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Mailman School of Public Health

Statistical Center for
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HEALTHY BUSINESS

"A DROP THAT COUNTS ...
..the number of new HIV infections"

Ministry of Health

Swaziland HIV Incidence Measurement Survey (SHIMS)

First Findings Report
November 2012

Shims
Swaziland HIV Incidence Measurement Survey

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Under the leadership of the Ministry of Health in the Kingdom of Swaziland (MOH), the Swaziland HIV Incidence Measurement Survey (SHIMS) was implemented through the technical and implementation support of the US Centers for Disease Control and Prevention (CDC) and ICAP-Columbia University. Four Principal Investigators, based at the MOH, CDC, and ICAP, guided protocol development and were responsible for overall technical oversight of the study. Financial support was provided under US government (USG) PEPFAR funding.

The Principal Secretary of the MOH established the SHIMS Steering Committee to advise the Principal Investigators and study team on survey implementation. The Steering Committee is comprised of technical experts and representatives from a wide array of in-country stakeholders.

Laboratory support was provided by the National Reference Laboratory (NRL), the International Lab Branch (ILB) of CDC, and ICAP-Columbia University. Technical and implementation support around data collection and data processing and analysis, was provided by Epicentre/Maromi and SCHARP respectively. Other key stakeholders include: the Central Statistics Office (CSO), NERCHA, UNISWA, non-governmental HIV/AIDS implementing partners, and the Central Statistic population.

In this regard, the Ministry of Health greatly appreciates the technical, financial and implementation support that has been provided towards achieving this significant goal in the national response. As a Ministry we believe in strategic partnership as it is stated as one of the guiding principles in the National Health Policy. SHIMS is indeed a demonstration of such partnership in action. It is our belief that this is just a beginning of some great work in the area of Public Health research in the Kingdom of Swaziland.

Appreciation is also forwarded to all the Swazi citizens that have participated in the SHIMS survey. Without their commitment to the survey, this great wealth of knowledge about our epidemic would not have been possible. This has further confirmed that in the Kingdom of Swaziland, the response to HIV and AIDS is indeed a collective responsibility "*yindzaba yetfu sonkhe*".

Hon Benedict Xaba
Minister for Health

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ACRONYMNS

Ab	Antibody
Ag	Antigen
AIDS	Acquired Immunodeficiency Syndrome
ART	Antiretroviral Therapy
ARV	Antiretroviral
BED CEIA	BED Capture Enzyme Immunoassay
BED EIA	BED Enzyme Immunoassay
CAP-CTM	Cobas ® Ampliprep/ Cobas ® Taqman ®
CDC	Centers for Disease Control and Prevention (USA)
CI	Confidence Interval
CRF	Case Report Form
CSO	Central Statistics Office
EA	Enumeration Area
EDTA	Ethylenediaminetetracaetic acid
EIA	Enzyme Immuno-Assay
GKOS	Government of the Kingdom of Swaziland
GPS	Global Positioning Systems
HAART	Highly Active Antiretroviral Therapy
HIV	Human Immunodeficiency Virus
HIV-1	Human Immunodeficiency Virus Type 1
HTC	HIV Testing and Counseling
ICAP	International Center for AIDS Care and Treatment Programs
ILB	International Laboratory Branch (Centers for Disease Control, USA)
IRB	Institutional Review Board
LAg-Avidity EIA	Limiting-Antigen Avidity Enzyme Immunoassay
MACRO	MACRO International Incorporated
MC	Male Circumcision
MOH	Ministry of Health
NAAT	Nucleic Acid Amplification Test
NAT	Nucleic Acid Detection Test
NERCHA	National Emergency Response Council
NRL	National Reference Laboratory
OD-n	Normalized optical density
PEP	Post-exposure Prophylaxes
PEPFAR	President's Emergency Plan for AIDS Relief
PITC	Provider-initiated opt-out HIV testing and counseling
PMTCT	Prevention of Mother to Child Transmission
PTID	Participant Identification Number
QA	Quality Assurance
QC	Quality Control

rLDR-M	A multi-subtype recombinant protein that covers the immunodominant region (IDR) of gp41 of HIV-1 group M
RT-PCR	Reverse transcription-polymerase chain reaction
SCHARP	Statistical Center for HIV/AIDS Research & Prevention
SDHS	Swaziland Demographic and Health Survey
SEC	Scientific and Ethics Committee
SHIMS	Swaziland HIV Incidence Measurement Survey
T1	Time 1 (the baseline measure timepoint of Cohort 1)
T2	Time 2 (the follow-up measure timepoint of Cohort 1)
UNAIDS	United Nations Joint Programme on HIV/AIDS
UNISWA	University of Swaziland
USAID	United States Agency for International Development
USG	United States Government
VCT	Voluntary Counseling and Testing
WHO	World Health Organization

