SECONDARY DISTRIBUTION OF HIV SELF-TESTS: AN INNOVATIVE STRATEGY FOR PROMOTING PARTNER TESTING AND REDUCING RISK

Principal Investigator

Harsha Thirumurthy
Department of Medical Ethics and Health Policy
423 Guardian Dr, Blockley Hall
215-898-7136
hthirumu@upenn.edu

Funding Sponsor

National Institute of Mental Health (NIMH)
6001 Executive Blvd.
Rockville, MD 20852
1-866-615-6464

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Study Summary

Title	Secondary Distribution of HIV Self-Tests: an Innovative Strategy for Promoting Partner Testing and Reducing Risk
Short Title	Secondary Distribution of HIV Self-Tests Among High Risk Women
IRB Number	828100
Methodology	Cluster randomized case-control R01
Study Duration	5 Years
Study Center(s)	Multi-site Study: • University of Pennsylvania - prime • University of North Carolina at Chapel Hill • Impact Research and Development Organization (IRDO) • RTI International
Objectives	Primary: • HIV Incidence Secondary: • Number of male partners per participant who obtain an HIV-positive test result • Proportion of unprotected sexual encounters with partners who were HIV-positive or whose HIV status was unknown • Occurrence of intimate partner violence (IPV) • Discussion of HIV testing with partners • Occurrence of couples testing • Qualitative descriptors of how the intervention was used and distributed • Analysis of cost-effectiveness
Number of Subjects	*About 2,010 subjects enrolled at IRDO, the field implementing partner in Kenya*

Main Inclusion and Exclusion Criteria	Inclusion Criteria: • Female • Age ≥ 18 years • Currently reside in the study area (hotspot or beach community) • Has resided in study area for at least 6 months in the year prior to enrollment • Intends to stay in the region for at least 24 months • Reports two or more sexual partners within the past 4 weeks • HIV-negative • Ownership or access to a mobile phone • Willing and able to provide informed consent for participant • Not enrolled in another HIV prevention research study Exclusion Criteria: • Does not meet above inclusion criteria • Does not provide informed consent • Does not provide verbal consent to screen for eligibility
Intervention	Clusters will be randomized to an intervention group in which women will be given *multiple* HIV self-tests coupled with referral vouchers for confirmatory testing (for those obtaining an HIV-positive result) over a period of up to 24months *or* to a comparison group that is given multiple referral vouchers alone for clinic-based HIV testing. The intervention's effect on uptake of HIV testing and identification of HIV-infection among sexual partners of high-risk women, sexual behavior of high-risk women, and HIV incidence among high-risk women will be compared between the two arms.
Statistical Methodology	The annual incidence of HIV infection will be compared between study arms through regression modeling using a generalized estimating equations (GEE) approach with a log link and assumed Poisson response distribution (the negative binomial distribution will be used if this distribution is not valid). An offset will be used in this model to account for differential follow-up times. The model will contain a dichotomous covariate for study group; the two-sided ($\alpha = 0.05$) statistical significance of the associated regression coefficient will be assessed with a Wald test performed using robust standard errors. If there are differences in baseline characteristics between the two study groups, a second regression model will be constructed that adjusts for the differing baseline characteristics.
Data and Safety Monitoring Plan	Data quality management will be a joint responsibility. The PI, site-PI, and project manager will provide regular oversight of data quality and reporting to all relevant parties. The implementing partner in the field also employs an internal research monitor who will also ensure adherence to study protocols, relevant guidelines, and good clinical practice. A DSMB has been formed to provide regular feedback on data quality and ensure patient safety.

Background and Study Rationale

This study will be conducted in full accordance with all applicable University of Pennsylvania Research Policies and Procedures, all applicable US federal and state regulations, all applicable Kenyan federal regulations, as well as in accordance with good clinical practice guidelines.

1 Introduction

This cluster randomized controlled trial will explore whether the provision of multiple oral fluid-based HIV self-test kits to women at higher risk of HIV can be used to promote HIV testing among their sexual partners, facilitate safer sexual decision-making, and ultimately reduce their risk of acquiring HIV. The study will recruit HIV-negative adult women who had two or more sexual partners within the past four weeks in the Nyanza region of Kenya. Beach communities and hotspots where women exchange sex for compensation will be randomized to an intervention group in which women will receive multiple oral fluid-based HIV test kits over a period of up to 24 months, training on how to use the tests, and encouragement to offer tests to their sexual partners. Women in sites that are randomized to the comparison group will be given referral vouchers for clinic-based HIV testing over a period of up to 24-monthsand encouraged to distribute these vouchers to their sexual partners. The primary outcome will be HIV incidence and secondary outcomes will include self-reported sexual behavior of participants as well as reported diagnoses of HIV-infected persons. Mixed methods research will be utilized to describe the use of self-tests by women and their sexual partners. Cost-effectiveness analyses will also be undertaken.

1.1 Background and Relevant Literature

Widespread HIV testing in sub-Saharan Africa is the essential first step in HIV treatment and prevention efforts. With a number of effective interventions for prevention and treatment of HIV, the global AIDS community is for the first time discussing the possibility of HIV elimination. Although UNAIDS has set out ambitious “90-90-90” goals, most countries in sub-Saharan Africa (SSA) are far from meeting the very first of these targets – that by 2020, 90% of all people living with HIV should know their HIV status [1]. Uptake of HIV testing in SSA remains low, particularly among men [2], and this significantly limits the ability to reduce HIV transmission through safer sexual decision-making and effective treatment as prevention. While community-based testing strategies have had success [3-5], there is an urgent need for creative strategies to increase HIV testing among high-risk populations.

Interventions that can identify HIV-positive persons who are unaware of their status are essential in the high prevalence Nyanza region of Kenya. With an adult HIV prevalence of 15.1% and 450,000 HIV-positive adults and adolescents, data from the Kenya AIDS Indicator Survey (KAIS) suggest that 40% of all persons living with HIV in the country are in the Nyanza region [6]. In the urban and peri-urban sites for the proposed study, HIV prevalence is estimated to be 26% (Homa Bay and Siaya counties, respectively) [7]. While the proportion of adults who have ever tested has risen in the Nyanza region, 50% of those who are HIV-positive remain unaware of their status [7, 8]. The fact that so many HIV-positive individuals remain unaware of their status despite significant expansion of HIV testing services underscores the urgency of finding *creative new testing strategies that can appeal to the unreached population groups*.

