used for HIV self-testing by the study participants. We included the following information in the materials: main modes of HIV transmission; the value of HIV testing; and what they should do if they have a negative or positive HIV test, including confirmatory testing, evaluation, and linkage to care in the event of a positive self-test. We translated the study materials into Luganda, the local language in the study area.

Identification of the study/data advisory board: The study team conducted stakeholder analysis to identify new and already identified stakeholders. The stakeholders formed the advisory board for the study.

Stakeholder engagement: we conducted a series of meetings at the national, district, and facility levels. The objectives of the meetings were to promote government buy-in through MOH, and also to facilitate entry into the districts and facilities. Stakeholders who participated in the meetings included: MOH and district health teams including district health officers, district elimination of mother to child transmission (eMTCT) and village health team focal persons, health facility in charge, hospital superintendents, and MOH representatives from the AIDS control program (particularly those coordinating eMTCT and HIV counseling and testing services).

Orientation of staff and all health workers at the selected health facilities: the study team oriented health facility staff including nurses and midwives on the HIV self-testing intervention to ensure that all health workers at the facility were competent in supporting implementation and follow up of study participants.

Staff recruitment and training: we recruited one study coordinator to lead coordination and implementation of study activities across sites. We recruited three site coordinators, who doubled as midwives and trained counselors for the study, and 9 research assistants at the start of the study. We recruited three more research assistants to support follow up activities due to overlap between recruitment and follow up.

C.3: Phase 2 (project implementation)

This phase involved screening participants for eligibility, recruiting women and men into the study, and conducting month 1 and month 3 follow-ups. Screening and selection of participants eligible for the study: Together with the health workers at the ANC, all pregnant women received health education on arrival at ANC clinic. The nurse informed the women about the ongoing study focused on partner HIV testing. As the women waited for their clinical examination, both old and new ANC attendees were screened for eligibility.

We administered baseline interviews to all eligible women who consented to participate. We obtained a list of household members from all women in the intervention arm to determine the number of adults in the household and hence the number of kits to give the woman. HIV self-testing procedures and information, test kits and pre- as well as post-test information, and referral resource lists for women in the intervention arm, and a month one follow-up date for the woman and partner were provided. Women allocated to the intervention arm watched a video translated in Luganda (the commonly spoken language in central Uganda) which displayed HIV self-testing procedures. The video was used to enhance the woman's perception of the HIVST procedures and enable her to explain to her partner and other adults in the household. A month one follow-up date was provided to the women and their partners in the standard of care arm.

In this phase of the study we also conducted follow-up interviews at month one and month three.

2.2 Polymerase Chain Reaction sub study

At the month-1 follow up visit (which may have been some weeks after the test was performed, and well outside the approved window for reading the test), we asked each HIVST participant to bring the used test kits back to the clinic. As part of the questionnaire, we asked participants to inspect the used kit and interpret the test result displayed on the result window of the test device. The interviewers also recorded their own reading of the used test kit result. We interpreted results as negative if only one "control" band was displayed, positive if two bands ("control" and "test") were displayed however faint the test line may have been, and invalid if it could not be interpreted. All those individuals whose kits had two bands were noted and sent for a confirmatory test using the rapid blood test.

At the month-1 follow up visit, some used test kits showed weak positive "test" bands indicating HIV positivity. In many cases the participant had read the tests as negative when they had first performed the test. The majority of the confirmatory test results conducted on participants with weak bands were negative. This discrepancy was attributed to either user error or the kit. Recognizing the importance of correct diagnosis for these individuals, and the importance of understanding the differential performance of the HIV testing systems, we prepared a list of individuals with weak positive bands on HIVST and held engagement meetings with the Uganda national health laboratory services team with the help of MOH. In order to capture the individual's experiences and allow a direct comparison between testing modalities, we designed a PCR sub-study in which we planned to re-contact participants with weak positive bands on HIVST. In this PCR sub-study, we tested three methods simultaneously: HIVST, standard of care rapid testing, and using a blood sample for PCR gold standard testing.

Re-contacting of participants

Using the study tracking forms, we retrieved the telephone numbers of all participants whose kits had weak bands (whether or not they had interpreted the results as positive or negative). The study team designed two separate messages (one to use over the phone and another at the facility) and a checklist for the PCR sub-study. Both messages were translated to Luganda to maintain uniformity. Site coordinators assigned to the 3 study sites underwent a one-day refresher training to familiarize themselves with the scripts and checklist. We reached out to all participants with telephone contacts and made appointments for re-testing and brief interviews.

Procedures for re-testing

While at the facility, we offered the participant more information about the objective of the study, and asked the participant how they stored their kits after the initial test. This

was followed by a repeat oral self-testing under the observation of the trained site coordinator who also doubled as counselor.

After reading the oral self-testing results, the participant was led to the laboratory for a rapid blood-based HIV test following the national algorithm. A laboratory technician drew one blood sample to use for the rapid test as well as the DNA/PCR test. Clearly labelled samples were delivered to the National Laboratory using hub riders after two days of sample collection for upcountry sites, and every day for Entebbe Hospital.

2.3 Study extension to oversample HIV positive women

In the preliminary analysis of phase 1 results, the number of male partners of HIV positive women reached was too small (32/77 (41.6%) to permit meaningful statistical comparisons. With support from the International Initiative for Impact Evaluation, the study was extended for seven months - from November 2017 to June 2018 to over-sample HIV positive participants to increase the number of positives and increase power to assess linkage to care across the two study arms. The request to extend the study was approved by Makerere University School of Public Health Higher Degree research and ethics committee.

Procedures for the extension

In line with the initial study procedures, we enrolled an additional 104 pregnant women (84 HIV-positive and 20 HIV-negative) in this extension to increase the number of index HIV-positive women. This increased the sample size for the intervention arm from 777 to 847 and from 737 to 771 in the control arm. We recruited 20 HIV-negative women to reduce stigmatization that might have resulted from enrolling only HIV-positive women. We conducted structured interviews with 104 pregnant women at baseline, 1-, and 3-months post-baseline, and with their male partners at 3-months after enrolment of the women. Quantitative data was collected using hard paper copies and later entered in REDCap.

2.4 Study extension to assess long term linkage to care for HIV positive men and coping among discordant couples who self tested for HIV

Results from phases 1 and 2 demonstrated potentially poor linkage to care among male partners who self-tested for HIV. This poor linkage to care was partly attributable to the short follow up period which characterized phase one and two sub-studies. While the scientific literature is very sparse on the subject of linkage to care among individuals using HIV self-testing, we expected linkage to care to increase over time, underscoring the importance of a longer follow-up period to accurately determine linkage to care for HIV positive men who self-tested.

Qualitative findings from a formative study conducted prior to the implementation of the current trial indicated that participants were scared that HIV self-testing could result in

marital instability due to the absence of pre- and post-test counseling, especially if one of the partners was HIV-positive (Matovu et al. 2017). Previous studies have also found that marital dissolution is more likely to happen in HIV-discordant couples than in concordant HIV-negative or concordant HIV-positive couples (de Walque & Kline 2012). While we saw only minor incidents of marital instability among couples enrolled into the HIV self-testing study in phases 1 and 2, we anticipated that HIV-discordant couples that self-tested for HIV could have experienced challenges in ensuring marital stability compared to other types of couples. Furthermore, greater challenges were also anticipated where the female partner was HIV-positive than those in which the male partner was HIV-infected. These observations informed the need to conduct longer-term follow-up of couples in HIV discordant relationships.

All men who tested positive on HIV self-testing as well as HIV discordant couples were identified and extracted from the main phase 1 and 2 databases. Using information from the clients' tracking forms, we sought to identify and interview all HIV positive men and HIV-discordant couples who were enrolled in phases 1 and 2 to determine their linkage to care, and explore their coping mechanisms following HIV self-testing. Couples that were found to have coping issues were referred to organizations that deal with domestic violence-related challenges.

We collected quantitative data using interviewer administered questionnaires, while we used in-depth interview guides to collect qualitative data.

2.5 Theory of change and key assumptions

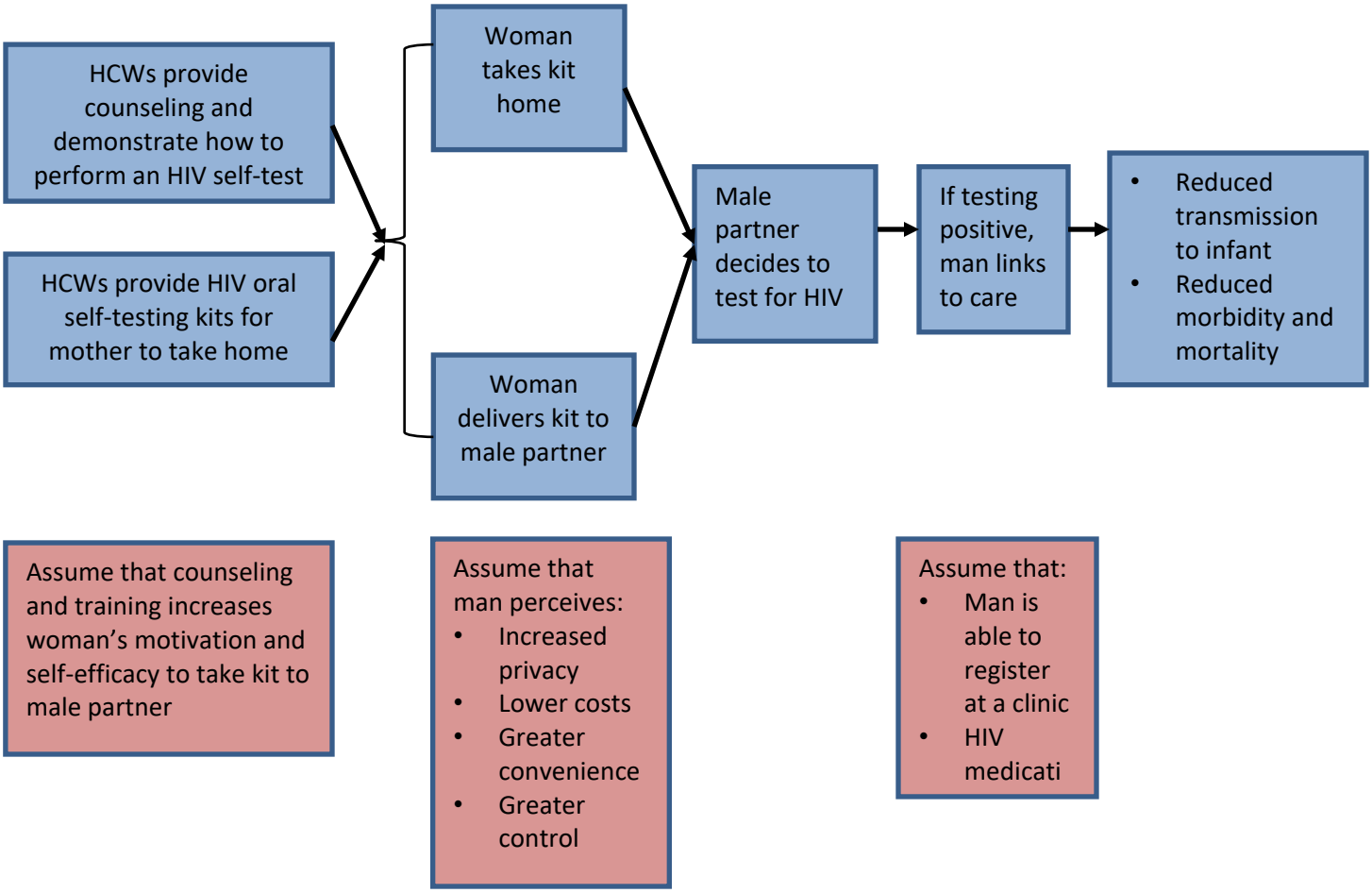
The theory of change that guided this study is shown below in Figure 1. We made several key assumptions in developing our theory of change. First, we assumed that the counseling and training provided to the women in the intervention arm would increase their motivation and self-efficacy to take the self-testing kits home and present them to their husbands. We assumed that having a self-testing kit would mitigate against common barriers to HIV testing among men, including lost work time, transportation costs, and stigma. We assumed that self-testing would reduce these barriers by increasing the man's sense of privacy, convenience, and low cost associated with HIV testing, leading to an increased likelihood of HIV testing. Furthermore, we assumed that having an HIV kit would increase the man's sense of self-efficacy, control, and ownership of the process of HIV testing, increasing the likelihood that he will test. Our theory of the health impact of testing rested on the assumption that men testing positive were able to link to care and that medication was available.

In previous research with pregnant women delivering kits to their male partners (Gichangi et al. 2017), we found that rates of couple testing were very high, and consequently rates of disclosure were very high. Thus, previous research supports the

hypothesis that home-based self-testing may result in high rates of disclosure as well as linkage to care.

Based on our theory of change, we formulated hypotheses that the impact of the intervention might vary by age, marital status, education, and religious affiliation, because these factors could be related to the woman's self-efficacy and motivation to bring the kit home and present it to the man, as well as the man's likelihood to respond positively and test for HIV. In addition, we planned to test for differential effects by study site because these and other factors may differ across sites.

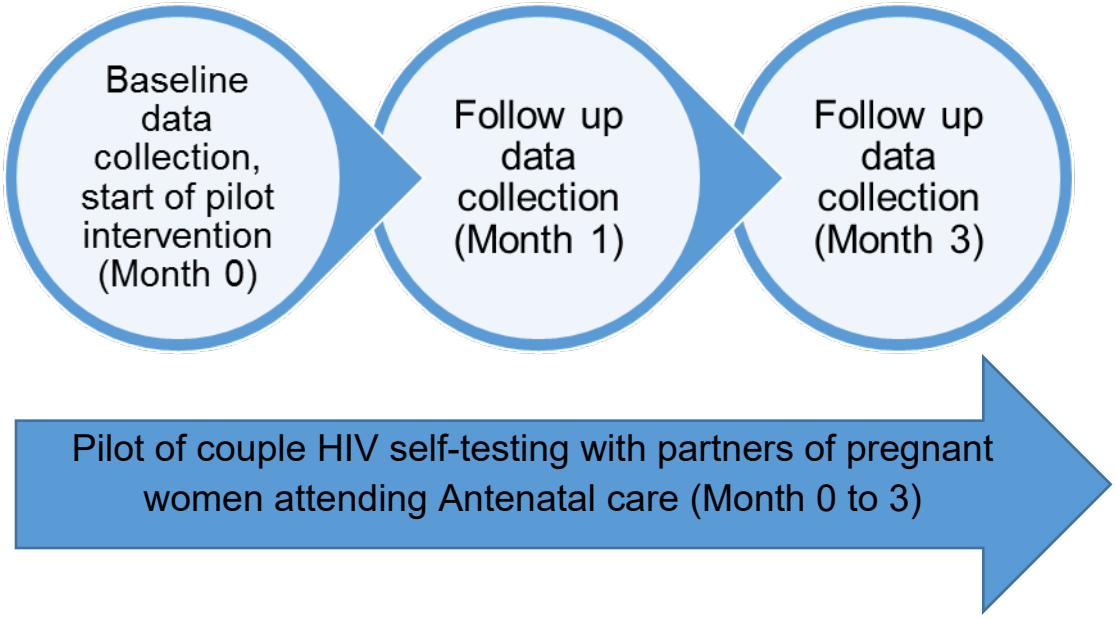
Figure 1: Theory of change



2.6 Study time frame

In planning the timeframe for the anticipated effects, most men were expected to test with the self-testing kit within the first month after the kits were presented by the pregnant female partner. The study was therefore designed with two follow up visits; a one-month follow up to try to capture the early uptake that was anticipated and a three-month follow up designed to provide a somewhat longer-term perspective on uptake of HIV testing during the pregnancy. However, longer follow-up after three months was conducted for the men who tested HIV+ and the sero-discordant couples as described in section 2.4 above.

Figure 2: Study time frame



Month 0

Month 0 was characterized by preparatory activities which included: completing protocol and data collection tools, study registration, obtaining IRB approval, stakeholder analysis and engagement, establishment and meeting of the MOH oversight committee. Additionally, we performed pre-implementation site visits and adoption of protocol to facilities. Protocol development involved designing: facility specific patient flow charts, and enrolment protocol which included educational materials and referral resource lists. Other activities included translation of HIVST kits user information and HIVST kits procurement, recruitment and training of staff, purchase and programming of tablets for data collection, pilot testing of tools, and orientation of providers at the selected facilities. Screening, identification and enrolment of eligible women were scheduled to start in January 2016 and end in March 2016. These were however delayed for about 2-4 months by unforeseen hitches which included:

- Change of study site from Mityana to Nakaseke Hospitals because another study which involved the same population was due to start in Mityana. This change was effected to avoid contamination and over-burdening the pregnant women. Among the other facilities that were supported by Mildmay Uganda, Nakaseke was selected because it had the highest outpatient department (OPD) and ANC attendance, which

was desirable to achieve the recruitment targets—the change was effected after IRB approval of the protocol amendment.
- Shipment of HIV self-testing kits to Uganda was delayed by 3 months. This time was however used to train interviewers and prepare health facilities for the study.

We rolled out the study on 25 July 2016 as soon as the HIV self-testing kits arrived. Lower daily antenatal care attendance, coupled with one clinic running 4 ANC days a week instead of five days, as well as many women having partners who tested in the previous six months, reduced the number of eligible women per clinic day and consequently reduced daily enrolments. Recruitment went on for three months instead of the planned two months for both phases 1 and 2.

Follow-up visits (month-1, month-3, long-term follow-up)

During month one and three follow ups, the teams concentrated on conducting follow up interviews; this however was delayed because of the overlap with enrolment which increased workload. Month three follow up for phase 1 was completed in February 2017 and phase 2 follow up began in November of 2017 and was completed in May 2018. Long term follow up began in July of 2018 and was completed in October 2018.

2.7 Primary and secondary outcomes of interest

The study had two primary outcomes; uptake of HIV testing by the male partners, and linkage to care among HIV positive partners across the two study arms. Secondary outcomes included the number of HIV infections identified in the two study arms, negative social outcomes, costing analysis of HIV self-testing and coping skills for discordant couples who self-tested for HIV.

3.0. Section III. Data and methods

3.1 Research ethics

We obtained approval to conduct this study from Makerere University School of Public Health Higher Degrees Research and Ethics Committee (Protocol number 392), Uganda National Council for Science and Technology (Protocol Number HS 2022) and the Medical University of South Carolina. All approvals were timely. All participants consented to participate and interviewers emphasized that participation was voluntary and participants were free to opt out at any time. To maximize the study protocol's relevance to scale-up by the Uganda Ministry of Health, study participants were given only minimal compensation for their participation. Those whose follow-up dates coincided with a regular ANC visit, or those with an interview conducted at home or over the telephone, were given 5,000 Ugandan shillings, equivalent to about $1.40, for their time. Those who came to the facility to provide an interview on a day that was not a regular ANC visit were compensated an average of 15,000 Ugandan shillings, equivalent to $4.20 USD, for their time and transportation costs.

3.2 Power calculation and sample size determination

We estimated our sample size based on a power calculation for a superiority test between Arm 2 and Arm 1 to determine whether HIV self-testing availability resulted in a significant increase in HIV testing uptake by the male partner. We considered our study design to be a cluster-randomized trial, although we did not expect our clusters would have any substantial intraclass correlation (ICC). The women coming to a clinic on any given day might have been equally likely to come on a different day; therefore, our clusters were not correlated in the usual sense. Our estimates assumed that the proportion of male partners testing in Arm 1 would be similar to the average reported proportion of 11.6% currently estimated for Mildmay clinics in Uganda. We hypothesized that Arm 2 (the intervention group, with self-testing kits) would have the highest rate of male partner HIV testing. We determined that an improved proportion of 20% was the minimum that would justify scaling up the program to a national level in Uganda, and we calculated the sample size to detect this effect.

With the cluster-randomized design, each facility would have three data collectors and each one was expected to recruit and interview five women per day at the ANC clinic, thus each cluster was estimated as 15 participants (one cluster per facility per day). With a cluster size of 15, and male partner testing rates of 11.6% vs. 20%, we estimated that with 50 clusters (i.e. 750 women/couples) per arm, we would have statistical power of 0.89 with ICC=0.07, 0.93 with ICC=0.05, 0.96 with ICC=0.03, and power of 0.99 with

ICC<0.01. With an assumed 10% attrition, the above sample size would have over 80% power to detect the 20% uptake. With a total of 100 clusters across three facilities, 750 women were estimated to be recruited in eight weeks.

Phase 2 sample size

An additional 120 women (100 HIV positive and 20 HIV negative) with equal numbers per arm were recruited in this seven-month extension in an attempt to reach more partners of HIV positive women. The negative women were enrolled to reduce stigma resulting from enrolling only HIV positive women. In other words, if we only enrolled HIV-positive women in the study, then any woman enrolling in the study could be identified as HIV-positive which would be stigmatizing. This additional enrolment increased the total sample size from 750 to 810 in each study arm. Again, we considered all women recruited each day from each study clinic to constitute one cluster. However, because this Phase of the study was focused primarily on HIV-positive women, many clusters were very small with only one or two women. The design of our study and small size of the clusters led us to expect a very small ICC. Nevertheless we continued to consider the essential design of our study to be a cluster-randomized trial for purposes of the primary analysis.

Sample size for phase 3

In the self-testing arm during Phase 1 and Phase 2 of the study, there were 42 men who had tested positive for HIV. Of these 42 men, one had died after testing positive. The team planned to follow up all remaining 41 men in the self-testing arm who tested positive for HIV (34 in phase 1 and 7 in phase 2) and assess coping skills among 75 discordant couples. Further, we planned to conduct 27 in-depth interviews with; 9 purposively selected HIV positive men (3 who linked in care and are still in care, 3 who linked but dropped out, and 3 who hadn't linked into care at the time of follow up), and nine purposely selected couples (3 with HIV-positive male partners and six with HIV-positive female partners.

3.3 Sampling strategy, recruitment, and participant's assignment to study arm

To minimize contamination between study arms, we used clinic day as the unit of randomization rather than individual randomization. We anticipated that this strategy would reduce contamination, because all women coming to the clinic on a given day usually spent multiple hours at the clinic together in the waiting area, and might be expected to talk and compare notes about the study. Each day in each clinic was a separate cluster. All women who were recruited from a particular clinic on a particular day were randomized to the same study arm. We randomized clinic day clusters to two study arms: Arm One for standard of care, and Arm Two for the HIV self-testing intervention. A Biostatistics PhD student from Dr. Korte's department generated the list

of random numbers used to assign each sequential clinic day to either Arm One or Arm Two. We generated separate lists of random numbers to choose participants for eligibility screening each day from the study clinics. Each morning during recruitment, the study coordinator unmasked the clinic day allocation and random number list for the cluster (clinic day) and communicated this every morning to the study team at each of the facilities. All three facilities were randomized each day to the same study arm. This randomization strategy was designed to ensure that any site differences would not bias our findings.

At the cluster level, a site coordinator generated a sampling frame daily as the women sequentially registered for the ANC clinic as they arrived. The site coordinator then used the list of simple random numbers received from the study coordinator to pick out women whose registered number matched the random one for screening and enrolment if they were eligible. The women who declined or were not eligible were replaced with the next random number from the recruitment list. Depending on the number of women registering at the clinic each day, and eligibility criteria, some women may not have been approached on some days if the recruitment limit had already been filled for that day. On the other hand, clinic attendance on some days at the smaller sites was lower than expected, leading us to recruit every eligible willing woman at the clinic that day. Participants were not aware of the study arm to which they were allocated, leaving no room for them to influence their randomization assignment. Furthermore, study staff did not know until each morning whether that day would be an intervention day or a control day.

In the last phase of recruitment, we recruited providers, women, men, and other family members for in-depth qualitative interviews.

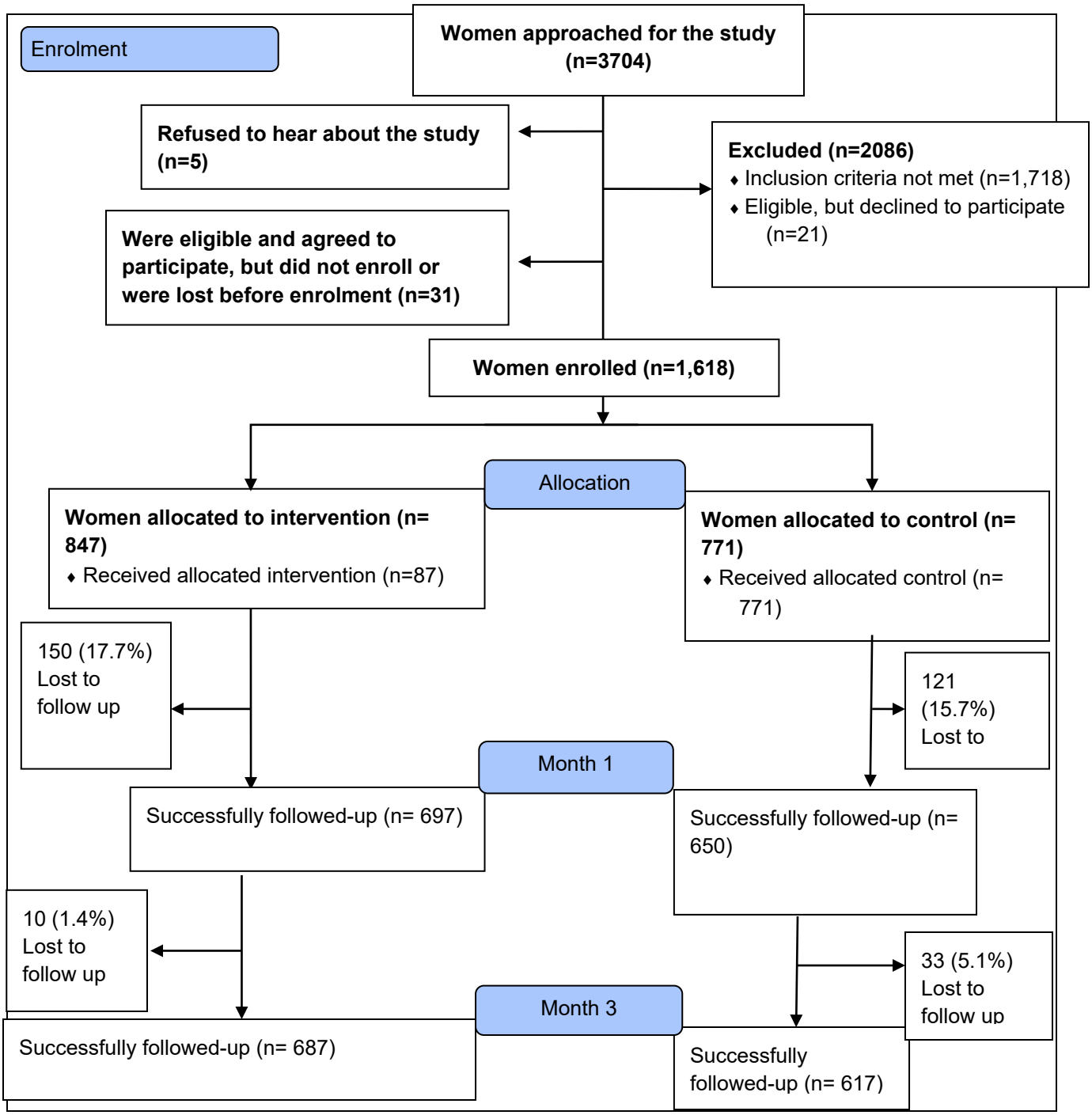
3.4 Inclusion criteria and Exclusion criteria

Every pregnant woman who was attending ANC in Mpigi Health Centre IV, Entebbe, and Nakaseke Hospitals was eligible for participation if she had a male partner she saw at least once a week, if the male partner was at least 18 years old, if his HIV status was negative or unknown, and if he had not tested for HIV in the last six months. Women were asked about intimate partner violence (IPV), but concern about IPV did not constitute an exclusion criteria. However, women were free to decline study participation for any reason, and participants were carefully monitored for instances of IPV throughout the study. Specifically, during follow-up interviews, women were asked if they experienced any forms of IPV, and those reporting that they experienced physical or sexual violence were referred to MIFUMI, an organization that is involved in gender-based violence prevention and psychosocial activities in central Uganda for further support. MIFUMI works closely with Mildmay Uganda to address gender-based violence issues reported by Mildmay clients. Given the fears about potential violence associated with HIVST, all women were provided with information on the existing referral networks

and the site coordinator's telephone contact and they were encouraged to call him/her whenever they experienced any forms of violence. The site coordinator supported women experiencing IPV to link to MIFUMI or any other organization of their choice.

Figure 3: Study Flow Chart showing the participants' enrolment and follow up trajectory (Phase 1)

Consort Flow diagram



3.5 Sources and methods of data collection

At the beginning of the study we used electronic Android tablet computers to collect data. We used the REDCap system, including a secure server at the Medical University of South Carolina, and an offline Android application that could be used with the tablets. With this system, interviewers were able to collect data on the tablets whether or not they had a network connection. If a network connection was available, then interviewers could synchronize data on the tablet with the server.

The REDCap system encountered several serious challenges relating to the use of the tablets. As data collection proceeded, the study coordinator and interviewers at all three of the study sites reported problems with long wait times as the tablets attempted to synchronize and update the data. After follow-up visits had begun, we realized that some of the data had not been synchronized to the server. We then used paper records to collect data while working to isolate the problem, and eventually decided to continue collecting data on paper. For the remainder of the study, we used the online REDCap system to enter data from paper copies.

Quantitative data collection methods

We used interviewer-administered questionnaires to collect quantitative data including cost, and we used key informant interviews and in-depth interviews to collect qualitative data.

Different tools were used to collect different information and they included:

- Pre-enrolment screening questionnaire in ANC clinic: demographic and behavioral information used to screen the women for eligibility to join the study;
- Baseline questionnaire (administered as soon as the participant consented): basic background characteristics from the woman, about herself and her family, also used to determine how many kits a woman would take home for adult family members;
- Tracking tool: information used for contacting participants for follow-up in the field to ensure retention in the study, including the residence and particular features around the place, preferred mode of follow-up and the available contacts that can be used for tracing the participant;
- Female follow-up questionnaire (for ANC client at month one and three):behaviours, attitudes, communication, HIV self-testing experiences and other relevant parameters for male partner and other adult family members.
- Male follow-up questionnaire: similar to the female questionnaire but specific to the male partner
- Long-term follow-up questionnaire: HIV testing behaviours, shame and internalised stigma, coping mechanisms for discordant couples. The information were similar but specific to the sex of the respondent;

- Costing tools: facility and volunteer time, facility-level assessment of monthly resources, HIV self- testing kits log, above site coordination and supervision costs for Mildmay Uganda and management costs for investigators

Qualitative data collection methods for phase 1
We conducted in-depth interviews after the main study outcome had been ascertained; i.e. after the last follow-up visits. During the in-depth interviews, we explored the anticipated fears/barriers that women had in mind on being asked to introduce the HIV self-test kits to their male partners; the strategies that they used to deliver the kits to their male partners; and what happened after HIVST, including any negative or positive social outcomes post-test. Similar issues were explored among male partners (e.g. men's initial thoughts about HIV self-testing, when their partners introduced the kits to them) to triangulate the data obtained from female partners but also to capture their perceptions and experiences regarding HIVST. Specifically, we explored if men were comfortable receiving HIV self-test kits from their female partners or if it would have been better if they (men) introduced the kits to their female partners. The information generated from these in-depth interviews is relevant for our understanding of the quantitative results (which will be reported elsewhere), and for greater understanding of the assumptions underlying the Theory of Change that informed the design of the intervention. All data collected were recorded on digital recorders with permission from the participants. Interviews lasted about 1-2 hours. All participants who consented to be interviewed and who actually participated in the interviews were compensated for time and their travel costs refunded.

Qualitative data collection methods for phase 3
We conducted in-depth interviews with 27 purposely selected respondents to explore: HIV self-testing behaviours and experience, linkage to care for HIV positive men only, coping mechanisms and changes in sexual behaviours for discordant couples. All interviews were audio-recorded and lasted 1 hour 30 minutes on average.

3.6 Strategies to avoid bias, address spill-over and contamination

To avoid contamination between the two study arms, the two arms were randomized by clinic day. Because all women who came on a particular day were enrolled in the same arm, this minimized social interaction and thus contamination between study arms.

To avoid selection bias, study arm was randomly assigned. Eligible women who chose to enroll versus those who did not were compared using data from the screening and pre-enrolment questionnaires to evaluate possible selection bias.

To assess whether participants in the control arm bought kits from those in the intervention arm or elsewhere, we included a question asking about HIV testing from any source in the follow-up questionnaires. The data were incorporated into the main

analysis of HIV testing and sub analyses conducted to evaluate HIV testing via the self-testing kit, clinical testing, home-based testing by a community health worker, or any other means of HIV testing.

We were also concerned about social desirability bias, where women enrolled in the intervention arm may report that their partner tested when they have not. The number of kits issued to women were based on the number of adults in the households and labelled. Women were requested to bring back used kits at follow-up visit and verified by the interviewers. Study staff told the women that they understand that the woman's partner may not have tested for HIV prior to asking whether her partner tested.

3.7 Data quality control measures

Prior to implementation, experienced interviewers with University education were recruited and trained for 5 days in research and interview skills, and details of the study including data collection tools. The study tools were piloted and corrections made before full implementation. During implementation, each site team met every day after work to discuss unusual cases. Weekly meetings were held with the interviewers and the investigators to discuss emerging issues, and weekly supportive supervision visits were conducted to further offer timely assistance to the sites. Initially, tablets with programmed skip patterns within the questionnaires enhanced the quality of data collected. After we switched to paper data collection, we continued to monitor data issues and quality control through team meetings and regular monitoring of the data entered into REDCap.

We conducted refresher training of 3 best performing interviewers before implementing phase 2 and 3 sub-studies. Emerging issues were dealt with mainly during supervision visits and through telephone calls and emails.

3.8 Problems or challenges

The following challenges were encountered during the study span;

i. Change of study site: prior to onset of data collection, another study targeting HIV infected pregnant women in Mityana hospital was discovered. There was a serious risk that HIVST interventions might influence the other study outcomes and vice versa. An assessment of alternative sites was done and Nakaseke Hospital was selected to replace Mityana Hospital;

ii. Late delivery of kits: OraQuick kits were received in Uganda on 12 July 2016 after more than a month of waiting. This delayed the launch of data collection activities;

iii. Low enrolment pace: Enrolment pace was lower than expected for various reasons: one facility (Entebbe) ran ANC clinics four days a week and not five like the other clinics, Nakaseke had a lower patient load with smaller clusters, and generally the partner testing reported at screening was higher than previously estimated based on routine facility data. This consequently extended the enrolment period from the planned eight weeks to 12 weeks. This created a longer overlap between recruitment and follow-up interviews and increased the load of interviews.

iv. Network and connectivity problems: Internet challenges were encountered in all sites but most especially in Nakaseke. This affected synchronization of data and we changed the mode of data collection to hard copies.

v. A few HIV positive women denied interviewers' access to their partners.

vi. Some couples had moved to unknown destinations hence we were unable to follow them up.

3.9 Data analysis methods

Evaluation strategy

Our primary analysis for estimating the impact of the intervention was to perform a comparison of the primary outcome (male partner testing) in the intervention group versus the control group. In addition to unadjusted analyses comparing these two groups, we fit log-linear models with and without accounting for clustering by clinic day, and testing for covariate imbalance at baseline. We accounted for clustering using a random effect for clinic day, because this was the unit of group-level randomization across clinics. In addition, we included study site as a fixed effect, and tested study site (as well as other pre-determined hypothesized effect modifiers) for multiplicative interactions with intervention assignment.