EXECUTIVE SUMMARY

The Swaziland HIV Incidence Measurement Survey (SHIMS) is a nationally representative survey aimed at assessing the impact of *Soka Uncobe* in the context of other national HIV prevention programs. SHIMS is the first measurement of directly-observed new HIV infections in Swaziland. This survey was led by the Ministry of Health in collaboration with PEPFAR and CDC and with ICAP as an implementing partner. The survey coincided with the Government of Swaziland's expansion of HIV prevention services such as HIV counseling and testing, condom use, antiretroviral treatment, and male circumcision. This report describes data collected from a cross-sectional, pre-cohort survey and from a longitudinal cohort which was conducted prior to the expansion of *Soka Uncobe*. It describes a national HIV prevalence estimate, a prevalence measure of male circumcision, and a directly observed HIV incidence rate. It also describes the results of the validation of three laboratory assays (NAAT, BED EIA, and LAg-Avidity EIA) for the estimation of HIV incidence.

From December 2010 through June 2011, 14,927 households were selected for study participation from a representative sample of 575 enumeration areas (EAs). EAs were selected using a probability proportional to size sampling plan. A total of 12,603 households participated. A total of 10,976 men and 13,508 women were eligible for study participation; 7129 and 11,040 men and women, respectively, who were 18-49 years old agreed to participate in a nationally-representative, cross-sectional pre-cohort survey.

The survey identified a national HIV prevalence of 31% among adults 18-49 years. A reanalysis of the 2006-2007 SDHS data, when restricted to 18-49 years of age, similarly identified a prevalence of 31% [SDHS 2007]. It appears that the overall HIV prevalence in Swaziland has remained nearly the same over the past five years. The expansion of HIV prevention, care and treatment services since 2006 is likely a significant factor for this possible stabilization. Peak prevalence among women was 54% in the 30-34 year age group. Among men, peak prevalence was 47% in the 35-39 year age group.

Nearly two-thirds (63%) of people testing HIV-positive during the pre-cohort survey were already aware of their HIV status. Prior knowledge of HIV status differed by gender. Over two-thirds (68%) of HIV-positive women compared to half (50%) of HIV-positive men knew their HIV status. Continued efforts to expand HIV testing and counseling services are needed and should consider strategies to increase testing among men.

The prevalence of male circumcision during the pre-cohort survey was 16% among 18-49 year old men. While the prevalence of male circumcision in Swaziland remains low, it has doubled in the past 5 years from 8% to 16%. Circumcised men in Swaziland do not report riskier sexual behavior and are more likely to have been tested for HIV, compared to uncircumcised men. HIV prevalence was significantly lower in circumcised men, reinforcing the evidence for a protective effect of male circumcision provided as a population-level (non-research) intervention.

Eligible persons who tested HIV-negative during the pre-cohort survey were asked to participate in a longitudinal cohort to measure HIV incidence. Approximately six months after the pre-cohort survey, cohort participants were re-visited to complete a follow-up survey interview and to receive HIV rapid testing. The cohort data provided a nationally representative, directly-observed HIV incidence rate. The cohort data also allowed for a comparison of directly observed incidence and three laboratory-derived incidence estimates using LAg-Avidity EIA, BED EIA, and NAAT.

Among the 12,025 persons eligible for cohort participation, 11,927 HIV-uninfected pre-cohort participants (5322 men and 6605 women) enrolled in the incidence cohort.

Adult HIV incidence in Swaziland is high at 2.4%. Incidence among men was 1.7% and was almost twice as high among women at 3.1%. Incidence peaked at 3.1% among men, 30-34 years. Incidence peaked among two age groups among women, 4.2% in women 20-24 years and 4.2% in women 35-39 years. Incidence was higher among women who were not married nor living with a partner (4.1%), those with 2 or more partners (9.6%) (accounting for only 3% of the study population), and reporting pregnancy (4.4%). Incidence among men was higher in those reporting inconsistent condom use (2.7%) and those with 2 or more partners (3.2%). HIV incidence was also higher among uncircumcised men (1.7%). In both men and women, being unaware of a partner's HIV status was a significant risk factor. Risk of HIV acquisition was nearly four and three times greater among men and women, respectively, who did not know their partner's HIV status. HIV prevention programming must consequently emphasize strengthening of HIV-positive person's disclosure skills and increased partner/couple's HIV testing and counseling.