Promoting awareness of serostatus is especially important among *high risk populations* such as women who have multiple partners, such as women engaging in transactional sex, as well as their sexual partners. The vulnerability to HIV of women who engage in transactional sex has been extensively documented [9]. Female sex workers (FSW) in SSA have HIV prevalence that often exceeds 50% and is 10-20 times higher than prevalence in the general population [10, 11]. HIV prevalence among FSW in the proposed study setting is estimated to be 56.5% [12] and recent data indicate there are 534 active FSW “hotspots” of commercial sex work, with an estimated 4,041 FSW [13]. Fisher folk communities (FFC) – also referred to as beach communities –similarly have a higher burden of HIV-1 infection than respective general populations [14-16]. Studies have reported HIV prevalence between 25–29% and annual incidence rates of 3.39-4.9% in Kenyan and Ugandan FFC. These figures are 3–4 times higher than respective national averages. Unlike general populations, fishing communities tend to be socially marginalized and often stigmatized. Due to ready cash from fishing activities coupled with staying away from their spouses and other family, FFC are characterized by a high presence of bars, lodges and

entertainment halls, transactional sex (sex for money and sex for fish), high alcohol consumption and multiple sexual partnerships, but very limited access to health services.

Oral fluid-based HIV self-testing is a promising biomedical technology that has the potential to overcome many of the barriers to HIV testing. With self-testing, individuals collect their own sample and perform a simple, rapid HIV antibody test in the absence of a provider. It offers increased convenience, privacy, and autonomy, and has the potential to normalize regular testing. Existing research shows a high level of acceptability and demand for self-testing across a wide range of populations and settings, as well as good accuracy in the hands of lay users [17-27]. Participants in these studies – including studies we have conducted in Kenya – report that self-testing would reduce stigma around HIV testing, a formidable barrier, as well as increase convenience and confidentiality. Interest is typically highest among high-risk groups and those who have never tested for HIV [24]. Regulated self-testing has been included in Kenya's national HIV testing guidelines since 2009 [28, 29] and a growing number of countries – including Kenya – are considering scaling-up self-testing [27]. Yet there is little evidence on how best to deploy self-tests so as to ensure that testing is increased among high-risk individuals *not reached* by other HIV testing modalities.

A promising but under-explored approach is the provision of *multiple* self-tests to individuals who are then encouraged to distribute the tests to others in their sexual networks (i.e. 'secondary distribution'). The use of networks to reach high-risk persons has proven to be successful in several areas of public health [30, 31]. Given the need for regular repeat testing among women with multiple partners (including those engaged in transactional sex and women in beach communities) as well as their sexual partners, we have shown in a recently completed pilot study in Kisumu that an especially promising strategy is to provide women with multiple self-tests that they can then use to initiate partner testing or couples testing [22]. This strategy has the potential to generate multiple HIV prevention benefits, including promotion of male partner testing and facilitation of safer sexual behaviors.

Studies that we and others have conducted suggest that an important HIV prevention benefit of self-tests may stem from their potential use as a "point-of-sex" testing technology. Point-of-sex testing, particularly when a condom would not otherwise be used, may promote safer sexual decision-making, thereby functioning as an HIV prevention intervention. Secondary distribution of self-tests has been undertaken among men who have sex with men (MSM) in New York City [21, 32, 33]. Results from the studies with MSM have been encouraging – demonstrating that MSM used self-tests to screen potential sexual partners for HIV and decide whether to use condoms (or even avoid sex altogether) when partners declined to test or when an HIV-positive result was obtained. Our pilot study with FSW in Kenya obtained similar results, and it was the first study to explore the feasibility of secondary distribution of self-tests in SSA [22, 34]. Another randomized controlled trial we recently completed among pregnant and postpartum women in Kisumu also demonstrated the feasibility of this intervention [35]. Rigorous evaluation of such a strategy among high-risk women, with measurement of HIV incidence and sexual risk behaviors, is a natural next step.

Women with multiple partners are an important population in which to evaluate secondary distribution of self-tests. Since male partners of these women are more likely to be HIV-positive than other men and are less likely to know their HIV status, this strategy could be an efficient way to identify HIV-positive persons (furthering the first of the 90-90-90 goals). Moreover, it could facilitate safer sexual decision making by women and thereby reduce their risk of HIV acquisition. Studies that we and others have conducted show suboptimal levels of condom use by FSW with their sexual partners [12, 36, 37].*If women are able to use self-tests to identify partners who are HIV-positive and make safer sexual decisions, as our preliminary data suggest, it could have a transformative impact as an HIV prevention strategy.* As such, the National AIDS and STI Control Programme (NASCOP) in Kenya and the Ministry of Health (MOH) in Siaya have expressed strong support for evaluating such an intervention.

2 Study Aims

2.1 Primary Aim

- *Aim 1.* To determine the effect of distributing multiple HIV self-tests (HIVST) on uptake of HIV testing, identification of HIV-infection among sexual partners of high-risk women, changes in sexual behavior of high-risk women, and HIV incidence among high-risk women.

2.2 Secondary Aims

- *Aim 2.* Use a mixed methods approach to identify and address safety concerns and general perceptions regarding use and distribution of the intervention by high risk women and their sexual partners
- *Aim 3.* Assess cost-effectiveness of the intervention and obtain information necessary to inform scale-up of the intervention in Kenya and other countries

3 Investigational Plan

3.1 General Design

We will conduct a cluster randomized trial among HIV-negative women in the Nyanza region of Kenya. Clusters will be defined as hotspots where women exchange sex and FFCs along beaches in the study region. Clusters will be randomized to an intervention group in which women will be given *multiple* HIV self-tests coupled with referral vouchers for confirmatory testing (for those obtaining an HIV-positive result) *or* to a comparison group that is given multiple referral vouchers alone for clinic-based HIV testing. We will test for HIV and collect survey information, including sexual behaviors and HIVST use, from women at a baseline visit and every six months for up to 24 months.

3.2 Allocation to Interventional Group

Clusters of geographic areas will be matched on the basis of population and type (hotspot for women who exchange sex or beach community) and then randomized to two study groups (receiving HIV self-test kits or referral cards for HTS based testing) in a 1:1 ratio. Computer-generated randomization will be used to determine group assignment of clusters. There will be no blinding associated with the study.

3.3 Study Measures

An original questionnaire was developed for to assess various participant characteristics at baseline. This questionnaire includes questions about participant's socio-economic characteristics, sexual behavior, HIV testing history as well as the PHQ-9 mental health scale and a gender-based violence assessment. Follow-up data will be obtained through short surveys as well as a follow-up questionnaire administered at approximately 6-month intervals.

3.4 Study Endpoints

3.4.1 Primary Study Endpoint

In keeping with the intervention's potential to general multiple HIV prevention benefits, we will assess a primary outcome of HIV incidence and two secondary outcomes (one pertaining to HIV testing and the other to sexual behavior).