We used log-binomial models to allow estimation of the relative risk, which we judged the most appropriate measure of association in this longitudinal study with interval-based assessment of a high-prevalence outcome measure (HIV testing).

Tests for differential attrition

We evaluated follow-up in both the intervention and control group by assessing the proportion of participants returning for each follow-up visit. Overall, we were able to achieve a good follow-up rate with 1244/1514 (82.2%) of women returning for month one interview and 1207/1514 (79.7%) for month three interview in phase 1; and 103/104 (99.0%) and 99/104 (95.2%) of women returning for month-1 and -3 respectively in

phase 2. We compared the attrition rates using a chi-square test of two proportions and found no difference in attrition by study arm. Follow-up rates were somewhat lower for men with approximately 73% (1110/1514) and 70% (1054/1514) of men participating in month 1 and 3, respectively in phase 1; and 85% (88/104) and 66.3% (69/104) participating in month 1 and three respectively in phase 2.

Primary specifications

The final analysis consisted of participants with sufficient follow-up data to be included in the primary analysis. To be included in the final analysis, participants needed to complete at least one of the two follow-up interviews. In random-effects log-binomial models accounting for clustering by clinic day, we estimated the risk ratio for HIV testing among male partners, comparing the two study arms. The primary outcome measure was the woman's self-report about whether her male partner had tested for HIV since the beginning of the study. Overall, we also conducted analyses accounting for both the report of the women and men, by considering a man to have tested if either he or the woman reported that he had done so. While our primary outcome was the woman's report, we constructed the male/female combined outcome to provide a more sensitive measure accounting for men who tested for HIV but did not reveal this to the women.

Balance tables

We assessed possible imbalances between the intervention and control groups by comparing baseline sociodemographic characteristics of participants. We used t-tests and chi-square tests as appropriate to test for any differences in these variables, using a nominal p-value of 0.05 to denote statistical significance.

Data cleaning

We had major problems with the electronic tablets used for data capture, and spent considerable effort making sure that we recovered all data that could be recovered from the tablets. In data cleaning, we merged and sorted data from several sources (properly synchronized data, tablet logs, emergency data dumps, and data entered separately from paper records) to produce a dataset with complete data for each participant.

In univariate and bivariate analyses, the data management team cleaned the data to check for outliers. Outliers and implausible values were very rare in the dataset due to electronic data entry and limits placed on variables to be entered. We did not impute any values for missing data. We conducted the analysis as we had planned in the initial protocol.

Qualitative data analysis

All digitally recorded interviews were transcribed verbatim and translated from Luganda, the language of interview, to English prior to data analysis. Initially, JKBM and RK

manually read through 10 transcripts to identify emerging themes based on the primary objective of the study; namely, to document perceptions, HIVST delivery strategies and post-test experiences of women and men with regard to HIV self-testing. Each emerging theme was coded as either belonging to “perceptions” or “strategies” or “experiences” through a process of constant-comparison and consensus-building. Each theme was assigned a code; and using these codes, we reviewed the remaining 22 transcripts to identify perceptions, strategies or post-test experiences pertaining to HIVST, while noting down any other emerging themes along the way. At the end of the analysis, all emerging themes were categorically grouped into four main themes: a) perceptions about HIVST; b) strategies used by women to deliver the kits to their male partners; c) experiences in using HIVST kits; and c) post-test experiences following HIVST. Data analysis was conducted inductively following a thematic framework approach. Similar procedures (i.e. initial reading of the transcripts to identify emerging themes; grouping themes into meaningful codes, and using the codes to review all the 25 transcripts) were followed in conducting analyses for coping mechanisms and linkage to care at the end of the phase 3 follow-up visit. Data analysis was done inductively following a thematic framework approach.

Cost-effectiveness analysis

Costing was done from the provider perspective taking into account only costs borne by the study team towards service provision using a 6-month time horizon. Cost categories were: above-facility personnel costs and operational costs for supervision of facility staff, facility personnel time costs, training costs, above-site assets (used by above-facility supervisors), facility assets, facility operational cost and facility supplies. Above-facility personnel included supervisors who went down to facilities to supervise implementation of services, and “above-site” operational costs and assets included costs incurred by above-site personnel to coordinate and supervise implementation of activities. Facility personnel costs included time spent by personnel to conduct health education, counseling of mothers, screening for eligibility of self-testing, training of mothers on HIVST, follow-up of mothers/partners/family members, linkage of partners and family members into care, testing partners and family members, distribution of self-test kits, mobilization, and organizing patient flow at the facility. On a daily basis, staff responded to a questionnaire to indicate how much time they spent doing the above activities. The total amount of staff time spent was multiplied by the unit hourly personnel cost to obtain the total cost of staff time. Costing used a micro-costing approach with identification of resource inputs, quantifying resources, obtaining unit cost for each resource and obtaining costs. Annualized costs of capital costs were determined using a 3 percent discount rate and halved to reflect a 6-months’ cost. The useful life of capital assets was based on estimates from Kenya. Assets bought in the past years were evaluated at 2016 values prior to being annualized. Training costs were annualized assuming that major retraining would be done after 2 years of the initial training as a consequence of staff

turnover or policy changes. Cost of the intervention was evaluated as cost per partner tested and cost per HIV-positive partner identified. Incremental cost effectiveness ratios (Total costs in intervention – Total cost in control)/(total # tested or positive intervention – total # tested or positive control) were based on incremental costs between intervention and control arms and incremental effects including incremental number of partners tested and partners identified as HIV-positive. We were unable to assess cost-per HIV-positive person linked to care due to incompleteness of linkage data.

One-way sensitivity analyses were performed using cost of self-test kits and HIV prevalence among partners tested.

4.0. Section IV. Results

4.1 Quantitative findings

We approached and screened a total of 3704 women, and we enrolled 1618 women in the study. Eight hundred and forty-seven women were enrolled in the intervention arm and 771 in the control arm. The imbalance in recruitment between study arms was due to random variation in the group assignment of clinic days to either intervention or control. We recruited a similar number of clusters (clinic days) at each site. This required extending recruitment at Entebbe Hospital because this site had only four ANC clinic days a week and not five like the other clinics. About 82.3% of women in the intervention arm and 84.3% in the control arm were successfully followed up at month one. Eighty one and a half percent of women who were enrolled in the intervention arm and 80.0% of women enrolled in the control arm were followed up at month three. Furthermore, 1198 (640 intervention and 558 control) and 1123 (589 intervention and 534 control) male partners were followed up at month-one and three respectively. The attrition was higher than predicted (18.5% in the intervention arm, 20.2% in the control arm compared to the 10% assumed in our power calculations). However, we compared the attrition rates using a chi-square test of two proportions, and found no difference in attrition by study arm (p-value=0.50), and follow-up rates were high enough to suggest that the study attrition was unlikely to have substantially biased our findings. In our study, we did not believe there was any systematic bias influencing which participants we were able to follow up. Therefore we believe the results in the participants who completed follow-up are a good representation of the results we would have found if we had been able to achieve 100% follow-up.

Although the attrition was higher than expected, the observed effect size was also higher than we had planned for. Therefore our study had adequate power to show a significant effect.

Women in the intervention arm were given up to 4 oral self-testing kits in phase 1 depending on the number of adult household members, and two kits in phase 2. Overall, 1815 kits were distributed to women randomized in the intervention arm. Of 1815 kits, 1442 (79.4%) kits were used and returned, 149 (8.2%) kits were returned unused and 244 (13.4%) kits were not returned.

4.1.1 Baseline characteristics

Characteristics of women at baseline, and male partners at the month one follow-up, are presented in tables one and two respectively, stratified by intervention assignment. No

important differences were noted between study sites. Large numbers of participants declined to answer questionnaire items pertaining to religion and employment status. Overall, randomized intervention and control groups were comparable, with no statistically significant differences observed between groups. A slight difference may be seen with educational attainment in women, with 22 of 847 (2.6%) completing university in the intervention arm versus 12 of 771 (1.6%) in the control arm; and with reported religious affiliation in men, with 168 of 847 (38.3%) Catholic in the intervention arm versus 169 of 771 (45.0%) in the control arm, although the difference was largely in the distribution of different types of Christianity (fewer Pentecostal and born-again Christians).

Table 1: Baseline characteristics of women attending antenatal care in Central Uganda by intervention or control group

Characteristic	Intervention (n=847, 52.3) n (%)	Control (n=771, 47.7) n (%)	Total (n=1,618) n (%)	p-value
Age (years), mean ±SD	25.1 ± 5.5	25.4 ± 5.5	25.2 ± 5.5	0.79
Missing	9 (1.1)	12 (1.6)	21 (1.3)	
Age (years), range	15-43	15-49	15-49	0.70
15-19	120 (14.3)	105 (13.8)	225 (14.1)	
20-24	330 (39.4)	281 (37.0)	611 (38.3)	
25-29	219 (26.1)	206 (27.1)	425 (26.6)	
30-49	169 (20.2)	167 (22.0)	336 (21.0)	
Missing	9 (1.1)	12 (1.6)	21 (1.3)	
Female Level of education				0.55
No formal education	13 (1.6)	13 (1.6)	29 (1.8)	
Nursery	3 (0.4)	1 (0.1)	4 (0.3)	
Primary	328 (39.2)	312 (41.2)	640 (40.2)	
Post-primary/vocational	39 (4.7)	35 (4.6)	74 (4.7)	
Secondary (A or O level)	384 (45.9)	343 (45.3)	727 (45.6)	
College (middle level)	45 (5.4)	38 (5.0)	83 (5.2)	
University	22 (2.6)	12 (1.6)	34 (2.1)	
Don't know	2 (0.2)	0 (0)	2 (0.1)	
Missing	11 (1.3)	14 (1.8)	25 (1.5)	
Religion				0.59
Catholic	97 (40.6)	84 (42.4)	130 (39.4)	
Protestant	62 (25.9)	42 (21.2)	78 (23.4)	
Pentecostal	29 (12.1)	30 (15.2)	49 (14.7)	
Muslim	46 (19.3)	35 (17.7)	66 (19.8)	
Other	5 (2.1)	7 (3.5)	10 (3.0)	
Missing	608 (71.8)	573 (74.3)	1181 (73.0)	
Employment status				0.57
Employed for wages	35 (14.6)	20 (10.1)	55 (12.5)	
Self-employed	63 (26.3)	49 (24.6)	112 (25.5)	
Student	3 (1.3)	1 (0.5)	4 (0.9)	
Out of work (Unemployed)	33 (13.8)	33 (16.6)	66 (15.0)	
Housewife	74 (37.2)	74 (37.2)	159 (36.2)	
Other	22 (11.1)	22 (11.1)	439 (9.8)	
Missing	607 (71.7)	572 (74.2)	1179 (72.9)	
Marital status				0.10
Currently married	121 (14.5)	142 (18.7)	263 (16.5)	
Cohabiting	679 (81.3)	579 (76.4)	1258 (79.0)	
Never married	33 (4.0)	34 (4.5)	67 (4.2)	
Divorced/Separated	2 (0.2)	3 (0.4)	5 (0.3)	
Missing	12 (1.4)	13 (1.7)	25 (1.5)	
Health facility				0.95
Nakaseke hospital	177 (20.9)	156 (20.2)	333 (20.6)	

Mpigi health center (HC) IV	292 (34.5)	267 (34.6)	559 (34.6)
Entebbe hospital	378 (44.6)	348 (45.1)	726 (44.9)

Abbreviations: SD, standard deviation

[a] Columns may not total to 100 due to missing values.

Note: Chi-square values are based on available data and exclude missing. Fisher's exact test was used as needed when one or more cells was less than 5.

*=Statistical significance at p<0.05. **=Statistical significance at p<0.01.

Baseline characteristics for partners

The mean age (SD) for the male partners was 32.2 (8.1) and slightly more than half (602 of 1198, 51.1%) were between 25-34 years. The majority of them were cohabiting (970 of 1198, 81.5%), more than half were self-employed (429 of 1198, 52.9%) and almost half were Catholics (337 of 1198, 41.4%). The two study groups did not differ significantly.

Table 2: Month 1 characteristics of male partners of women attending antenatal care in Central Uganda by intervention or control group

Characteristic	Intervention (n=847, 52.3) n (%)	Control (n=771, 47.7) n (%)	Total (n=1,618) n (%)	p-value
Age (years), mean ±SD	31.9 ± 8.2	32.6 ± 7.9	32.2 ± 8.1	0.33
Range	18-68	19-64	18-68	
Age (years)				0.36
15-24	106 (16.9)	77 (14.0)	183 (15.5)	
25-34	324 (51.6)	278 (50.6)	602 (51.1)	
35-44	146 (23.3)	148 (26.90)	294 (25.0)	
45-68	52 (8.3)	47 (8.6)	99 (8.4)	
Missing	*212 (25.0)*	*216 (28.0)*	*440 (27.2)*	
Level of education				0.54
No formal education	24 (3.8)	16 (2.9)	40 (3.4)	
Primary	267 (42.1)	228 (41.1)	495 (41.6)	
Post-primary/vocational	38 (6.0)	418 (7.4)	79 (6.4)	
Secondary (A or O level)	239 (37.6)	206 (37.1)	445 (37.4)	
College (middle level)	44 (6.9)	34 (6.1)	78 (6.6)	
University	23 (3.6)	30 (5.4)	53 (4.5)	
Missing	*199 (25.6)*	*213 (28.9)*	*428 (26.5)*	
Religion				0.046
Catholic	168 (38.3)	169 (45.0)	337 (41.4)	
Protestant/other Christian	115 (26.2)	104 (27.7)	219 (26.9)	
Pentecostal	16 (3.6)	5 (1.3)	21 (2.6)	
Born Again	45 (10.3)	26 (6.9)	71 (8.7)	
Muslim	89 (20.3)	716 (18.9)	160 (19.6)	
No Religion	1 (0.2)	0 (0)	1 (0.1)	

Other	5 (1.1)	1 (0.3)	6 (0.7)	
Missing	*408 (48.2)*	*395 (51.2)*	*803 (49.6)*	
Employment status				0.96
Employed for wages	134 (30.7)	119 (31.7)	253 (31.2)	
Self-employed	231 (53.0)	198 (52.8)	429 (52.9)	
Business Partnership	26 (6.0)	20 (5.3)	46 (5.7)	
Student	1 (0.2)	0 (0)	1 (0.1)	
Out of work (Unemployed)	3 (0.7)	4 (1.1)	7 (0.9)	
Retired	1 (0.2)	1 (0.3)	2 (0.3)	
Other	40 (9.2)	33 (8.8)	73 (9.0)	
Missing	*411 (48.5)*	*396 (51.4)*	*807 (52.2)*	
Marital status				0.11
Currently married	84 (13.2)	101 (18.2)	185 (15.6)	
Cohabiting	531 (83.6)	439 (79.1)	970 (81.5)	
Never married	12 (1.9)	11 (2.0)	23 (1.9)	
Widowed	2 (0.3)	0 (0)	2 (0.2)	
Divorced/Separated	6 (0.9)	4 (0.7)	10 (0.8)	
Missing	*212 (25.0)*	*216 (28.0)*	*428 (26.5)*	

4.1.2 Male partners' uptake of HIV testing

In our primary comparison between intervention and control arms, the focus was on the woman's report of her male partner using the oral self-testing kit to test for HIV (Table 3). We present results for Month 1 interviews, Month 3 interviews, and cumulative measures looking across both timepoints. In addition, we present results for the woman's report, the man's report, and measures we constructed based on both the woman's and man's reports. In all combined measures, we took the most optimistic assumption. For example, if either partner reported that the man had tested, then we classified the man as having tested in the combined measure. At both Month 1 and Month 3, we attempted to contact all enrolled participants to ask about HIV testing, confirmatory testing, and linkage to care.

In month 1, 477 out of 693 women (81.1%) reported that their male partners tested in the intervention arm, versus 111 over 631 (18.9%) in the control arm (RR 3.9, 95% CI 3.28-4.67). At month three follow-up, women were asked whether their male partner had tested since the last interview, and 171 out of 587 (29.1%) versus 116 out of 523 (22.2%) reported testing in the intervention and control group, respectively (RR 1.31, 95% CI 1.07-1.61). Looking across both follow-up time-points, we defined a cumulative measure (as described above) based on reported testing at either time-point. For the purposes of the cumulative measure, we considered the male partner not to have tested if the response was "no/don't know" at month one, and either missing or "no/don't know" at month three. Based on this definition, the woman's cumulative report regarding whether her male partner tested for HIV during the entire three-month follow-up period

was 567 out of 805 (70.4%) in the intervention group versus 201 over 732 (27.5%) in the control group (RR 2.57, 95% CI 2.26-2.91).

Ninety-nine percent of the women at baseline, and 88.9% of the men at their first interview (Month 1 follow-up) reported to have ever been previously tested for HIV. However, 34 men (16 in the intervention arm and 18 in the control arm) were tested for the very first time during the study period (RR 2.08; 95% CI: 1.19-3.63).

Table 3: Primary outcome tables by intervention arm and follow-up time-point: women's report of male partner testing

Month 1 Woman's Report

	Since your last interview, has your partner tested for HIV?			
	Yes	**No**	**Total**	**RR (95% CI)**
Intervention, n (%)	477 (81.1)	216 (29.4)	693	3.9 (3.28-4.67)
Control, n (%)	111 (18.9)	520 (70.7)	631	
Total [a]	588 (44.4)	736 (55.6)	1324	
Missing			*294*	

Month 3 Woman's Report

	Since your last interview, has your partner tested for HIV?			
	Yes	**No**	**Total**	**RR (95% CI)**
Intervention, n (%)	171 (29.1)	416 (70.9)	587	1.31 (1.07-1.61)
Control, n (%)	116 (22.2)	407 (77.8)	523	
Total [a]	287 (25.4)	823 (74.6)	1110	
Missing			*508*	

Combined Month 1 and Month 3 Woman's Report

	Male tested at Month 1 and/or Month 3			
	Yes	**No**	**Total**	**RR (95% CI)**
Intervention, n (%)	567 (70.4)	238 (29.6)	805	2.57 (2.26-2.91)
Control, n (%)	201 (27.5)	531 (72.5)	732	
Total [a]	768 (50.0)	769 (50.0)	1537	
Missing			*81*	

When combining women's and men's report for testing for HIV across the whole study period, we found 626 out of 816 (76.7%) in the intervention group versus 278 out of 742 (37.5%) in the control group tested for HIV (Table 4).

Table 4: Primary outcome tables by intervention arm, combined women's and men's report of male partner testing

	Tested	Did not test	Total n	p-value
Intervention, n (%)	626 (76.7)	190 (23.3)	816	<0.01
Control, n (%)	278 (37.5)	464 (62.5)	742	
Total, n (row %)	904 (58.0)	654 (42.0)	1558	

To explore heterogeneity of effects, we analysed the group differences stratified by pre-specified potential effect modifiers: woman's age, woman's educational attainment, woman's employment status, study site, and woman's baseline HIV status. We had intended to also assess religious affiliation but were unable to do so due to large amounts of missing data for the women's religious affiliation.

To explore effect modification by age, we stratified the age of the ANC client into 4 categories: 15-19, 20-24, 25-29, and 30-49 years, as shown in Table 5 below. We saw very little effect modification by age, with very similar risk ratios in the 4 categories:2.61, 2.34, 2.77 and 2.67, respectively.

Table 5: Primary outcome table for combined month 1 and month 3 mother's report by allocation day and woman's age

Age 15-19 years				
	Male partner tested at Month 1 and/or Month 3			
	Yes	**No**	**Total**	**RR (95% CI)**
Intervention, n (%)	83 (72.8)	31 (27.2)	114	2.61 (1.86-3.67)
Control, n (%)	27 (27.8)	70 (72.2)	97	
Total [a]	110 (52.1)	101 (47.9)	211	
Missing			*14*	
Age 20-24 years				
	Male partner tested at Month 1 and/or Month 3			
	Yes	**No**	**Total**	**RR (95% CI)**
Intervention, n (%)	223 (70.6)	93 (29.4)	316	2.34 (1.93-2.84)
Control, n (%)	82 (30.2)	190 (69.8)	272	
Total [a]	305 (51.9)	283 (48.1)	588	
Missing			*23*	
Age 25-29 years				
	Male partner tested at Month 1 and/or Month 3			
	Yes	**No**	**Total**	**RR (95% CI)**
Intervention, n (%)	149 (72.0)	58 (28.0)	207	2.77 (2.15-3.58)
Control, n (%)	49 (25.9)	140 (74.1)	189	
Total [a]	198 (50.0)	198 (50.0)	396	
Missing			*29*	
Age 30-49 years				
	Male partner tested at Month 1 and/or Month 3			

	Yes	No	Total	RR (95% CI)
Intervention, n (%)	105 (65.6)	55 (34.4)	160	2.67 (1.99-3.58)
Control, n (%)	40 (24.5)	123 (75.5)	163	
Total [a]	145 (44.9)	178 (55.1)	323	
Missing			*13*	

To explore effect modification by education, we stratified the ANC client's educational attainment into 3 categories: none/primary, secondary/vocational, and college/university, as shown in Table 6 below. We saw little effect modification by educational level, with very similar risk ratios in the 3 categories: 2.44, 2.72 and 2.25, respectively.

Table 6: Primary outcome tables for combined month 1 and month 3 woman's report by allocation day and woman's educational level

None/Primary				
	Male partner tested at Month 1 and/or Month 3			
	Yes	**No**	**Total**	**RR (95% CI)**
Intervention, n (%)	220 (68.3)	102 (31.7)	3225	2.44 (2.01-2.96)
Control, n (%)	867 (28.0)	221 (72.0)	307	
Total [a]	306 (48.7)	323 (51.4)	629	
Missing			*44*	
Secondary/Vocational				
	Male partner tested at Month 1 and/or Month 3			
	Yes	**No**	**Total**	**RR (95% CI)**
Intervention, n (%)	291 (71.5)	116 (28.5)	407	2.72 (2.26-3.27)
Control, n (%)	95 (26.2)	267 (73.8)	362	
Total [a]	386 (50.2)	383 (49.8)	769	
Missing			*32*	
College/University				
	Male partner tested at Month 1 and/or Month 3			
	Yes	**No**	**Total**	**RR (95% CI)**
Intervention, n (%)	46 (71.93)	18 (28.1)	64	2.25 (1.46-3.46)
Control, n (%)	16 (32.0)	34 (68.0)	50	
Total [a]	62 (54.4)	52 (45.6)	114	
Missing			*3*	

To explore effect modification by ANC client's employment status, we created 3 categories: employed for wages, self-employed, and other, as shown in Table 7 below. The very low prevalence of employment limited our statistical power to detect an

interaction by employment status; however, we did see some differences in the observed impact of self-testing in these categories. Among ANC clients employed for wages, 14 out of 31 male partners in the intervention arm versus 6 out of 17 in the control arm tested for HIV during the three-month follow-up period (RR 1.18, 95% CI 0.73-1.90). Interestingly, among ANC clients who were self-employed, 41 out of 56 male partners in the intervention arm versus 7 out of 39 in the control group tested for HIV (RR 3.06, 95% CI 1.93-4.84). Among ANC clients who were neither employed for wages nor self-employed, 90 out of 119 male partners in the intervention arm versus 35 out of 111 in the control arm tested for HIV (RR 2.81, 95% CI 2.00-3.95).

Table 7: Primary outcome tables for combined month 1 and month 3 woman's report by allocation day and woman's employment status

Employed for Wages				
	Male partner tested at Month 1 and/or Month 3			
	Yes	**No**	**Total**	**RR (95% CI)**
Intervention Day, n (%)	14 (45.2)	17 (54.8)	31	1.27 (0.60-2.71)
Control Day, n (%)	6 (35.3)	11 (64.7)	17	
Total [a]	20 (41.7)	28 (57.1)	48	
Missing			*7*	
Self-employed				
	Male partner tested at Month 1 and/or Month 3			
	Yes	**No**	**Total**	**RR (95% CI)**
Intervention Day, n (%)	41 (73.2)	15 (26.8)	56	4.08 (2.05-8.12)
Control Day, n (%)	7 (17.9)	32 (82.0)	39	
Total [a]	48 (50.5)	47 (49.5)	95	
Missing			*17*	
Other				
	Male partner tested at Month 1 and/or Month 3			
	Yes	**No**	**Total**	**RR (95% CI)**

Intervention Day, n (%)	90 (75.6)	29 (24.4)	111	2.81 (2.00-3.95)
Control Day, n (%)	35 (31.5)	76 (68.5)	119	
Total [a]	125 (54.4)	105 (45.6)	230	
Missing			*42*	

To explore site differences, we evaluated the intervention impact separately at Entebbe, Mpigi, and Nakaseke (Table 8). We observed comparable uptake of HIV testing in the intervention arm at the different study sites, but substantially higher testing at Nakaseke in the control arm, contributing to a lower observed intervention impact at that study site. Specifically, the risk ratios were 1.87 for Nakaseke, 2.97 for Mpigi, and 2.71 for Entebbe.

Table 8: Primary outcome tables for combined month 1 and month 3 woman's report by allocation day and facility

Nakaseke				
	Male partner tested at Month 1 and/or Month 3			
	Yes	**No**	**Total**	**RR (95% CI)**
Intervention Day, n (%)	115 (67.7)	55 (32.3)	170	1.87 (1.47-2.36)
Control Day, n (%)	54 (36.2)	95 (63.8)	149	
Total [a]	169 (53.0)	150 (47.0)	319	
Missing			*14*	
Mpigi				
	Male partner tested at Month 1 and/or Month 3			
	Yes	**No**	**Total**	**RR (95% CI)**
Intervention Day, **n (%)**	199 (70.8)	82 (29.2)	281	2.97 (2.36-3.75)
Control Day, **n (%)**	61 (23.8)	195 (76.2)	256	
Total [a]	260 (48.4)	277 (51.6)	537	
Missing			*22*	
Entebbe				

	Male partner tested at Month 1 and/or Month 3			
	Yes	**No**	**Total**	**RR (95% CI)**
Intervention Day, n (%)	253 (71.5)	101 (28.5)	354	2.71 (2.24-3.29)
Control Day, n (%)	86 (26.3)	241 (73.7)	327	
Total [a]	339 (49.8)	342 (50.2)	681	
Missing			*45*	

To explore effect modification by woman's baseline HIV status, we stratified the ANC client's baseline HIV status into 3 categories: HIV positive, HIV negative, and did not receive last HIV test result, as shown in Table 9 below. We saw some effect modification by baseline HIV status, with risk ratios in the 3 categories of: 2.76, 2.52 and 3.6, respectively. However, these subgroup differences should be interpreted with caution due to the small number of women in the category "did not receive last HIV test result".

Table 9: Primary outcome tables for combined month 1 and month 3 woman's report by allocation day and woman's baseline HIV status

Positive HIV baseline status

	Male partner tested at Month 1 and/or Month 3			
	Yes	**No**	**Total**	**RR (95% CI)**
Intervention, n (%)	65 (67.7)	31 (32.3)	96 (62.8)	2.76 (1.71-4.43)
Control, n (%)	14 (24.6)	43 (75.4)	57 (37.3)	
Total [a]	79 (51.6)	74 (48.4)	153 (100)	
Missing			*8*	

Negative HIV baseline status

	Male partner tested at Month 1 and/or Month 3			
	Yes	**No**	**Total**	**RR (95% CI)**
Intervention, n (%)	471 (71.0)	192 (29.0)	663 (51.3)	2.52 (2.21-2.89)
Control, n (%)	177 (28.1)	453 (71.9)	630 (48.7)	

Total [a]	648 (50.1)	645 (49.9)	1293 (100)	
Missing			*67*	
Did not receive last HIV test result				
	Male partner tested at Month 1 and/or Month 3			
	Yes	**No**	**Total**	**RR (95% CI)**
Intervention, n (%)	9 (60.0)	6 (40.0)	15 (45.5)	3.6 (1.18-10.95)
Control, n (%)	3 (16.7)	15 (83.3)	18 (54.6)	
Total [a]	12 (36.4)	21 (63.6)	33 (100)	
Missing			*1*	

Finally, we used multivariable log-binomial models to estimate adjusted risk ratios and to explore subgroup heterogeneity. We fit models with clustering to account for the group-randomized study design. Overall, no covariates were imbalanced at baseline and intraclass correlations were low, so the adjusted results with clustering were comparable to the unadjusted results shown above. We found that male partners in the intervention arm were much more likely to test for HIV than men in the control arm, with a risk ratio (95% confidence interval) of 2.6 (2.3, 2.9) after controlling for the woman's baseline HIV status, employment status, and study site. Regarding subgroup differences in intervention impact, we found significant site differences (interaction p-value < 0.01 for Mpigi vs. Nakaseke, and p=0.02 for Entebbe vs. Nakaseke). We also found possible subgroup differences by the woman's employment status, with interaction p-value 0.05 for a difference in intervention impact comparing "self-employed" vs. "employed for wages", and p=0.10 for "other employment status" vs. "employed for wages". In addition, although no significant interaction was detected between intervention arm and the woman's baseline HIV status, we explored stratified risk ratios by HIV status because this was a major secondary question of interest. Adjusted risk ratios stratifying by study site were 1.9 (1.5, 2.3) for Nakaseke, 3.0 (2.4, 3.7) for Mpigi, and 2.7 (2.2, 3.3) for Entebbe. Adjusted risk ratios stratifying by the woman's employment status were 1.3 (0.61, 2.9) for "employed for wages", 3.6 (1.9, 7.1) for "self-employed", and 2.6 (2.3, 2.9) for other employment status. Finally, adjusted risk ratios stratifying for woman's baseline HIV status were 2.8 (1.7, 4.4) for women who were HIV-positive, and 2.5 (2.2, 2.9) for women who were HIV-negative or unknown.

4.1.3 HIV Case Finding

When combining the women's and men's report across the whole-time period of the study, 53 men tested positive of the 904 who reported testing, with 42 in the intervention arm and 11 in the control arm. In table 10 below, we show overall testing results among the 904 who reported testing.

Table 10: Results of man's HIV testing, combined across woman's and men's report and Month 1 and 3, stratified by allocation day

Study arm	Missing	Positive	Negative	Indeterminate	Did not receive result	Total	p-value
Intervention, n (%)	6 (1.0)	42 (6.7)	569 (90.9)	6 (1.0)	3 (0.5)	626	0.02
Control, n (%)	10 (3.6)	11 (4.0)	254 (91.4)	1 (0.4)	2 (0.7)	278	
Total, n (row %)	16 (1.8)	53 (5.9)	823 (91.0)	7 (0.8)	5 (0.6)	904	

4.1.4 Confirmatory testing and linkage to care among male partners

As shown in Table 11, after one month of follow-up, out of 307 men who tested using oral self-testing, 26 (almost nine per cent) went for confirmatory testing and 281 did not. Of the men who tested positive on the HIVST, 4 out of 16 (25.0%) went for confirmatory testing, while 22 out of 284 (7.8%) of the men testing negative went for confirmatory testing, and 0 out of 7 (0%) of the men who tested indeterminate on the HIVST went for confirmatory testing. Even with our small sample size, this difference in confirmatory testing was substantial enough to show borderline statistical significance (p = 0.06). Furthermore, this difference in rates of confirmatory testing was in the expected direction, with those testing positive appearing to have higher rates of confirmatory testing versus those with negative or indeterminate results with the self-testing kit.

Table 11: Confirmatory testing for male partners who used HIVST as reported by women in month 1

HIVST result	Confirmatory testing, n (%)	No confirmatory testing, n (%)	Total	p-value
Positive	4 (25.0)	12 (75.0)	16	0.06

Negative	22 (7.8)	262 (92.3)	284
Indeterminate	0 (0)	7 (100)	7
Total [a]	26 (8.5)	281 (91.5)	307

Based on the combined women and men's report at both time points (Table 12), there were 472 men who used the HIVST and answered the confirmatory testing question. Of those 472, 102 went for confirmatory testing and 356 did not. Of the men testing positive on the HIVST, 11 of 26 (42.3%) went for confirmatory testing, while 89 of 436 (20.4%) of the men testing negative on the HIVST went for confirmatory testing, and 2 of 5 (40%) of the men testing indeterminate on the HIVST went for confirmatory testing (p-value < 0.01).

Table 12: Confirmatory testing for male partners who used HIVST as reported by women or men, month 1 or 3

HIVST result	Missing	Went for confirmatory test	Did not go for confirmatory test	Total	p-value
Missing, n (%)	2 (100.0)	0 (0)	0 (0)	2	<0.01
Positive, n (%)	0 (0)	11 (42.3)	15 (57.7)	26	
Negative, n (%)	12 (2.8)	89 (20.4)	335 (76.8)	436	
Indeterminate, n (%)	0 (0)	2 (40.0)	3 (60.0)	5	
Did not receive results, n (%)	0 (0)	0 (0)	3 (100.0)	3	
Total, n (row %)	14 (3.0)	102 (21.6)	356 (75.4)	472	

Linkage to care among male partners testing positive for HIV was evaluated based on the woman's report and man's report. Based on the woman's report (Table 13), during the first month of follow-up, 12 men in the intervention arm and two men in the control arm tested positive, with one from the intervention group and two from the control group linking to care. Over the entire three-month follow-up period, based on the woman's report, 19 men in the intervention arm and four men in the control arm tested positive, but only six men linked to care, with a significant difference between the study groups:

two (10.5%) in the intervention arm and four (100%) in the control arm linked to care (Fisher's exact test $p<0.01$).

Table 13: Linkage to care for male partners as reported by women, stratified by intervention arm and follow-up period

Variable	Yes	No	Total	p-value
Month 1 Woman's Report				
Intervention Day, n (%)	1 (8.3)	11 (91.7)	12	0.03
Control Day, n (%)	2 (100)	0 (0)	2	
Total	3 (21.4)	11 (78.6)	14	
Month 3 Woman's Report				
Intervention Day, n (%)	1 (14.3)	6 (85.7)	7	0.08
Control Day, n (%)	2 (100)	0 (0)	2	
Total	3 (33.3)	6 (66.7)	9	
Combined Month 1 and Month 3 Woman's Report				
Intervention Day, n (%)	2 (10.5)	17 (89.5)	19	<0.01
Control Day, n (%)	4 (100)	0 (0)	4	
Total	6 (26.1)	17 (73.9)	23	

Note: Chi-square values are based on available data and exclude missing. Fisher's exact test was used as needed when one or more cells were less than 5.

Based on the man's report, however, we did not observe a significant difference between groups. As shown in Table 14, 29 men (24 in the intervention arm and five in the control arm) tested positive over the entire three months follow up period. Of the 29 who tested positive, 10 (41.7%) men in the intervention arm and 3 (60%) men in the control arm linked to care.

Table 14: Linkage to care for male partners as reported by men, stratified by intervention arm and follow-up period

Variable	Yes	No	Total	p-value
Month 1 Male Partner's Report				
Intervention Day, n (%)	6 (30.0)	14 (70.0)	20	0.31
Control Day, n (%)	3 (60)	2 (40)	5	
Total	9 (36.0)	16 (64.0)	25	
Month 3 Male Partner's Report				
Intervention Day, n (%)	6 (85.7)	1 (12.5)	7	1.00
Control Day, n (%)	1 (100)	0 (0)	1	
Total	7 (87.5)	1 (12.5)	8	
Combined Month 1 and Month 3 Male Partner's Report				
Intervention Day, n (%)	10 (41.7)	14 (58.3)	24	0.63
Control Day, n (%)	3 (60)	2 (40)	5	
Total	13 (44.8)	16 (55.2)	29	

Note: Chi-square values are based on available data and exclude missing. Fisher's exact test was used as needed when one or more cells were less than 5.

When we combined men and women's report (Table 15), we found that 53 men (42 in the intervention arm and 11 in the control arm) tested positive over the entire three months follow up period. Of the 53 who tested positive by any means and answered the linkage to care question, 10 (23.8%) men in the intervention arm and 5 (45.5%) men in the control arm linked to care.

Table 15: Linkage to Care for male partners as reported by either women or men, combining month 1 and 3, stratified by intervention arm

Study arm	Missing	Registered for care	Did not register for care	Total	p-value
Intervention, n (%)	9 (21.4)	10 (23.8)	23 (54.8)	42	0.09
Control, n (%)	4 (36.4)	5 (45.5)	2 (18.2)	11	
Total, n (row %)	13 (24.5)	15 (28.3)	25 (47.2)	53	

Note: Chi-square values are based on available data and exclude missing. Fisher's exact test was used as needed when one or more cells were less than 5.

4.1.5 Long-term follow-up (Phase 3): Confirmatory testing and linkage to care

As described above, in Phase 3 of the study we sought to re-contact couples in which the male partner had tested positive for HIV through self-testing, to allow longer-term follow-up of linkage to care outcomes. Participants were contacted after a range of 5 to 26 months after baseline (mean 13.8 ± 8.0 months). In Phase 1 and 2, we identified a total of 26 men testing positive. However, two of these men did not use the self-testing kits, and another man died during follow-up. Of the remaining 23 men, we interviewed 18 in Phase 3 for the long-term follow-up interview (78% retention).

As shown above in Table 10 and 12, based on the man's report and the woman's report across Month 1 and 3, there were 42 men in the intervention arm who tested positive, of whom 26 men used the self-testing kit and answered the question about confirmatory testing. During Months 1 and 3, based on the combined response from the man and woman, we ascertained that 11 of these 26 men went for confirmatory HIV testing at the clinic (Table 12). Similarly, of the 42 men testing positive in the intervention arm, we ascertained that 10 men registered in HIV care (Table 15), with 23 failing to register in care and 9 missing. Therefore, in the extended follow-up, we were particularly interested in the men who by the Month 3 interview had not yet reported confirmatory testing or linkage to care. In Table 16 we summarize confirmatory testing results from Phase 3 of the study, based on the 26 men who tested positive via HIVST. Overall, we found a notable increase in men going for confirmatory testing during the extended follow-up period, bringing the proportion from 11/26 to 16/26.

Among the 15 men who tested positive with HIVST but did not go for confirmatory testing during the first 3 months, we found that 3/15 men had gone for confirmatory

testing based on the woman's report. However, based on the man's report, and looking across both the woman's and man's report, we found that 5/15 men had gone for confirmatory testing between the Month 3 visit and the long-term visit. Looking across all three study visits, therefore, we found that 16 of the 26 men eventually went for confirmatory testing. Finally, among all 42 men who tested positive in the intervention arm, we found that 21 eventually went for confirmatory testing, with 15 failing and 6 missing.

Table 16: Confirmatory testing at long-term follow-up (at long-term visit, and cumulative) for male partners testing positive by HIVST.

	Missing	Went for confirmatory test	Did not go for confirmatory test	Total
Long-term visit				
Mother's report	21 (80.8%)	4 (15.4%)	1 (3.8%)	26
Partner's report	19 (73.1%)	7 (26.9%)	0 (0%)	26
Combined	19 (73.1%)	7 (26.9%)	0 (0%)	26
Cumulative				
Mother's report	0 (0%)	12 (46.2%)	14 (53.8%)	26
Partner's report	5 (19.2%)	13 (50.0%)	8 (30.8%)	26
Combined	0 (0%)	16 (61.5%)	10 (38.5%)	26

Regarding linkage to care, in Table 17 we summarize results from the long-term visit, and updated cumulative results for linkage to care among men testing positive via HIVST.

Overall, among all men testing positive in the intervention arm whether or not they used HIVST, when including the longer-term follow-up, we found an increase from 10/42 (Table 15) to 14/42 (with 21 failing to link to care and 7 missing), demonstrating a meaningful proportion of men who did link to care after the Month 3 visit. In comparison, among 11 men testing positive in the control arm, 5 men linked to care during the first 3 months of follow-up, with only 2 failing and 4 missing. Therefore, linkage to care among

men testing positive via HIVST continued to lag behind linkage among men who tested positive at the clinic in the control arm.

Table 17: Linkage to HIV care at long-term follow-up (at long-term visit, and cumulative) for male partners testing positive by HIVST.

	Missing	Linked to HIV care	Did not link to HIV care	Total
Long-term visit				
Mother's report	22 (84.6%)	3 (11.5%)	1 (3.8%)	26
Partner's report	20 (76.9%)	5 (19.2%)	1 (3.8%)	26
Combined	20 (76.9%)	5 (19.2%)	1 (3.8%)	26
Cumulative				
Mother's report	10 (38.5%)	3 (11.5%)	13 (50.0%)	26
Partner's report	12 (46.2%)	7 (26.9%)	7 (26.9%)	26
Combined	4 (15.4%)	7 (26.9%)	15 (57.7%)	26

4.1.6 Secondary outcomes: passing the kit to the male partner and testing as a couple among HIV positive and negative women attending ANC

Overall, 651 out of 662 (98.3%) of the women took the HIV oral self-testing kit home; 597 out of 647 (92.1%) of the women passed them on to their partners and the majority of the women who passed the kits on to their partners passed them on the same day (239 of 497, 40.0%) or within the first week (254 of 597, 42.6%). As shown in Table 18, based on the combined women and men's reports, approximately three quarters (562 of 767, 73.3%) in the intervention arm reported to have tested as a couple, and the difference in couple testing was statistically different at all follow up points but highest within month one women's report, with 419 out of 573 (73.1%) versus 45 out of 241 (18.7%).

Table 18: HIV self-testing as a couple among pregnant women attending ANC and their male partners

Variable	Yes	No	Total	p-value
Month 1 Woman's Report				
Did you test together as a couple?				
Intervention arm, n (%)	419 (73.1)	154 (26.9)	573	<0.0001
Control arm, n (%)	45 (18.7)	196 (81.3)	241	
Total	464 (57.0)	350 (43.0)	814	
Missing			*804 (49.7)*	
Month 3 Woman's Report				
Did you test together as a couple?				
Intervention arm, n (%)	100 (33.3)	200 (66.7)	300	0.003
Control arm, n (%)	54 (22.0)	192 (78.1)	246	
Total	154 (28.2)	392 (71.8)	546	
Missing			*1072 (66.3)*	
Combined Month 1 and Month 3 Woman's and Men's Report				
Did you test together as a couple?				
Intervention arm, n (%)	562 (73.3)	205 (26.7)	767	<0.0001
Control arm, n (%)	186 (30.8)	418 (69.2)	604	
Total	748 (54.6)	623 (45.4)	1371	
Missing			*247 (15.3)*	

4.1.7 Disclosure rates and outcomes of partner HIVST across the two arms (positive including partner support for women and negative events including social harms

A third of the women (533 out of 1562, 34.1%) reported to have disclosed their HIV status at baseline, and their disclosure rates at the subsequent follow up points were

higher than their male partners (Table 19). A comparison of disclosure rates by arm reveals meaningful differences, but must take into account the fact that many more couples in the intervention arm tested together. Therefore Tables 19 and 20 only refer to those couples who did not test together. As shown in Table 20, the disclosure rates were generally comparable across arms although more men in the control arm reported to have disclosed to their partners than their counterparts in the intervention arm. During month one, 214 of 309 (69.3%) of men in the control arm and 105 of 164 (64.0%) in the intervention arm disclosed their test results to their partners, although the difference was not statistically significant. Disclosure by men increased by over 10% (to 38 of 46, 82.6%) in the control arm and increased by 8% (to 27 of 39, 69.2%) in the intervention arm at month three.

As shown in Table 21, more women in the intervention arm (66 of 277, 23.8%) than in the control arm (75 of 563, 13.3%) reported that their partners disclosed their test results at month one. At month three, slightly more women in the intervention arm (94 of 487, 19.3%) compared to those in the control arm (64 of 454, 14.1%) reported partner disclosure. Although the difference in disclosure rates among women was statistically significant at month one, the difference was comparable at month three and across all follow up points among men.

Table 19: Disclosure rates from women to men in baseline report

Baseline woman's report	Yes	No	Only Tested Today	Total	P value
Intervention, n (%)	270 (32.8)	238 (28.9)	315 (38.3)	823	0.38
Control, n (%)	263 (35.6)	216 (29.2)	260 (35.2)	739	
Total	533 (34.1)	454 (29.1)	575 (36.8)	1562	

Table 20: Disclosure rates in man's report, stratified by arm and follow up period

Month 1 Man's Report				
	If you didn't test with your partner, did you disclose your results to her?			
	Yes	**No, n (%)**	**Total**	**p-value**
Intervention Day, n	105 (64.0)	59 (36.0)	164	0.25

(%)			
Control Day, n (%)	214 (69.3)	95 (30.7)	309
Total [a]	319 (67.4)	154 (32.6)	473
Missing			*1145*

Month 3 Man's Report

	If you didn't test with your partner, did you disclose your results to her?			
	Yes, n (%)	**No, n (%)**	**Total**	**p-value**
Intervention Day, n (%)	27 (69.2)	12 (30.8)	39	0.15
Control Day, n (%)	38 (82.6)	8 (17.4)	46	
Total [a]	65 (76.5)	20 (23.5)	85	
Missing			*1533*	

Table 21: Disclosure rates in woman's report, stratified by arm and follow up period

Month 1 Mother's Report

If you didn't test as a couple, did your partner disclose to you his test results?

	Yes	**No**	**Don't know**	**Total**	**P value**
Intervention Day, n (%)	66 (23.8)	120 (43.3)	91 (32.8)	277	<0.01
Control Day, n (%)	75 (13.3)	275 (48.8)	214 (37.9)	564	
Total [a]	141 (16.8)	395 (47.0)	305 (36.3)	841	
Missing				*777*	

Month 3 Mother's Report

If you didn't test as a couple, did your partner disclose to you his test results?

	Yes	No	Don't know	Total	P value
Intervention Day, n (%)	94 (19.3)	222 (45.6)	171 (35.9)	487	0.09
Control Day, n (%)	64 (14.1)	227 (50)	163 (35.9)	454	
Total [a]	158 (16.8)	449 (47.7)	334 (35.5)	941	
Missing				*677*	

4.1.8 Positive and negative social outcomes

In the questionnaires, we asked both women and their partners about positive and negative social outcomes at baseline and throughout the follow up period. Negative social outcomes were of interest to address the concern that stress associated with HIV testing, and conflict related to the woman bringing a kit home, might result in negative social harms. On the other hand, positive social outcomes were of interest to investigate whether successful HIV testing, and possibly increased self-efficacy associated with HIV self-testing, might improve the relationship or have other beneficial social outcomes.

We assessed the women's questionnaire regarding how the men responded to the idea of HIV testing and found minimal negative outcomes. Overall, of those who answered the question at the month 1 interview, the largest percent of women reported the men to be happy (45.0%), with 20.5% "not sure", as well as 7.9%, 4.6%, 4.3%, 0.5%, and 17.2% of the women describing the men as "did not want to talk", "angry", "fearful", "violent", and "other", respectively. The majority of the men (66.4% overall, similar between study arms) did not change in the way they supported their pregnant partners. The most common support given to the women was money to attend ANC clinic; this was reported by 452 of 847 (52.3%) of the women in the intervention arm and 413 of 771 (47.8%) in the control arm (Table 22).

Table 22: Partner support based on women's report

Row % for Month 1 & 3 separately	**Month 1**		**Month 3**	
	Intervention (n=847)	**Control (n=771)**	**Intervention (n=847)**	**Control (n=771)**
How has your partner supported you towards attending ANC, after your last interview? (row percentages; women could choose more than one)				
Money to attend ANC, n (%)	452 (52.3)	413 (47.8)	305 (52.8)	273 (47.2)
Escorts me to attend	47 (56.6)	36 (43.4)	46 (56.1)	36 (43.9)

ANC, n (%)				
ANC Reminders, n (%)	213 (49.9)	214 (50.1)	126 (52.7)	113 (47.3)
Does not support me to attend ANC, n (%)	31 (50.0)	31 (50.0)	28 (50.9)	27 (49.1)
In your assessment, how has the support from your husband changed, if at all? (column percentages)				
Not changed, n (%)	475 (68.6)	412 (64.0)	346 (59.2)	281 (54.8)
Improved, n (%)	167 (24.1)	174 (27.0)	180 (30.8)	188 (36.7)
Reduced, n (%)	47 (6.8)	54 (8.4)	59 (10.1)	44 (8.6)
Not sure, n (%)	3 (0.4)	4 (0.6)	n/a	n/a

As shown in Table 23, at month 1 according to the woman's report, a higher proportion reported her partner humiliating her or threatening to harm her (34/690 vs. 10/643, p=0.0006). However, only a few of these women reported this to be related to the HIV testing (8/32 vs. 1/10, p=0.42), providing no clear support for the concern that HIV self-testing might lead to gender-based violence. Furthermore, only 2 couples in the intervention arm were reported to have separated during the study period with no other intimate partner violence registered.

Table 23: Social harms based on women's report

Row % for Month 1 & 3 separately	**Month 1**		**Month 3**	
	Intervention (n=847)	**Control (n=771)**	**Intervention (n=847)**	**Control (n=771)**
Partner humiliated or threatened to harm you	34 (4.9%)	10 (1.6%)	13 (2.2%)	12 (2.3%)
Related to HIV testing?	8 (0.9%)	1 (0.2%)	2 (0.4%)	2 (0.4%)
Physical harm	16 (2.3%)	7 (1.1%)	11 (1.9%)	4 (0.8%)
Related to HIV testing?	4 (0.5%)	1 (0.2%)	1 (0.2%)	0 (0.0%)
Worried that partner may harm you	13 (1.9%)	11 (1.7%)	15 (2.6%)	4 (0.8%)

4.1.9 Coping strategies among discordant couples

In Phase 3 (long-term follow-up), we enrolled discordant couples to assess coping strategies, in addition to confirmatory testing and linkage to care as summarized above. In Table 24, we summarize reported impacts to the relationship, and coping strategies employed by discordant couples. Many of the study participants (22 of 45, 48.9% of women and 17 of 41, 41.5% of men) had considered ending the relationship after they learned the discordant status; however, few actually left the relationship. Overall, women were significantly more likely than men to share their discordant status with others, with somewhat higher rates of disclosure (not statistically significant) to parents and friends; however, men were somewhat more likely than women to share the discordant status with other relatives (not statistically significant). We observed no differences between women and men regarding the reaction of those with whom they shared news of their discordant relationship. Most women and men reported that the individual encouraged them to stay in the relationship. Few were linked to discordant couples clubs or HIV counselors.

Regarding coping strategies, women and men reported their agreement with different statements using a Likert scale in which “1” indicated strong agreement, and “5” indicated strong disagreement (Table 24). Overall, we found that both men and women tended to agree that they solved their problems through discussion, they were concerned about preventing HIV transmission, and the uncertainty of having HIV presented a major concern in their lives. We found no strong agreement or disagreement with the idea that HIV brought them emotionally closer, or that HIV induced emotional distance between the woman and male partner; however, men were somewhat less likely to agree that having HIV created an emotional distance between the partners (p=0.09). Men were somewhat more likely than women to report that they always used condoms during sexual intercourse (p=0.09). Finally, we found no strong agreement or disagreement with the idea that the respondent should have left the discordant relationship, but did not do so for the sake of their children.

Table 24: Discordant couples: relationship outcomes and strategies for coping

	Woman	Male partner	p-value
Thought of quitting relationship?	22/45 (48.9%)	17/41 (41.5%)	0.49
Quit the relationship?	4/22 (21.7%)	2/16 (12.5%)	0.64
Share discordant status with anyone?	28/48 (58.3%)	11/40 (27.5%)	0.004
Parents	11/28 (39.3%)	3/11 (27.3%)	0.71
Friends	9/28 (32.1%)	2/11 (18.2%)	0.46
Religious leaders	0/28 (0%)	0/11 (0%)	1.0

Other relative	9/28 (32.1%)	6/11 (54.6%)	0.28
Children	0/28 (0%)	0/11 (0%)	1.0
How they were supported			
Encourage to stay in relationship	22/28 (78.6%)	10/11 (90.9%)	0.65
Link to discordant couples' club	0/28 (0%)	0/11 (0%)	1.0
Link to HIV counselor	1/28 (3.6%)	0/11 (0%)	1.0
Encourage to leave relationship	3/28 (10.7%)	1/11 (9.1%)	1.0
Did not support me	1/28 (3.6%)	0/11 (0%)	1.0
Coping strategies (Likert scale [1=agree, 5=disagree]: mean, standard deviation)			
Solve our problems by discussing	1.9 (1.2)	1.8 (1.2)	0.71
Concerned about preventing HIV transmission	1.9 (1.0)	1.8 (0.96)	0.87
Big challenge is uncertainty of HIV	3.1 (1.7)	3.2 (1.4)	0.73
Discordance brought us closer	3.3 (1.6)	3.2 (1.5)	0.84
Discordance causes emotional distance	3.1 (1.7)	3.7 (1.4)	0.09
We always use condoms	3.3 (1.7)	2.7 (1.6)	0.09
I stay because of our children	3.1 (1.9)	3.5 (1.7)	0.36

4.1.10 PCR results

We identified 186 participants in the intervention arm who reported testing negative with the oral self-testing kit, but whose kits appeared to show a weak positive band when they returned for a follow-up visit. We invited these 186 individuals to participate in a PCR testing study to confirm their results and to better understand the performance of different HIV testing modalities. One hundred and fifty out of 186 (80.7%) people participated in this sub study and more than half were women (96 of 150, 64%). As described in Methods above, these individuals underwent repeat supervised oral testing, standard rapid blood-based testing, and blood was taken for PCR testing. Nearly all of these individuals were confirmed negative on retesting, with 140 concordant negative on observed oral self-testing, rapid blood based and PCR tests. Five other participants were

found to be HIV positive, with concordant results on all three methods. Lastly, five participants had discordant results: two oral self-testing results were in agreement with PCR and two with the rapid blood test. As part of this sub-study, participants were asked to interpret their oral self-testing result, under observation. About 139 oral testing results were interpreted correctly by the participants, six were wrongly interpreted and five were missing participant's interpretation. Of the six results that were wrongly interpreted, four were wrongly interpreted as positive and two as negative. All the four results that were wrongly interpreted as positive tested negative on PCR. Of the two wrongly interpreted as negative; one interpreted as indeterminate by the interviewer tested negative and the second interpreted as negative by both the interviewer and participant tested positive on PCR. Four out of the six (66.7%) wrongly interpreted results were for women.

4.2 Qualitative results

Eighty-five (85) individuals were interviewed; of these, 70 were in-depth interview (IDI) participants while 15 were key informant interview (KII) participants (Table 23). Of the 70 IDI participants, 11 were family members of women whose male partners self-tested for HIV, 15 were male partners who used the kit; 15 were male partners who refused to use the kit; while 12 were women whose male partners refused to use the kit to test for HIV.. Of the 15 KII participants, nine were nurse counselors; two were expert clients; while four were other types of participants. All interviews were conducted at the end of the last quantitative follow-up visit; i.e. at the end of the follow-up period.

Table 25: Number of participants interviewed for the qualitative study by study site and category of participant

Study site	Entebbe			Mpigi			Nakaseke			Total
	IDI	KII	Total	IDI	KII	Total	IDI	KII	Total	
Participant category										
In-depth interviews										
Family member	5		5	4		4	2		2	11
Men who refused HIVST	5		5	6		6	4		4	15
Men who self-tested	6		6	5		5	4		4	15
Women whose partners refused HIVST	5		5	5		5	2		2	12
Women whose partners self-tested	5		5	5		5	7		7	17
Sub-total	26		26	25		26	19		19	70
Key informant interviews										
Nurse Counselor	0	2	2	0	3	3		4	4	9
Expert Client	0	0	0	0	2	2		0	0	2
Other (not specified)	0	3	3	0	0	0		1	1	4
Total	0				5	5		5	5	6
Overall Total	26	5	5	25	5	30	19	5	24	85

Study findings were grouped into six *a priori* and emerging themes, including: a) motivation for HIV self-testing; b) anticipated fears/initial barriers to HIV self-testing; c) strategies used by women in delivering HIV self-test kits to their male partners; d) experiences in using HIV self-test kits; e) social consequences associated with HIV self-testing; and f) positive outcomes/benefits of HIV self-testing. These findings support our initial assumptions as envisaged in the theory of change, and partly explain the high HIV self-testing rates reported by women in the quantitative section of this report.

4.2.1 HIV self-testing facilitates male partner and couples' HIV testing

Evidence from prior research suggests that men are less likely than women to test for HIV(Camlin, Seeley, et al. 2016) largely because they do not have time to go health facilities to test for HIV. We explored participants' perceptions as to whether the presence of the kits in the home could have motivated men to test for HIV. In response, women indicated that the HIVST kit not only helped to encourage men to test for HIV, but also helped them to learn about their male partners' HIV infection status (some men got to know they were HIV-positive after using the kit) which they might not have known had the kit not been brought home.

> "… if I had not taken it, even my husband would not have come to the facility to be tested but I took it and told him that once it comes 2 lines, it means you have HIV and if it come with 1 line it means you don't have HIV and when we came here and the lab tested him, and they called him and he came, they drew blood from us and on that very day he started on medication which he didn't know. And if I had not taken that kit, he didn't have the idea in his mind to come to hospital to test for HIV but the oral kit, influenced him to come to the hospital so that he knows the truth with his status and after that day he started getting treatment" (*HIV-negative woman in an HIV-discordant relationship whose male partner self-tested for HIV, age 34, Nakaseke Hospital*)

Women also indicated that the presence of the kits in the home motivated them to test together with their male partners. This was likely the case because women and their partners were able to use the test kits at home, something that would be difficult if men were asked to go to the health facilities to test for HIV with their female partners.

4.2.2 Anticipated fears/barriers that women faced before delivering HIVST kits

Women participants narrated how they were initially scared of how best they were going to introduce the HIVST kits to their male partners. Most of the women thought that their male partners would "*ask me what I had brought home*", and that they were most likely to refuse to use the kits. There were initial doubts about the ability of the HIVST kit to detect HIV antibodies given that participants were used to a blood-based test, rather than a test kit that uses mucosal fluids.

> The first time I had about HIV self-testing, the issue that came into my mind was that the kits will not work. This is because personally I was used to the old method of pricking with a needle. So I wondered and thought [about] how this method will test for HIV yet there is no blood involved (*HIV-positive female partner in an HIV-discordant relationship whose male partner self-tested for HIV, age 33, Mpigi Health Center IV*)

When asked if the HIVST kit performed as expected, participants indicated that when they self-tested using the HIVST kit, their HIV results were similar to those that they got when they were tested at the ANC using a blood-based rapid HIV test; that is, the test

yielded HIV-positive results which they already knew having tested previously through ANC.

4.2.3 Strategies used by women to introduce HIV self-test kits to their male partners or to make them use the kits at home

Women used several strategies to introduce HIVST kits to their male partners. Some women, particularly those whose relationship with their husbands/male partners was good, introduced the kit on the same day and told their partners that the kits were meant for HIV self-testing. However, in the majority of cases, women thought of innovative strategies that would enable them to deliver the kits to their male partners without courting any form of trouble for themselves. Most of the strategies used were positive and included: a) enlisting the support of a health worker in convincing the male partner to use the kit; b) asking that the HIVST kits be sent to the male partners by the health workers; and c) waiting for 'opportune moments'. Other strategies used to convince their partner to use the test or to ensure their partner tested were less than honest. Only a few women reported using these strategies, but they are important to mention. These included: a) concealing some information about the HIVST kit from the male partner, e.g. telling the male partner that the kit was for HIV self-testing but not telling them how the results should be interpreted; b) lying about the purpose of the kit; i.e. telling the male partner that the HIV self-test kit was meant to test all 'blood-related' diseases in the body; and c) controlling the HIV self-testing process; e.g. one woman swabbed the male partner and conducted the self-testing exercise herself instead of teaching her partner how to do it on his own:

> "… I told him that he would do it wrongly so; **I asked him to allow me do it for him**. He asked me to teach him how he should do it and I told him that he would not afford to do it and he was convinced. So he allowed me to do it [perform HIV self-testing] for him" (***HIV-negative female partner who self-tested with her HIV-negative male partner, age 20 years, Entebbe***)

4.2.4 Experiences during the process of using HIV self-testing kits

Participants indicated that HIVST is easy to perform because of its convenience; that is, it can be done at home or in any other private place and in a much simpler way than what one goes through to undertake conventional HIV testing processes:

> I think it's a simple process because when you go for testing at a health facility, you must wait till when you're called for your HIV test results but in self-testing, it's you who controls the entire process. For the conventional HIV testing, it's the health provider who sees your test results first before you do. Secondly before they give you your results, again they first take you through counseling which can make you think that you're HIV positive. For HIV self-testing, you get to know your test results without going through counseling again – that stress! (*Female partner who self-tested with male partner, age 20 years, Entebbe Hospital*)

One man said that he was not sure that just a simple test kit – the one he received from his wife – could really detect HIV antibodies. He said he still carried these thoughts even after performing the test.

> "… I was asking myself saying 'is this really true'? Can really a person just get that spoon and pass it in the gum and then ... [he spreads his hands] and tests for HIV? Still that was running in my mind – wondering ... and up to now; am still not convinced because she told me that you know the saliva settles there and the person who is positive, there is this and that – she is not a nurse, she is ... [laughs] so you have to know am still asking myself really (*Male partner who self-tested for HIV, 38 years, Entebbe Hospital*)

This male participant indicated that for him, he knew that HIV antibodies can only be detected through blood rather than through oral mucosal fluids. In his own reasoning, he thought that the oral mucosal fluids which he constantly referred to as 'saliva', is "too acidic" for HIV to survive in it. As such, there was no way that "saliva" could have antibodies for HIV even if someone were HIV-positive. Even after performing the test and testing negative, this participant indicated that he still had doubts as to whether the oral HIVST kit can detect HIV antibodies in mucosal fluids.

4.2.5 Women's experiences after using the kits

We asked women what happened when they delivered and/or eventually used the HIVST kits with their male partners. Overall, all women whose male partners self-tested for HIV reported that they did not experience any dire social consequences arising from testing with them. Instead, there were more positive experiences reported.

In an in-depth interview with an HIV-positive woman in an HIV-discordant relationship, we asked her what happened to their relationship after the husband knew his HIV-negative status and the woman's HIV-positive status. In response, she said that although she feared what the husband might do after learning that she was HIV-positive, he did not "*show any anger*":

> We had tested together some time back. But for me I had taken a period of three months since I had last tested. But we had tested together sometime back through the mobile testing services that had come to our village and we were both negative. I was surprised when I tested this time and the results had changed. So may be the virus was just not detected that time. My greatest fear was that it was going to be trouble the moment he learns about it. But he did not show me any anger. Nothing happened (*HIV+ woman in an HIV-discordant relationship whose male partner self-tested for HIV, age 25, Mpigi HC IV*)

This woman indicated that instead of the relationship developing cracks, her husband started to support her the moment he learnt of her HIV-positive status. He supports her with money for transport to the clinic and reminds her of when to take her drugs to improve adherence:

> Since that time, he asks me when I am going for treatment and he gives me transport. He is very interested in knowing my return date whenever I come from the facility to enable him plan for the transport … He always reminds me to take my medication on time (*HIV+ woman in an HIV-discordant relationship whose male partner self-tested for HIV, age 25, Mpigi HC IV*)

In another interview, when an HIV-negative woman whose male partner tested HIV-positive was asked about what she thought following the knowledge of her partner's HIV-positive status; she indicated that while knowledge of her male partner's results stressed her at the beginning, she was able to eventually cope with the situation, and they still live together with him.

4.2.6 Positive outcomes/benefits of HIV self-testing

Participants who tested together for HIV indicated that the use of HIVST kits helped to improve the quality of their relationships:

> It built the confidence between the two of us because – I do not know whether she misunderstood or that that is exactly what you told her but she told me that; 'we have to do it when we are two' – I do not know because I was not there in the first place when she was bringing the kits ... but it builds the confidence … (*Male partner who self-tested for HIV, 38 years, Entebbe Hospital*).

> I didn't trust him even when we were going to have sex I would be scared thinking that I would contract HIV from him at that time. But after HIV self-testing I gained confidence in him and stopped worrying (*HIV-negative female partner who self-tested with her HIV-negative male partner, age 20 years, Entebbe Hospital*).

Similar benefits of HIVST were shared by a nurse counselor at Mpigi. When asked what observations she had seen at the health facility since HIV self-testing was initiated, the nurse counselor reported that there was an increase in the number of men escorting their wives to the health facility, in addition to an increase in the number of men testing for HIV.

> What I can say is that HIV self-testing has increased on the number of men testing for HIV which was not the case before. According to my observation, the study has also improved on the number of men who escorts their wives for antenatal care unlike before. The number has gone up (*KII with nurse counselor, Mpigi HC IV*).

4.2.7 Coping mechanisms of HIV-discordant couples

Eighteen individuals in HIV discordant relationships (i.e. 9 couples) were followed up and interviewed about how they coped with their HIV sero-discordant status since they last self-tested for HIV. Of the nine couples, six had the female partner HIV-infected while three had the male partner HIV-infected. It is important to note that 11 of 18 individuals interviewed had ever tested for HIV and were already aware that they were living in an

HIV-discordant relationship; so, they had most likely overcome the initial emotions and fears associated with living in an HIV discordant relationship. Only seven individuals indicated that they got to know about their HIV discordant status after they self-tested for HIV. But even then, we did not find any major differences in the way the two sets of couples coped with HIV discordance, probably because most, if not all, of them had already bypassed the most critical/difficult stage in appreciating their HIV discordant status and probably because of the long duration since they last self-tested for HIV. The follow-up visit to assess coping mechanisms among HIV discordant couples happened after 6-18 months since the couples last self-tested for HIV.

Nevertheless, study findings provide insights into what goes through the minds of individuals the moment they learn that they are in an HIV-discordant relationship and how they eventually cope with the situation. The findings present scenarios that can happen in any relationship regardless of the method of HIV testing used. Study findings were grouped into four main areas: a) *initial reactions when members of the couple learnt for the first time that they were HIV-discordant*; b*) how individuals coped with their HIV discordant status and managed to live together until time of interview*; c) *current thoughts and fears about HIV-discordance* and d) *advice to couples in other HIV-discordant situations.*

a) Initial reactions about HIV sero-discordance

Our findings suggest that three things happened the moment individuals learnt of their sero-discordant status for the first time: i) *HIV-positive women feared that they would be chased out of their homes while HIV-negative women thought of separating from their HIV-infected partners*; ii) *some participants developed suicidal ideations but these cleared after they were counselled*; and iii) *some participants reported changes in the way they related sexually*. A majority of HIV-positive women with HIV-negative male partners were scared that their male partners would throw them out of the home, although many attested to the fact that this did not eventually happen, as the quotation below indicates:

> *"What came to my mind, at heart I was so scared and worried and had this feeling that since he had found out that I am HIV positive while he is HIV negative, he might over-react and in the end we separate but all in all, I was also relieved after knowing the truth about his status and became strong and ready to go by whichever decision he would make. To my surprise, he did not react like I had expected because he chose to stay with me and support me in my situation* **(HIV-positive female partner age 35, Mpigi Health Centre IV)**

Likewise, HIV-negative women with HIV-positive partners initially thought of separating with their HIV-positive male partners but after being counselled by health workers, they decided to stay in the relationship. A female participant from Entebbe Hospital narrated

how she developed repetitive impulses to separate from her HIV-positive husband but "*cooled down*" after she was counselled by health workers and she decided to stay in the relationship:

> "*… What came to my mind … I thought of walking away and abandoning him, I thought of separating from him, I even didn't want to have a glance at him at that time but I cooled down, such thoughts would come and I felt so stressed, I was pregnant [at the time] and felt stressed. But I decided to calm down by myself, the health workers had tried to counsel me that this was possible, I could stay like that and look after my children. Generally, I got a very big challenge and if it was not the fact that I was strong, I would not have tolerated it at all or would have packed my bags and separated from him.* (**HIV-negative female partner age 25, Entebbe Hospital)"**

Two HIV-positive men indicated that they initially thought of committing suicide due to being HIV-infected yet their partners were HIV-negative but also due to the fact that their HIV-negative partners were threatening to leave them. An HIV-positive man from Entebbe Hospital narrated how he felt that he was no longer "worth living" since his partner who would have consoled him was threatening to leave him. However, when these individuals received counseling from their relatives and health workers, they managed to drop the idea of committing suicide and decided to continue with life, as the quotation below indicates:

> *"I had decided to commit suicide. I got that thought so often because of three reasons, first was because I had found myself infected with HIV, second was I was no longer working and thirdly, my wife who would have counselled me was continuously threatening to abandon me. Whenever I thought of all these, I felt like I was not worth living but I dropped the decision because of the thorough counseling I received from my aunt and my parents and also the fact that my wife eventually decided to stay with me in our relationship and we look after our children.* **(HIV-positive male partner age 30, Entebbe Hospital)."**

A majority of HIV-negative participants with HIV-infected partners narrated how learning about their HIV sero-discordant status created an emotional distance between them. The idea of resorting to regular condom use with their marital partners became so hard and painful that some participants would take long to engage in sex with their HIV-positive partners. In a few couples, HIV-negative men refused to use condoms and continued to have live sex which put them at risk of HIV infection. A 34 year-old HIV-negative male participant from Entebbe Hospital narrated how they no longer have sex as regularly as they used to do (before he got to know that his wife is HIV-positive) since the '*love has reduced*'.

> *"Hmm, life changed a bit. Our life was very good before I learnt that my partner was HIV positive but when I did, just like you know, the love reduced a bit and became measurable because before, we both thought that we were HIV negative and we used to*

have live sex. We could have it like three or more times but now, it reduced. We can have it like once in a week or not even having it at all because we rarely think about that. It is because the love has reduced. Nothing else changed. The way we treat and care for each other is still the same. I still love her. **(HIV-negative male partner age 34, Entebbe Hospital)."**

b) How couples coped with their HIV discordance status

As noted, HIV-positive individuals in HIV-discordant relationships were initially concerned that they would separate or thought of committing suicide while others had to grapple with changes in the way their partners related with them sexually. To cope with these thoughts and changes in their lives, participants highlighted the important role of counseling from professional health workers and psycho-social support from relatives and friends. The following quotations highlight the importance that counseling played in these people's lives and helped them to cope with HIV discordance:

"I received some counseling. What I really got out of this counseling was to ensure that my partner takes medicine. This was something important I got because I leant that when she takes her medicine, the virus will become dormant. And, secondly not to stress her and keep reminding her that you are HIV positive because, just that you have come at a time when she is just recovering from an illness. She had an illness which affected her but before that she was very healthy that no one could even suspect that she is HIV positive. When she goes to pick her medicine, one could think that she is taking the child for immunization but she would be getting her medicine. So, what I got from this counseling is that I don't make my partner worried and stressed. This also helped us to stay together because of the fact that you are aware of her status and you know how to support her to stay healthy" **(HIV-negative male partner age 47, Nakaseke Hospital)**

"Yes, especially me … It took me time to accept that I would stay with her in our relationship and I still remain HIV negative. It took time. The health worker assured me that it was possible so long as she adhered to her drugs as prescribed; it was possible that she could live long and I can also stay negative. The counseling partly helped because according to my understanding, I had made my own decisions about what would happen [getting HIV-infected] … They continued to strengthen me that it was possible to remain in this relationship when you are still HIV negative" **(HIV-negative male partner age 45, Mpigi Health Centre IV).**

As already noted, some individuals indicated that they were supported to cope with their HIV discordant status by people within their social networks, including parents, aunties, siblings, and to some extent, close friends, to whom they had disclosed their HIV status. When asked if disclosing to these people helped them to cope in any way, most participants indicated that they received support from those that they disclosed to, including support to stay together with their partners and to start/continue to take HIV-treatment if they were HIV infected, as indicated in the quotation below.