HIV incidence. All participants will be asked to come for HIV testing at baseline/screening and every 6 months during the follow-up period. We will use these data to measure HIV incidence among participants over a maximum of 24-month period. To limit attrition and obtain follow-up information, at 6-month intervals, participants will be offered compensation for transportation and time they take to undergo HIV testing and completing the follow-up surveys mentioned above. Our hypothesis is that the intervention

group will have lower HIV incidence than the comparison group. Obtaining a measure of HIV incidence among participants will also be useful for performing cost-effectiveness analyses in Aim 3.

3.4.2 Secondary Study Endpoints

Number of male partners per participant who obtain an HIV-positive test result. This information will be obtained directly from the index participants. For each participant, we will assess the number of reported partners who tested for HIV and obtained a reactive result. We hypothesize that the number of HIV-positive male partners identified per participant will be higher in the intervention group than the comparison group.

Proportion of unprotected sexual encounters with partners who were HIV-positive or whose HIV status was unknown. This outcome will be based on data from follow-up surveys and will assess the HIV risk that participants were exposed to during the follow-up period. We expect, based on pilot data, that women in the intervention group will be able to utilize self-tests to facilitate HIV results disclosure with sexual partners and make safer sexual decisions. Thus, we hypothesize that the intervention group will be less likely than the comparison group to have unprotected sex with a partner of unknown or HIV-infected status.

Additional Outcomes. Other outcomes that we assess will include the occurrence of intimate partner violence (IPV), discussion of HIV testing with partners, and occurrence of couples testing. The outcomes of Aim 2 will be a qualitative narrative of how HIVST are perceived and used. Aim 3 will use the primary outcome to determine the cost-effectiveness of HIVST distribution in this setting.

4 Study Population and Duration of Participation

The study will include women who report having two or more partners in the past month, including women who exchange sex and high-risk women residing in beach communities. In each of the selected clusters (hotspots or beach communities), we will sample women and assess their eligibility. We will also interview male partners of women who participate in the study, to collect data on their experience. Women enrolled in the main study will be followed for up to two years. Male partners who are contacted will participate in one qualitative interview.

4.1 Duration of Study Participation

Participation in the main study may entail up to two years (24 months) of follow-up from the date of enrollment. The qualitative interview (Aim 2) will require only one day of participation to obtain informed consent and complete the interview.

4.2 Total Number of Subjects and Sites

We will seek to enroll about 1,980 women from a total of about 66 clusters in the Nyanza Region of Kenya. An average of approximately 30 women per cluster will be enrolled in the main study. Approximately 100 of these women will be selected to participate in an additional qualitative interview during the follow-up period. Among these 100 women, approximately 30 male partners will be selected and contacted to participate in a qualitative interview to learn more about how men perceive and use the HIV self-test kits. The total number of individuals enrolled in the study will therefore be approximately 2,010.

There are multiple sites contributing to this study. The University of Pennsylvania will serve as the prime implementing site, with the University of North Carolina and RTI International subcontracted to provide administrative and data management support until the transfer of study data to UPenn is complete. Impact Research and Development Organization (IRDO) is conducting all field work, including enrollments, follow-up, and monitoring for adverse events.

4.3 Inclusion Criteria

High-risk women who meet with study staff will be screened for the following eligibility criteria after providing oral informed consent:

- Female
- Age ≥18 years
- Currently resides in the study area (hotspot or beach community)
- Has resided in the study area for at least 6 months in the year prior to enrollment
- Intends to stay in the region for at least 24 months
- Reports two or more sexual partners within the past 4 weeks
- HIV-negative*
- Ownership or access to mobile phone
- Willing and able to provide informed consent for participation
- Not enrolled in another HIV prevention research study

* To verify HIV status at baseline, women will be offered rapid HIV testing based on Kenyan guidelines. Those who test HIV-positive will be actively linked to care as per the IRDO drop-in center's protocol or the Ministry of Health recommendations.

4.4 Exclusion Criteria

Those who do not meet the inclusion criteria listed above, do not provide informed consent, or who do not provide oral consent to assess these eligibility criteria (screening) will be excluded from the study.

4.5 Subject Recruitment

Given the study's focus on reducing the risk of HIV acquisition among high-risk women in the study region, we will recruit HIV-negative women from the clusters that are selected for Aim 1. Our recruitment strategy closely resembles the strategy that we used to successfully recruit 101 HIV-negative FSW (over a one month period) for participation in a pilot study [22]. Specifically, from each hotspot we will recruit high-risk women including FSW enrolled in IRDO's drop-in center and others who meet eligibility criteria. We will rely on peer educators who have pre-existing relationships with these women to initiate contact, provide them with general information on the study, and refer those who are interested to meet with study staff. Peer educators will receive transport and outreach reimbursement for their recruitment activities. Recruitment will end when the target sample size is reached.

In the beach communities, we will obtain a sampling frame from the census of the study community which IRDO conducted towards the end of 2015; in addition, we will work with the beach management unit officials should we need additional information. We will then contact women to assess their eligibility to participate in the study. We will work with IRDO's program staff to identify those who may be eligible to participate in the study and refer them to the study venue if they are interested in learning more.

4.6 Vulnerable Populations:

Children, fetuses, neonates, or prisoners are not included in this research study. Pregnant women are neither excluded if they meet the other eligibility criteria, nor removed from the study if they become pregnant during the study. However, there are no study procedures that should affect the condition of the pregnant woman or fetus.

5 Study Procedures

Participants in clusters randomized to the intervention group will be provided with multiple self-tests over a period of up to 24 months and encouraged to distribute the tests to individuals in their sexual networks with whom they may have unprotected sex. Participants will be given several HIV self-tests *initially* and informed that they can obtain *additional* self-tests during the intervention period. Each self-test will include clear instructions for use, a list of HIV testing services (HTS) clinics where those obtaining reactive self-tests can seek confirmatory testing (as is recommended by Kenya's testing guidelines). In order to encourage individuals who obtain a reactive self-test to seek confirmatory testing *and* to measure uptake

of confirmatory testing, a *VCT referral voucher* will be included with each self-test. Each self-test will also include a study phone number that participants or male partners of participants may call to obtain information about how to use the test and receive information on follow-up services.