> *"I told my mother and elder brother who is a pastor. I opened up to my mother since she is an adult and can understand, she advised that I should continue taking drugs and look after my children. She strengthened me and that is why I am still living too. I further explained to them about my wife's [HIV-negative] status too and they were eager to know if she would be willing to [stay with] me, they had that thought [in their] mind, too. I told them that currently I had not sensed any changes but since we all have different plans hidden in our heart, I may be here proud that she may stay with me forever when she has a different plan in the long run* **(HIV-positive male partner age 48, Entebbe Hospital)".**

When asked what their source of hope for a healthy future is, despite being in an HIV-discordant relationship, HIV negative participants indicated that the fact their HIV-positive partner is already receiving HIV treatment is a great source of hope. Being on treatment will help them to remain healthy and strong. Likewise, HIV-positive individuals reported that being on HIV treatment will help them to live a longer life and "*be able to take care of my children*":

> "*What gives me hope is being on treatment and to be of importance to my children. What gives me hope is that I am going to be healthy and alive and I will be able to take care of my children when I promptly take my medicine. Also the fact that my partner takes good care of me but even if he doesn't take care of me, I have hope that when I am healthy, I can provide everything I want for myself*. **(HIV-positive female partner aged 34, Nakaseke Hospital)."**

c) Current thoughts and fears about HIV discordance

Although a majority of couples indicated that they were coping well with HIV discordance, a few HIV negative individuals indicated that they sometimes feared that their partners might one day infect them with HIV, especially if they refused to use a condom. This is a natural feeling of desperation that calls for individuals in HIV discordant relationships to be provided with on-going support counseling.

> "*Maybe what can come on my mind is sometimes I can sit down and think that since he is sick (i.e. HIV-positive), one day I will also wake up when he has infected me. If he wakes up one morning and [refuses] to use a condom and forces me into sex, won't I risk my life getting infected? Sometimes I get those worries but I try so hard to remain strong.***(HIV-negative female partner aged 25-34, Entebbe hospital)."**

When asked what their hardest moment has been ever since they got to know that they were HIV-positive while their partners were HIV-negative, some HIV-positive individuals expressed fear and scepticism regarding what their partners think about them. In the quotation below, a 32 year-old HIV-positive female partner from Mpigi narrates how she feels that she could be more of a burden to her HIV-negative male partner, something that continues to bother her:

"The hardest thing is sometimes when we are discussing family issues and I get imaginations of what he may be thinking about me in regards to our different status because he does not talk about it. Secondly, sometimes when I am going to get my drugs at the health facility and I do not have transport , I find it hard turning to him for assistance, sometimes I feel like I am a burden and he may complain and get fed up of such a situation. **(HIV-positive female partner age 32, Mpigi Health Centre IV)."**

d) Advice to other couples in HIV-discordant relationships

When asked what advice they would give to other HIV discordant couples to cope with HIV infection, most participants suggested that such couples should endeavour to avoid getting into arguments (about who brought HIV into the home) with each other but try to support each other to live harmoniously without pointing fingers. There were also suggestions that the HIV-negative partner should support the HIV-positive partner to not only link to HIV care but also to continue to receive and take their HIV medication as expected. Individuals who are HIV-positive should endeavour to take their treatment as advised rather than resort to regrets. The following quotation illustrates one of the suggestions that can help couples in HIV discordant relationships to stay together and live harmoniously thereafter.

I would advise the one who is negative or even request them that you encourage your partner to always go back to the health facility on the return date given and to also make sure that the medicine given is taken as instructed. The other thing is a challenge of getting so worried about the fact that you are positive and your partner is negative and you start thinking that he will even leave me but leaving your partner after going through so much trouble together, I don't see that as right … Lastly, the advice I would give to discordant couples is that the partner who is infected should also take trouble to take his medicine instead of feeling low about themselves saying that after-all I am already infected,,. The more they continue being reluctant about care, the more their lives will be in danger. Actually, in most cases, people who drop off care get worse and some of them even lose their lives **(HIV-negative male partner age 45, Nakaseke hospital).**

4.2.8 Linkage to HIV care among HIV-positive individuals

Interviews were conducted with seven (7) HIV-positive men to explore: a) issues that supported them to link to and remain HIV care, among those that had linked to care and were still in care; b) issues that had led to dropping out of care, among those that had initiated care but dropped out; and c) issues that inhibited them from linking to HIV care among those that had not yet initiated HIV care. Study findings have been grouped into three main a priori themes: a) *Issues that influence linkage to and retention in HIV care*; b) *Issues that led HIV-positive men who had enrolled into HIV care to drop out*; and c) *Issues that have inhibited HIV-positive men who are yet to link into HIV care to do so*.

a) Issues that influenced linkage to and retention in HIV care

Three HIV-positive men had initiated care after HIV self-testing and were still in HIV care at the time of interview. We asked these men what had helped them to link into HIV care in the first place when other men have failed to do so. In response, men cited the role of counseling that they received from health workers and encouragement from their relatives as key factors.

> *I realised that my life was deteriorating and yet my children needed me. Secondly how my aunt and other health workers counselled me. When I thought about all this, I realised that my people still needed me and I also had more reasons to continue living. During counseling, they showed me examples of some people who had lived for many years yet they were in my situation. So all this gave me hope to start on drugs.* (**HIV-positive male partner aged 34, Entebbe Hospital**).

When asked what had made them continue with their HIV treatment yet others sometimes drop out, men cited two main reasons for keeping in HIV care: a) support from their wives/female sexual partners, and b) the love of their life; i.e. the need to remain alive and strong, as illustrated in the quotations below:

> *"What you should know is that our wives play a big role in our lives, communicate through women … when these women are attending antenatal services, the men do not escort them and tend to be so busy. I personally would have opposed the idea if my wife was not among those who had counselled me to initiate drugs…* (**HIV-positive male partner age 30, Entebbe Hospital**).

> *"… And what has helped me to be on care for the last two years is because I love my life. Ever since I started treatment, there is a lot of improvement on my life. I used to constantly fall sick but that stopped when I started on care. I could be attacked by fever, strong cough and other illnesses constantly. Also, what has helped me stay on care is the fact that I know that I am not alone but there are many other people who are on care like me, this makes me stronger. Also, my wife... reminds me to take my medicine."*(**HIV-positive male partner age 29, Nakaseke hospital**).

b) Issues that led HIV-positive men who had enrolled into HIV care to drop out

In interviews with one participant from Mpigi who initiated HIV care and dropped out, we found that inability to disclose his HIV status to his new partner was the main reason that he dropped out of care. This participant informed us that he got a new wife after starting his HIV treatment but because he had not disclosed his HIV-positive status to her, he feared that continuing to take his HIV medicines could reveal his hidden HIV-positive status:

> *What made me drop off care is the fact that I had got a wife during that time and I did not know how I was going to handle being on care without her finding out. So I decided to drop out of care. I was afraid she would discover the medicine. Secondly, the health*

workers that are working under the HIV care program … come from the areas we live in. Sometime we might not be at per with that person and because you have your misunderstandings, he starts to spread rumors about your life because he is already aware that I am on care so he decides to tell people about it. That kind of condition also forced me to drop off care (**HIV-positive male partner age 25, Mpigi Health Centre IV**)."

c) Issues that have inhibited HIV-positive men to link to HIV care

Three men who had not yet initiated HIV care were interviewed to document reasons for their failure to link to care. When asked why they have never initiated HIV care since they self-tested for HIV, men cited reasons such as not being ready to start life-long HIV treatment (largely driven by misconceptions that they picked from fellow men – see below) and the perception that they were still healthy and did not see the need to start HIV treatment at the time. The quotations below illustrate these reasons:

"… the truth is that this [starting HIV treatment] is not something that one can just adopt like that. ***I have spent two years but I am yet to initiate HIV care.*** *The main reason is the tablets! [He speaks with emphasis and disgust] Taking those tablets is not easy. We are told that when you start on the treatment, you have started. There is no stopping; it is like eating food the truth is you have started so for that matter, you really have to get ready for it after doing some observation. When I start I don't want to stop. This is the arrangement I have. I want to go and do a confirmatory test then I start on the treatment. I am afraid of starting and then drop-out."* **(HIV-positive male partner age 31, Entebbe Hospital)**

"… I have not yet put my mind to it. I have not yet felt like it in my heart. Secondly, what is stopping me is because ***there is nothing I feel about my health that needs me to start treatment****. To me, I am still healthy and do not see any reason as to why I should start treatment when I don't have any sickness I am feeling in my life that needs medication. I just feel that it is not yet time for me to start on medication, when time comes, I will start"* (**HIV-positive male partner aged 30, Nakaseke Hospital**)."

The other reasons why men had not started on HIV treatment bordered on misconceptions from participants' social networks. For instance, a participant from Mpigi narrated how he had heard from his friends that taking HIV medication requires one to have a lot of money to buy food to eat and that individuals taking HIV medication become fat and black, something that he says threatened him from starting treatment.

"There was some guy I spoke to who is on care and he gave me that information. He told me that when he enrolled to care, he had to sell his piece of land because he used to eat a lot and yet he didn't have the money. So that is the problem. He told me that if you have to enroll into care, you need to first prepare some money for yourself, money that is not for solving other problems [but for buying food]…He further said that being on treatment makes you weak and at the same time makes you eat too much. There is too

much desire for food. The other thing is when people start on treatment, they become fat and yet I don't want to become fat … Imagine a person becoming so fat with a very big belly and then he turns black like charcoal, e… what is in this world? I have never admired becoming fat. That is what I am worried of … (**HIV-positive male partner age 44, Mpigi Health Centre IV**).

4.3. Cost-effectiveness analysis results

Table 26 below shows the cost of the intervention by cost categories. In the base-case analysis the total cost for intervention was $15,717.27 and $5,826.1 for the control. In the intervention arm, the biggest cost driver was HIV self-testing kits (60.2% of the total cost) followed by above-site costs (20.6%) of the intervention which largely covered operational costs, training coordination and personnel time costs. In the control arm, above-site costs were the biggest cost driver (55% of total cost) followed by facility personnel time costs (27% of total cost). The facility personnel time was computed from the time they spent on activities related to recruitment, follow-up of recruited participants, and linkage to care of those who tested HIV positive Their time was spent on health education, counseling of mothers, screening for eligibility of self-testing, training of mothers on HIVST, follow-up of mothers/partners/family members, linkage of partners and family members into care, testing partners and family members, distribution of self-test kits, mobilization, and organizing patient flow at the facility.

The cost per partner tested was $30.3 for the intervention and $31.2 for control, while the cost per HIV-infected person identified was $462.3 for the intervention and $582.6 for the control. Comparing intervention to control, the incremental cost per additional partner tested (incremental cost-effectiveness ratio (ICER)) was $29.8 and the ICER per additional partner testing HIV-positive was $412.1. In a one-way sensitivity analysis, reducing the unit cost of self-testing test kits by half reduced cost per partner tested, and cost per HIV-positive partner identified, by 30% (to $21.2 and $323.3, respectively). The ICERs of partner testing and identifying HIV-positive partners were reduced by 48% (to $15.6 per extra person tested and $215.26 per extra HIV-positive person identified). The ICER for identifying HIV-positive partners and cost per HIV-positive person identified were also sensitive to the proportion of partners who tested HIV-positive. Doubling the proportion of HIV-positive partners reduced ICER and cost per HIV-positive partner identified by another 50% (ICER = $107.6 per incremental HIV-partner identified) (Table 25).

Table 26: Distribution of costs by category

	Intervention		Control	
	Cost ($)	Percent of total	Cost ($)	Percent of total
Above-site personnel costs	1,926.8	12.3%	1,926.79	33%
Above-site operational costs	1,296.2	8.3%	1,296.2	22%
Facility Personnel time costs	2,016.5	12.8%	1,599.8	27%
Training costs	73.4	0.5%	48.9	1%
Above-site assets	330.1	2.1%	330.1	6%
Facility asset costs	141.8	0.9%	141.8	2%
Facility operational costs	482.5	3.1%	482.5	8%
Facility Supplies (self-test kits)	9,450.0	60.2%	-	0%
Total	15,717.3	100	5,826.1	100

Table 27: Cost effectiveness and incremental cost effectiveness of self-testing on partners testing and identification of HIV-positive partners

			Partner testing					Partners testing HIV-positive			
	Cost ($)	Cost difference ($)	Partners tested	Cost per partner tested	Partner testing difference	ICER		Number HIV-positive	Cost per new HIV-positive partner	Difference number HIV-positive	ICER
Control	5,826.1	0	187	31.2	-	-		10	582.61	-	-
Intervention	15,717.3	9,891.2	519	30.3	332	29.8		34	462.27	24	412.13
Sensitivity analysis on cost of self-testing kits											
Control	5,826.1	0	187	31.2	0			10	582.6	-	-
Intervention (cost of self-testing kits halved	10992.5	5,166.2	519	21.2	332	15.6		34	323.3	24	215.26
Sensitivity analysis on joint effect of doubling proportion of partners who tested HIV-positive and reduction in cost of self-testing kits											
Control	5826.1	0	186	31.2	0	-		20	582.6	-	-
Intervention (cost Kits =50% & double HIV-positive	10992.5	5,166.2	503	21.2	332	15.6		68	161.7	48	107.6

Section V. Discussion

5.1 Uptake of HIV testing services by male partners of pregnant women

In this study, a convincing and impressive increase in male partner testing, resulting from provision of HIV oral self-testing kits through the female partner enrolled in antenatal care was demonstrated. During the first month of follow-up, HIV testing uptake was almost 4 times higher in the self-testing arm. Considering the women and men's reports across the entire follow-up period, 76.7% in the intervention tested compared to 37.5% in the control group. The large increase in testing uptake was seen in both couples where the woman was HIV-negative or HIV-positive. HIV self-testing also led to a significant increase in couple testing with 73% in the intervention arm testing as couples compared to 31% in the control arm. Improved male partner testing is further highlighted in the qualitative findings where respondents assert that the number has gone up and their relationships have improved. These results show that HIV oral self-testing may have the potential to be an important tool in working to increase HIV testing rates in male partners of pregnant women and couples testing in Uganda, and likely in other important populations around Uganda. Among the men who received the HIVST kits, 94% used them to test for HIV (based on the woman's report). The resistance to testing among some men could be due to men's chauvinistic tendencies since the test was provided to them by their wife, fear of testing, or the men's perception that their HIV status is implied in the woman's status.

Similar results were found in Kenya with 90.8% partner testing in the HIVST arm compared to 51.7%(Masters et al. 2016), and a meta-analysis where HIVST doubled the uptake of HIV testing among men compared to standard HTS (Johnson et al. 2017). Such increase in HIV testing uptake has important public health implications, if it can be achieved at a population level and reach those with undiagnosed HIV infection. This increase is also critical for the success of PMTCT programs. Contrary to this study findings, HIVST use was low in Malawi in the first (46.1%) and second (43.8%) year in a community based prospective study (Choko et al. 2015).

5.2 Linkage to Care

Regarding linkage to care, we have had a concern that individuals who had not previously tested for HIV, but agree to use self-testing, may be more difficult to link to care if they test positive for HIV. While we had very limited statistical power to evaluate linkage to care, the results of our study are consistent with the hypothesis that men who test positive via self-testing may be less likely to link to care than men testing at a clinic. Notably, based on this study, two to three times as many male partners tested positive in the self-testing arm compared to the control arm. However, the proportion of men who

went for confirmatory testing and linkage to care was low enough that the intervention arm did not show a great improvement in the number of HIV+ men linked to care. This is similar to what was found in an RCT in Kenya, where women reported that 25% (n = 2/8) of their male partners in the HIVST group linked to confirmatory testing at 3-month follow-up and then to care, while in the control group, all four male partners diagnosed HIV positive linked to care (Masters et al. 2016). These findings underscore the need for further research in this area, and careful monitoring of people using self-testing as the practice is rolled out on a larger scale. It is possible that individuals who test positive through self-testing, and do not immediately link to care, may still change their sexual behaviour to reduce the risk of transmitting the HIV virus to sexual partners. Our extended follow-up period revealed that a meaningful proportion (approximately 10%) of men testing positive through HIVST showed delayed linkage to care after our Month 3 visit, highlighting the importance of conducting longer follow-ups to better understand long-term linkage and retention on care for individuals testing positive through HIVST. Linkage to care in a study in Malawi was 41.7% in the researchers' first estimate, but increased to 56.3% after adding on those who had already initiated ART by one year (Choko et al. 2015). Additionally, it may be useful to develop and test interventions to improve overall linkage to care after HIVST.

Study findings reflect a higher percentage (45.5%) of men linked to care in the control arm compared to the intervention arm (23.8%). This could possibly be due to the men not being ready to commit to long-term treatment, inconvenience of accessing clinic (travel, wait, opportunity costs), fear or avoidance of a needle stick, privacy concerns, while those who test at a clinic are already there, and therefore are easier to enroll in immediate treatment. Approximately 31% of men who tested positive on self-testing were assessed for antiretroviral therapy eligibility but only 19.2% were initiated on treatment in Malawi(Maheswaran et al. 2016), and no partner of pregnant women attending ANC in Kenya came for confirmatory testing or even was linked to care (Masters et al. 2016).

As part of phase 3, we interviewed HIV-positive men who had linked to HIV care to document the factors that facilitated their linkage to care; asked those who linked to care whether or not they were still in care (and what had helped them to remain in care) and interviewed men who had linked to care but dropped out as well as those that had never linked to care since they self-tested for HIV. Our findings show that provision of post-test counseling support is crucial for enhanced linkage to and retention in HIV care.

Individuals who were able to link to care cited the counseling support that they received from professional health workers, coupled with psycho-social support from their relatives, as having been crucial for their ability to link to and remain in HIV care. HIV-positive men who remained in care also cited the role that their spouses/female sexual partners played in supporting them to remain in care, highlighting the importance of tapping from non-traditional support mechanisms (including working with spouses or female partners) to improve retention in HIV care among HIV-positive men. However,

lack of HIV status disclosure and fear to be seen by people who reside in the same community as the HIV-positive men acted as a deterrent for retention in HIV care.

HIV-positive men who did not link to HIV care cited two main reasons: a) they were not ready to commit to life-long HIV treatment – preferably driven by misconceptions from their peers (e.g. beliefs that being on HIV treatment makes one fat and black); and b) the feeling that they (HIV-positive men) were still strong and did not need to start on HIV treatment at the time. The issue of men still feeling strong as a deterrent for engaging in HIV care has been cited in previous studies (Nyamhanga et al. 2013; Camlin, Ssemmondo, et al. 2016; Gregson et al. 2011; Musheke et al. 2016), and borders on what has come to be known as hegemonic masculinity norms in which men project themselves as being strong and resilient, whereby, those who seek HIV care services are recognized as being weak or not 'man-enough' (Siu et al. 2013). Studies have also documented the fact that men tend to be less represented in health facility settings – where HIV treatment and other HIV services are provided (Nyamhanga et al. 2013; Camlin, Ssemmondo, et al. 2016), suggesting a need for alternative models of reaching HIV-positive men and linking them to care, including provision of home-based antiretroviral therapy that has been proven to be successful in several settings (Govindasamy et al. 2014).

Overall, few women in the intervention and control groups reported any negative social outcomes related to HIV testing. This is similar to what was reported in a meta-analysis on HIVST (Johnson et al. 2017). Though there seems to be much anxiety that HIVST could exacerbate or bring about intimate partner violence, this does not seem to be the case. However, more research is needed to critically study this in larger scale programs and studies.

5.3 Strategies for delivering HIV self-testing kits

In general, women used positive strategies to deliver HIVST kits to their male partners but some used less honest methods. Our qualitative findings show that HIVST was accepted and associated with positive benefits including a chance to learn about the partners' HIV status as well as disclosure of HIV status. Women used a number of positive strategies to deliver the kits to their male partners. These include: have included: a) enlisting the support of a health worker in convincing the male partner to use the kit; b) asking that the HIVST kits be sent to the male partners by the health workers; and c) waiting for 'opportune moments'. However, some women used less-than-honest methods to convince their male partners to use the kits. These methods included: a) concealing some information about the HIVST kit from the male partner, e.g. telling the male partner that the kit was for HIV self-testing but not telling them how the results should be interpreted; b) lying about the purpose of the kit; i.e. telling the male partner that the HIV self-test kit was meant to test all 'blood-related' diseases in the body; and c) controlling the HIV self-testing process; e.g. one woman swabbed the male partner and conducted the self-testing exercise herself instead of teaching her partner how to do

it on his own. The use of these methods raises a number of public health implications. For instance, the action of women controlling the HIV self-testing process denies the men the opportunity to conduct the test themselves (which is the essence of "*self-testing*"), and implies a sign of coercion from the female partner. Although the number of women who used these undesirable strategies was quite small – about 3-4 women – we thought it was important to still report about them since they have serious implications for HIV self-testing.

5.4 Coping mechanisms of HIV discordant couples after HIV self-testing

We observed that the majority (11 of 18) of individuals interviewed in HIV-discordant relationships had ever tested for HIV and were aware of their HIV discordant status by the time they self-tested for HIV. As a result, many of them had been able to move beyond the most critical/difficult stages in the coping process, and had settled down with their partners. This observation was true for those that first learnt of their sero-discordant status when they self-tested since the follow-up visits were made between 6-18 months post-test. Thus, we were not able to link any coping mechanisms observed to HIV self-testing. However, despite this observation, we still inquired how individuals in HIV discordant relationships coped with HI discordance by asking them to take us back in time when they first learnt of their HIV sero-discordance and how they managed to cope with their different HIV statuses thereafter. We thought this would still be important for programs intending to assist couples to cope with their HIV discordant status. In general, our findings have a number of program implications, as discussed below:

1. In line with the quantitative findings, qualitative findings show that HIV-positive women were initially scared that their partners would chase them out of the house, while HIV negative women thought of separating from their HIV-positive partners, possibly to avoid getting infected with HIV in the process. It should be recalled that 48.9% of women and 41.5% of men in HIV discordant relationships initially thought of ending the relationship but a majority of individuals who initially had these thoughts did not eventually separate. In the qualitative interviews, we found that individuals who had thought of separation did not actually separate with their partners but rather continued with the relationship. These individuals mentioned that what helped them to stay together was the counseling they received from professional counselors coupled with psycho-social support from relatives and close friends. These findings suggest that HIV discordant couples can be supported to remain together through counseling support reinforced with psycho-social support from other non-traditional sources of support, including from relatives and friends.
2. Couples reported that learning about their HIV discordant status initially created an emotional distance between partners manifested through reduced frequency of sexual intercourse and the disgust associated with using condoms all the time with their marital partners, something that they were not used to. Initially, couples found it

hard to cope with condom use at every sexual encounter, and this resulted in reduced sex frequency in some couples. In a few couples, HIV-negative men refused to use condoms and continued to have live sex which put them at risk of HIV infection. These findings highlight a need for on-going support counseling to assist couples to explore other non-penetrative forms of sexual satisfaction to reduce risk of HIV infection in the event that they are unable to use condoms all the time they have sex.

3. We noted that some participants – particularly HIV-positive men – thought of committing suicide after they learnt of their HIV discordant status but these were counselled out of these thoughts by health providers and relatives and no suicide was reported. These findings reinforce the need to provide appropriate post-test counseling support to HIV discordant couples to help them appreciate their HIV sero-discordant status and plan how to cope with it thereafter.
4. Two mechanisms were cited as the main factors that enabled individuals to cope with HIV sero-discordance: a) post-test counseling support from health workers; and b) the psycho-social support that these individuals received from their significant others including mothers, sisters, other siblings, and close friends, after they disclosed their HIV discordant status to them. As noted in the quantitative findings, 78.6% of women and 90.9% of men in HIV discordant relationships reported that they were encouraged to stay in their relationships by their significant others. These approaches should be maximized in supporting HIV discordant couples to cope with their different HIV statuses.

5.5 Cost-effectiveness analysis

We showed that the cost of the intervention was driven mainly by the cost of self-test kits and that the cost-effectiveness of the intervention would be very sensitive to lowering the cost of test kits and using the intervention in a context with higher HIV prevalence. Reducing the cost of test kits and targeting use of kits in settings with higher HIV prevalence such as priority populations (e.g. fishing communities and sex workers and their partners), and partner HIV and STI notification programs is needed. In another report we will provide detailed sensitivity analyses examining the effect of joint distribution of all parameters using probabilistic methods and also use generic outcomes such as QALYs and DALYs to provide for comparability of results across interventions. Because of incomplete data on linkage to care, we did not have sufficient data to assess cost-effectiveness with respect to linkage to care (Table 15).

5.6 Conclusion

In conclusion, our results demonstrate an enormous increase in individual and couple HIV testing when oral self-testing is available at home. This option appears to break down several barriers to testing, including time and effort to attend clinic, expense

associated with attending clinic, lack of privacy, lack of control, and fear of stigma. HIVST also does not seem to increase negative social harms compared to the standard of care and could potentially reduce provider workload by screening off HIV-negative individuals through HIVST. However, our results do not show that men testing positive through self-testing are as likely to link to care compared to men who test positive at a clinic. This question clearly deserves further study, and better understanding of longer-term linkage to care among those who test positive through oral self-testing will be extremely important in planning public health programs in Uganda as well as in other countries. Advocacy for reduction of costs of test kits along with targeting the intervention to settings with higher HIV prevalence will be important for scale-up

5.7 Recommendation and Specific Findings for Policy and Practice

HIV self-testing should be integrated as one of the recognized approaches for HIV testing.

Additional support may be required to ensure linkage to care for individuals who test HIV+ through HIV self-testing, including provision of home-based ART initiation.

Further evaluations and research with larger numbers and longer-term follow-up of newly diagnosed HIV+ individuals are needed to ascertain better the linkage to and retention in care and social harms following HIV self-testing.

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Section VIII. Appendixes

8.1 Appendix A: Survey instruments

Quantitative informed consent form for women

Title of study: HIV self-testing for partners of women attending ANC in Uganda: uptake and linkage to care post-test

Investigators: Rhoda Wanyenze, Jeffrey E. Korte, Angela Malek, Joseph KB Matovu, Esther Buregyeya, Harriet Chemusto

Introduction
This research study is being conducted by Makerere University School of Public Health, Mildmay Uganda and Medical University of South Carolina. You are being asked to take part in a study promoting HIV testing among partners of women attending ANC in Nakaseke Hospital, Entebbe Hospital and Mpigi HC IV. This study will examine the experiences of the women in encouraging their male partners to take up an HIV test. We are asking you for your consent to be interviewed as part of this study because you have been receiving care in this clinic, which has been selected to participate in the study.

Purpose of the Research
This study will gather information mainly on acceptance of HIV testing among male partners of women attending ANC in this health facility. This study will also document the behaviors surrounding partners testing and circumstances under which the testing takes place. This study is intended to provide information that will help to promote partner/couple HIV testing across the country. We ask you to take part in the study because you are an ANC client.

Your Part in the Study
If you agree to participate in the study you will be interviewed for about 40 minutes, and after that be given appointments for follow-up interviews.

Procedures
If you say yes, I will ask you to take part in several phases of the study:

a) Here in the clinic, I will ask you some questions about your background and household, after this consent. I will ask for your telephone number and other contact information. These questions may take 40 minutes.
b) During the ANC visit today, the nurse will give you information and counseling regarding male partner HIV testing.
c) After enrolment today, we ask you questions about yourself and your relationship with your current partner.
d) At 1 and 3 months interval, after enrolling in the study, we will meet you physically when you return to the clinic or at any other place that is convenient to you, and ask you

questions about your partner taking up an HIV test and circumstances that surrounded the testing. This will be a follow up interview that will take about 40 minutes. We will also give you information on where further testing can be done in a clinic. Testing for HIV is voluntary. Responding or not responding will not affect the care you receive here or at any other clinic and will have no consequence.

e) We will ask if you agree with us talking with your partner. We will ask him for his consent and do a survey interview with him.
f) With your permission, we will review your medical records related to this pregnancy and HIV testing for additional information on your health and the decisions made by your providers

Voluntariness

Please know that you have a choice whether to take part or not in this study. You can choose not to answer any of all of the questions. You may withdraw or stop taking part in this study at any time for any reason. There is no consequence for stopping to be in the study. This will not affect the health care you or your family receives at this clinic. If you feel unsafe at home related to partner testing, we will provide you with information on resources that exist to help women.

Risks

We will do our best to keep your information private and safe. There is a small risk that someone outside the study may see your information or HIV results when you test. Health providers and research assistants will be aware that you are taking part in this study and will be trained to keep the information on you from the study private and secure. Encouraging male partners to take up an HIV test could be associated with various challenges within some relationships. If you have concerns about this, you can choose not to participate in the study. In case you do not anticipate this and it happens, we encourage you to tell us so that we provide you with information on resources that can help you.

Confidentiality

In the study, we will use a special code and <u>not</u> your name when we record information. In a separate place, we will keep your name, telephone numbers, residence location and special code. The telephone number is to contact you at a later time, as I described. After the study, we will delete this information.

We will make sure that every computer that contains the study information is protected by passwords and that only study staff will see the information. Your information will be kept in a locked cabinet or room.

Benefits

You will receive no direct benefit from this study. However, partner testing for HIV has health benefits for you, your male partner and family

From this study, we will share the overall results with the Uganda Ministry of Health to inform the leaders how best to encourage HIV testing as part of prevention and treatment.

Compensation

You will receive a token of 5,000 shillings to compensate for your time during each interview. If you choose to return to this facility for follow-up interviews, you will receive an additional 5,000 shillings for your transportation.

Contact Person for Questions

If you have any questions about the study or any problems with the study you may contact Dr. Rhoda Wanyenze the PI at the following telephone number (0772-419762) or at the School of Public Health Annex (Plot 30A, York Terrace, Kololo). If you have any questions about your rights as a participant in this study please contact Dr. Suzanne Kiwanuka, the Chairperson of the School of Public Health Ethics Committee, at the telephone number 041-4532207.

Consent to Participate in Study

I have read (or had read to me) the information above describing the procedures, benefits and risks of participating in this study titled: “HIV self-testing for partners of women attending ANC in Uganda: uptake and linkage to care post-test”. I agree to participate as a volunteer in this study.

_____ _____

Date Signature of participant

_____ _____

Date Name and Signature of Person Obtaining Consent

Quantitative informed consent form for men

Title of study: HIV self-testing for partners of women attending ANC in Uganda: uptake and linkage to care post-test

Investigators: Dr. Rhoda Wanyenze, Jeffrey E. Korte, Angela Malek, Joseph KB Matovu, Esther Buregyeya, Harriet Chemusto

Introduction

This research study is being conducted by Makerere University School of Public Health and Medical University of South Carolina and Mildmay Uganda. You are being asked to take part in a study promoting HIV testing among partners of women attending ANC in Nakaseke Hospital, Entebbe Hospital and Mpigi HC IV. This study will assess uptake of HIV self- testing among male partners of women attending ANC.

Purpose of the Research

This study will gather information mainly on acceptance of HIV testing among male partners of women attending ANC in this health facility. This study will also document the behaviors surrounding partners testing and circumstances under which the testing takes place. This study is intended to provide information that will help to promote partner/couple HIV testing across the country. We ask you to take part in the study because your partner is an ANC client at this facility.

Procedures

We would like to ask you some questions about whether and how you learned about the HIV testing, testing experience, and about the talks you've had with your partner. We will also ask you about general beliefs; attitudes and experiences related your relationship with your partner. This survey will take approximately one hour. Some men are being asked the survey while waiting at or near the clinic and some at home. There is no "right" or "wrong" answer to any question. For each question, we will write the response.

Voluntariness

You have a choice take part in the study, or you can refuse. You do not have to answer any question that you do not want to. You can stop taking part in this study at any time for any reason. This will not affect the health care you or your family receives at this clinic. We can give information on where further testing can be done in a clinic. Testing for HIV is voluntary.

Risks

We will do our best to keep your information private and safe. There is a small risk that someone outside the study may see your information. Our study staff and health providers at the clinic have been trained on this study to keep the information private and secure.

Confidentiality

In the study, we will use a special code and not your name when we record information from the survey. We will make sure that every computer where the study information is kept, is protected by passwords and that only study staff will see the information. Your information will be kept in a locked cabinet or room.

Benefits

You will receive no personal benefit from this study. Testing for HIV has benefits for health of the partners and family, but there is no guarantee of any benefit to you or your family.

From this study, we will share the overall results with the Ugandan Ministry of Health to inform the leaders how best to encourage HIV testing as part of prevention and treatment. With this survey, we hope to understand the needs and perspective of men.

Compensation

You will receive a token of 5,000 shillings to compensate for your time during each interview. If you choose to return to this facility for follow-up interviews, you will receive an additional 5,000 shillings for your transportation.

Contact Person for Questions

If you have any questions about the study or any problems with the study you may contact Dr. Rhoda Wanyenze the PI at the following telephone number (0772-419762) or at the School of Public Health Annex (Plot 30A, York Terrace, Kololo). If you have any questions about your rights as a participant in this study please contact Dr. Suzanne Kiwanuka, the Chairperson of the School of Public Health Ethics Committee, at the telephone number 041-4532207.

Consent to Participate in Study

I have read (or had read to me) the information above describing the procedures, benefits and risks of participating in this study titled: “HIV self-testing for partners of women attending ANC in Uganda: uptake and linkage to care post-test”. I agree to participate as a volunteer in this study.

_____ _____

Date Signature of participant

_____ _____

Date Name and Signature of Person Obtaining Consent

Long term follow up consent

Quantitative informed consent form for women

Title of study: HIV self-testing for partners of women attending ANC in Uganda: Uptake and linkage to care post-test

Investigators: Rhoda Wanyenze, Jeffrey E. Korte, Angela Malek, Joseph KB Matovu, Esther Buregyeya, Harriet Chemusto

Introduction

This research study is being conducted by Makerere University School of Public Health, Mildmay Uganda and Medical University of South Carolina. It has been going on since July 2016. You are being asked to take part in this study promoting HIV testing among partners of women attending /who recently attended ANC in Nakaseke Hospital, Entebbe Hospital and Mpigi HC IV. This study will examine the experiences of women in; discordant relationships encouraging their male partners to take up an HIV test and link to care for those found to be HIV positive We are asking you for your consent to be interviewed as part of this study because you received/have been receiving care in this clinic, which has been selected to participate in the study.

Purpose of the Research

This study will gather information mainly on acceptance of HIV testing among male partners of women attending/who recently attended ANC in this health facility. This study will follow up men who recently tested positive to find out if they linked to care and also document the process leading to linkage, factors and barriers to care. The study will document how discordant couples identified previously are coping with their different HIV status and their perceived stigma. This study is intended to provide information that will help to promote partner/couple HIV testing across the country, linkage to care and reduce perceived stigma for those who test positive. We ask you to take part in the study because you were or have previously been an ANC client.

Your Part in the Study

If you agree to participate in the study you will be interviewed for about 40 minutes. We will also give you information on where further testing and treatment if needed can be done in a clinic. We will also provide information about organizations which support discordant couples. Testing for HIV is voluntary. Responding or not responding will not affect the care you receive here or at any other clinic and will have no consequence.

Procedures

We would like to ask you some questions about whether and how you learned about the HIV testing, about the talks you've had with your partner, and how you are coping with HIV discordance. We will also ask you about general beliefs, attitudes and experiences related to your relationship with your partner and the mechanisms you are using as a couple to cope.

This survey will take approximately one hour. Some women will be asked the survey while at or near the clinic and some at home. There is no "right" or "wrong" answer to any question. For each question, we will write the response.

Voluntariness

Please know that you have a choice whether to take part or not in this study. You can choose not to answer any of all of the questions. You may withdraw or stop taking part in this study at any time for any reason. There is no consequence for stopping to be in the study. This will not affect the health care you or your family receives at this clinic. If you feel unsafe at home related to partner testing, we will provide you with information on resources that exist to help women.