At enrollment, participants will be trained on how to use HIV self-tests using methods and materials developed in our pilot study. They will be counseled on how to discuss HIV self-testing with sexual partners and on the importance of using their own discretion and assessing the risk of IPV when deciding whether to offer a self-test to a sexual partner. The concept of the HIV "window period" and the importance of condom use and other sexual risk reduction strategies will also be discussed. As part of the pilot study we carried out last year, we developed talking points for study staff to use when enrolling participants and giving them multiple self-tests. These talking points, as well as lessons we learned in the pilot study, will be fully incorporated into the education and counseling that participants will receive during enrollment. Participants will be reminded to use condoms whenever possible and reserve self-tests for primary partners as well as current and potential partners with whom unprotected sex is likely. The counseling message outlined in the study procedures discusses the rate of false negative results (up to 8%) that can occur when using the kits and gives possible reasons for false negatives to occur, including: improper use of the test, antibodies cannot be detected because of the window period, or the HIV positive person is on ARVs and virally suppressed. False positives are also explained such that any "reactive" test does not mean HIV positive and that any reactive test should be confirmed at a local VCT clinic for a proper medical diagnosis.

We will use the FDA-approved OraquickAdvance Rapid HIV-1/2 Antibody Test, which achieved 92% sensitivity in premarket self-testing in the US [44]. This oral fluid-based test detects antibodies to HIV-1 and HIV-2 in 20 minutes. Currently, the Oraquick self-test is approved for use in Kenya and the government is considering its broader use throughout the country. In our prior study, we developed easy-to-follow instruction materials on how to use the self-test. These instruction materials will be included with each self-test that is distributed to study participants.

Participants in the clusters randomized to the control group will be provided with several HTS referral vouchers initially and encouraged to distribute them to their sexual partners (participants will be informed they can return for additional vouchers during the follow-up period of up to 24-months. As in the intervention group, participants in the comparison group will also be counseled on the importance of condom use and other sexual risk reduction strategies. Female participants will also be encouraged to give their male partners a phone number that they can contact if they have questions.

For both study arms, research assistants will seek to recruit those who meet eligibility criteria. Research assistants will review the written informed consent form with eligible women and those who provide written consent to study enrollment will be administered a baseline questionnaire (described below), and digital fingerprint collection with a fingerprint biometric device to verify identification at follow-up visits. We have found fingerprinting to be highly acceptable, and it has been successful in other studies in the region.

Data Collection Procedures:

Baseline data. At the time of enrollment, participants will be administered a baseline questionnaire to record information such as socio-demographic characteristics, economic characteristics, sexual behavior, HIV testing history, and any experience of IPV.

Distribution Visits. Participants will be offered the opportunity to collect additional HIVST or VCT referral coupons regularly during the follow-up period. These visits will entail the distribution of the study tools, retraining on important counseling messages (how to safely avoid IPV, importance of condom use, etc.) and collect basic information on how the study tools previously distributed were used. IPV and other possible adverse events will be monitored at every point of contact.

Follow-up surveys administered at 6-month intervals. Study staff will administer tablet-based, structured follow-up survey questionnaires to participants in approximate 6-month intervals to learn about their experiences distributing self-tests (intervention group) and referral vouchers (comparison group), assess sexual behavior with persons who do and do not accept self-tests or vouchers, inquire about occurrence of IPV or other adverse events. For women who report their sexual partners had a reactive self-test, the questionnaires will also inquire about linkage to care. To collect these data, we will adapt questionnaires

we previously developed and used in our pilot study. Fingerprint data collection will take place at baseline and at follow-up visits in order to ensure correct identification of study participants. We will carry out the intervention for up to 24 months. Enrollment will be on a rolling basis, and each woman will be followed up for between 12-24 months dependent on her date of enrollment.

HIV testing. At baseline and at each follow-up interview, rapid HIV antibody testing for all participants will take place according to Kenyan guidelines and using approved algorithms. A dried blood sample (DBS) will be collected and stored at the first baseline visit. If the participant becomes positive during the first 6 months of follow-up, the DBS will be used for PCR confirmatory HIV testing to confirm the participant was negative at enrollment and not in the pre-detection window of the rapid tests.

Does your study use MRI? (CAMRIS is the appropriate contact for all studies involving MRIs)

☐ Yes ☒ No (If No, no CAMRIS review needed)

Ultrasound

☐ Yes ☒ No

Will your study be using CT Scans? (CACTIS is the appropriate contact for studies involving CT scans)

☐ Yes ☒ No

Studies involving Nuclear Medicine: Will subjects be undergoing any of the following procedures specific to research:

☐ MUGA
(See Nuclear Medicine-Muga Scan)
☐ PET/CT Scan
(See PET/CT Scan)
☐ Bone /DXA
(See Bone Scan)

Check off all of the following procedures that will be performed in your research- each option you select will link to the template language document:

☐ Apheresis/plasma exchange
☐ Leukapheresis
☐ Bone Marrow Biopsy or Aspirate
☐ Use of AP clinical specimens
☐ Biopsies- check those which apply
☐ Blood draw

5.1 Screening and Baseline Visit

At the screening and baseline visit, which occurs on the same day, the following procedures are performed:

- Verbal informed consent obtained to screen for eligibility
- Screening questions administered by research assistant
- HIV rapid test is performed according to Kenyan HTS guidelines. Currently, this includes testing with Alere Determine HIV-1/2 rapid antibody test and confirming all non-negative results with Premier Medical Corporation First Response HIV 1-2 rapid antibody test. Appropriate counseling is provided by research assistants, who are certified HTS counselors by the Kenyan government.
- Main study written informed consent obtained

- Fingerprinting enrollment process
- Administration of the baseline visit questionnaire
- Distribution of the HIV self-test kits or HTS referral cards, including counseling on how to safely use and distribute the intervention.
- Reimburse participant for travel and time

The screening and baseline visit is estimated to take approximately 90 minutes.

5.2 Follow-Up Visits

5.2.1 Monthly Distribution Visits

Each month, research assistants will schedule a time to visit each cluster where enrollments have taken place. Participants will be made aware of the venue and times that the research assistant will be available, and they can attend the event to replenish their stock of either HIVST kits or HTS referral cards. Fingerprints are collected to verify the participant's identity and a record is kept of the serial number of the HIVST kits or referral cards. Participants will be asked how they used and distributed to cards to help guide additional discussion about the number of HIVST kits or VCT referral cards to receive and if relevant counseling messages need to be reiterated. The research assistants will also use this time to answer any questions about the study, intervention use, distribution, or adverse event reporting that the participants would like to disscuss. Participation in the monthly distirubtion visits is optional; if participants do not need to replenish their supply, have no questions, or cannot attend, there is no additional follow-up for these visits. These visits will take approximately 10 minutes, on average.

5.2.2 6-Monthly Follow-Up (Months 6, 12, 18, and 24)

The 6-monthly follow-up procedures will be used to test for HIV, collect information about the use of the interventions, and address any questions the participant may have. These visits will take approximately 45 minutes. Specific procedures include:

- Fingerprint verification of participant's identity
- HIV rapid test is performed according to Kenyan HTS guidelines.
- Administration of the follow-up visit questionnaire
- Distribution of the HIV self-test kits or HTS referral cards, to include "refresher" counseling session on how to safely use and distribute the intervention.
- Reimburse participant for travel and time

5.2.3 Qualitative Interview Visits

Approximately 100 women and 30 male partners of women selected will be invited to participate in qualitative interviews. This interview will examine the person's experience with the HIVST or referral vouchers. It will occur one or two times and take approximately 60 minutes each time. Specific procedures include:

- Informed Consent (men only: qualitative interview is described in the main study consent that female participants will sign at the baseline visit)
- Interview with research assistant
- Identify sexual partners who may be willing to participate in qualitative interview (female only to identify 30 men)
- Reimburse participant for travel and time

5.2.4 End of Study Visit

The end of study visit is identical to the last 6-monthly follow-up visit. No results will be shared with the subject at this time, and no unblinding is necessary.

5.3 Unscheduled Visits

Unscheduled contact with the participant will occur most often through the study hotline number. This number is provided on the informed consent, HIVST instruction sheet, on the confirmatory testing card, and on HTS referral card. If an in-person meeting is necessary, the Study Coordinator, who manages the hotline number, will schedule a time for the participant to meet with a research assistant. All meetings will be documented in a note to file which is placed in the participant's file at the IRDO office. If the meeting is to report an adverse event, appropriate steps will be taken to notify the PI's and IRB offices.

5.4 Subject Withdrawal

Subjects may withdraw from the study at any time without impact to their care. They may also be discontinued from the study at the discretion of the Investigator for lack of adherence to intervention or study procedures or visit schedules, and AEs. The Investigator or the Sponsor may also withdraw subjects who violate the study plan, to protect the subject for reasons related to safety or for administrative reasons. It will be documented whether or not each subject completes the study.

5.4.1 Data Collection and Follow-up for Withdrawn Subjects

No additional data will be collected or follow-up attempted for participants who withdraw completely from the study.

5.5 Early Termination Visits

The last 6-monthly follow-up survey form will serve as the final data collection for participants who withdraw. No additional data will be collected or follow-up attempted for participants who terminate their involvement with the study.

5.6 Safety Evaluation

To ensure correct usage of self-tests (in the intervention group) and to minimize the probability of psychological distress due to HIV testing, we will include simple instruction materials with each self-test on how to use the tests, in English and local languages. These instruction materials have been developed by us and used in our pilot study, and they were well-received by FSW and the sexual partners. In addition, each self-test will include clear information on the importance of seeking confirmatory HIV testing (which is recommended by the WHO and the Kenyan Ministry of Health) – as such the vouchers and self-test will include information listing HTS clinics in the area where free HIV testing and counseling is available. Information will also be provided on clinics in the area where free HIV care and treatment is available. We will also establish a support telephone line (hotline) that study participants or their sexual partner can call at any time that will put them in touch with the study coordinator, who will be ready to provide additional information on where to seek further testing, care or treatment.

IPV is monitored at each in-person visit, through the monthly text-message based survey, and by providing the 24/7 hotline for self-reporting. The Study Coordinator who mans the hotline and is responsible for first contact for all IPV reports will provide information and resources to the woman to include emergency medical treatment, support hotlines to call, and additional resources as necessary. All incidences of IPV will immediately be reported to the PI's and those related to the study intervention will be reported to both IRBs within one day.

6 Statistical Plan

6.1 Sample Size and Power Determination

We will seek to enroll about 1,980 women from a total of about 66 clusters. An average of approximately 30 women per cluster will be enrolled in the study. The power analysis for this cluster randomized study focused on the primary outcome comparing HIV infection incidence among high-risk women between two groups: the comparison group receiving vouchers for in-clinic HIV testing vs. an intervention groups receiving oral fluid-based HIV self-testing kits. Assuming an annual HIV infection incidence of 0.045 in the control group, the sample size required to detect a 50% reduction in this incidence with 80% power and a

type I error of 0.05 is 1,980women, with 33 clusters per study group and 30 women per cluster. This calculation assumes a 10% loss to follow-up over 1.5 years of follow-up and a coefficient of variation of 0.40 [48,49].1.5 years of follow-up is conservatively assumed for the power calculation, as this is the expected amount of time that FSWs will be followed, even though there is a maximum of 2 years.

6.2 Statistical Methods

6.2.1 Analysis of Primary Outcome of Interest

The annual incidence of HIV infection will be compared between study arms through regression modeling using a generalized estimating equations (GEE) approach with a log link and assumed Poisson response distribution (the negative binomial distribution will be used if this distribution is not valid). An offset will be used in this model to account for differential follow-up times. The model will contain a dichotomous covariate for study group; the two-sided ($\alpha = 0.05$) statistical significance of the associated regression coefficient will be assessed with a Wald test performed using robust standard errors. If there are differences in baseline characteristics between the two study groups, a second regression model will be constructed that adjusts for the differing baseline characteristics.

6.2.2 Analysis of Secondary Outcomes of Interest

The number of identified HIV-positive male partners per woman will be compared between study groups using the same GEE approach as described above; an offset accounting for differing numbers of partners will be included if possible. For each woman, the second outcome (proportion of unprotected sexual encounters with individuals who were HIV-positive or whose HIV status was unknown) will be defined as a binary variable that indicates whether the proportion is below a threshold of 0.10 – this will distinguish between women who engaged in a high degree of safe sexual behavior and those who did not. This outcome will be analyzed similarly to the first, but the GEE model of interest will assume a logit link and binomial distribution.

Aim 2 data analysis will consist of 5 steps:1) Reading for Content: Our analysis will begin with data reading until content becomes intimately familiar [45]. As data are reviewed, emergent themes will be noted. Topics that the research has not adequately addressed and ones that emerge unexpectedly will be explored in continued fieldwork. 2) Coding: A list of codes will be created based on identified themes and assigned to specific sections of text so that the text can be easily searched. Code definitions will be documented in a code book[46]. Qualitative interviewers will be trained to apply the codes using ATLAS.ti. To ensure inter-coder reliability, 10% of data will be double-coded. 3) Data reduction: Once transcripts have been coded, we will work within each code to identify principal sub-themes that reflect finer distinctions in the data. This entails taking an inventory of what is related to the given code, capturing the variation or richness of each theme and noting differences between individuals or among subgroup[46]. 4) Data display: Matrices and tables that categorize and display data will be used to help facilitate comparisons. 5) Interpretation: Once text has been read and coded, and central ideas extracted, we will identify and explain the core meanings of the data. We will search for relationships among themes identified and develop diagrams in order to map out relationships in the data.