Risks

We will do our best to keep your information private and safe. There is a small risk that someone outside the study may see your information or HIV results when you test. Health providers and research assistants will be aware that you are taking part in this study, and will be trained to keep the information on you from the study private and secure. Encouraging male partners to take up an HIV test could be associated with various challenges within some relationships. If you have concerns about this, you can choose not to participate in the study. In case you do not anticipate this and it happens, we encourage you to tell us so that we provide you with information on resources that can help you.

Confidentiality

In the study, we will use a special code and not your name when we record information. In a separate place, we will keep your name, telephone numbers, residence location and special code. The telephone number is to contact you at a later time, as I described. After the study, we will delete this information.

We will make sure that every computer that contains the study information is protected by passwords and that only study staff will see the information. Your information will be kept in a locked cabinet or room.

Benefits

You will receive no direct benefit from this study. However, partner testing for HIV and linkage to care as well as good coping mechanisms have health benefits for you, your male partner and family

From this study, we will share the overall results with the Uganda Ministry of Health to inform the leaders how best to encourage HIV testing as part of prevention and treatment and good coping among discordant couples.

Compensation

You will receive a token of 5,000 shillings to compensate for your time during each interview. If you choose to come to this facility, you will receive an additional 5,000 shillings for your transportation.

Contact Person for Questions

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Consent to Participate in Study

I have read (or had read to me) the information above describing the procedures, benefits and risks of participating in this study titled: “HIV self-testing for partners of women attending ANC in Uganda: uptake and linkage to care post-test”. I agree to participate as a volunteer in this study.

Date	Signature of participant
Date	Name and Signature of Person Obtaining Consent

Quantitative informed consent form for men

Title of study: HIV self-testing for partners of women attending ANC in Uganda: uptake and linkage to care post-test

Investigators: Dr. Rhoda Wanyenze, Jeffrey E. Korte, Angela Malek, Joseph KB Matovu, Esther Buregyeya, Harriet Chemusto

Introduction

This research study is being conducted by Makerere University School of Public Health and Medical University of South Carolina and Mildmay Uganda. It has been going on since July 2016.You are being asked to take part in a study promoting HIV testing among partners of women attending /who attended ANC in Nakaseke Hospital, Entebbe Hospital and Mpigi HC IV. This study will assess uptake of HIV self- testing, linkage to care among male partners of women attending /who attended ANC.

Purpose of the Research

This study will gather information mainly on acceptance of HIV testing among male partners of women attending/previously ANC in this health facility. This study will also follow up men who recently tested positive to find out if they linked to care, document processes leading to their linkage and assess their perceived stigma. We will also document how discordant couples identified in the earlier phases of the study are coping with different HIV status. . This study is intended to provide information that will help to promote partner/couple HIV testing across the country, linkage to care for those who test positive and coping mechanism. We ask you to take part in the study because your partner was an ANC client at this facility.

Procedures

We would like to ask you some questions about whether and how you learned about the HIV testing, about the talks you've had with your partner, whether you linked to care and how you are coping with HIV discordance. We will also ask you about general beliefs, attitudes and experiences related to your relationship with your partner and the mechanisms you are using as a couple to cope.

This survey will take approximately one hour. Some men will be asked the survey while at or near the clinic and some at home. There is no "right" or "wrong" answer to any question. For each question, we will write the response.

Voluntariness

You have a choice to take part in the study, or you can refuse. You do not have to answer any question that you do not want to. You can stop taking part in this study at any time for any reason. This will not affect the health care you or your family receives at this clinic. We can give information on where further testing and linkage to care can be done in a clinic, but also provide information about organizations that support discordant couples. Testing for HIV is voluntary.

Risks

We will do our best to keep your information private and safe. There is a small risk that someone outside the study may see your information. Our study staff and health providers at the clinic have been trained on this study to keep the information private and secure.

Confidentiality

In the study, we will use a special code and not your name when we record information from the survey. We will make sure that every computer where the study information is kept is protected by passwords and that only study staff will see the information. Your information will be kept in a locked cabinet or room.

Benefits

You will receive no personal benefit from this study. Testing for HIV and linkage to care and good coping mechanisms have benefits for health of the partners and family, but there is no guarantee of any benefit to you or your family.

From this study, we will share the overall results with the Ugandan Ministry of Health to inform the leaders how best to encourage HIV testing as part of prevention and treatment as well as coping among discordant couples. With this survey, we hope to understand the needs and perspective of men.

Compensation

You will receive a token of 5,000 shillings to compensate for your time during each interview. If you choose to come to the facility, you will receive an additional 5,000 shillings for your transportation.

Contact Person for Questions

If you have any questions about the study or any problems with the study you may contact Dr. Rhoda Wanyenze the PI at the following telephone number (0772-419762) or at the School of Public Health Annex (Plot 30A, York Terrace, Kololo). If you have any questions about your rights as a participant in this study please contact Dr. Suzanne Kiwanuka, the Chairperson of the School of Public Health Ethics Committee, at the telephone number 041-4532207.

Consent to Participate in Study

I have read (or had read to me) the information above describing the procedures, benefits and risks of participating in this study titled: “HIV self-testing for partners of women attending ANC in Uganda: uptake and linkage to care post-test”. I agree to participate as a volunteer in this study.

Date	Signature of participant

Date Name and Signature of Person Obtaining Consent

QUALITATIVE CONSENT FORM
TO BE USED FOR MALE PARTNERS

Project Title: HIV Self-testing for Partners of Women Attending Antenatal Care in Central Uganda: Uptake and Linkage to Care Post-Test

Study Investigators: Rhoda Wanyenze, Jeffrey E. Korte, Angela Malek, Joseph KB Matovu, Esther Buregyeya, Harriet Chemusto

Hello, my name is _____.I work with Makerere University School of Public Health. I would like to invite you to participate in a health study which includes research on HIV self-testing. The study is called 'HIV Self-testing for Partners of Women Attending Antenatal Care in Central Uganda: Uptake and Linkage to Care Post-Test'.

OBJECTIVE OF THE STUDY
This will assess the proportion of HIV-positive men who have been able to link to HIV care after a longer duration of follow up (up to 18 months); and also assess coping mechanisms among HIV-discordant couples that were identified in the earlier phases of the study to ascertain how they are coping with HIV-discordance

PROCEDURES
In-depth interviews will be conducted with women and their male partners who have previously participated in the earlier phases of the study. Specifically, within each facility, we will interview 3 couples – one with an HIV+ male partner and two with an HIV+ female partner. Each participant will be contacted at each site and invited to participate in the interviews. These interviews will be conducted at the health facility, or at home or at other agreed-upon venues. Data will be collected on general questions, HIV self- testing, coping mechanisms and changes in sexual behaviors if at all.

We seek consent from you to audio-record the interviews. The interviews will be audio-recorded in the language of interview and transcribed verbatim. The verbatim transcripts will then be translated into English. In-depth interviews will last between 30-45 minutes. Prior to interview, all participants will be asked to provide written informed consent.

RISKS FROM BEING IN THE STUDY
Potential risks include:
The risk that your views may become known to other people who have not participated in the interviews. We will minimize this by ensuring that only those individuals who are directly responsible for this study will have access to the interviews. Only authorized project personnel (approved by the study Principal Investigator) will have access to this information.

BENEFITS

An opportunity to have your ideas shared with policy makers and program implementers to influence the way HIV discordant couples cope with their different HIV status.

ASSURANCE OF CONFIDENTIALITY
Information collected from you will be kept confidential by Makerere University of Public Health to the full extent allowed by law. In addition, all audio-recordings will be destroyed immediately after the transcription process; and all transcribed data will be kept under password-protected computers to avoid unauthorized access to the data. Finally, your name will not be linked to your views; we will report about people's views in general and no attempt will be made to link the

views to those who shared them.

PARTICIPATION IS VOLUNTARY
Your participation in this study is completely voluntary. You are free to withdraw at any time or decline to participate in the interview altogether. If you decide not to participate or withdraw from the study, you will still have access to the general health services offered at the health facility.

COMPENSATION All participants will receive UShs.5, 000/= to compensate for time lost as a result of participation. In addition, they will receive a travel refund of up to UShs. 10,000 (exact amount given will depend on distance travelled to reach the health facility) to cover their transport expenses

QUESTIONS/POINTS OF CONTACT

If you have any questions for me, about the study or the consent process, please ask before signing, and I will do my best to answer them. You will receive a copy of this consent form. If you have additional questions or if you need to discuss any other aspect of the study, you can contact: Dr. Rhoda Wanyenze, the Principal Investigator, based at the School of Public Health, Makerere University, Kampala (0772 419 762).

This study has been reviewed and approved by the Makerere University School of Public Health Higher Degrees, Research and Ethical Committee and by the Uganda National Council for Science and Technology. If you have any questions concerning your rights as a participant in this research, please contact the Chairman of the Higher Degrees, Research and Ethics Committee at Makerere University School of Public Health (tel. 0393 291397).

STATEMENT OF MALE PARTNER CONSENT

I have been asked to participate in a research study named '**HIV Self-testing for Partners of Women Attending Antenatal Care in Central Uganda: Uptake and Linkage to Care Post-Test**'. The Principal Investigator, Dr. Rhoda Wanyenze, or her representative, _____, has explained the study to me and risks that I might take. The information was read to me and I have been given an opportunity to ask questions. All questions were answered in a way that I understand. If I have other questions about this research, I can ask the study representative, _____, or contact Dr. Rhoda Wanyenze. I understand that my agreement to participate in this study is voluntary, and that I can decline to participate or leave the study at any time, without losing access to services provided to individuals at thus health facility whether or not they are study participants. I also understand that I have the right to voluntarily refuse to participate in all or part of the study. I am signing this consent form below to indicate my consent to participate in this study. I have agreed to be audio-recorded for this interview. I understand that I will be given a copy of the signed consent form.

_____ _____

Signature of participant Date
(Thumb print if non-literate)

_____ _____

Signature of Investigator eliciting consent Date

_____

Printed name of Investigator eliciting consent

HIV self-testing for partners of women attending antenatal care in central Uganda: uptake and linkage to care post-test

Mother Screening Tool

1. Name of the screener: _____

2. Name of Health Facility: _____

3. Study day number: _____

4. Intervention or control day:_____

5. Unique identifier: *Facility code/interviewer code/Anonymous study ID* _____

6. REDCap ID number on the Android tablet (confirm this number AFTER uploading data and synchronizing with server) _____

Start time: _____ End time:_____

Hello. My name is _____. I work with Makerere School of Public Health Medical University of South Carolinaand Mildmay Uganda. Today we are asking ANC clients some questions for a research study about partner testing for HIV. We are asking you because today you came to this clinic for antenatal care. May I continue? Yes [ ] No [ ]

Checklist for inclusion into the study *(Tick and write all that apply in the spaces provided)*

1.	How many times have you attended ANC during this pregnancy, including this visit?	Number of visits _____
2.	Do you currently have a male partner with whom you are in a relationship?	1= Yes 2= No If ”yes“ continue If “no” stop recruitment
3.	How often do you see this partner?	1= At least once a week 2= Once in two or more weeks If “yes” to at least once in a week continue If “no” to once in a week stop recruitment
4.	Has your partner tested for HIV in the last six month?	0=No 1= Yes If “no” then continue recruitment If “yes” then stop recruitment
5.	In the last six months, what is your partner’s HIV status?	1= HIV+ 2= HIV- 3= Don’t know If “positive” stop recruitment
6.	How old is your partner?	Age in years _____ If partner is 18 years or older, continue If partner is less than 18 years old, stop recruitment
7.	Has your partner ever humiliated you in public or threatened to harm you?	0= No 1=Yes Decide to recruit at question 12
8.	Has your partner ever physically harmed you (e.g. slapped, kicked you)?	0=No 1= Yes Decide to recruit at question 12
9.	Are you worried that your partner may	0= No

	harm you, or that you would feel unsafe, if you tell him that you tested positive for HIV	1= Yes Decide to recruit at question 12
10.	Are you worried that your partner may harm you in any way, or that you would feel unsafe, if you talk to him about his being tested for HIV	0= No 1= Yes Decide to recruit at question 12
11.	Would your partner be concerned if he found out that you participated in this study without his permission?	0= No 1=Yes 2= Don't Know
12.	Are you willing to participate in this study which involves you talking to your partner about him getting tested for HIV	0= No 1= Yes If no, stop recruitment
Any ANC client who discloses current risk of gender-based violence (i.e. responds in the affirmative to Q7-9), please give her the referral information to Mildmay Uganda Gender based Violence service provider partner. *If the client is willing to participate (Q12), please continue with study enrolment /consent.*		
13.	May I tell you more about the study on partner testing for HIV?	If answer is "yes", please go on to the CONSENT FORM If no, write the reason for refusal _____ _____
14.	Is the client eligible? 0= No 1= Yes	
15.	If yes, does the client agree to participate in study? 0= No 1= Yes	

Mother Tracking & Retention Form (Keep separate from all other tools and questionnaires)

1. Health Facility Name (Circle the one that applies):

Entebbe Hospital	1
Nakaseke Hospital	2
Mpigi HCIV	3

2. Study ID/Unique Identifier: (from screening form)
3. REDCap ID (confirm this number AFTER uploading data and synchronizing with server):
4. ANC number:
5. Enrolment date: ____/_____/_____
6. Date of first follow up: ____/_____/_____
7. Date of second follow up: ____/_____/_____
8. Surname: _____

   Other name(s): _____
9. Physical Address: Village (LCI/Zone) _____ Parish (LCII) _____ Sub county (LCIII) _____ District _____
10. If renting, what is the name of the land lord?

    LC 1 women affairs
11. Which features can we easily use to reach your home? Probe for mosque, church, hospital, school, or other prominent feature).
12. What name do people commonly call you?
13. In case we want to follow you up can we attempt to follow you up via visits to the above residence? Yes…… No…….
14. 14 What is your preferred method for follow up assessments?

Face to face interview ……1

Telephone interview……..2

Others (Specify) _____.....3

15. If venue is not place of residence or current health facility, please provide a detailed description of location

_____
_____
_____

16. Can you be reached by telephone? Yes……1 No……2
17. If you can be reached by telephone kindly provide the number to be used: _____
18. Whose number is this? _____
19. What is the best time of the day to contact you by?

Phone _____

Home visit_____

Ask the mother two individuals who may be contacted by the study staff if we are unable to reach her directly. Ask the mother whether it is acceptable for staff to identify themselves as research staff from Mildmay Uganda. Assure the mother that we will not disclose any health information, including HIV serostatus to contacts.

20. Additional contact #1

    Name _____

21. Relationship to participant:_____
22. Can this person be reached by telephone? Yes…….1 No……2
23. Telephone contact number_____

24. Additional contact #2

    Name _____

25. Relationship to participant: _____
26. Can this person be reached by telephone? Yes…….1 No……2
27. Telephone contact number_____

Male Partner Tracking & Retention Form

1. Health Facility Name (Circle the one that applies):

Entebbe Hospital	1
Nakaseke Hospital	2
Mpigi HCIV	3

2. Study ID/Unique Identifier (this should be the same ID as the ANC client):

Facility code/Interviewer code/participant serial no

3. REDCap ID (this should be the same REDCap ID as the ANC client):

4. Enrolment date of the male partner: ____/_____/_____

5. Date of male partner's first interview: ____/_____/_____

6. Date of male partner's second interview: ____/_____/_____

7. Study unique ID number : _____

8. Surname:_____ Other name(s)_____

9. Physical Address: Village (LCI/Zone) _____

Parish (LCII) _____ Sub county (LCIII) _____

District _____

10. If renting, what is the name of the land lord? _____

LC 1 Women affairs _____

11. Which feature/s can we easily use to reach your home? Probe: Mosque, church, hospital, school, other feature).

12. What name do people commonly call you? _____

13. In case we want to follow you up can we attempt to follow you up via visits to the above residence? Yes……1 No…….2

14. What is your preferred method for follow up assessments?

Face to face interview ……1

Telephone interview……..2

Others (Specify) _____.....3

15. If venue is not place of residence or current health facility, please provide a detailed description of location

_____
_____
_____
_____

16. Can you be reached by telephone? Yes……1 No……2

17. If you can be reached by telephone kindly provide the number to be used:

_____

18. Whose number is this? _____

19. What is the best time of the day to contact you by?

Phone _____

Home visit_____

Ask the male partner to identify two individuals who may be contacted by the study staff if we are unable to reach him directly. Ask the male partner whether it is acceptable for staff to identify themselves as research staff from Makerere University School of Public Health. Assure the male partner that we will not disclose any health information, including HIV Serostatus to contacts.

Additional contact #1

20. Name_____

21. Relationship to participant: _____

22. Can this person be reached by telephone? Yes…….1 No……2

23. Telephone contact number_____

Additional contact #2

24. Name: _____

25. Relationship to participant: _____

26. Can this person be reached by telephone? Yes…….1 No…….2

27. Telephone contact number_____

Participant and family background information: administered at baseline

Mother Baseline Questionnaire

1. Date of visit: dd/mm/yy_____
2. Interviewer: _____
3. Unique Facility ID: _____
4. Study day no: _____
5. Study Arm: _____
6. Anonymous Participant ID: *Facility code-Interviewer code- participant number* ___
7. REDCap ID (confirm this after uploading and synchronizing data with the server)

Start Time: End Time:

	Languages used: 1 Luganda 2 English 3 Others _____	
	Demographic Information: (Tick and write all that apply in the spaces provided)	
1.	In what year were you born	Year _____ Don't know _____
2.	How old are you?	Age in complete years
3.	What is the highest level of school you completed?	1= No formal education 2= Nursery 3= Primary 4= Post-primary/Vocational 5= Secondary (A or O level) 6= College (middle level) 7= University 8= Don't know
4.	Religion	1= Catholic 2= Protestant 3= Pentecostal 4= Muslim 5= No religion 6= Other (specify) _____
5.	What is your current employment status	1= Employed for wages 2= Self-employed 3= Business partnership 4= Student 5= Out of work (Unemployed) 6= Housewife 7= Retired 8= Others
6.	What is your current marital status?	1= Currently married 2= Cohabitating 3= Never married 4= Widowed 5= Divorced/Separated
7.	Is your husband / partner living	1= Living with me

	with you now or is he staying elsewhere?	2= Staying elsewhere
8.	Does your husband/partner have other sexual partners/wives that you are aware of?)	1= Yes 2= No 3= Don't Know If No/Don't Know Skip to QN 10
9.	Including you, in total, how many wives or live-in partners does your partner have that you are aware of?	1= Number 2= Don't know
10.	What is your partner's/husband's highest level of school attendance?	1= No formal education 2= Nursery 3= Primary 4= Post-primary / vocational 5= Secondary (A or O level) 6= College (middle level) 7= University 8= Don't know
11.	What is your partner's/ husband's current employment status?	1= Employed for wages 2= Self-employed 3= Business partnership 4= Student 5= Out of work (Unemployed) 6= Retired 7= Others 8= Don't know
12.	Would you say that the money you earn is more than what your partner earns or less than what he earns or about the same?	1= More than him 2= Less than him 3= About the same 4= Partner does not bring in any money 5= Don't know
13.	Who usually decides how the money you earn will be used?	1= Myself 2= My partner 3= Jointly 4= Others specify……
	Now, I would like to ask you some questions about your household	
14.	What is the main source of drinking water for members of your household?	1= Piped water 2= Dug Well 3= Borehole 4= River 5= Rain Water 6= Bottled Water
15.	What kind of toilet facility do members of your household usually use?	1= Flush or pour flush toilet 2= Traditional pit latrine 3= Ventilated improved pit latrine(VIP) 4= No facility/bush/field 5= Other
16.	Do you share this toilet facility with other Households?	1= Yes 2= No
17.	What type of fuel does your household mainly use for	1= Electricity 2= Lpg / natural gas

	cooking?	3= Biogas 4= Paraffin / kerosene 5= Charcoal from wood 6= Firewood / straw 7= Dung 8= No food cooked in household 9= Other
18.	Does your household have any of the following	1= Electricity from a wire 2= Solar panels 3= Generator 4= Radio 5= Television 6= Refrigerator 7= A telephone/mobile telephone 8=None
19.	Does any member of your household own:	1= Bicycle 2= Motorcycle 3= Car or truck 4= Cows 5= None
20.	What is the main material of your house floor	1= Earth and Dung 2= Cement 3= Wood 4= Tiles
21.	What is the main material of your house roof	1= Grass thatched 2= Iron sheets 3= Tiles
22.	Do you, in your own name, own any land, or a house (Yes for any one or both)	1= Yes 2= No
23.	Do you yourself own any productive assets (for example, cattle or sewing machine)?	1= Yes 2= No
24.	Do you have any cash savings now?	1= Yes 2= No
25.	Have you ever had cash savings that you used for business or money-lending?	1= Yes 2= No
26.	Of your total household expenses, what proportion is met through your own earnings?	1= All my expenses 2= More than half of my expenses 3= Half of my expenses 4= Less than half of my expenses 5= None of my expenses
27.	Which of these statements best describes food eaten in your household in the last 12 months?	1= We always have enough to eat and the kinds of food we want 2= We have enough to eat, but not always the kinds of food we want 3= Sometimes we don't have enough to eat 4= Often we don't have enough to eat

28	How many members in your house hold are 18 years and above, starting with the youngest to the oldest including you? |__| Enter number here and complete table below No | Age | Relationship 1 2 3 4 5	
Now, I would like to ask you some questions about the decision-making in your household and the relationship with your partner		
29	Who usually makes decisions about health care for yourself	1= Myself 2= Husband /Partner 3= Myself and Husband /Partner jointly 4= Others specify_____
30.	Who usually makes decisions about making major household purchases?	1= Myself 2= Husband/Partner 3= Myself and Husband /Partner jointly 4= Others specify_____
31.	Who usually makes decisions about making purchases for daily household needs?	1= Myself 2= Husband/Partner 3= Myself and Husband /Partner jointly 4= Others specify_____
32.	Who usually makes decisions about visits to family or relatives?	1= Myself 2= Husband/Partner 3= Myself and Husband /Partner jointly 4= Others specify_____
33.	Have you ever had a major disagreement with your partner?	1= Yes 2= No If no, skip to QN 37
34.	If yes, when did you last have a major disagreement with your partner?	1= Within a month 2= 1-6 months ago 3= 7-12 months ago 4= >12 months ago If more than six months ago, skip to QN 36
35.	In the last 6 months, how many times have you had a major disagreement with your partner?	1= None 2= Once 3= 2-3 times 4= >3 times
36.	The last time you had a major disagreement with your partner, how did you resolve it?	1= Talked and amicably resolved the disagreement 2= Had heated arguments/quarrel 3= Physical fight 4= Other, specify……
37.	The relationships that women have with their husbands vary. Some have various challenges and discuss them while others do not. How, would you describe your relationship with your partner?	1= Very good and have never had any disagreement 2= Good, with a few disagreements 3= Sometimes difficult and sometimes good 4= Very difficult, characterized by frequent disagreements
	The following questions are related to your current pregnancy and any past pregnancies	

38.	Have you ever given birth	1= Yes 2= No If No, skip to QN 41
39.	If yes, how many children have you ever given birth to?	Children alive _____ Children Dead _____ Total _____
40.	What is the age of your youngest child?	_____ Years _____ months
41.	When you got pregnant with this current pregnancy, did you want to get pregnant at that time?	1= Yes, then 2= Yes, but later 3= Not at all If "yes, then" or "Not at all" skip to Qn 43
42	If later, how much later did you want to have the child?	1= <1 year 2= 1-2 years 3= 2 or more years
43.	At what stage of pregnancy did you start attending antenatal care for this pregnancy?	_____ months
44.	How many times have you attended ANC for this pregnancy?	_____ visits
45.	How many scheduled ANC visits (appointments) have you missed during this pregnancy?	_____ visits
46.	Would you say your partner supports you with antenatal care related issues?	1= Yes 2= No If no, skip to QN 48
47.	If yes, how does he support you (unprompted)? Tick all that apply	1= Gives me money to attend ANC 2= Reminds me to attend ANC 3= Escorts me to attend ANC 4= Gives me supplies (e.g. gloves) for ANC 5= Other, specify…….
48.	Has your partner ever attended antenatal care with you?	1= Yes 2= No
49.	Do you have an intention of having another baby in future, after this current pregnancy?	1= Yes 2= No
50	Does your husband/partner want the same number of children as yourself?	1= Same number 2= He wants more children 3= He wants fewer children 4= Don't know 5= Never talked
51.	Do you and your partner discuss the number of children you would like to have (family size)?	1= Yes 2= No
52.	Do you and your partner discuss when to get pregnant and when not to get pregnant?	1= Yes 2= No
Finally, I would like to ask you some questions about HIV		
53.	Have you ever heard of an infection called HIV, the virus that causes AIDS?	1= Yes 2= No

54.	If a man/woman has HIV, does his/her partner always have HIV?	1= Yes 2= No 3= Don't Know
55.	Is it possible for a healthy-looking person to have HIV?	1= Yes 2= No 3= Don't Know
56.	If a mother is HIV-positive, can she transmit HIV to her baby? (Unprompted)	1= Yes 2= No 3= Don't Know
57.	Do you know of a place(s) where people can get tested for HIV?	1= Yes 2= No
58.	Have you ever been tested for HIV?	1= Yes 2= No If no, skip to QN 67
59.	How many times have you been tested during this pregnancy?	Number _____
60.	When was your last HIV test?	1= Just tested (*Please specify how long ago in days*) 2= Less than 3 months ago 3= 3-5 months ago 4= 6-11 months ago 5= 1-2 years ago 6= More than 2 years ago 7= Can't remember
61.	Are you willing to tell me the last HIV test result you received?	1= Yes 2= No If No, Skip to Qn 63
62.	If yes, what was the result of that HIV test?	1= Positive 2= Negative 3= Indeterminate 4= I did not receive result
63.	Have you disclosed your HIV status to your partner?	1= Yes 2= No 3= Only tested today Skip to Qn 67 if last HIV result (Qn 62) was negative, indeterminate, or did not receive result
64	If your HIV status is positive, have you registered in a clinic for HIV care?	1= Yes, registered in the HIV clinic in this facility, in addition to care at the ANC clinic 2= Yes, registered in an HIV clinic in another facility, in addition to care at the ANC clinic 3= Only registered in the ANC clinic for care and no other HIV clinic
65.	Are you currently on antiretroviral therapy?	1= Yes 2= No 3= Only tested today If No or tested today, skip to Qn 67
66.	How long ago did you start taking ARVs to manage your HIV?	_____Months _____Years
67.	Have you discussed HIV testing with your current partner?	1= Yes 2= No
68	How easy is it to talk to your	1 = Very easy

	current male partner about HIV testing?	2= Easy 3= Somewhat hard 4= Hard 5= Very hard
69.	Have you ever asked your current partner to test for HIV?	1= Yes 2= No
70.	In general, based on your understanding of your male partner and your understanding of HIV testing, how convenient do you think it is for your partner to get tested for HIV?	1= Very convenient 2= Convenient 3= Neither convenient nor inconvenient 4= Inconvenient 5 = Very inconvenient
71.	Have you ever tested together with your current partner as a couple?	1= Yes 2= No If Yes, Skip to QN 74
72	Have you asked your current partner if he has ever tested for HIV?	1= Yes 2= No
73	Do you know whether your current partner has ever tested for HIV?	1= Yes 2= No
74.	Have you asked your partner to test for HIV during this current pregnancy?	1= Yes 2= No
75.	Did your partner test during this current pregnancy?	1= Yes, before today 2= Yes, tested today 3= No 4= Don't Know If No or Don't Know, skip Qn76 (end the interview)
76	Did you test as a couple?	1= Yes 2= No If it is a "control" day, end the interview. "Thank you for your time"

HIV Self-testing for Partners of Women Attending ANC in Uganda: Uptake and Linkage to Care Post-Test

Month-1 Follow up questionnaire for mothers

Unique Facility ID:

Participant ID: *Facility code/interviewer code/Anonymous study ID*:

REDCap ID: _____

Study arm:---------- Follow up No:----------

Interviewer Name: _____

Start Time: End Time:

(Tick and write all that apply in the spaces provided)

HIV testing

1.	How easy is it in general to talk to your partner about HIV testing	1= Very easy 2= Easy 3= Somehow 4= hard 5= Very hard	
2.	After your last interview, have you talked to your partner about HIV testing?	1 = Yes 2 = No	If No, skip to QN 5
3.	How soon after your last interview, were you able to talk to your partner about HIV testing?	1=Same day 2=Within the first week 3=>week 4=Do not remember	
4	How easy was it to talk to your male partner about HIV testing?"	1= Very easy 2= Easy 3= Somehow 4= Hard 5= Very hard	
5	What are the things that increased the likelihood that you would talk to your partner about HIV testing? (unprompted, check all that apply)	1=Having the oral HIV self-testing kit which I got from the ANC 2=Health education received from the health worker 3=Concern for my baby's health 4=Concern for my partner's health 5=Concern for my health 6=Others specify_____	
If has not talked , skip to question 7 or else continue			
6	How did your partner respond to the idea of HIV testing? (check all that apply)	1= Happy 2= Angry 3= Not sure 4=Did not want to talk 5= Violent 6= Fear	

		7= Other (specify)	
7	What discouraged/stopped you from talking to your partner about HIV testing?	1 = Fear of violence 2 = Fear of separation 3 = Fear of being stigmatized 4= Hard to find time to talk 5 = Hard to find privacy to talk 6 = Hard to talk to my partner about anything 7 = Other reason, specify	
Please ask Q8-11 to women in the intervention group ONLY. For women in the control group, skip to Q12.			
8	Did you take home the HIV oral testing kit?	1=Yes 2=No	If No, skip to QN 12
9	If you took home an oral HIV testing kit afteryour ANC visit, have you passed it on to your partner?	1=Yes 2= No	If No, skip to QN 12
10	How soon after taking the kit home were you able to pass it on to your partner?	1=Same day 2=Within the first week 3=Within one month 4=Others Specify _____	
11	How did your partner respond to the oral HIV self-testing kit? (Probe for; angry, Partner separation, violence, reduced support.)	1= Happy 2= Angry 3= Not sure 4=Did not want to talk 5= Violent 6= Fear 7= Other (specify)	
12	Since your last interview, has your partner tested for HIV?	1 = Yes 2 = No 3=Don't know	If No or Don't know, skip to QN 16
13	Where was your partner tested for HIV?	1 = Home 2 = Health facility 3=Don't know 4=Others, Specify----------	
14	How did he test for HIV? Prompted responses (please read out the responses and check all that applies/Skip option 1 for women in the control group)	1=Tested himself using the oral HIV kit I gave him 2= Tested himself using the oral HIV kit he got from elsewhere 3= Through other testing services at the health facility/outreach 4= Don't know	
15	To the best of your knowledge, how convenient do you think it was for your male partner to get tested using this method in 14 above?	1= Very convenient 2= Convenient 3= Neither convenient nor inconvenient 4= Inconvenient 5 = Very inconvenient	
16	In general, based on your understanding of your partner and your understanding of HIV testing, how convenient do you think it is for your partner to get tested for HIV?	1= Very convenient 2= Convenient 3= Neither convenient nor inconvenient 4= Inconvenient 5 = Very inconvenient	
17	After your last interview, have you	1=Yes	If No, skip to QN

	tested for HIV?	2=No	38
18	If yes, how did you test for HIV? (please read out the responses and check all that applies/Skip option 1 for women in the control group)	1=Using the oral HIV test kit I got from the ANC clinic 2= Using the oral HIV test kit I got from elsewhere 3= Testing services at the health facility/outreach	
19	Can you please share with me your HIV test results for the test you did after the last interview?	1= Yes 2= No	If No, skip to QN 36 for those who did not use HIVST and to QN 21 for those who used HIVST
20	What was your HIV test result?	1= Positive 2= Negative 3= Indeterminate 4= I couldn't understand the results 5= I didn't get the results	For those who were HIV positive and did not use HIVST: skip to 33. For those who did not use HIVST (QN 18), and HIV result (QN 20) was "negative, indeterminate, could not understand results, or didn't get the results": skip to 36
21	For those who used the HIV oral self-testing kit: Who conducted the oral HIV self-test?	1= Self 2= Husband 3= Health worker 4= Others specify	
22	Did you find it difficult to understand the instructions for using the kit?	1= Very difficult 2= Somewhat difficult 3= Not difficult 4= N/A(Didn't read the instructions myself)	
23	How difficult was it for you to swab your gum for the test kit?	1= Very difficult 2= Somewhat difficult 3= Not difficult 4= N/A(Didn't swab the gum myself)	
24	Was it difficult for you to time the twenty minutes?	1= Very difficult 2= Somewhat difficult 3= Not difficult 4= N/A (Didn't time the test myself)	
25	How difficult was it for you to read the test result?	1= Very difficult 2= Somewhat difficult 3= Not difficult 4= N/A (Didn't read the test myself)	
26	Did you require any additional help with any of the following?	1= Needed counseling before the test 2=Needed counseling after the test	

	Prompted/check all that apply	3= Needed help to read and interpret the test results 4=Other support, specify	If No in QN 19, skip to 30
27	Check and confirm that the participant used the self-test kit (*confirm by checking the HIV test kit*)	1= Yes 2= No	
28	Please look at the kit and tell me test results	1= Positive 2= Negative 3= Indeterminate 4= I don't know	
29	Interviewer looks at the kit and records test results	1= Positive 2= Negative 3= Indeterminate 4= I don't know	
30	Did you go to the health facility for a confirmatory test?	1= Yes 2= No	If No, skip to QN 36
31	How soon, did you go for a confirmatory test?	1=Same day 2=Within the first week 3=>week 4=Do not remember	
32	What was your confirmatory HIV test result?	1= Positive 2= Negative 3= Indeterminate 4= I didn't get the results	If Not Positive skip to QN 36
33	Have you registered in HIV clinic for care since you received your HIV positive confirmatory test?	1= Yes 2= No	If No, skip to QN 36
34	When did you register in the HIV Clinic?	1=Within the first week 2=Within one month 3=Within three months 4= Others specify _____	
35	Have you started taking ART?	1= Yes 2= No 3= Others Specify ____	
36	Did you test together as a couple?	1=Yes 2=No	If No, skip to QN38
37	What method of HIV testing did you use when you tested together? Prompted responses, check all that applies/ Skip option 1 for women in the control group	1=Using the oral HIV kit I got from the ANC clinic 2= Using the oral HIV kit I got from elsewhere 3= Testing services at the health facility/outreach	Skip to 39
38	If you didn't test as a couple, did your partner disclose to you his test results?	1=Yes 2=No 3=Don't know whether partner tested	If No or Don't know, skip to QN 47
39	Are you willing to share with me your husband / partner's test results?	1=Yes 2=No	If No, Skip to 47
40	If your partner disclosed to you, or you tested together, can you please share with me his HIV test results?	1=Negative 2=Positive 3= Indeterminate	

<table>
<tr><td>41</td><td>What was your serial number and your partner's serial number in the test kit?</td><td>_<table><tr><th>Kit no.</th><th>Serial no.</th><th>Returned Y/N</th><th>Test results Mother</th><th>Test result Interviewer</th></tr><tr><td>1</td><td></td><td></td><td></td><td></td></tr><tr><td>2</td><td></td><td></td><td></td><td></td></tr></table></td><td>Check the used kit and fill in the serial number from the mother's and partner's kits.