Aim 3. Our analyses will estimate the cost per averted disability-adjusted life year (DALY) based on (a) increased identification of HIV-positive men, and thus higher and earlier initiation of ART; and (b) fewer HIV infections among women as a result of using self-tests to make safer sexual decisions. Our analyses will include modeled lifetime ART health benefits and costs. Our analyses will also be useful for estimating how many additional high-risk men can be tested and how many additional HIV infections can be averted by spending a fixed amount of resources on self-tests rather than conventional testing models. Analyses will be conducted using customized spreadsheet-based decision tree and clinical progression simulation modeling methods adapted from other projects. Extensive one-way, multi-way, threshold, and scenario sensitivity analyses will quantify the effects of input uncertainty on results. Our analytic perspective will be the health system, for direct medical costs, discounting future costs and DALYs at 3% per year.

7 Safety and Adverse Events

7.1 Definitions

7.1.1 Adverse Event

An adverse event (AE) is any symptom, sign, illness or experience that develops or worsens in severity during the course of the study. Intercurrent illnesses or injuries should be regarded as adverse events. Abnormal results of diagnostic procedures are considered to be adverse events if the abnormality:

- results in study withdrawal
- is associated with a serious adverse event
- is associated with clinical signs or symptoms
- leads to additional treatment or to further diagnostic tests
- is considered by the investigator to be of clinical significance

7.1.2 Serious Adverse Event

Serious Adverse Event

Adverse events are classified as serious or non-serious. A serious adverse event is any AE that is:

- fatal
- life-threatening, including IPV
- requires or prolongs hospital stay
- results in persistent or significant disability or incapacity
- required intervention to prevent permanent impairment or damage
- a congenital anomaly or birth defect
- an important medical event, including HIV seroconversion

7.2 Recording of Adverse Events

At each in-person contact with the subject, the investigator will seek information on adverse events by specific questioning Information on all adverse events will be recorded immediately in a note to file that is kept permanently in the participant's study file. A standard case report form is employed by IRDO to report adverse events and will be completed by IRDO staff.

All adverse events occurring during the study period will be recorded and reported immediately to the site-PI, who will notify the study PI. The study PI is responsible for overseeing the investigation of the adverse event. The PI will also make the University of Pennsylvania and Maseno University (Kenya) IRBs as well as the DSMB aware of any serious adverse events within one day, as necessary. The clinical course of each event will be followed until resolution, stabilization, or until it has been determined that the study intervention or participation is not the cause. Serious adverse events that are still ongoing at the end of the study period will be followed up to determine the final outcome. Any serious adverse event that occurs after the study period and is considered to be possibly related to the study intervention or study participation will be recorded and reported.

7.3 Relationship of AE to Study

The site PI will lead the investigation of all adverse events to completion or until it is decided that participation in the study is not the cause. For social or economic adverse events, the site PI will make this determination, and for medical adverse events, will work with appropriate medical staff in the clinic to make that decision. The relationship of the adverse event to participation in the study will be classified as: definitely related, probably related, possibly related, unlikely or unrelated.

7.4 Reporting of Adverse Events and Unanticipated Problems

The Investigator will promptly notify the Penn IRB of all on-site unanticipated, Adverse Events that are related to the research activity within one day from the time of reporting, with further follow-up as needed as the investigation continues. Other unanticipated problems related to the research involving risk to subjects or others will also be reported promptly. Written reports will be filed using the HS-ERA.

7.4.1 Follow-up Report

If an AE has not resolved at the time of the initial report and new information arises, such as further medical results or diagnoses, that changes the investigator's assessment of the event, a follow-up report including all relevant new or reassessed information (e.g., concomitant medication, medical history) should be submitted to the IRB. The investigator is responsible for ensuring that all SAEs are followed until either resolved or stable.

7.4.2 Investigator reporting: notifying the study sponsor (if applicable)

All relevant events will be reported to NIMH, according to the criteria listed at:
https://www.nimh.nih.gov/funding/clinical-research/nimh-reportable-events-policy.shtml

7.4.3 Data and Safety Monitoring Plan

Data will be monitored by the project manager and the principal investigator throughout the study. Any adverse events will be immediately reported to both UPenn and the Kenyan IRB, and study personnel will follow up with the participant(s) involved to ensure linkage to appropriate care and services.

We are concerned with the possibility of women being at increased risk of intimate partner violence (IPV) as a result of introducing self-testing with their partner, and we have put into place both preventative and follow up procedures to mitigate this risk. As part of the initial instruction about use of the self-test, we discuss the risk of violence with all research participants, how to talk about the self-test with partners, advise them NOT to introduce the self-test with a partner if they are concerned that there is a risk of violence, and provide resources to women about what to do if they experience violence (including safety and counseling resources). Participants will be instructed to contact our 24-hour telephone line if they have questions about the self-test use or if they experience violence. Furthermore, during the follow-up questionnaire, we will be asking whether participants experienced violence since they received the self-test kit and if they feel the violence was a direct result of the study.

We will be monitoring incidents of IPV as the study progresses and will follow up with each reported case. Study RAs and the study coordinator will follow up with any woman who reports IPV either through the hotline or during the follow up survey to provide her with safety and counseling resources and also to determine to what extent the IPV was a direct result of participation in our study.

IRDO employs an internal research monitor that regularly audits study procedures and documentation, including any event reporting. A DSMB will be formed to regularly review interim data to monitor safety and recommend whether the trial should continue. Serious unexpected events will be disclosed to the Board in between meetings and if needed, meetings will be convened to discuss these events and recommend appropriate responses. The DSMB will also evaluate participant risk vs benefit as the trial progresses. The DSMB will also work closely with the investigators and biostatistician to develop study-wide stopping rules.

This study receives annual review at the Maseno University Ethics Review Board (MUERC), and has been reviewed by the University of North Carolina at Chapel Hill (Year 1), and by the University of Pennsylvania for the remainder of the study (Years 2-5).

7.4.3.1 Data Safety Monitoring Board

See appended DSMB Charter

8 Study Administration, Data Handling and Record Keeping

8.1 Confidentiality

Information about study subjects will be kept confidential and managed according to the requirements of the Health Insurance Portability and Accountability Act of 1996 (HIPAA). Those regulations require a signed subject authorization informing the subject of the following:

- What protected health information (PHI) will be collected from subjects in this study
- Who will have access to that information and why
- Who will use or disclose that information
- The rights of a research subject to revoke their authorization for use of their PHI.

In the event that a subject revokes authorization to collect or use PHI, the investigator, by regulation, retains the ability to use all information collected prior to the revocation of subject authorization.

8.2 Data Collection and Management

We have developed standard operating procedures for data security and confidentiality procedures at collection, transfer, entry and storage levels, and make these readily accessible to all staff members who have access to confidential study data. All study data will remain secure at UPenn for the duration of the study.