If the male partner did not use HIVST (QN 37 and/or QN 14): skip to 45 if QN 40 = positive, and skip to 47 if QN 40 = "negative or indeterminate"</td></tr>
<tr><td>42</td><td>Did he go to the health facility for a confirmatory test?</td><td>1 = Yes
2 = No
3=Don't know</td><td>If No or Don't know skip to QN 47</td></tr>
<tr><td>43</td><td>How soon after the oral HIV self-testing did he go to the facility?</td><td>1=Within the first week
2=At least a week but within one month
3=At least a month but within three months
4= Don't know
5= Others specify _____</td><td></td></tr>
<tr><td>44</td><td>What was his confirmatory HIV test result?</td><td>1= Positive
2= Negative
3= Indeterminate
4= I didn't get the results</td><td>If NOT Positive skip to QN 47 for those in the intervention and 49 for those in the control group</td></tr>
<tr><td>45</td><td>Has he registered in HIV clinic for care?</td><td>1= Yes
2= No
3= Don't Know</td><td>If No or Don't know, skip to QN 47 for those in the intervention group, and 49 for those in the control group</td></tr>
<tr><td>46</td><td>When did he register in the clinic?</td><td>1=Within the first week
2=At least a week but within one month
3=At least a month but within three months
4= Don't know
5= Others specify</td><td></td></tr>
<tr><td>47</td><td>Have other household members received the kits? Skip entire question for women in the control group</td><td>_<table><tr><th>Kit no.</th><th>Received Y/N/DK</th><th>Tested Y/N/ DK</th><th>Relationship 1= Children 2= Co-wife 3= Sister 4=Others, specify</th><th>know 49</th></tr><tr><td>1</td><td></td><td></td><td></td><td></td></tr><tr><td>2</td><td></td><td></td><td></td><td></td></tr></table></td><td>If None or Don't skip to QN</td></tr>
</table>

		3					
		4					
48.	Who gave the kit to the other family members? Skip entire question for women in the control group	1= Myself 2= My husband 3= Other, specify _____					
	Outcomes of HIV testing: To be answered by all women						
49.	How has your partner supported you towards attending ANC, after your last interview? Prompted and check all that applies	1=Gives me money to attend ANC 2=Escorts me to attend ANC 3= Reminds me to attend ANC 4=Does not support me to attend ANC					
50.	In your assessment, how has the support from your husband/partner changed, if at all, since your last interview?	1 = Not changed 2 = Improved 3=Reduced 4=Not sure					
51	Has your current husband/partner humiliated you in public or threatened to harm you since your last interview?	1 = Yes 2 = No					If No skip to QN 53
52.	In your assessment, was this related to the HIV testing?	1 = Yes 2 = No					
53.	Has your current husband physically harmed you (e.g. slapped, kicked you), since your last interview?	1 = Yes 2 = No					If No, skip to QN 55
54	In your assessment, was this related to the HIV testing?	1 = Yes 2 = No					
55.	Are you worried that your partner may harm you, or that you would feel unsafe, since your last interview?	1 = Yes 2 = No					
56.	In your assessment, how has your relationship with your partner changed, if at all, since you discussed with him about HIV testing?	1 = Not changed 2 = Improved 3=Worsened 4=Not sure					
	Woman's violence towards her male partner						
57	How has your support for your husband/partner changed, if at all, since your last interview?	1 = Not changed 2 = Improved 3=Reduced 4=Not sure					
58	Have you humiliated your current husband/ partner in public or threatened to harm him since your last interview?	1 = Yes 2 = No					If No, skip to QN 60
59	Was this related to the HIV testing?	1 = Yes 2 = No					
60	Have you physically harmed (slapped, kicked, etc) your current husband/ partner since your last interview?	1 = Yes 2 = No					If No, skip to QN 62
61	Was this related to the HIV testing?	1 = Yes 2 = No					
62	Do you feel you might harm your	1 = Yes					

	current husband/ partner since your last interview?	2 = No	
Gender Equitable Scale Now, I will read to you a series of statements and I would like you to tell me whether you agree, partially agree, or disagree with the statements			
63	There are times when a woman deserves to be beaten.	1 = agree 2 = partially agree 3 = do not agree	
64	A woman should tolerate violence to keep her family together	1 = agree 2 = partially agree 3 = do not agree	
65.	It is alright for a man to beat his wife if she is unfaithful.	1 = agree 2 = partially agree 3 = do not agree	
66	A man can hit his wife if she won't have sex with him.	1 = agree 2 = partially agree 3 = do not agree	
67	A man using violence against his wife is a private matter that shouldn't be discussed outside the couple.	1 = agree 2 = partially agree 3 = do not agree	
68	There are times when a man deserves to be beaten.	1 = agree 2 = partially agree 3 = do not agree	
69	A man should tolerate violence to keep his family together	1 = agree 2 = partially agree 3 = do not agree	
70.	It is alright for a woman to beat her husband if he is unfaithful.	1 = agree 2 = partially agree 3 = do not agree	
71	A woman can hit her husband if he won't have sex with her.	1 = agree 2 = partially agree 3 = do not agree	
72	A woman using violence against her husband is a private matter that shouldn't be discussed outside the couple.	1 = agree 2 = partially agree 3 = do not agree	
			Exit the survey

HIV Self-testing for Partners of Women Attending ANC in Uganda: Uptake and Linkage to Care Post-Test

Month-1 Follow up questionnaire for male partners

Date of visit: dd/mm/yy_____/_____/_____

Interviewer Name: _____

Unique Facility ID:

Participant ID: Facility code/code interviewer/ Anonymous participant ID: (same as mother's ID)

REDCap ID (same as mother's REDCap ID): _____

Study arm:---------- Follow up No:----------

Start time End time_____

(Tick and write all that apply in the spaces provided)

Demographic Information		
1.	In what month and year were you born	Month _____ Year _____ Don't know _____
2.	How old are you?	Age in complete years ___
3.	What is the highest level of school you completed?	1= No formal education 2= Nursery 3= Primary 4= Post-primary / vocational 5= Secondary (A or O level) 6= College (middle level) 7= University 8= Don't know
4.	Religion	1= Catholic 2= Protestant 3= Seventh Day Adventist 4= Born again 5= Muslim 6= No religion 7= Other (specify) _____
5.	What is your current employment status	1= Employed for wages 2= Self-employed 3= Business partnership 4= Student 5= Out of work (Unemployed) 6= Retired 7= Others
6.	What is your current marital status?	1= Currently married 2= Cohabitating 3= Never married 4= Widowed

		5= Separated/Divorced
Wealth index variables		
7.	What is the main source of drinking water for members of your household?	1= Piped water 2= Dug Well 3= Borehole 4= River 5= Rain Water 6= Bottled Water
8.	What kind of toilet facility do members of your household usually use?	1= Flush or pour flush toilet 2= Traditional pit latrine 3= Ventilated improved pit latrine(VIP) 4= No facility/bush/field 5= Other
9.	Do you share this toilet facility with other Households?	1= Yes 2= No
10.	What type of fuel does your household mainly use for cooking?	1= Electricity 2= Lpg / natural gas 3= Biogas 4= Paraffin / kerosene 5= Charcoal from wood 6= Firewood / straw 7= Dung 8= No food cooked in household 9= Other
11.	Does your household have	1= Electricity from a wire 2= Solar panels 3= Generator 4= Radio 5= Television 6= Refrigerator 7= A telephone/mobile telephone
12.	Does any member of your household own:	1= Bicycle 2= Motorcycle 3= Car or truck 4= Cows 5= None
HIV Knowledge and testing History		
13.	Have you ever heard of an infection called HIV, the virus that causes AIDS?	1= Yes 2= No
14.	If a man/woman has HIV, does his/her partner always have HIV?	1= Yes 2= No 3= Don't Know
15.	Is it possible for a healthy-looking person to have HIV?	1= Yes 2= No 3= Don't Know
16.	If a mother is HIV-positive can she transmit HIV to her baby?	1= Yes 2= No 3= Don't know
17.	Do you know of a place(s) where people can get tested for HIV?	1= Yes 2= No

18	Has your partner discussed with you about HIV testing in the last month?	1= Yes 2= No
19.	Has your partner given you an HIV self-testing kit and materials about HIV testing in the last month?	1= Yes 2= No Skip for the men whose partners are in the control group
20	Have you ever been tested for HIV?	1= Yes 2= No If No, skip to QN 22
21	When was your last HIV test?	1= Just tested (within one week) 2= More than a week but less than 3 months ago 3= 3 -5 months ago 4= 6-11 months ago 5= 1-2 years ago 6= More than 2 years ago 7= Don't know
22	In the last month, what made it more likely that you would take an HIV test?	1=The oral HIV testing kit my partner brought me 2=My partner's discussion about the need for me to test 3=Taking care of my own health 4=Taking care of my partner's health 5=Taking care of my baby's health 6=Others specify_____ If never tested (QN 20), skip to QN 45
If never tested, skip to question 45 or else continue		
23	Where did you test for HIV?	1 = Clinic 2 = Home 3=Others Specify----------
24	How did you test for HIV? (Check all that applies)	1=Using the oral HIV kit my partner gave me 2= Using the oral HIV kit I got from somewhere else 3= Through other testing services at the health facility/outreach 4= Others Specify----------
25	Are you willing to tell me the last HIV test result you received?	1= Yes 2= No If No, skip to QN 27 for those who used HIVST and QN 42 for men who didn't use HIVST
26	What was the result of that HIV test?	1= Positive 2= Negative 3= Indeterminate 4= I did not receive result If Positive and did not use oral HIVST kits, Skip to QN 39. If not positive and did not use oral HIVST kits, Skip to QN 42.
Questions 27 – 38 should be administered to men who used the oral HIV self-testing kit, irrespective of source. Now I'm going to ask you some questions about your experience with the oral HIV self-testing kit.		
27	(For men who used the test): Who conducted the oral HIV self-test?	1= Self 2= Wife 3= Health worker 4= Others specify_____
28	Did you find it difficult to understand the instructions for using the kit?	1= Very difficult 2= Somewhat difficult 3= Not difficult

		4= N/A (Didn't read the instructions myself)
29	How difficult was it for you to swab your gum for the test kit?	1= Very difficult 2= Somewhat difficult 3= Not difficult 4= N/A (Didn't swab the gum myself)
30	Was it difficult for you to time the twenty minutes?	1= Very difficult 2= Somewhat difficult 3= Not difficult 4= N/A (Didn't time the test myself)
31	How difficult was it for you to read the test result?	1= Very difficult 2= Somewhat difficult 3= Not difficult 4= N/A(Didn't read the test myself)
32	Did you require any additional help with any of the following? Prompted/check all that apply	1= Needed counseling before the test 2=Needed counseling after the test 3= Needed help to read and interpret the test results 4=Other support, specify
33	Did you go to the health facility for a confirmatory test?	1 = Yes 2 = No If No, skip to QN 36
34	How soon after performing the oral HIV self-testing, did you go for a confirmatory test?	1= Same day 2=Within the first week 3= 1 week – 1 month 4=1 month – 3 months 5 = Do not remember Skip to QN 42 for those who did not want to share their HIV results
35	What was your confirmatory HIV test result?	1= Positive 2= Negative 3= Indeterminate 4= I didn't get the results
36	Check and confirms that the participant used the self-test kit (*confirm by checking the HIV test kit*)	1= Yes 2= No
37	Please look at the kit and tell me test results	1= Positive 2= Negative 3= Indeterminate 4= I don't know
38	Interviewer looks at the kit and records test results	1= Positive 2= Negative 3= Indeterminate 4= I don't know
Access to care for those who tested HIV positive through all forms of testing		
39	Have you registered in HIV clinic for care since you received your HIV positive test results?	1= Yes 2= No If No, skip to QN42

40	If you have registered in the HIV Clinic, how soon did you register?	1=Within the first week 2=1 week – 1 month 3=1 month to three months 4= Others specify _____
41	Have you started taking ART?	1= Yes 2= No 3= Others Specify ____
Partner HIV testing for all those who tested and those who did not test		
42	Did you test with your partner?	1=Yes 2=No If no, skip to QN 44
43	How did you test together with your partner? (Check all that applies)	1=Using the oral HIV kit at home 2= Testing services at the health facility/outreach 3=Other, specify---------- Skip to 46 for those who tested with partner
44	If you didn't test with your partner, did you disclose your results to her?	1=Yes 2=No
45	If you didn't test with your partner, did she test for HIV in the last month?	1= Yes 2= No 3= I don't know If No or I don't know, skip to QN 51
46	If yes, to Q45, how did your partner test for HIV?	1=Using the oral HIV kit at home 2= Testing services at the health facility/outreach 3= Don't know If 2 or 3, skip to QN 48
47	If tested at home with the oral HIV kit, who conducted the HIV test?	1=I tested her 2=She tested herself 3=Health worker 4=Others specify_____
48	Did your partner disclose her results to you?	1=Yes 2=No If No, skip to 51
49	If your partner disclosed to you, are you willing to share with me her HIV test results?	1=Yes 2=No If No, skip to 51
50	What was her HIV test result?	1=Negative 2=Positive 3= Invalid
Social outcomes for both study groups *Some families have disagreements related to HIV testing. Now, I am going to ask you some questions about your relationships*		
51	How have you supported your partner towards attending ANC in the last month? Interviewer Note: Refer to the "last month" for the first interview and "since the last interview" for the second male partner follow-up interview	1=Give her money to attend ANC 2=Escort her to attend ANC 3= Remind her to attend ANC 4=Buy her a mama kit or similar product 5=Do not support at all 6= Others specify _____
52	How has your support for your partner changed, if at all, in the last month?	1 = Not changed 2 = Improved

		3=Reduced 4=Not sure
53	Have you humiliated your current partner in public or threatened to harm her, in the last month?	1 = Yes 2 = No If No, skip to Qn 55
54	Was this related to the HIV testing?	1 = Yes 2 = No
55	Have you physically harmed (slapped, kicked) your current partner in the last month?	1 = Yes 2 = No If No, skip to Qn 57
56	Was this related to HIV testing?	1 = Yes 2 = No
57	Did you feel you might harm your current partner in the last month?	1 = Yes 2 = No
58	Do you feel you might harm your current partner because of conflict around HIV testing?	1 = Yes 2 = No
59	In your assessment, how has your relationship with your partner changed, if at all, in the last month?	1 = Not changed 2 = Improved 3=Worsened 4=Not sure/Don't know
Woman's violence towards her male partner *Sometimes women can become violent towards their partners. Now, I am going to ask you some questions about this.*		
60	In your assessment, how has the support from your wife/partner changed, if at all, in the last month?	1 = Not changed 2 = Improved 3=Reduced 4=Not sure
61	Has your current wife/partner (one who introduced the idea of HIV testing) humiliated you in public or threatened to harm you in the last month?	1 = Yes 2 = No If No, skip to Qn 63
62	In your assessment, was this related to HIV testing?	1 = Yes 2 = No
63	Has your current wife/partner physically harmed you (e.g. slapped, kicked you), in the last month?	1 = Yes 2 = No If No, skip to Qn 65
64	In your assessment, was this related to HIV testing?	1 = Yes 2 = No
65	Are you worried that your wife/ partner may harm you, or that you would feel unsafe, in the last month?	1 = Yes 2 = No
66	In your assessment, has your relationship with your partner improved or worsened in the last month?	1 = Improved 2=Worsened 3=Not sure/Don't know
Gender scales. Now, I will ask you some questions about your possessions and decision-making in your household. Remember that all the issues we discuss will remain confidential.		
67	Do you, in your own name, own any land, or house	1= Yes 2= No

68	Do you yourself own any productive assets (for example, cattle or sewing machine)?	1= Yes 2= No
69	Do you have any cash savings now?	1= Yes 2= No
70	Have you ever had cash savings that you used for business or money-lending? (yes for any one or both)	1= Yes 2= No
71	Of your total household expenses, what proportion is met through your own earnings?	1= All my expenses 2= Less than half of my expenses 3= Half of my expenses 4= More than half of my expenses 5= None of my expenses
72	Who usually makes decisions about making major household purchases?	1= Respondent 2= Spouse/partner 3 = Respondent and spouse/partner jointly 4= Someone else
73	Who usually makes decisions about making purchases for daily household needs?	1= Respondent 2= Spouse/partner 3= Respondent and spouse/partner jointly 4= Someone else
74	Who usually makes decisions about visits to family or relatives?	1 = Respondent 2 = Spouse/partner 3 = Respondent and spouse/partner jointly 4= Someone else
75	Who usually makes decisions about healthcare for your partner?	1= Respondent 2 = Spouse/partner 3 = Respondent and spouse/partner jointly 4 = Someone else
Gender Equitable Men (GEM) Scale. Now, I will read to you a series of statements and I would like you to tell me whether you agree, partially agree, or disagree with the statements.		
76	There are times when a woman deserves to be beaten.	1 = Agree 2 = Partially agree 3= Do not agree
77	A woman should tolerate violence to keep her family together	1 = Agree 2 = Partially agree 3= Do not agree
78	It is alright for a man to beat his wife if she is unfaithful.	1 = Agree 2 = Partially agree 3= Do not agree
79	A man can hit his wife if she won't have sex with him.	1= Agree 2= Partially agree 3= Do not agree
80	A man using violence against his wife is a private matter that shouldn't be discussed outside the couple.	1 = Agree 2 = Partially agree 3 = Do not agree
81	A woman using violence against her husband is a private matter that shouldn't be	1 = Agree 2 = Partially agree 3 = Do not agree

	discussed outside the couple.	
82	There are times when a man deserves to be beaten.	1 = Agree 2 = Partially agree 3 = Do not agree
83	A man should tolerate violence to keep his family together	1 = Agree 2 = Partially agree 3 = Do not agree
84	It is alright for a woman to beat her husband if he is unfaithful.	1 = Agree 2 = Partially agree 3 = Do not agree
85	A woman can hit her husband if he won't have sex with her.	1 = Agree 2 = Partially agree 3 = Do not agree

HIV SELF-TESTING FOR PARTNERS OF WOMEN ATTENDING ANC IN UGANDA: UPTAKE AND LINKAGE TO CARE POST-TEST

Month-3 Follow up questionnaire for mothers

Unique Facility ID:

Participant ID: *Facility code/interviewer code/Anonymous study ID*:

REDCap ID: _____

Study arm:---------- Follow up No:----------

Interviewer Name: _____

Start Time: End Time:

Thank you for accepting to talk with us again about HIV testing and your experiences in relation to this. We will ask you some questions again like we did at the last interview. Some of the questions will be similar to those we asked you last time because some of your experiences and circumstances may have changed since the last interview.
(Tick and write all that apply in the spaces provided)

HIV testing

1.	In general, since your last interview, how easy has it been to talk to your partner about HIV testing?	1= Very easy 2= Easy 3= Somewhat easy, 4= somewhat hard 5= hard 6= Very hard	
2.	After your last interview, have you talked to your partner/husband about HIV testing?	1 = Yes 2 = No	If No, skip to QN 5
3.	How soon after your last interview, were you able to talk to your partner about HIV testing?	1=Same day 2=Within the first week 3=>week 4=Do not remember	
4	How easy was it to talk to your male partner about HIV testing?	1= Very easy 2= Easy 3= Somewhat easy, 4=somewhat hard 5= Hard 6= Very hard	
5	What made it more likely that you would talk to your partner about HIV testing? (unprompted, check all that apply)	1=Having the oral HIV self-testing kit which I got from the ANC 2=Health education received from the health worker 3=Concern for my baby's health 4=Concern for my partner's health 5=Concern for my health	

		6=Others specify_____	
If has not talked to the partner , skip to question 7 or else continue			
6	How did your partner respond to the idea of HIV testing?	1= Happy 2= Angry 3= Not sure 4=Did not want to talk 5= Violent 6= Fear 7= Other (specify)	
7.	What discouraged/stopped you from talking to your partner about HIV testing? Unprompted, check all that apply)	1 = Fear of violence 2 = Fear of separation 3 = Fear of being stigmatized 4 = Other reason, specify_____	
Please ask Q8-11 to women in the intervention group ONLY. For women in the control group, skip to Q12.			
8	Did you take home the HIV oral testing kit?	1=Yes 2=No	If No, skip to QN 12
9	If you took home an oral HIV testing kit during your ANC visit, have you passed it on to your partner?	1=Yes 2= No	If No, skip to QN 12
10	How soon after taking the kit home were you able to pass it on to your partner?	1=Same day 2=Within the first week 3=Within one month 4=Others Specify _____	
11	How did your partner respond to the oral HIV self-testing kit? (Probe for; angry, Partner separation, violence, reduced support.)	1= Happy 2= Angry 3= Not sure 4=Did not want to talk 5= Violent	
12	Since your last interview, has your partner tested for HIV?	1 = Yes 2 = No 3=Don't know	If No or Don't know, skip to QN 16
13	Where was your partner tested for HIV?	1 = Home 2 = Health facility 3=Don't know 4=Others, Specify----------	
14	How did he test for HIV? Prompted responses (please read out the responses and check all that applies/Skip option 1 for women in the control group)	1=Tested himself using the oral HIV kit I gave him 2= Tested himself using the oral HIV kit he got from elsewhere 3= Through other testing services at the health facility/outreach 4= Don't know	
15	To the best of your knowledge, how	1= Very convenient 2= Convenient	

	convenient do you think it was for your male partner to get tested using this method in 14 above?	3= Neither convenient nor inconvenient 4= Inconvenient 5 = Very inconvenient	
16	In general, based on your knowledge of your partner and your knowledge of HIV testing, how convenient do you think it is for your partner to get tested for HIV?	1= Very convenient 2= Convenient 3= Neither convenient nor inconvenient 4= Inconvenient 5 = Very inconvenient	
17	After your last interview, have you tested for HIV?	1=Yes 2=No	If No, skip to QN 38
18	If yes, how did you test for HIV? (please read out the responses and check all that applies/Skip option 1 for women in the control group)	1=Using the oral HIV test kit I got from the ANC clinic 2= Using the oral HIV test kit I got from elsewhere 3= Testing services at the health facility/outreach	
19	Can you please share with me your HIV test results for the test you did after the last interview?	1= Yes 2= No	If No, skip to QN 36 for those who did not use HIVST and to QN 21 for those who used HIVST
20	What was your HIV test result?	1= Positive 2= Negative 3= Indeterminate 4= I couldn't understand the results 5= I didn't get the results	For those who did not use HIVST (QN 18): if she was HIV positive, skip to 33. Otherwise skip to 36.
21	For those who used the HIV oral self-testing kit: Who conducted the oral HIV self -test?	1= Self 2= Husband 3= Health worker 4= Others specify_	
22	Did you find it difficult to understand the instructions for using the kit?	1= Very difficult 2= Somewhat difficult 3= Not difficult 4= N/A (Didn't read the instructions myself)	
23	How difficult was it for	1= Very difficult	

	you to swab your gum for the test kit?	2= Somewhat difficult 3= Not difficult 4= N/A (Didn't swab the gum myself)	
24	Was it difficult for you to time the twenty minutes?	1= Very difficult 2= Somewhat difficult 3= Not difficult 4= N/A (Didn't time the test myself)	
25	How difficult was it for you to read the test result?	1= Very difficult 2= Somewhat difficult 3= Not difficult 4= N/A (Didn't read the test myself)	
26	Did you require any additional help with any of the following? Prompted/check all that apply	1= Needed counseling before the test 2=Needed counseling after the test 3= Needed help to read and interpret the test results 4=Other support, specify	If No in QN 19, skip to 30
27	Check and confirm that the participant used the self-test kit (*confirm by checking the HIV test kit*)	1= Yes 2= No	
28	Please look at the kit and tell me test results	1= Positive 2= Negative 3= Indeterminate 4= I don't know	
29	Interviewer looks at the kit and records test results	1= Positive 2= Negative 3= Indeterminate 4= I don't know	
30	Did you go to the health facility for a confirmatory test?	1= Yes 2= No	If No, skip to QN 36
31	How soon did you go for a confirmatory test?	1=Same day 2=Within the first week 3=>week 4=Do not remember	
32	What was your confirmatory HIV test result?	1= Positive 2= Negative 3= Indeterminate 4= I didn't get the results	If not positive, skip to QN 36
33	Have you registered in HIV clinic for care since you received your HIV positive confirmatory test?	1= Yes 2= No	If No, skip to QN 36
34	When did you register in the HIV Clinic?	1=Within the first week 2=Within one month 3=Within three months 4= Others specify _____	
35	Have you started taking ART?	1= Yes 2= No	

<table>
<tr><td></td><td></td><td>3= Others Specify ____</td><td></td></tr>
<tr><td>36</td><td>Did you test together as a couple?</td><td>1=Yes
2=No</td><td>If No, skip to QN38</td></tr>
<tr><td>37</td><td>What method of HIV testing did you use when you tested together? Prompted responses and check all applies/ Skip option 1 for women in the control group</td><td>1=Using the oral HIV kit I got from the ANC clinic
2= Using the oral HIV kit I got from elsewhere
3= Testing services at the health facility/outreach</td><td>Skip to 39.</td></tr>
<tr><td>38</td><td>If you didn’t test as a couple, did your partner disclose to you his test results?</td><td>1=Yes
2=No
3=Don’t know whether partner tested</td><td>If No or Don’t know: Skip to QN 47 if not HIVST, and skip to 42 if HIVST.</td></tr>
<tr><td>39</td><td>Are you willing to share with me your husband / partner’s test results?</td><td>1=Yes
2=No</td><td>If No: Skip to 47 if not HIVST, and skip to 42 if HIVST.</td></tr>
<tr><td>40</td><td>If your partner disclosed to you, or you tested together, can you please share with me his HIV test results?</td><td>1=Negative
2=Positive
3= Indeterminate</td><td></td></tr>
<tr><td>41</td><td>What was your serial number, and your partner’s serial number in the test kit?</td><td>_
<table><tr><th>Kit no.</th><th>Serial no.</th><th>Returned Y/N</th><th>Test results Mother</th><th>Test result Interviewer</th></tr><tr><td>1</td><td></td><td></td><td></td><td></td></tr><tr><td>2</td><td></td><td></td><td></td><td></td></tr></table></td><td>Check the used kit and fill in the serial number from the mother’s and partner’s kits.

If the male partner did not use HIVST (QN 37 and/or QN 14): skip to 45 if QN 40 = positive, and skip to 47 if QN 40 = “negative or indeterminate”</td></tr>
<tr><td>42</td><td>Did he go to the health facility for a confirmatory test?</td><td>1 = Yes
2 = No
3=Don’t know</td><td>If No or Don’t know skip to QN 47</td></tr>
<tr><td>43</td><td>How soon after the oral HIV self-testing did he</td><td>1=Within the first week
2=Within one month</td><td></td></tr>
</table>

<table>
<tr><td></td><td>go to the facility?</td><td>3=Within three months
4= Don’t know
5= Others specify _____</td><td></td></tr>
<tr><td>44</td><td>What was his confirmatory HIV test result?</td><td>1= Positive
2= Negative
3= Indeterminate
4= I didn’t get the results</td><td>If QN 40 and 44 are BOTH not positive, then skip to QN 47</td></tr>
<tr><td>45</td><td>Has he registered in HIV clinic for care?</td><td>1= Yes
2= No
3= Don’t Know</td><td>If No or Don’t know, skip to QN 47</td></tr>
<tr><td>46</td><td>When did he register in the clinic?</td><td>1=Within the first week
2=Within one month
3=Within three months
4= Don’t know
5= Others specify</td><td></td></tr>
<tr><td>47</td><td>Have other household members received the kits?</td><td><table><tr><th>Kit no.</th><th>Received Y/N/DK</th><th>Tested Y/N/DK</th><th>Relationship
1= Children
2= Co-wife
3= Sister
4= Others, specify</th></tr><tr><td>1</td><td></td><td></td><td></td></tr><tr><td>2</td><td></td><td></td><td></td></tr><tr><td>3</td><td></td><td></td><td></td></tr><tr><td>4</td><td></td><td></td><td></td></tr></table></td><td>If None or Don’t know skip to QN 49</td></tr>
<tr><td>48</td><td>Who gave the kit to the other family members?</td><td>1= Myself
2= My husband
3= Other, specify _____</td><td></td></tr>
<tr><td colspan="4">Outcomes of HIV testing: To be answered by all women</td></tr>
<tr><td>49</td><td>How has your partner supported you towards attending ANC, after your last interview? Prompted and check all that applies</td><td>1=Gives me money to attend ANC
2=Escorts me to attend ANC
3= Reminds to attend ANC
4=Does not support to attend ANC</td><td></td></tr>
<tr><td>50</td><td>In your assessment, how has the support from your husband/partner changed, if at all, since your last interview?</td><td>1 = Not changed
2 = Improved
3=Reduced
4=Not sure</td><td></td></tr>
<tr><td>51</td><td>Has your current husband/partner humiliated you in public or threatened to harm you since your last interview?</td><td>1 = Yes
2 = No</td><td>If No skip to QN 53</td></tr>
<tr><td>52.</td><td>In your assessment, was this related to the</td><td>1 = Yes
2 = No</td><td></td></tr>
</table>

	HIV testing?		
53.	Has your current husband physically harmed you (e.g. slapped, kicked you), since your last interview?	1 = Yes 2 = No	If No, skip to QN 55
54.	In your assessment, was this related to the HIV testing?	1 = Yes 2 = No	
55.	Are you worried that your partner may harm you, or that you would feel unsafe, since your last interview?	1 = Yes 2 = No	
56.	In your assessment, how has your relationship with your partner changed, if at all, since your last interview?	1 = Not changed 2 = Improved 3=Worsened 4=Not sure	
	Woman's violence towards her male partner		
57	How has your support for your husband/partner changed, if at all, since your last interview?	1 = Not changed 2 = Improved 3=Reduced 4=Not sure	
58	Have you humiliated your current husband/ partner in public or threatened to harm him since your last interview?	1 = Yes 2 = No	If No, skip to QN 60
59	Was this related to the HIV testing?	1 = Yes 2 = No	
60	Have you physically harmed (slapped, kicked, etc.) your current husband/ partner since your last interview?	1 = Yes 2 = No	If No, skip to QN 62
61	Was this related to the HIV testing?	1 = Yes 2 = No	
62	Do you feel you might harm your current husband/ partner since your last interview?	1 = Yes 2 = No	
Discrete choice analysis questions. People have different preferences in terms of where and how they would like to receive HIV counseling and testing. I am going to show you a series of two different options for testing and I request that you tell me which option you prefer for each choice. Interviewer —Please refer to the discrete choice charts.			

63	I prefer option 1 [ ] I prefer option 2 [ ]	
64	I prefer option 1 [ ] I prefer option 2 [ ]	
65	I prefer option 1 [ ] I prefer option 2 [ ]	
66	I prefer option 1 [ ] I prefer option 2 [ ]	
67	I prefer option 1 [ ] I prefer option 2 [ ]	
68	I prefer option 1 [ ] I prefer option 2 [ ]	
69	I prefer option 1 [ ] I prefer option 2 [ ]	
70	I prefer option 1 [ ] I prefer option 2 [ ]	
71	I prefer option 1 [ ] I prefer option 2 [ ]	
72	I prefer option 1 [ ] I prefer option 2 [ ]	
		Exit the survey

Month-3 Follow up questionnaire for male partners

Unique Facility ID:

Participant ID: Facility code/code interviewer/ Anonymous participant ID (same as mother's ID):

REDCap ID (same as mother's REDCap ID): _____

Date of visit: dd/mm/yy_____/_____/_____

Study arm:---------- Follow up No:----------

Interviewer Name: _____

Start time End time

Thank you for accepting to talk with us again about HIV testing and your experiences in relation to this. We will ask you some questions again like we did at the last interview. Some of the questions will be similar to those we asked you last time because some of your experiences and circumstances may have changed since the last interview.
(Tick and write all that apply in the spaces provided)

Demographic Information		
1.	Has your partner discussed with you about HIV testing since the last interview?	1= Yes 2= No
2.	Has your partner given you an HIV self-testing kit and materials about HIV testing since the last interview?	1= Yes 2= No Skip for the men whose partners are in the control group
3.	Since your last interview, have you tested for HIV?	1 = Yes 2 = No 3=Don't know If no or don't know, skip to QN 26
4.	Where did you test from?	1 = Home 2 = Health facility 3=Don't know 4=Others, Specify----------
5.	How did you test for HIV? (Check all that applies)	1=Using the oral HIV kit my partner gave me 2= Using the oral HIV kit I got from somewhere else 3= Through other testing services at the health facility/outreach 4= Others Specify----------
6.	Since the last interview, what made it more likely that you would take an HIV test?	1=The oral HIV testing kit my partner brought me 2=My partner's discussion about the need for me to test 3=Taking care of my own health 4=Taking care of my partner's health 5=Taking care of my baby's health 6=Others specify_____
7.	Are you willing to tell me the last HIV test result you received?	1= Yes 2= No If No, skip to QN 9 for those who used HIV oral self-testing and to 24 for those who did not use HIV self-testing
8.	What was the result of that HIV test?	1= Positive 2= Negative 3= Indeterminate 4= I did not receive result

(For those who used the oral HIV self-testing kit, irrespective of source) Now I'm going to ask you some questions about your experience with the oral HIV self-testing kit.		
9.	(For men who used the test): Who conducted the oral HIV self-test?	1= Self 2= Wife 3= Health worker 4= Others specify_____
10.	Did you find it difficult to understand the instructions for using the kit?	1= Very difficult 2= Somewhat difficult 3= Not difficult 4= N/A (Didn't read the instructions myself)
11.	How difficult was it for you to swab your gum for the test kit?	1= Very difficult 2= Somewhat difficult 3= Not difficult 4= N/A (Didn't swab the gum myself)
12.	Was it difficult for you to time the twenty minutes?	1= Very difficult 2= Somewhat difficult 3= Not difficult 4= N/A (Didn't time the test myself)
13.	How difficult was it for you to read the test result?	1= Very difficult 2= Somewhat difficult 3= Not difficult 4= NA (Didn't read the test myself)
14.	Did you require any additional help with any of the following? Prompted/check all that apply	1= Needed counseling before the test 2=Needed counseling after the test 3= Needed help to read and interpret the test results 4=Other support, specify
15	Did you go to the health facility for a confirmatory test?	1 = Yes 2 = No If No, skip to QN 18 and to QN 24 if No in QN 7
16	How soon after performing the oral HIV self-testing, did you go for a confirmatory test?	1= Same day 2=Within the first week 3= 1 week – 1 month 4=1 month – 3 months 5 = Do not remember Skip to QN 24 for those who did not want to share their HIV results
17	What was your confirmatory HIV test result?	1= Positive 2= Negative 3= Indeterminate 4= I didn't get the results
18	Check and confirm that the participant used the self-test kit (*confirm by checking the HIV test kit*)	1= Yes 2= No
19	Please look at the kit and tell me test results	1= Positive 2= Negative 3= Indeterminate 4= I don't know

20	Interviewer looks at the kit and records test results	1= Positive 2= Negative 3= Indeterminate 4= I don't know
Access to care for those who tested HIV positive through all forms of testing (QN 8 and 17) (if HIV negative, skip to QN 24)		
21	Have you registered in HIV clinic for care since you received your HIV positive test results?	1= Yes 2=No If No, skip to QN 24
22	If you have registered in the HIV Clinic, how soon did you register?	1=Within the first week 2=1 week – 1 month 3=1 month to three months 4= Others specify _____
23	Have you started taking ART?	1= Yes 2= No 3= Others Specify ____
Partner HIV testing for all those who tested and those who did not test		
24	Did you test with your partner?	1=Yes 2=No If yes, skip to QN 27
25	If you didn't test with your partner, did you disclose your results to her?	1=Yes 2=No
26	If you didn't test with your partner, did she test for HIV since the last interview?	1= Yes 2= No 3= I don't know If No or I don't know, skip to QN 32
27	How did your partner test for HIV? (Check all that applies)	1=Using the oral HIV kit 2= Testing services at the health facility/outreach 3= Don't know If Don't know, skip to QN 32
28	If tested at home with the oral HIV kit, who conducted the HIV test?	1= I tested her 2= She tested herself 3= Health worker 4= Others specify_____
29	Did your partner disclose her results to you?	1=Yes 2=No If no, skip to 32
30	If your partner disclosed to you, are you willing to share with me her HIV test results?	1=Yes 2=No If no, skip to 32
31	What was her HIV test result?	1=Negative 2=Positive 3= Invalid
Social outcomes for both study groups *Some families have disagreements related to HIV testing. Now, I am going to ask you some questions about your relationships*		
32	How have you supported your partner towards attending ANC since the last	1=Give her money to attend ANC 2=Escort her to attend ANC

	interview?	3= Remind her to attend ANC 4=Buy her a mama kit or similar product 5=Do not support at all 6= Others specify _____
33	How has your support for your partner changed, if at all, since the last interview?	1 = Not changed 2 = Improved 3=Reduced 4=Not sure
34	Have you humiliated your current partner in public or threatened to harm her, since the last interview?	1 = Yes 2 = No If No, skip to QN 36
35	Was this related to HIV testing?	1 = Yes 2 = No
36	Have you physically harmed (slapped, kicked, etc.) your current partner since the last interview?	1 = Yes 2= No If No, skip to QN 38
37	Was this related to HIV testing?	1 = Yes 2 = No
38	Did you feel you might harm your current partner since the last interview?	1 = Yes 2 = No
39	In your assessment, how has your relationship with your partner changed, if at all, since the last interview?	1 = Not changed 2 = Improved 3=Worsened 4=Not sure/Don't know
Woman's violence towards her male partner *Sometimes women can become violent towards their partners. Now, I am going to ask you some questions about this.*		
40	In your assessment, how has the support from your wife/partner changed, if at all, since the last interview?	1 = Not changed 2 = Improved 3=Reduced 4=Not sure
41	Has your current wife/partner (one who introduced the idea of HIV testing) humiliated you in public or threatened to harm you since the last interview?	1 = Yes 2 = No If No, skip to QN 43
42	In your assessment, was this related to HIV testing?	1 = Yes 2 = No
43	Has your current wife/partner physically harmed you (e.g. slapped, kicked you), since the last interview?	1 = Yes 2 = No If No, skip to QN 45
44	In your assessment, was this related to HIV testing?	1 = Yes 2 = No
45	Are you worried that your wife/ partner may harm you, or that you would feel unsafe, since the last interview?	1 = Yes 2 = No
46	In your assessment, has your relationship with your partner improved or worsened since the last interview?	1 = Improved 2=Worsened 3=Not sure/Don't know
Discrete choice analysis questions. People have different preferences in terms of where and how they would like to receive HIV counseling and testing. I am going to show you a series of two different options for testing and I request that you tell me which option you prefer for each choice. Interviewer— Please refer to the discrete choice charts.		

47	I prefer option 1 [ ] I prefer option 2 [ ]	
48	I prefer option 1 [ ] I prefer option 2 [ ]	
49	I prefer option 1 [ ] I prefer option 2 [ ]	
50	I prefer option 1 [ ] I prefer option 2 [ ]	
51	I prefer option 1 [ ] I prefer option 2 [ ]	
52	I prefer option 1 [ ] I prefer option 2 [ ]	
53	I prefer option 1 [ ] I prefer option 2 [ ]	
54	I prefer option 1 [ ] I prefer option 2 [ ]	
55	I prefer option 1 [ ] I prefer option 2 [ ]	
56	I prefer option 1 [ ] I prefer option 2 [ ]	

HIV SELF-TESTING FOR PARTNERS OF WOMEN ATTENDING ANC IN UGANDA: UPTAKE AND LINKAGE TO CARE POST-TEST

Long-term follow-up questionnaire for female participants

Unique Facility ID:

Participant ID: *Facility code/interviewer code/Anonymous study ID*:

REDCap ID: _____

Study arm:---------- Follow up No:----------

Interviewer Name: _____

Start Time: End Time:

Thank you for accepting to talk with us again about HIV testing and your experiences in relation to this. We will ask you some questions again like we did at the last interview. Some of the questions will be similar to those we asked you last time because some of your experiences and circumstances may have changed since the last interview.

(Tick and write all that apply in the spaces provided)

HIV testing

1.	In general, since your last interview, have you talked to your partner about HIV testing?	1=Yes 2=No	**If No, skip to QN 6**
2.	How easy was to talk to your partner about HIV testing?	1= Very easy 2= Easy 3= Somewhat easy, 4= somewhat hard 5= hard 6= Very hard	
3.	How soon after your last interview, were you able to talk to your partner about HIV testing?	1=Same day 2=Within the first week 3=>week 4=Do not remember	
4	What made it more likely that you would talk to your partner about HIV testing? (unprompted, check all that apply)	1=Having the oral HIV self-testing kit which I got from the ANC 2=Health education received from the health worker 3=Concern for my baby's health 4=Concern for my partner's health 5=Concern for my health 6=Others specify_____	
5	How did your partner respond to the idea of HIV testing?	1= Happy 2= Angry 3= Not sure 4=Did not want to talk 5= Violent 6= Fear 7= Other (specify)	
6	What discouraged/ stopped you	1 = Fear of violence	

	from talking to your partner about HIV testing? Unprompted, check all that apply)	2 = Fear of separation 3 = Fear of being stigmatized 4 = Other reason, specify_____	
The following questions relate to the time when you or your partner last tested for HIV using the HIV self-test kit			
7	The last time that your husband/partner tested using the HIV self-test kit, did he share with you his HIV status?	1 = Yes 2 = No	**If No skip to QN17 if positive, skip to QN 29 if Negative**
8	Are you willing to share with me your husband / partner's test results?	1=Yes 2=No	**If No skip to QN17 if positive, skip to QN 29 if Negative**
9	What were your partner's HIV results?	1= Positive 2 =Negative 3= Indeterminate	**If 2 or 3, skip to QN 17 if positive , and to QN 29 if Negative**
10	Did your partner go to the health facility for a confirmatory test?	1=Yes 2=No	**If No skip to QN17 if positive, skip to QN 29 if Negative**
11	How soon did your partner go for a confirmatory test?	1=Same day 2=Within the first week 3=>week 4=Do not remember	
12	What was your partner's confirmatory HIV test result?	1= Positive 2= Negative 3= Indeterminate	**If 2,3 and 4, skip to Qn. 17**
13	Has your partner registered in HIV clinic for care since he received his HIV positive confirmatory test result?	1=Yes 2=No	**If No, skip to QN 17**
14	When did he register in the HIV clinic?	1=Within three months 2= Within six months 3=Within one year 4= Others specify _____	
15	Has your partner started taking ART?	1=Yes 2=No	**If No, skip to QN 17**
16	How soon did your partner start taking ART?	1=Within one week 2=Within 1 month 3=Within 3 months 4=Within 6 months 5=With 1 year 6=Other (specify)_____	
Internalized stigma: Question 17- 25 should be answered by ONLY HIV positive women **In the following questions, we are going to read to you statements which you should indicate the times you feel or do not feel them by indicating the level on a scale of 1-5, where 1= none**			

of the time, 2= a little bit of time, 3= some of the time, 4=most of the time and 5 = all of the time			
17	People blame me for having HIV	1=None of the time 2=A little bit of time 3=Some of the time 4= Most of the time 5=All of the time	
18	People assume I slept around because I have HIV	1=None of the time 2=A little bit of time 3=Some of the time 4= Most of the time 5=All of the time	
19	I am concerned if I go to the HIV clinic someone I know might see me	1=None of the time 2=A little bit of time 3=Some of the time 4= Most of the time 5=All of the time	
20	I am concerned people will find out I have HIV by looking at my medical paperwork	1=None of the time 2=A little bit of time 3=Some of the time 4= Most of the time 5=All of the time	
21	I feel abandoned by family members because I have HIV	1=None of the time 2=A little bit of time 3=Some of the time 4= Most of the time 5=All of the time	
22	People I am close to are afraid they will catch HIV from me	1=None of the time 2=A little bit of time 3=Some of the time 4= Most of the time 5=All of the time	
23	I feel ashamed to tell other people that I have HIV	1=None of the time 2=A little bit of time 3=Some of the time 4= Most of the time 5=All of the time	
24	My family is comfortable talking about my HIV	1=None of the time 2=A little bit of time 3=Some of the time 4= Most of the time 5=All of the time	
25	It is important for a person to keep HIV a secret from co workers	1=None of the time 2=A little bit of time 3=Some of the time 4= Most of the time 5=All of the time	
Questions 26-28 are about situations that people encounter in day to day life and are followed by several common reactions. We ask you to rate all responses since people react differently to same situations			
26	You break something at work and hide it		

a.	You would think: "This is making me anxious. I need to either fix it or get someone else to"	1=Very likely 2=Unlikely 3=Neither likely nor unlikely 4=Likely 5=Very likely	
b.	You would think about quitting	1=Very likely 2=Unlikely 3=Neither likely nor unlikely 4=Likely 5=Very likely	
c.	You would think: "A lot of things aren't made very well these days"	1=Very likely 2=Unlikely 3=Neither likely nor unlikely 4=Likely 5=Very likely	
d.	You would think: It was an accident	1=Very likely 2=Unlikely 3=Neither likely nor unlikely 4=Likely 5=Very likely	
27 a	You make a mistake at work and find out a co-worker is blamed for the error You would think the company didn't like the co-workers	1=Very likely 2=Unlikely 3=Neither likely nor unlikely 4=Likely 5=Very likely	
b.	You would think: "Life is fair"	1=Very likely 2=Unlikely 3=Neither likely nor unlikely 4=Likely 5=Very likely	
c.	You would keep quiet and avoid the co-workers	1=Very likely 2=Unlikely 3=Neither likely nor unlikely 4=Likely 5=Very likely	
d.	You would feel unhappy and eager to correct the situation	1=Very likely 2=Unlikely 3=Neither likely nor unlikely 4=Likely 5=Very likely	
28. a	While out with a group of friends, you make fun of a friend who is not there. You would think : It was all in fun; its harmless	1=Very likely 2=Unlikely 3=Neither likely nor unlikely 4=Likely 5=Very likely	
b	You feel so small….like a rat	1=Very likely 2=Unlikely 3=Neither likely nor unlikely 4=Likely	

		5=Very likely	
c	You would think that perhaps that friend should have been there to defend him/herself	1=Very likely 2=Unlikely 3=Neither likely nor unlikely 4=Likely 5=Very likely	
d	You would apologize and talk about that person's good points	1=Very likely 2=Unlikely 3=Neither likely nor unlikely 4=Likely 5=Very likely	
To be answered by both ALL women			
29	The last time that you used the HIV self-test kit to test for HIV, did you test together as a couple?	1=Yes 2=No	**If yes, skip to QN 31**
30	If you didn't test as a couple, did you disclose your HIV results to your husband/partner?	1=Yes 2=No	
31	If you didn't test as a couple, did your partner disclose to you his test results?	1=Yes 2=No 3=Don't know whether partner tested	
32	Can you please share with me your HIV test results for the last test you did using the HIV self-test kit?	1= Yes 2= No	**If No, skip to QN 43**
33	What was your HIV test result the last time you tested using the HIV self-test kit?	1= Positive 2= Negative 3= Indeterminate 4= I couldn't understand the results 5= I didn't get the results	**If 2,3,4, 5 – skip to QN 43**
34	Did you go to the health facility for a confirmatory test?	1= Yes 2= No	**If No, skip to QN 43**
35	How soon did you go for a confirmatory test?	1=Same day 2=Within the first week 3=>week 4=Do not remember	
36	What was your confirmatory HIV test result?	1= Positive 2= Negative 3= Indeterminate 4= I didn't get the results	**If 2,3,4 -skip to QN 43**
37	Have you registered in HIV clinic for care since you received your HIV positive confirmatory test?	1= Yes 2= No	**If No, skip to QN43**
38	When did you register in the HIV clinic?	1=Within three months 2= Within six months 3=Within one year 4= Others specify _____	
39	Have you started taking ART?	1= Yes 2= No	

		3= Others Specify ____	
40	How soon did you start taking ART?	1=Within one week 2=Within 1 month 3=Within 3 months 4=Within 6 months 5=With 1 year 6=Other (specify)_____	
41	Are you still taking your antiretroviral medication?	1=Yes 2=No	**If Yes, skip to QN 43**
42	What is the main reason for why you stopped taking your antiretroviral medication?	1=Lack of confidentiality 2=Stigma 3=Tested elsewhere and I was found to be HIV-negative 4=Long distance to the clinic 5=Lack of support from partner 6=Changed location/moved to another place 7=Other (specify)_____	
Outcomes of HIV testing: To be answered by all women			
43	Has your partner supported you in any way since you last tested with the HIV self-test kit? Prompted and check all that applies	**HIV+ women** 1=He gives me money for transport to the HIV clinic 2=He reminds me when to take my medication 3=He reminds me to keep my appointment days 4=He escorts me to the HIV clinic 5= Other (specify)_____ **HIV-negative women** 1=He encourages me to remain HIV negative 2=He pays my medical bills when I am sick 3=He buys food for the family 4=He supports me in my household chores 5=Other (specify)_____	
44	In your assessment, how has the support from your husband/partner changed, if at all, since you last tested using the self-test kit?	1 = Not changed 2 = Improved 3=Reduced 4=Not sure	
45	Has your current husband/partner humiliated you in public or threatened to harm	1 = Yes 2 = No	**If No skip to QN 47**

	you since you last tested using the HIV self-test kit?		
46	In your assessment, was this related to the HIV testing?	1 = Yes 2 = No	
47	Has your current husband physically harmed you (e.g. slapped, kicked you), since you last tested using the HIV self-test kit?	1 = Yes 2 = No	**If No, skip to QN 49**
48	In your assessment, was this related to the HIV testing?	1 = Yes 2 = No	
49	Were you worried that your partner might harm you, or that you would feel unsafe, since you last tested using the HIV self-test kit?	1 = Yes 2 = No	
50	In your assessment, how has your relationship with your partner changed, if at all, since you last tested using the HIV self-test kit?	1 = Not changed 2 = Improved 3=Worsened 4=Not sure	
	Woman's violence towards her male partner		
51	How did the support for your husband/partner change, if at all, since you last tested using the HIV self-test kit?	1 = Not changed 2 = Improved 3=Reduced 4=Not sure	
52	Have you humiliated your current husband/ partner in public or threatened to harm him since you last tested using the HIV self-test kit?	1 = Yes 2 = No	**If No, skip to QN 54**
53	Was this related to the HIV testing?	1 = Yes 2 = No	
54	Have you physically harmed (slapped, kicked, etc.) your current husband/ partner since you last tested using the HIV self-test kit?	1 = Yes 2 = No	**If No, skip to QN 56**
55	Was this related to the HIV testing?	1 = Yes 2 = No	
56	Did you feel that you could harm your current husband/ partner since you last tested using the HIV self-test kit?	1 = Yes 2 = No	
Coping mechanisms among HIV discordant couples			
57	After learning about your HIV discordant status, did you think of quitting the relationship?	1 = Yes 2 = No	**If No, skip to QN 60**
58	Did you actually quit the relationship	1=Yes, quit completely 2=Yes, quit but returned after some time 3=No	**If No, skip to QN 60**

59	How long after learning about your HIV discordant status did you quit the relationship?	1=Immediately 2=Within 1 month 3=Within 3 months 4= Other specify (_____)	
60	Did you share your HIV discordant status with anyone else?	1=Yes 2=No	**If No, skip to QN 63**
61	Who did you share your HIV discordant status with?	1=Parents 2=Friends 3=Religious leaders 4=Other relative (specify_____) 5=Children 6=Other (specify_____)	
62	How did the person(s) you shared your HIV discordant status with support you?	1=Encouraged me to stay in my relationship 2=Linked me to HIV discordant couples' club 3=Linked to me an HIV counselor for ongoing support 4=Encouraged me to leave the relationship 5=Did not support me at all 6=Other (specify_____)	
In the following questions, we are going to read to you statements which you should indicate if you agree or disagree with; and indicate the level of agreement or disagreement on a scale of 1-5, where 1= strongly agree and 5 = strongly disagree.			
63	We normally solve our problems by discussing them with my partner	1=strongly agree 2=Agree 3=Neither agree nor disagree 4=Disagree 5=Strongly disagree	
64	We have been very concerned about preventing HIV transmission between us	1=strongly agree 2=Agree 3=Neither agree nor disagree 4=Disagree 5=Strongly disagree	
65	One of our biggest challenges is the uncertainty that HIV adds to our life	1=strongly agree 2=Agree 3=Neither agree nor disagree 4=Disagree 5=Strongly disagree	
66	The difference in our HIV status has brought us emotionally closer	1=strongly agree 2=Agree 3=Neither agree nor disagree 4=Disagree 5=Strongly disagree	
67	We always have some emotional distance because of our difference in HIV status	1=strongly agree 2=Agree 3=Neither agree nor disagree 4=Disagree 5=Strongly disagree	
68	We always use condoms	1=strongly agree	

	protected during sexual intercourse	2=Agree 3=Neither agree nor disagree 4=Disagree 5=Strongly disagree	
69	If it were not for my children, I should have left this relationship because of the difference in our HIV status	1=strongly agree 2=Agree 3=Neither agree nor disagree 4=Disagree 5=Strongly disagree	
			Exit the survey

Long-term follow-up questionnaire for male participants

Unique Facility ID:

Participant ID: *Facility code/interviewer code/Anonymous study ID*:

REDCap ID: _____

Study arm:---------- Follow up No:----------

Interviewer Name: _____

Start Time: End Time:

Thank you for accepting to talk with us again about HIV testing and your experiences in relation to this. We will ask you some questions again like we did at the last interview. Some of the questions will be similar to those we asked you last time because some of your experiences and circumstances may have changed since the last interview.

(Tick and write all that apply in the spaces provided)

HIV testing

1.	In general, since your last interview, have you talked to your partner about HIV testing?	1=Yes 2=No	**If No, skip to QN 6**
2.	How easy was to talk to your partner about HIV testing?	1= Very easy 2= Easy 3= Somewhat easy, 4= somewhat hard 5= hard 6= Very hard	
3.	How soon after your last interview, were you able to talk to your partner about HIV testing?	1=Same day 2=Within the first week 3=>week 4=Do not remember	
4	What made it more likely that you would talk to your partner about HIV testing? (unprompted, check all that apply)	1=Having the oral HIV self-testing kit which my wife/partner got from the ANC 2=Health education received from the health worker 3=Concern for my baby's health 4=Concern for my partner's health 5=Concern for my health 6=Others specify_____	
5	How did your partner respond to the idea of HIV testing?	1= Happy 2= Angry 3= Not sure 4=Did not want to talk 5= Violent 6= Fear 7= Other (specify)	

The following questions relate to the time when you or your partner last tested for HIV using the HIV self-test kit

6	The last time that your partner used the HIV self-test kit, did she share with you her HIV test results?	1 = Yes 2 = No	**If No, skip to QN 16**
7	Are you willing to share with me your wife/partner's test results?	1=Yes 2=No	**If No, skip to QN 16**
8	What were your partner's HIV results?	1=Negative 2=Positive 3= Indeterminate	**If 1 or 3, skip to QN 16**
9	Did your partner go to the health facility for a confirmatory test?	1=Yes 2=No	**If No, skip to QN 16**
10	How soon did your partner go for a confirmatory test?	1=Same day 2=Within the first week 3=>week 4=Do not remember	
11	What was your partner's confirmatory HIV test result?	1= Positive 2= Negative 3= Indeterminate	**If 2,3, and 4, skip to QN. 16**
12	Has your partner registered in HIV clinic for care since he received his HIV positive confirmatory test result?	1=Yes 2=No	**If No, skip to QN.16**
13	When did he register in the HIV clinic?	1=Within three months 2= Within six months 3=Within one year 4= Others specify _____	
14	Has your partner started taking ART?	1=Yes 2=No	**If No, skip to QN.16**
15	How soon did your partner start taking ART?	1=Within one week 2=Within 1 month 3=Within 3 months 4=Within 6 months 5=With 1 year 6=Other (specify)_____	
16	The last time that you used the HIV self-test kit to test for HIV, did you test together as a couple?	1=Yes 2=No	**If yes, skip to QN19**
17	If you didn't test as a couple, did you disclose your HIV results to your wife/partner?	1=Yes 2=No	
18	If you didn't test as a couple, did your partner disclose to you his test results?	1=Yes 2=No 3=Don't know whether partner tested	**If 2 or 3, Skip to QN. 20**
19	Can you please share with me your HIV test results for the last test you did using the HIV self-test kit?	1= Yes 2= No	**If No, skip to QN 42**
20	What was your HIV test result the last time you tested using the	1= Positive 2= Negative	**If 2,3,4, 5 – skip to QN42**

	HIV self-test kit?	3= Indeterminate 4= I couldn't understand the results 5= I didn't get the results	
21	Did you go to the health facility for a confirmatory test?	1= Yes 2= No	**If No, skip to QN 42**
222	How soon did you go for a confirmatory test?	1=Same day 2=Within the first week 3=>week 4=Do not remember	
23	What was your confirmatory HIV test result?	1= Positive 2= Negative 3= Indeterminate 4= I didn't get the results	**If 2,3,4 -skip to QN 42**
24	Have you registered in HIV clinic for care since you received your HIV positive confirmatory test?	1= Yes 2= No	**If No, skip to QN 30**
25	When did you register in the HIV clinic?	1=Within three months 2= Within six months 3=Within one year 4= Others specify _____	
26	Have you started taking ART?	1= Yes 2= No 3= Others Specify ____	
27	How soon did you start taking ART?	1=Within one week 2=Within 1 month 3=Within 3 months 4=Within 6 months 5=With 1 year 6=Other (specify)_____	
28	Are you still taking your antiretroviral medication?	1=Yes 2=No	**If Yes, skip to Q30 if Positive, and to QN 42 if Negative**
29	What is the main reason for why you stopped taking your antiretroviral medication?	1=Lack of confidentiality 2=Stigma 3=Tested elsewhere and I was found to be HIV-negative 4=Long distance to the clinic 5=Lack of support from partner 6=Changed location/moved to another place 7=Other (specify)_____	
Internalized stigma: Question 30-38 should be answered by ONLY HIV positive men In the following questions, we are going to read to you statements which you should indicate the times you feel or do not feel them by indicating the level on a scale of 1-5, where 1= none of the time, 2= a little bit of time, 3= some of the time, 4=most of the time and 5 = all of the time			
30.	People blame me for having HIV	1=None of the time 2=A little bit of time	

		3=Some of the time 4= Most of the time 5=All of the time	
31.	People assume I slept around because I have HIV	1=None of the time 2=A little bit of time 3=Some of the time 4= Most of the time 5=All of the time	
32.	I am concerned if I go to the HIV clinic someone I know might see me	1=None of the time 2=A little bit of time 3=Some of the time 4= Most of the time 5=All of the time	
33.	I am concerned people will find out I have HIV by looking at my medical paperwork	1=None of the time 2=A little bit of time 3=Some of the time 4= Most of the time 5=All of the time	
34.	I feel abandoned by family members because I have HIV	1=None of the time 2=A little bit of time 3=Some of the time 4= Most of the time 5=All of the time	
35.	People I am close to are afraid they will catch HIV from me	1=None of the time 2=A little bit of time 3=Some of the time 4= Most of the time 5=All of the time	
36.	I feel ashamed to tell other people that I have HIV	1=None of the time 2=A little bit of time 3=Some of the time 4= Most of the time 5=All of the time	
37.	My family is comfortable talking about my HIV	1=None of the time 2=A little bit of time 3=Some of the time 4= Most of the time 5=All of the time	
38.	It is important for a person to keep HIV a secret from co workers	1=None of the time 2=A little bit of time 3=Some of the time 4= Most of the time 5=All of the time	
Questions 39-41 are about situations that people encounter in day to day life and are followed by several common reactions. We ask you to rate all responses since people react differently to same situations			
39. a.	You break something at work and hide it You would think: “This is making me anxious. I need to either fix it or get someone else to”	 1=Very likely 2=Unlikely 3=Neither likely nor unlikely 4=Likely	

		5=Very likely	
b.	You would think about quitting	1=Very likely 2=Unlikely 3=Neither likely nor unlikely 4=Likely 5=Very likely	
c.	You would think: “A lot of things aren’t made very well these days”	1=Very likely 2=Unlikely 3=Neither likely nor unlikely 4=Likely 5=Very likely	
d.	You would think: It was an accident	1=Very likely 2=Unlikely 3=Neither likely nor unlikely 4=Likely 5=Very likely	
40. a	You make a mistake at work and find out a co-worker is blamed for the error You would think the company didn’t like the co-workers	1=Very likely 2=Unlikely 3=Neither likely nor unlikely 4=Likely 5=Very likely	
b.	You would think: “Life is fair”	1=Very likely 2=Unlikely 3=Neither likely nor unlikely 4=Likely 5=Very likely	
c.	You would keep quiet and avoid the co-workers	1=Very likely 2=Unlikely 3=Neither likely nor unlikely 4=Likely 5=Very likely	
d.	You would feel unhappy and eager to correct the situation	1=Very likely 2=Unlikely 3=Neither likely nor unlikely 4=Likely 5=Very likely	
41 a	While out with a group of friends, you make fun of a friend who is not there. You would think : It was all in fun; its harmless	1=Very likely 2=Unlikely 3=Neither likely nor unlikely 4=Likely 5=Very likely	
b	You feel so small….like a rat	1=Very likely 2=Unlikely 3=Neither likely nor unlikely 4=Likely 5=Very likely	
c	You would think that perhaps that friend should have been there to defend him/herself	1=Very likely 2=Unlikely 3=Neither likely nor unlikely	

		4=Likely 5=Very likely	
d	You would apologize and talk about that person's good points	1=Very likely 2=Unlikely 3=Neither likely nor unlikely 4=Likely 5=Very likely	
Outcomes of HIV testing: To be answered by all men			
42	Has your partner supported you in any way since you last tested with the HIV self-test kit? Prompted and check all that applies	**HIV+ men** 1=She gives me money for transport to the HIV clinic 2=She reminds me when to take my medication 3=She reminds me to keep my appointment days 4=She escorts me to the HIV clinic 5= Other (specify)_____ **HIV-negative men** 1=She encourages me to remain HIV negative 2=She pays my medical bills when I am sick 3=She buys food for the family 4=Other (specify)_____	
43	In your assessment, how has the support from your wife/partner changed, if at all, since you last tested using the self-test kit?	1 = Not changed 2 = Improved 3=Reduced 4=Not sure	
44	Has your current wife/partner humiliated you in public or threatened to harm you since you last tested using the HIV self-test kit?	1 = Yes 2 = No	**If No skip to QN 46**
45	In your assessment, was this related to the HIV testing?	1 = Yes 2 = No	
46	Has your current wife physically harmed you (e.g. slapped, kicked you), since you last tested using the HIV self-test kit?	1 = Yes 2 = No	**If No, skip to QN 48**
47	In your assessment, was this related to the HIV testing?	1 = Yes 2 = No	
48	Were you worried that your partner might harm you, or that you would feel unsafe, since you last tested using the HIV self-test kit?	1 = Yes 2 = No	
49	In your assessment, how has your relationship with your partner changed, if at all, since you last tested using the HIV self-	1 = Not changed 2 = Improved 3=Worsened 4=Not sure	

	test kit?		
Man's violence towards her female partner			
50	How did the support from your wife/partner change, if at all, since you last tested using the HIV self-test kit?	1 = Not changed 2 = Improved 3=Reduced 4=Not sure	
51	Have you humiliated your current wife/ partner in public or threatened to harm him since you last tested using the HIV self-test kit?	1 = Yes 2 = No	**If No, skip to QN 53**
52	Was this related to the HIV testing?	1 = Yes 2 = No	
53	Have you physically harmed (slapped, kicked, etc.) your current wife/ partner since you last tested using the HIV self-test kit?	1 = Yes 2 = No	**If No, skip to QN 55**
54	Was this related to the HIV testing?	1 = Yes 2 = No	
55	Did you feel you that you could harm your current wife/ partner since you last tested using the HIV self-test kit?	1 = Yes 2 = No	
Coping mechanisms among HIV discordant couples			
56	After learning about your HIV discordant status, did you think of quitting the relationship?	1 = Yes 2 = No	**If No, skip to QN 59**
57	Did you actually quit the relationship	1=Yes, quit completely 2=Yes, quit but returned after some time 3=No	**If No, skip to QN 59**
58	How long after learning about your HIV discordant status did you quit the relationship?	1=Immediately 2=Within 1 month 3=Within 3 months 4= Other specify (_____)	
59	Did you share your HIV discordant status with anyone else?	1=Yes 2=No	**If No, skip to QN 62**
60	Whom did you share your HIV discordant status with?	1=Parents 2=Friends 3=Religious leaders 4=Other relative (specify_____) 5=Children 6=Other (specify_____)	
61	How did the person(s) you shared your HIV discordant status with support you?	1=Encouraged me to stay in my relationship 2=Linked me to HIV discordant couples' club 3=Linked to me an HIV counselor for ongoing support 4=Encouraged me to leave the relationship	

		5=Did not support me at all 6=Other (specify_____)	
	In the following questions, we are going to read to you statements which you should indicate if you agree or disagree with; and indicate the level of agreement or disagreement on a scale of 1-5, where 1= strongly agree and 5 = strongly disagree.		
62	We normally solve our problems by discussing them with my partner	1=strongly agree 2=Agree 3=Neither agree nor disagree 4=Disagree 5=Strongly disagree	
63	We have been very concerned about preventing HIV transmission between us	1=strongly agree 2=Agree 3=Neither agree nor disagree 4=Disagree 5=Strongly disagree	
64	One of our biggest challenges is the uncertainty that HIV adds to our life	1=strongly agree 2=Agree 3=Neither agree nor disagree 4=Disagree 5=Strongly disagree	
65	The difference in our HIV status has brought us emotionally closer	1=strongly agree 2=Agree 3=Neither agree nor disagree 4=Disagree 5=Strongly disagree	
66	We always have some emotional distance because of our difference in HIV status	1=strongly agree 2=Agree 3=Neither agree nor disagree 4=Disagree 5=Strongly disagree	
67	We always use condoms protected during sexual intercourse	1=strongly agree 2=Agree 3=Neither agree nor disagree 4=Disagree 5=Strongly disagree	
68	If it were not for my children, I should have left this relationship because of the difference in our HIV status	1=strongly agree 2=Agree 3=Neither agree nor disagree 4=Disagree 5=Strongly disagree	
			Exit the survey

Costing tools

Daily HIVST staff time log

Date: _____

Facility name: _____

Cluster type: Intervention 1 (circle as appropriate)
Control 2

Name of staff	Role of staff	Time spent on implementation activities (a) today		Time spent on evaluation activities (b) today	
		Hours	Minutes	Hours	Minutes

Staff Roles: 1= Coordinator 2=Interviewers

a) Implementation activities include: Health education, Counseling, Training of mothers on HIVST, Linkage of partners and family members into care, distribution of intervention logistics e.g. kits, mobilization, organizing patient flow, testing partners and family members,

b) Evaluation activities include: Organizing study site, screening , consent, interviews, study follow-up activities for mothers/partners/family members, completion of other study tools including costing tools

Facility staff and Volunteer time on the HIVST study

(To be completed on Tuesday and Wednesday)

Date:

Facility name:

Day's cluster (Intervention or Control):

For every staff at this facility who worked in antenatal, maternity, post-natal care and laboratory ask:

1) I would like to know how much of your time today has been spent working on the HIVST study. This information is not to be used for remuneration but to help us estimate the personnel resources needed to for this intervention. Please choose a number between 0 and 100 that best represents how much time you have spent, with zero meaning "no time at all spent on this study" and 100 meaning "worked all day on this study"

2) What study activities were you involved in today?

Name	Time spent (%)	Staff cadre code	Activity code

Staff cadre codes: 1=MW, 2=nurse, 3=clinical officer, 4=doctor, 5=lab techn, 6=nurse asst, 7=lab asst.

Activity codes: 1=Health education on HIVST, 2=Screening for the HIVST, 3=Consent and Interviews 4=Training of mothers on HIVST, 7=Follow-up of mothers/partners, 8= Linkage of partners and family members into care, 9=Testing mothers, 10=testing partners and family members.

For volunteers (mentor mothers, VHTs, expert clients, CHWs) ask:

1) Besides the work that you normally do the pMTCT program, I would like to know how much of your time yesterday was spent supporting mothers receiving the HIVST intervention or their partners and family members. Please note that this information will not to be used to make decisions on your remuneration but will help us better estimate the personnel resources needed to for this intervention. Please choose a number between 0 and 10 that best represents how much time you spent on the HIVST study. 0 means “you didn’t work on this study at all yesterday” and 10 means “you spent all day yesterday working on study” *(IF spent any time please ask question 2)*
2) What study activities were you involved in today?

Code in table below

Name	Time spent (%)	volunteer code	Activity code

Volunteer codes: 1=Mentor mother, 2 = VHT, 3 = Other (specify)

Activity codes 1=Training of mothers on HIVST, 7=Follow-up of mothers/partners, 8= Linkage of partners and family members into care

Signature of facility coordinator: _____

Facility-level assessment of monthly resources

Month: _____

Name of facility: _____

Table1: HIVST-specific facility Operational costs in previous month

	Total cost	% allocation to HIVST implementation phase	Comments
Community mobilization/sensitization meetings			
Facility expenses (VHTs and others)			
Transport allowance for tracking mothers			
Stationery			
Airtime for tracking mothers			
Fuel			
Vehicle maintenance			
Motorcycle maintenance			
*Rental costs			
Other (specify)			

*See instructions page below

Table 2: Health worker Training costs in previous month

	Number	Unit cost/day	Number of days	Total cost	% allocation to the HIVST implementation phase
Stationery					
Visual Aids					
Facilitators					
Trainee allowances					
Venue costs					
Meals					
Accommodation					
Others					

Table 3: Assets used or purchased in the previous month (Not limited to only those purchased for HIVST, for purchases/use reported in previous month only complete columns 1, 5, 6 and 7. Columns 8 and 9 are NA for new purchase/use)

Type	1 Number	2 Year of purchase	3 Cost at purchase (UGX)	4 Useful life	5 No of months used since start of HIVST	 % usage by HIVST study	7 What % of the HIVST use was dedicated to the implementation phase?	8 Ongoing use (tick)	9 Use ended (tick)
Desktop computers									
Laptops									
Printers									
Photocopier									
Motorcycle									
Vehicle									
Bicycle									

Tent									
Tables									
Chairs									
Shelves									
Cell phone									
Other (specify)									

Table 4: Overhead costs in previous month

	Total facility month cost	*HIVST allocation basis	Cost to HIVST	% allocation to HIVST implementation phase
Electricity		d		
Water		d		
Security		d		
Compound maintenance		d		
Cleaning services		d		
Repairs		d		
HUMC meetings		d		

*See instructions page

Instructions

Derivation of allocation basis for overhead costs

Total square meters of Facility rooms	A
Total square meters of space used by HIVST	B
Proportion of time HIVST space is used by HIVST study	C
Proportion of overheads to HIVST	d=(b/a)xc

Rental costs

Determine number of rooms used by HIVST and establish monthly area market rental rates for such number of rooms (a), then multiply this by (c) in the table above.

Above-site Coordination and Supervision Costs

Table 1: Personnel time costs in the previous month

	Number of days worked on the HIVST study	On average how much time was spent on HIVST/day		What % of the HIVST time was dedicated to the implementation phase?
Month/Year		Hours	minutes	

Table 2: Coordination training costs in the previous month (Not applicable)

	Number of trainees	Unit cost/day	Number of days	Total cost for HIVST	% allocated to implementation phased of HIVST
Stationery					
Printing costs					
Visual Aids					
*Facilitators/consultants					
Trainee allowances					
Venue costs					
Meals					
Accommodation					
Airtime for mobilization					
Internet costs for mobilization					

Transport costs (refund)					
Others					

*Applies only to facilitators who are not investigators

Table 3: Previous month's operational costs

	Total cost	% allocation to implementation phase of HIVST	Comments
Coordination meetings			
Venue hire			
Stationery			
Meals			
Per-diems			
Travel			
Others			
Fuel			
Office supplies (not including assets)			
Airtime			
Transport costs (car hire, boda-boda			
Other (specify)			

*insert 0 (zero) for costs not incurred, please do not leave blank spaces.