All study tablets used for data collection will be password protected. After a survey is completed in ODK, the Research Assistant will mark it as “finalized” which automatically encrypts the survey and sends it to the ODK aggregate survey. Completed surveys therefore do not live on the tablet, but rather as encrypted data on a secure server. All electronic study data will be stored on a secure terminal server at UPenn on PMACS secure servers with access limited only to authorized staff. All computers and servers will be encrypted and password-protected with limited access. Files on PMACS servers are encrypted both in motion and at rest. Backup of the data will be done by designated study staff onto a secure server at UPenn. All electronic information will be recorded using study identification numbers, rather than participant names.

Physical data collection forms will be stored at IRDO headquarters in Kisumu, which will be the operating headquarters of the study. No participants will have any identifier on the data forms; names and signatures will only be on the consent forms, which will be kept under lock and key by the Study Coordinator and after signing, will be accessible only to the PIs, Coordinator and IRDO’s Research Officer. All sensitive information is stored separately from any identifying information to prevent breach of confidentiality.

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8.3 Records Retention

At the end of the study, data will be kept for up to 5 years for electronic version on the UPenn terminal server, and up to 2 years for paper forms, including consent forms at the IRDO facility in Kenya.

9 Study Monitoring, Auditing, and Inspecting

9.1 Study Monitoring Plan

The PI and project manager will periodically monitor the study to ensure adherence to study procedures and national guidelines. In addition, IRDO has a dedicated research monitor who will regularly review the study according to study protocol, SOPs, and good clinical practice guidelines. The internal monitor will also review all informed consent documents that are collected to ensure accuracy, completeness, and adherence to proper version control. A DSMB has also been formed to perform study monitoring, as needed.

9.2 Auditing and Inspecting

The investigator will permit study-related monitoring, audits, and inspections by the EC/IRB, the sponsor, government regulatory bodies, and University compliance and quality assurance groups of all study related documents (e.g. source documents, regulatory documents, data collection instruments, study data etc.).

10 Ethical Considerations

Approvals from the University of North Carolina institutional review board and the Maseno University institutional review boards (IRBs) were obtained prior to initiation of any study activities, before the study was moved to the University of Pennsylvania. In the future, all study documents and data collection tools will be submitted and must be approved by both the IRB at both the University of Pennsylvania and at Maseno University in Kenya.

All study staff are required to undergo training in human subjects research, and good clinical practice. Having received approval for the intervention in our pilot study, we are confident that the risks to participants and our strategies to minimize these risks will be acceptable to the IRBs.

10.1 Risks

Based on our own pilot data, we believe there are relatively few risks to study participants. The results from our pilot study and in-depth interviews with FSW indicated that IPV and other adverse events were extremely rare. The primary risk involved in study participation include violence experienced by women due to the introduction of HIV self-testing to their sexual partners. For example, if a sexual partner uses an HIV self-test or seeks clinic-based testing and obtains an HIV-positive test result, there is a risk of adverse reactions including IPV directed toward the woman as well as adverse events experienced by the sexual partner. This risk may be heightened in the intervention group as self-testing is likely to occur in the absence of a counsellor. Our data indicated these risks are very rare and this is consistent with data from a number of other studies conducted in sub-Saharan Africa that also show high safety and acceptability of HIV self-testing. But nonetheless we will put in place study procedures (described below) that are intended to minimize these risks and address any adverse events that do occur. In our pilot study that implemented the intervention, we developed and used these procedures, and we also obtaining ethical approval for the procedures.

During enrollment and over the course of a maximum 24-month follow-up period, we will be measuring HIV status of women who participate in the study. There may remain a small risk that the HIV status of study participants could be inadvertently disclosed. Precautions will be taken to avoid any inadvertent sharing of this information. We will make strong efforts to ensure the maintenance of privacy, confidentiality, and security of all study data that are obtained. Data collection and storage procedures will include the use of encrypted, password-protected devices and servers, and only authorized study investigators will have access to these data.

As part of the study, women in the intervention group will be likely to distribute (or attempt to distribute) HIV self-tests to their sexual partners. Women in the comparison group will be likely to discuss clinic-based HIV testing to their sexual partners. As mentioned above, there is a small probability that some sexual partners will become angry and/or violent due to the women's suggestion of HIV testing or due to the results obtained from the HIV testing. In our previous study, we found that this probability was very small, as the 101 FSW participants distributed 370 self-tests and only 1 adverse event was reported. We are still acutely cognizant of this risk and have developed detailed training materials for study staff to use when enrolling participants as well as procedures to protect against these risks. These are described below.

As with any HIV testing research there is the possibility of psychological distress for study participants due to testing. Study participants may feel pressured to test and if they test, may be distressed by the results, especially if they obtain an HIV-positive result. Our pilot study data indicate that women and their sexual partners reacted well to receiving their test results, even when the result indicated a person was HIV-positive. These data are consistent with many other studies from sub-Saharan Africa showing that self-testing is safe and acceptable, and that the risks of adverse reactions are very low. Proper

information and subsequent counseling is nonetheless necessary to minimize the possibility of distress. For the intervention group, we will provide detailed, easy-to-use instruction sheets on how to use self-tests as well as a demonstration to women at the time of enrollment on how to use self-tests. We will also provide detailed information on the need to seek clinic-based confirmatory testing after receiving an HIV-positive self-test result, as well as information on where individuals can receive care and treatment.

To minimize risk we will do the following:

Maintaining privacy and avoiding stigmatization. Study visits with participants to recruit, screen, consent, enroll and follow-up participants will occur at the drop-in centers or participant homes in order to reduce the unlikely possibility of stigmatizing study participants. Every effort will be made to ensure privacy is maintained during survey administration. HIV testing results will be confidential and linked to participants by a unique study identification number (their study ID number). Participants' names and study number, and thus their HIV status and name, will never appear in a dataset together.

Minimizing probability of violence. To minimize the likelihood of violence against study participants, we will train study staff to talk to participants at the time of enrollment about the importance of *using their discretion* and *assessing the risk of IPV* when deciding whether to introduce self-tests or offer HTS referral vouchers to their sexual partners. Study staff will also talk to participants about strategies for introducing self-testing or HTS referral vouchers to sexual partners, including potential talking points. It will be emphasized to study participants that they are not obligated to distribute self-tests to their sexual partners. Participants will be counseled to never offer a self-test or HTS referral voucher to someone who they will believe will become violent due to the introduction. Having developed the training materials for study staff and implemented the intervention successfully in our pilot study, we are confident that they will help minimize the risks of violence. We will also provide study participants with information on where they can seek help if they do experience violence or do need advice. We will establish a support telephone line (hotline) that study participants or their sexual partners can call at any time that will put them in touch with the study coordinator. The study coordinator will help arrange support for any woman experiencing violence. In our pilot study, we set up a hotline similar to what is proposed here.