Table 4: Assets used or purchased in the previous month (Not limited to only those purchased for HIVST, for purchases/use reported in previous month only complete columns 1, 5, 6 and 7. Columns 8 and 9 are NA for new purchase/use)

Type	1 Number	2 Year of purchase	3 Cost at purchase (UGX)	4 Useful life	5 No of months used since start of HIVST	6 % usage by HIVST study	7 What % of the HIVST use was dedicated to the implementation phase?	8 Ongoing use (tick)	9 Use ended (tick)
Desktop computers									
Laptops									
Printers									
Photocopier									
Motorcycle									
Vehicle									
Bicycle									
Tent									
Tables									
Chairs									
Shelves									
Cell phone									
Other- internet modem									

MUSPH/MOH HIVST Management Costs

Date:

Table 1: Personnel time costs in previous month

Name of Investigators/administrators	Number of days worked on the HIVST study	On average how much time was spent on HIVST/day		What % of the HIVST time was dedicated to the implementation phase?
		Hours	minutes	

Table 2: Coordination costs in previous month

	Total cost	What % of the HIVST allocation was dedicated to the implementation phase?	Comments
Office supplies (Not including assets)			
Stationery			
Catridges			
Others			
Communication: Airtime			
Internet costs			
Other (specify)			

*for overhead costs we will use the overhead costs contributed from the intervention budget (implementation phase)

Table 3: Assets used or purchased in the previous month ((Not limited to only those purchased for HIVST, for purchases/use reported in previous month only complete columns 1, 5, 6 and 7. Columns 8 and 9 are NA for new purchase/use)

Type	1 Number	2 Year of purchase	3 Cost at purchase (UGX)	4 Useful life	5 Number of months used since start of HIVST	6 % usage by HIVST study	7 What % of the HIVST use was dedicated to the implementation phase?	8 Ongoing use (tick)	9 Use ended (tick)
Desktop computers									
Laptops									
Printers									
Photocopier									
Motorcycle									
Vehicle									
Bicycle									
Tent									
Tables									
Chairs									
Shelves									
Cell phone									
Other (specify) Table phone									

HIVST Study HIV test kit log

		Enrolment visit	Month 1			Month 3			Month 6	
Name	Study-id	Number of kits supplied	Number used	Number returned	Number supplied	Number used	Number returned	Number supplied	Number used	Number returned

HIV Confirmatory HIV test kit log

Date	Index mother's name	Index mother's ID	Number of confirmatory tests done

Qualitative tools

HIV self-testing for partners of women attending antenatal care in Central Uganda: uptake and linkage to care post-test

In depth interview guide

[For family members of pregnant women who took HIV self-test kits home]

**If family member did not receive any HIVST kit, please do not interview

For official use only

Tracking Number: Please generate the tracking number using the format: *IDI/NAK-FM/17/01/16/01* where IDI= In-depth interview [Method]; NAK = Nakaseke (Replace with MPI in Mpigi or ENT in Entebbe) [District name]; FM = Family Member; 17/01/16 – Date of Interview and 01 – first IDI interview.

Moderator #: _____
Tracking # _____
Date of interview: _____/ _____/ _____

Name of health facility: _____

Venue: _____

Language of interview: _____

Time started: _____ Time ended: _____

Participant's socio-demographic information

1. Age-group
   - 18-24 1
   - 25-34 2
   - 35-44 3
   - 45+ 4

2. Sex
   - Male 1
   - Female 2

3. Education level
   - No education 1
   - P1-P4 2
   - P5-P7 3
   - S1-S4 4
   - S5-S6 5
   - University 6

Other (specify) _____	7

4. Religious affiliation

Catholic	1
Protestant	2
Muslim	3
Saved/Pentecostal	4
SDA	5
Other (specify) _____	6

5. HIV self-testing experience

Got kit but did not perform HIV self-test	1
Self-tested alone	2
Self-tested together with partner	3

Questions

Section A: General Questions

1. Let's talk about HIV self-testing. What do you understand by the term 'HIV self-testing'?
2. If HIV self-testing kits became freely available in this community, would people go for them? Why do you think so?

Section B: Decision-making processes

3. When did you first hear about HIV self-testing and from who? What questions came into your mind when you first heard about it?
4. Has anyone given you the self-testing kit to test in the past few months? Who was this person and what did s/he say to you?
5. When you were given the HIV self-test kits at home, what specific fears did you have in your mind? Why did you have those fears?
6. Would you say that you were given an opportunity to think through and freely decide when and how to test? Did you feel you were coerced to test? Please explain.
7. When you were given the HIV self-testing kit, were you prepared well enough to perform the HIV self-test kit: a) alone? b) with other family members? C) with your partner? Were you scared of the HIV test results? How did you overcome these fears?
8. When [*XX*] introduced the HIV self-test kit to you, what was your initial reaction? Did you accept to use it?

<u>Interviewer: Please administer Sections C&D if the family member self-tested for HIV. Else, skip to Section E.</u>

Section C: Experiences with HIV self-testing [For those who self-tested for HIV]

9. Please describe how the HIV self-testing process was done, from the time you received the HIV self-test kit to the time you read your HIV test results.
10. Were the messages on the materials and kits adequate for you? Were you able to easily understand how the test is done and the referral processes for additional help? What else could have been added to make it easier for you and your family?

11. Please describe how you felt when you saw your HIV test results. Were you surprised? Did the results upset you? What did you do immediately after you had read your HIV test results?
12. Were you able to share your HIV test results with any of your family members? *If participant shared HIV results with any family member, ask*: Please describe how you navigated the HIV status disclosure process from the time you learnt of your HIV test results to the time you finally shared your HIV test results with them. *If participant did not share results, ask*: What made it difficult for you to share your HIV results with any of your family members? What fears did you have? How can these fears be minimized?
13. Did the other family members share their HIV test results with you? How did they do it?
14. Would you describe the HIV self-testing process as a simple or complicated procedure? What makes you think so?
15. What initial fears did you have about the HIV self-testing procedures? Did you experience these fears as you performed the HIV self-test? Did you experience these fears after the HIV test?
16. Were there any members of your family that were forced to undergo HIV self-testing against their will? Who forced them? What happened when they were forced? Were you personally forced to test or share your HIV test results?
17. In general, would you say HIV self-testing has increased cases of domestic violence in this community? Can you describe any specific cases that you know of where HIV self-testing resulted in domestic violence or death? How can these situations be minimized in future?

Section D: Linkage to HIV care [For those that self-tested for HIV]

18. In your opinion, would you say it would have been easier for you to enroll into HIV care if you tested HIV-positive? How easy would this be? Please describe how you would go about enrolling into HIV care if you tested HIV-positive.
19. How can the process of enrolling into HIV care for HIV-positive individuals be strengthened?

Interviewer: Please administer section E if the family member did not test for HIV. Else, skip to Section F.

Section E: Failure to self-test for HIV [For those who failed to perform HIV self-testing]

20. When [*XX*] brought the HIV self-test kits home, did she give you a kit for you to perform HIV self-testing? Did she explain to you how you were meant to perform HIV self-testing? What did she say you were meant to do as you performed HIV self-testing?
21. When you received the HIV self-test kit and thought about the HIV self-testing process, what came to your mind? Why did you eventually decide not to perform HIV self-testing?
22. If you received another HIV self-test kit, would you reconsider your decision and: a) perform HIV self-testing alone; b) perform HIV self-testing with partner?
23. Did any of your family members perform HIV self-testing after [*XX*] brought the HIV self-test kits home? Did your family members share their HIV test results with you?
24. Were there any members of your family that were forced to undergo HIV self-testing against their will? Who forced them? What happened when they were forced?
25. Please tell me what happened in your family after HIV self-testing. Were there any quarrels, fights or other forms of domestic violence? How did these manifest themselves? How they were finally resolved?

Section F: Suggestions for enhancing HIV self-testing uptake

26. Overall, how well did the process of HIVST for you, your partner and family members work? Do you think there are any better ways this kit could have been given to you, other than through [*XX*]? Are there any other changes we could make to the self-testing program? Please explain.
27. What do you see as the advantages and dangers that might be associated with HIV self-testing? How can these dangers be minimized?
28. How can HIV self-testing be popularized in this community?
29. In your opinion, would you say HIV self-testing will help to improve: a) HIV testing in general? b) Couples' HIV self-testing?
30. What else would you like to tell us regarding your experiences with HIV self-testing?

Thank you for your time

HIV self-testing for partners of women attending antenatal care in Central Uganda: uptake and linkage to care post-test

In-depth interview guide
[For male partners of pregnant women who did not perform HIV self-testing]

For official use only

Tracking Number: Please generate the tracking number using the format: *IDI/NAK-MPNT/17/01/16/01* where IDI= In-depth Interview [Method]; NAK =Nakaseke (Replace with MPI in Mpigi or ENT in Entebbe) [District name]; the 'MPNT' denotes "male partner not tested"; 17/01/16 – Date of Interview and 01 – first IDI interview.

Moderator #: _____

Tracking #: _____

Date of interview: _____/ _____/ _____

Name of health facility: _____

Venue: _____

Language of interview: _____

Time started: _____ Time ended: _____

Participant's socio-demographic information

6. Age-group

18-24	1
25-34	2
35-44	3
45+	4

7. Education level

No education	1
P1-P4	2
P5-P7	3
S1-S4	4
S5-S6	5
University	6
Other (specify) _____	7

8. Religious affiliation

Catholic	1
Protestant	2
Muslim	3
Saved/Pentecostal	4
SDA	5
Other (specify) _____	6

Questions

Section A: General Questions

9. What do you understand by the term ‘HIV testing’? Have you ever heard of the term ‘HIV self-testing’? What have you heard about it and from who?
10. What advantages might HIV self-testing have over the existing HIV testing approaches?
11. In your opinion, do you think HIV self-testing will become a popular HIV testing approach in future?

Section B: Decision-making processes

12. When you first heard about HIV self-testing, what issues came into your mind?
13. When your female partner brought the HIV self-test kits home, what fears did you have in your mind?
14. When your female partner gave you the HIV self-test kit, did she prepare you well enough to perform HIV self-testing? Why do you think so?
15. Would you say you missed anything by not performing HIV self-testing?

Section C: Reasons for failure to self-test for HIV

16. When your partner brought the HIV self-test kits home, did she give you one of the kits for you to perform HIV self-testing? Did she explain to you how you were meant to perform HIV self-testing? Please tell me how she described the HIV self-testing procedures.
17. When you received the HIV self-test kit and thought about the HIV self-testing process, what came to your mind? Why did you eventually decide not to perform HIV self-testing?
18. Did your partner encourage you to perform HIV self-testing with them? What was your reaction to the suggestion that you test together?
19. If you received another HIV self-test kit, would you reconsider your decision and: a) perform HIV self-testing alone; b) perform HIV self-testing with partner?
20. Did any of your family members perform HIV self-testing after your partner brought the HIV self-test kits home? Did your family members share their HIV test results with you?
21. Were there any members of your family that were forced to undergo HIV self-testing against their will? Who forced them? What happened when they were forced?

Section D: Suggestions for enhancing HIV self-testing uptake

22. What do you see as the dangers that might be associated with HIV self-testing? How can these dangers be minimized?
23. How can HIV self-testing be popularized in this community?
24. In your opinion, would you say HIV self-testing will help to improve: a) HIV testing in general? b) Couples’ HIV self-testing?
25. What else would you like to tell us regarding your experiences with HIV self-testing?

Thank you for your time

HIV self-testing for partners of women attending antenatal care in Central Uganda: uptake and linkage to care post-test

In-depth interview guide
[For male partners of pregnant women who performed HIV self-testing]

For official use only

Tracking Number: Please generate the tracking number using the format: *IDI/NAK-MPT/17/01/16/01* where IDI= In-depth Interview [Method]; NAK = Nakaseke (Replace with MPI in Mpigi or ENT in Entebbe) [District name]; the 'MPT' denotes "male partner tested"; 17/01/16 – Date of Interview and 01 – first IDI interview.

Moderator #: _____

Tracking #: _____

Date of interview: _____/ _____/ _____

Name of health facility: _____

Venue: _____

Language of interview: _____

Time started: _____ Time ended: _____

Participant's socio-demographic information

1. Age-group

18-24	1
25-34	2
35-44	3
45+	4

2. Education level

No education	1
P1-P4	2
P5-P7	3
S1-S4	4
S5-S6	5
University	6
Other (specify) _____	7

3. Religious affiliation

Catholic	1
Protestant	2
Muslim	3
Saved/Pentecostal	4

SDA 5
Other (specify) _____ 6

4. HIV self-testing experience
   Self-tested individually 1
   Self-tested together with partner 2

Questions

Section A: General Questions

5. Let's start by talking about HIV self-testing. If HIV self-testing kits were freely available in this community, do you think people would go for them? Please explain why you think so.
6. How would you describe the process of HIV self-testing to someone who has never heard about it?

Section B: Decision-making processes

7. When you first learnt about HIV self-testing, what issues came into your mind?
8. When your partner brought the HIV self-test kits home, what fears did you have in your mind? How were these fears resolved?
9. When your partner gave you the HIV self-test kit, did she prepare you well enough to perform HIV self-testing? Please explain how she prepared you for self-testing.
10. Were the messages on the materials and kits adequate for you? Were you able to easily understand how the test is done and the referral processes for additional help? What else could have been added to make it easier for you and your family to perform HIV self-testing?
11. Would you say things would have been easier if it was you who gave her the HIV self-test kit rather than receive it from your partner? What makes you think so?

Section C: Experiences with HIV self-testing

12. Please describe how you performed the HIV self-testing exercise. Did each of you test alone or did you test together with your partner? *If self-tested alone*: what motivated you to test alone rather than with your partner? *If self-tested with partner*: what motivated you to test together with your partner rather than doing it alone? How did you overcome the fears associated with testing with partner?
13. **If self-tested with partner**: How did your partner convince you to test together with her? Please tell me what happened before, during and after the testing process. How did each of you react to the HIV test results? How were you able to cope with the HIV test results?
14. Looking back at the time before and after HIV self-testing: would you say, HIV self-testing has improved your relationship with your partner? Why do you think so?
15. **If self-tested individually**: What made it difficult for you to test together with your partner? What do you think would have happened to you or your partner or both of you, if you tested together with your partner?
16. If self-tested individually: were you able to share your HIV test results with your partner? Did the partner share their HIV test results with you?
17. Would you describe the HIV self-testing process as a simple or complicated procedure? What makes you think so? If you were to repeat the HIV self-testing exercise, what would you do differently?

18. What initial fears did you have about the HIV self-testing procedures? Did you experience these fears as you performed the HIV self-test?
19. As you performed the HIV self-test, did you feel that the process would have been much easier if there was a health worker to support you? Why did you think so?
20. Did any of your family members perform HIV self-testing after your partner brought the HIV self-test kits home? Did your family members share their HIV test results with you? Did you share your HIV test results with them?
21. Were there any members of your family that were forced to undergo HIV self-testing against their will? Who forced them? What happened when they were forced?

Section D: Linkage to HIV care

22. If you tested HIV positive, what would you do immediately after learning about your HIV-positive test result?
23. What specific information would you need in order to be able to start HIV treatment on time?

Section E: Suggestions for enhancing HIV self-testing uptake

24. In your opinion, would you say HIV self-testing will help to improve: a) HIV testing in general? b) Couples' HIV self-testing?
25. Overall, how well did the process of HIVST for you, your partner and family members work? Do you think there are any better ways this kit could have been given to you, other than through your wife? Are there any other changes we could make to the self-testing program? Please explain.
26. How can HIV self-testing be popularized in this community?
27. What else would you like to tell us regarding your experiences with HIV self-testing?

Thank you for your time

HIV self-testing for partners of women attending antenatal care in Central Uganda: uptake and linkage to care post-test

In-depth interview guide
[For pregnant women whose male partners did not perform HIV self-testing?]

For official use only

Tracking Number: Please generate the tracking number using the format: *IDI/NAK-WMPNT/17/01/16/01* where IDI= In-depth Interview [Method]; NAK = Nakaseke (Replace with MPI in Mpigi or ENT in Entebbe) [District name]; the '*WMPNT*' – denotes "Woman whose male partner did NOT self-test"; 17/01/16 – Date of Interview and 01 – first IDI interview.

Moderator #: _____

Tracking #: _____

Date of interview: _____/ _____/ _____

Name of health facility: _____

Venue: _____

Language of interview: _____

Time started: _____ Time ended: _____

Participant's socio-demographic information

1. Age-group
   <18 years 1
   18-24 2
   25-34 3
   35-44 4
   45+ 5

2. Education level
   No education 1
   P1-P4 2
   P5-P7 3
   S1-S4 4
   S5-S6 5
   University 6
   Other (specify) _____ 7

3. Religious affiliation
   Catholic 1
   Protestant 2
   Muslim 3
   Saved/Pentecostal 4

SDA	5
Other (specify) _____	6

QUESTIONS

Section A: General Questions

4. Have you ever heard of the term 'HIV self-testing'? What have you heard about it?
5. What advantages might HIV self-testing have over the existing HIV testing approaches?
6. In your opinion, do you think HIV self-testing will become a popular HIV testing approach in future?

Section B: Decision-making processes

7. When you first heard about HIV self-testing, what issues came into your mind?
8. When you were asked to take HIV self-test kits home by the health worker, what fears did you have in your mind?
9. When you were given HIV self-test kits to take home, would you say you were prepared well enough to deliver the HIV self-test kit to your partner? Please explain how the preparation process was done.
10. When you were given HIV self-test kits to take home, were you scared that your partner might shout at you or abuse you for taking him the self-test kits before talking to them?
11. Did you give an HIV self-test kit to your male partner?
12. For women who did not give kits to their partners: Please share with me the reasons why you did not give the kit to your partner. Probe: fear of violence and other negative outcomes.
13. For women who gave kits to their partners: Please tell me how you went through the process of giving the HIV self-test kit to your partner from the time you arrived home with the kits up to the time you gave the kit to him. How would you describe your experience as you went through this process?
14. When you gave the kit to your partner, did you give it to him on the same day; on the following day or after some days? If you gave the kit to your male partner on the same day, how did you get the courage to do so? If you delayed giving him the kit, how did you eventually manage to do it?
15. Do you have any regrets why you took the HIV self-test kits home? Please explain more.
16. When you gave the HIV self-test kit to your male partner, what was his initial reaction? Did he accept to take it? If you were to repeat the process of giving the kit to him, how else would you do it differently?
17. I understand you were given up to four kits to take home, including some for your other household members. Please tell me how you went through the process of giving the HIV self-test kits to your other household members. Did you give the kits to them yourself, or did you pass them through your husband? If you were to repeat the process, how else would you do it differently?
18. Did any of your family members perform HIV self-testing after you gave them the HIV self-test kits? Did your family members share their HIV test results with you?
19. Were there any members of your family that were forced to undergo HIV self-testing against their will? Who forced them? What happened when they were forced?

Section C: Failure to test by male partner

20. What do you think happened to the HIV self-test kit after you gave it to your male partner? Could he have used it and you were not aware? Please let me know what you think
21. If your partner did not use the HIV self-test kit to test for HIV, what do you think could have led to this? In your opinion, do you think you prepared him to know how to use the kit?
22. How did the fact that you gave him an HIV self-test kit which he did not use affect your relationship with him? Did his action arouse any fears that he could be infected, and that this could be the reason he refused to test for HIV?
23. Did you self-test for HIV yourself, despite his refusal to test for HIV? Did you share your HIV test results with him? What was his immediate reaction to the results shared?
24. In your opinion, if you gave him another HIV self-test kit, can this prompt him to: a) self-test for HIV alone; b) self-test with you?
25. What else can be done to encourage him to self-test for HIV; alone or together with you?

Section D: Suggestions for enhancing HIV self-testing uptake

26. In your opinion, would you say HIV self-testing will help to improve: a) HIV testing in general? b) Couples' HIV self-testing?
27. How can HIV self-testing be popularized in this community?
28. What else would you like to tell us regarding your experiences with HIV self-testing?

Thank you for your time

HIV self-testing for partners of women attending antenatal care in Central Uganda: uptake and linkage to care post-test

In-depth interview guide
[For pregnant women whose male partners performed HIVST?]

For official use only

Tracking Number: Please generate the tracking number using the format: *IDI/MTN-WMPT/17/01/16/01* where IDI= In-depth Interview [Method]; NAK = Nakaseke (Replace with MPI in Mpigi or ENT in Entebbe) [District name]; the 'WMPT' – denotes "Woman whose male partner tested"; 17/01/16 – Date of Interview and 01 – first IDI interview.

Moderator #: _____

Tracking #: _____

Date of interview: _____/ _____/ _____

Name of health facility: _____

Venue: _____

Language of interview: _____

Time started: _____ Time ended: _____

Participant's socio-demographic information

1. Age-group
   - <18 years 1
   - 18-24 2
   - 25-34 3
   - 35-44 4
   - 45+ 5

2. Education level
   - No education 1
   - P1-P4 2
   - P5-P7 3
   - S1-S4 4
   - S5-S6 5
   - University 6
   - Other (specify) _____ 7

3. Religious affiliation
   - Catholic 1
   - Protestant 2
   - Muslim 3
   - Saved/Pentecostal 4
   - SDA 5
   - Other (specify) _____ 6

4. HIV self-testing experience
   - Self-tested individually 1

Self-tested together with partner 2

Questions

Section A: General Questions

5. Let's start by talking about HIV self-testing. If HIV self-testing kits were freely available in this community, do you think people would go for them? Please explain why you think so.
6. How would you describe the process of HIV self-testing to someone who has never heard about it?

Section B: Decision-making processes

7. When you first heard about HIV self-testing, what issues came into your mind?
8. When you were asked to take HIV self-test kits home by the health worker, what fears did you have in your mind? How were these fears resolved?
9. When you were given HIV self-test kits to take home, would you say you were prepared well enough to deliver the HIV self-test kit to your partner? Please explain how the preparation process was done. What could be improved?
10. When you were given HIV self-test kits to take home, were you scared that your partner might shout at you or abuse you for taking him the self-test kits before talking to them? How did you overcome these fears?
11. Did you give an HIV self-test kit to your male partner? Please tell me how you went through the process of giving the HIV self-test kit to your partner from the point you arrived home with the kits up to the point you gave the kit to him. How would you describe your experience as you went through this process?
12. When you gave the HIV self-test kit to your partner, did you give it to him on the same day; on the following day or after some days? If you gave the kit to your male partner on the same day, how did you do so? If you delayed giving him the kit, how did you eventually manage to do it?
13. Do you have any regrets why you took the HIV self-test kits home? Please explain more.
14. Would the process have been much easier if the HIV self-test kit was given to you by your male partner rather than you giving it to him? What makes you think so?
15. When you gave the HIV self-test kit to your male partner, what was his initial reaction? Did he accept to take it? If you were to repeat the process of giving the kit to him, how else would you do it differently?
16. I understand you were given up to four kits to take home, including some for your other household members. Please tell me how you went through the process of giving the HIV self-test kits to your other household members. Did you give the kits to them yourself, or did you pass them through your husband? If you were to repeat the process, how else would you do it differently?
17. Were the messages on the materials and kits adequate for you? Were you able to comfortably explain the process to your husband and other family members? What else could have been added to make it easier for you and your family?

Section C: Experiences with HIV self-testing

18. Please describe how you performed the HIV self-testing exercise. Did each of you test alone or did you test together with your partner? *If self-tested individually*: what motivated you to test alone rather than with your partner? *If self-tested with partner*: what motivated you to test together with your partner rather than doing it alone? How did you overcome the fears associated with testing with partner?
19. If self-tested with partner: please describe how you were able to convince your partner to test together. What happened before, during and immediately after you had tested together with your partner? How did each of you react to the HIV test results? How were you able to cope with the HIV test results?
20. Looking back at the time before and after HIV self-testing: would you say, HIV self-testing has improved your relationship with your partner? Why do you think so?
21. If self-tested individually: What made it difficult for you to test together with your partner? What do you think would have happened to you or your partner or both of you, if you tested together with your partner?

22. If self-tested individually: were you able to share your HIV test results with your partner? Did the partner share their HIV test results with you? Did your family members share their HIV test results with you? Did you share your HIV test results with them?
23. Would you describe the HIV self-testing process as a simple or complicated procedure? What makes you think so? If you were to repeat the HIV self-testing exercise, what would you do differently?
24. What initial fears did you have about the HIV self-testing procedures? Did you experience these fears as you performed the HIV self-test?
25. As you performed the HIV self-test, did you feel that the process would have been much easier if there was a health worker to support you? Why did you think so?
26. Were there any members of your family that were forced to undergo HIV self-testing against their will? Who forced them? What happened when they were forced?

Section D: Linkage to HIV care

27. If you tested HIV positive, what would you do immediately after learning the HIV-positive test result?
28. What specific information would you need in order to be able to start HIV treatment on time?

Section E: Suggestions for enhancing HIV self-testing uptake

29. In your opinion, would you say HIV self-testing will help to improve: a) HIV testing in general? b) Couples' HIV self-testing?
30. Overall, how well did the process of HIVST for your partner and family members work for you? Do you think there are any better ways this kit could have been given to your partner, other than through you? Are there any other changes we could make? Please explain.
31. How can HIV self-testing be popularized in this community?
32. What else would you like to tell us regarding your experiences with HIV self-testing?

Thank you for your time

Key informant interview tool

For official use only

Tracking Number: Please generate the tracking number using the format: *KII/NAK-NC/17/01/16/01* where KII= Key Informant Interview [Method]; NAK = Nakaseke (Replace with MPI in Mpigi or ENT in Entebbe) [District name]; NC – Nurse Counselor [replace with EC if Expert Client]; 17/01/16 – Date of Interview and 01 – first KII interview.

Moderator #: _____
Tracking #: _____
Date of interview: _____/ _____/ _____
Name of health facility: _____
Venue: _____
Language of interview: _____
Time started: _____ Time ended: _____

Participants' socio-demographic information

1. Sex

Male	1
Female	2

2. Age-group

15-24	1
25-34	2
35-44	3
45+	4

3. Education level

No education	1
P1-P4	2
P5-P7	3
S1-S4	4
S5-S6	5
University	6
Other (specify) _____	7

4. Religious affiliation

Catholic	1
Protestant	2
Muslim	3
Saved/Pentecostal	4
SDA	5
Other (specify) _____	6

Questions

Section A: General Questions

5. Tell me your views about oral HIV self-testing, given your experience with this approach in your facility over the past few months. Probes: In comparison with the conventional HIV testing that you have been conducting, what do you see as the strengths or the contribution of oral HIVST? What are the limitations of oral HIVST?

6. How can HIV self-testing be implemented in a health facility setting?

Section B: Experiences with HIV self-testing

7. Please comment on the informational materials provided to pregnant women at the time of the intervention. Would you say the materials were appropriate and adequate? How else should these materials have been packaged?
8. If you were given the role of promoting HIV self-testing among male partners of pregnant women, what specific messages would you emphasize? Are there any other adjustments you would make to the messages? Please explain.
9. What are your views of the adequacy of the information and linkage to further counseling for those who need it?
10. In your overall assessment of the approach that was used for HIVST to reach the men are there any other adjustments you would make? Please explain.

11. Are there any other ways the kits may have been given to the men other than through the women? Which approach do you think is best, overall? Please explain.

Section C: Benefits of HIV self-testing

12. What would you say are the benefits of HIV self-testing? How can these benefits be maximized?
13. In your opinion, did HIV self-testing increase HIV testing rates among male partners of pregnant women? Please explain the reasons for your response
14. Would you say HIV self-testing promotes confidentiality in the HIV testing process more than other conventional HIV testing approaches? Please explain
15. How can HIV self-testing be used to promote couples' HIV testing?

Section D: Challenges associated with HIV self-testing

16. What were your fears before HIV self-testing was introduced? Which of these fears did you experience? How can these be mitigated?
17. As the HIV self-testing intervention was being implemented, what aspects of the intervention did you find difficult to implement? What aspects were easy? Why?
18. What aspect of the intervention did you find: a) most striking, b) least striking? Please explain your reasons.
19. Did you encounter any cases of negative social outcomes such as relationship challenges among the couples? Please explain. How can such negative events be minimized?
20. Did you experience any cases of false HIV-positives? How did you handle these cases?
21. There are fears among people that health workers do not keep secrets. This might prevent people from seeking the support of health workers in the process of HIV self-testing. How can these fears be minimized?

Section E: Linkage to HIV care

22. Please tell me your experience in helping HIV self-tested, HIV-positive people to link to HIV care. Would you say HIV self-testing has improved linkage to care among: a) men, b) women, c) both men and women, d) other family members? Why do you think so?
23. How would you compare linkage to HIV care among those tested through conventional HIV testing approaches and those tested through HIV self-testing? Are you concerned that some people who tested HIV-positive through HIV self-testing might not have reported for facility-based linkage to HIV care? How can this problem be minimized?
24. How can linkage to HIV care among people who have self-tested and are HIV-positive be enhanced?
25. What would be the role of expert clients and family support groups in supporting: a) HIV self-testing? b) Linkage to HIV care?

Thank you for your time

IN-DEPTH INTERVIEW GUIDE - FOR HIV POSITIVE MEN AND HIV DISCORDANT COUPLES FOLLOWING HIV SELF-TESTING

FOR OFFICIAL USE ONLY

Tracking Number: Please generate the tracking number using the format: *IDI/NAK-WP/17/07/18/01* where IDI= In-depth Interview [Method]; NAK = Nakaseke (Replace with MPI in Mpigi or ENT in Entebbe) [District name]; the 'WP' – denotes "female participant who is HIV+' (Replace with 'WN' for female participant who is HIV-negative; MP for male partner who is HIV-positive; or MN for male partner who is HIV-negative) ; 17/07/18 – Date of Interview and 01 – first IDI interview.

Moderator #: _____
Tracking #: _____
Date of interview: _____/ _____/ _____
Name of health facility: _____
Venue: _____
Language of interview: _____
Time started: _____ Time ended: _____

Ground Rules

1. The following are questions which will guide us to understand your experiences of discordant HIV situation.
2. You are requested to answer appropriately and in details according to your own understanding and experience
3. As an Interviewee, you are free to or not to participate in this research, you are therefore not to answer any question if you don't feel comfortable to, and this will not prejudice your care in any way nor will you be penalized for not taking part.
4. This information will only be used for the purpose of this research only
5. Your voice will be recorded and the audio will later be transcribed to script/ paper. The audio information will not be kept but destroyed after transcription.
6. You are assured of absolute confidentiality, that none of your information will be divulged to any person unless you allow so. Nevertheless the results of the research will be published and these will be the results of the whole research and no identity of any person will be revealed.

Participant's socio-demographic information

33. Age-group

<18 years	1
18-24	2
25-34	3
35-44	4
45+	5

34. Education level

No education	1
P1-P4	2
P5-P7	3
S1-S4	4
S5-S6	5
University	6

Other (specify) _____ 7

35. Religious affiliation
    Catholic 1
    Protestant 2
    Muslim 3
    Saved/Pentecostal 4
    SDA 5
    Other (specify) _____ 6

36. Category of respondent
    HIV+ male partner 1
    HIV-negative male partner 2
    HIV+ female partner 3
    HIV-negative female partner 4

SECTION A: GENERAL QUESTIONS

1. How long have you been married to your wife/husband?
2. How often do you discuss with your wife/husband about general health issues? Probe for discussion about HIV/AIDS in general and HIV testing in particular
3. Over the past year, have you or your partner discussed going for HIV testing: a) alone, or b) with your partner? What did you discuss and what was the outcome of the discussion?
4. In your opinion, would you prefer to test alone or together with your partner? Please provide reasons for your response
5. Over the past year, have you tested together with your partner? If yes, please describe the process that led to both you deciding to test together with each other. If not, what made it difficult for you to test with your partner?
6. How would you explain your HIV testing experience?

SECTION C: HIV SELF-TESTING

7. **Men**: Did you receive any HIV self-testing kit from your wife/partner? If yes, did you use it to test for HIV? Please tell me how you used the kit.
8. **Women**: Did you give any HIV self-test kit to your male partner? If yes, how did you do it?
9. Did you perform the self-test together? If yes, please describe how you did this. If not, what made it difficult for you to self-test together?
10. If you did not test together, did you share your HIV test results with your partner? If so, please describe the process that lead to the HIV disclosure event. If not, please explain what made it difficult for you to disclose to your partner

SECTION D: LINKAGE TO CARE (HIV POSITIVE MEN ONLY)

11. Let's look back to the time you learnt of your HIV status, how did you feel?
12. Describe to me what you did immediately after knowing your positive status (probe for counseling, confirmatory testing, ART initiation, viral load testing)
13. In your view, what are the advantages and disadvantages of HIV care services?
14. Did you link to HIV care services?
    a) If yes, what factors facilitated you to access HIV care services?
    i. If yes, are you still enrolled in HIV care? What has made it possible for you to continue to be enrolled in HIV care? If you dropped out of care, what made you drop out of care? How can HIV positive men be helped to continue to remain in HIV care?
    b) If you did not link to HIV care at all, what made it difficult for you to access HIV care services?
    i. How can HIV positive men be helped to link to HIV care?

15. Is there any additional support you would have required to help you access HIV services?
16. How helpful was the information your wife shared with you on the day she delivered the kits, with regard to linkage to HIV care?

SECTION E: COPING MECHANISMS

17. Let's look back to the time when you first learnt of your own and your partner's HIV status. Was this the first time that you came to learn of his/her HIV status? What went through your mind on the first day that you learnt of his/her HIV status?
18. How would you describe the period between knowing his/her HIV status and now? Please describe what happened to you from the time you learnt of his/her HIV status to now. What decisions did you make during this period? Which of these decisions did you eventually adopt? What made you adopt those decisions?
19. What decisions did you make during the period after learning of his/her HIV status and now that you eventually dropped? What made you drop these decisions?
20. If you were to go back to that time that you learnt of his/her HIV status, what would you do differently this time? Please provide reasons for your responses.
21. Did you receive any form of support – e.g. counseling – from anyone or any organization during the period after learning about his/her HIV status? If you received any support, what form of support did you receive? How did it help you to continue to live with your partner? If not, how were you able to cope with the knowledge of your partner's HIV status (which was different from yours) without any support?
22. After learning about his/her HIV status, did you feel any regrets? How did you overcome these regrets?
23. Did you believe that you and your partner had different results? If so, what made you believe so? If not, why not?
24. What have been your greatest concerns or worries?
25. What has been your hardest thing about coping with the situation?
26. What has been your source of hope?
27. What do you consider to be the most trying moment of the HIV discordant situation?
28. Tell me what you and your partner's life was before you knew that you are HIV-discordant and what changes (if any) have emerged.
29. Do any of your family members or close friends know about you situation?
30. What advice or suggestion would you give to a couple that experiences HIV discordance?
31. What are your future plan regarding child bearing?

SECTION F: CHANGES IN SEXUAL BEHAVIOR

32. After learning that their HIV status is not the same as their partner's, some people feel sad and feel like not wanting to engage in sex with their partners any more. Did this happen to you? If yes, how did you overcome this?
33. Having one partner living with HIV when the other one does not can be challenging to your sexual intimacy. Are there any changes that you have introduced in your sexual intimacy as a result of knowing that you have different HIV status? If yes, what changes have you introduced into the relationship? How have these changes helped to keep your sexual relationship intact?
34. Have you or your partner started antiretroviral medication? How is this helping you to cope with the knowledge that one of you is HIV-positive while the other is HIV-negative?
35. What specific hopes do you have for the future of your marital/sexual relationship?

End, Thank you