Minimizing probability of adverse reactions to test results. To ensure correct usage of self-tests (in the intervention group) and to minimize the probability of psychological distress due to HIV testing, we will include simple instruction materials with each self-test on how to use the tests, in English and local languages. These instruction materials have been developed by us and used in our pilot study, and they were well-received by FSW and the sexual partners. In addition, each self-test will include clear information on the importance of seeking confirmatory HIV testing (which is recommended by the WHO and the Kenyan Ministry of Health) – as such the vouchers and self-test will include information listing HTS clinics in the area where free HIV testing and counseling is available. Information will also be provided on clinics in the area where free HIV care and treatment is available. We will also establish a support telephone line (hotline) that study participants or their sexual partner can call at any time that will put them in touch with the study coordinator, who will be ready to provide additional information on where to seek further testing, care or treatment.

10.2 Benefits

The main direct benefit of this study, is that we will provide free HIV self-testing kits to women, allowing them to test themselves regularly and offer tests to their partners (with the potential of also learning their partners' HIV status). Additionally, enabling HIV-negative women to distribute tests to their sexual partners (including their clients) will help them make informed sexual decisions, thereby protecting them from HIV acquisition. By helping the partners of women learning their status, our study will also benefit these other individuals. Indirectly, the study may give rise to increased identification of HIV-positive persons and increased engagement in HIV care and treatment, thereby reducing the overall number of HIV transmissions occurring as well.

10.3 Risk Benefit Assessment

The risks faced by women and their sexual partners in this study are far outweighed by the benefits to participants and the community, as well as the importance of the knowledge to be gained. Given the public health importance of achieving higher uptake of HIV testing among high-risk populations –

particularly women and their sexual partners, who generally have lower access to prevention services – it is vital to find effective new strategies that can be used to promote testing and identify HIV-positive persons unaware of their HIV infection. The knowledge gained from this study is particularly relevant at a time when countries in Africa are actively developing HIV self-testing policies and seeking optimal ways to scale-up HIV self-tests. Our study will also provide information on the effectiveness of secondary distribution of HIV self-tests by women as a strategy to *reduce the risk of HIV acquisition* among high-risk women by facilitating safer, more informed sexual decision-making. This is an important contribution to the HIV prevention knowledge base since women with multiple partners face extremely high risks of HIV infection and there is an urgent need to interventions that can prevent new infections in this key population.

10.4 Informed Consent Process / HIPAA Authorization

Written informed consent will be obtained from all participants in the main study and qualitative interviews by trained research assistants. The research assistants will find a private place and provide the potential participant with a paper consent form (see Informed Consent document attached). The research assistants will carefully explain the nature and purpose of the study to each potential participant, potential risks and benefits, compensation for participation, and will describe the two study groups to which participants will be randomized. The consent process will be offered in English, Kiswahili, or Dholuo (as per the participant's preferences). Our study team has prior experience in obtaining informed consent for research and clinical trials within the cultural context of in Kenya. The informed consent procedure has been designed to maximize understanding of potential risks. Participants will be told that they may decline to participate at any point. The consent form must be version controlled and approved by the IRB at the University of Pennsylvania and in Kenya. Written informed consent must be obtained before any study procedures can occur. In the event that a participant is illiterate, an impartial witness of the participant's choice must be present during the consenting process and can document the participant's consent. All participants will be given one copy of the signed consent form to take home for further review, if desired.

10.4.1 Alterations to Typical Consent Process (only include if applicable)

10.4.1.1 Waiver of Consent

None

10.4.1.2 Waiver of Written Documentation of Consent

We are requesting a waiver of writted documentation of consent in order to verbally screen women for the main study. A standardized verbal consent form (see attached) will be read and verbal consent obtained before the interviewer begins the screening process. This verbal consent form includes consent to ask sensitive questions and perform a rapid HIV test. We are requesting a waiver of written consent since documentation of consent to screen would be the only written record linking the subject and the research for those women who do not later enroll in the study, presenting an unnecessary risk of breach of confidentiality. In the proposed verbal screening consent form, we will collect no identifying information that could be used to link a participant with her responses to the screening questions, or her HIV results. All women who successfully complete screening and are interested in the study will complete the full written consent before beign enrolled.

11 Study Finances

11.1 Funding Source

This study is financed through two grants from the US National Institute of Mental Health. This study received initial funding in September of 2016. A supplemental grant was awarded in July of 2017.

11.2 Conflict of Interest

All University of Pennsylvania Investigators will follow the University of Pennsylvania Policy on Conflicts of Interest Related to Research.

11.3 Subject Stipends or Payments

Each participant attending an in-person visit with the study staff, including the screening/baseline visit and each 6-monthly follow-up (6,12,18,24 months) will receive Kenyan shillings (KES) 300 as compensation for the time to participate in study procedures. An additional amount up to KES 200 will be provided as reimbursement for transportation to the study venue. Refreshments will be provided during the screening/baseline visit.

12 Publication Plan

Findings from this study will be published in peer-reviewed journals and presented at scientific conferences. There is no projected impact on publication or presentation plans.

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14 Attachments

Attached to this application for ethics review are the following documents:

- Consent Forms
  - Main Study ICF (3 languages)
  - Verbal Screening ICF (3 languages)
- Survey Instruments
  - Baseline Questionnaire (3 languages)
  - SMS Women Questionnaire (3 languages)
- Participant Instruction Sheets
  - HIVST Instructions (3 languages)
  - Vaginal Swab Instructions (3 languages)
  - Referral Voucher (Control)
  - Confirmatory Testing Card (Intervention)
- Previous Approval Letters
  - University of North Carolina at Chapel Hill
  - Maseno University
- Personnel Biosketches and Ethics Training Certificates
- DSMB charter
- IPV Reporting Log (Adverse Event Reporting)

15 Appendices

15.1 Table 1: Schedule of Aim 1 Study Procedures

Study Phase:	Screening/Baseline	Monthly Distribution	Monthly Text Message Surveys	6-Monthly Follow-up
Assess Inclusion Criteria	X			
Informed Consent	X			
HIV rapid test	X			X
STI test	X			X
Fingerprint Verification	X	X		X
HIVST demonstration (intervention group only)	X	*As Needed*		X
Distribution counseling message given	X	*As Needed*		X
HIVST or referral cards given to participants	X	X		X
Survey questionnaire administered	X		X	X
IPV risk assessed	X	*Self-reported*	X	X