Three different laboratory assays, LAg-Avidity EIA, BED EIA and NAAT, were validated for the purpose of estimating HIV incidence in a cross-sectional population and compared to directly observed incidence, the current gold standard measure. Incidence estimates obtained using LAg-Avidity EIA (2.6%) and NAAT (2.6%) compared favorably to directly observed incidence (2.4%). These results suggest that these assays may be used to accurately calculate HIV-1 incidence estimates in cross-sectional populations, including those with substantial ART use. In contrast, the incidence estimate derived from the BED assay (13.1%) was not comparable to directly observed incidence, indicating that the BED assay overestimates incidence by a large margin and is not appropriate for use in populations with high ART coverage. While NAAT is not a practical laboratory method for measuring incidence due to cost, the LAg-Avidity assay shows promise as a cost-effective approach to estimate HIV incidence for the purposes of surveillance, prevention, and impact evaluation of prevention programs. Additional field evaluations of the LAg-Avidity EIA are ongoing in other country settings to measure misclassification of long-term infections as recent due to ART use, subtype differences and other high disease prevalence.

BACKGROUND

Context

The HIV epidemic in Swaziland was declared a national disaster in 1999. It is the Kingdom's leading public health concern. Swaziland has the highest HIV prevalence and incidence in the world estimated at 26% [CSO 2008] and 2.66% [UNAIDS 2010] respectively among 15-49 year olds. Unprotected heterosexual transmission accounts for 94% of all new HIV infections [MOH 2009]. Moreover, risk of perinatal transmission is high with over two-fifths (41%) of pregnant women testing HIV-positive [MOH 2011]. As a generalized epidemic, HIV has affected all geographic, social, and economic strata in society.

In response to the severity of the HIV epidemic, national efforts have emphasized the scale-up of a combination prevention approach to HIV, including HIV testing and counseling, social and behavior change communications, HIV care and ART services, and PMTCT. In addition, because several randomized clinical trials showed a 60% reduction in HIV heterosexual acquisition in circumcised compared to uncircumcised men [WHO/UNAIDS, 2007], the MOH launched a male circumcision campaign in 2011 known as "*Soka Uncobe"* – meaning "conquer through circumcision." With only eight percent of Swazi men being circumcised [CSO 2008], this campaign aimed to increase the uptake of voluntary medical male circumcision (MC) to 80% coverage among HIV-uninfected men, ages 15-49 years.

Using a longitudinal cohort study design, direct follow-up of a cohort of HIV-seronegative persons is the "gold standard" for determining incidence. This approach, however, is limited by high costs, time intensive methods, recruitment bias, and potential modification of participants' behaviors after enrollment in the study. With these limitations, laboratory-based assays that can accurately measure HIV-1 incidence in cross-sectional cohorts are critically needed to monitor the epidemic and to measure the effectiveness of combination prevention strategies. Several laboratory-based assays, such as NAAT, BED EIA and LAg-Avidity EIA, are used to measure HIV-1 incidence but each has limitations [Appendix A]. These laboratory methods seek to exploit the biological differences between recently infected and chronically infected individuals.

Study Purpose and Objectives

The Swaziland HIV Incidence Measurement Survey (SHIMS) was initiated in 2010 to assess the population-level impact of *Soka Uncobe* in the context of other HIV prevention initiatives. SHIMS is a multi-phased study that measures HIV prevalence and incidence before and after the scale-up of these interventions.

The accurate measurement of HIV incidence (i.e. the rate of new infections that develop during a specified period of time) is critical to informing national prevention strategies and for identifying high risk populations in greatest need of HIV prevention services. Incidence estimates can also be used to measure the effectiveness of prevention programs to reduce the number of new infections in the given population. Prior incidence estimates in Swaziland were derived from mathematical models which are based on previous rounds of HIV prevalence measurements. Incidence estimates derived from these models do not provide real-time information on the HIV epidemic needed to make program decisions and include many assumptions of survival and mortality that may not be applicable to Swaziland. A key feature of SHIMS is the direct observation of HIV seroconversions within a nationally representative cohort of men and women, 18-49 years old. Through use of direct observation of seroconversions, a more accurate HIV incidence measure can be estimated. Additionally, SHIMS provides an updated HIV prevalence which can be compared to the prior estimate derived in 2007 [CSO 2008].

Study Objectives

Primary objectives

1) To estimate HIV incidence rates in a household-based, nationally representative sample of men and women ages 18-49, before and after the scale up of *Soka Uncobe* in the context of other the HIV combination prevention programs.
2) To estimate the HIV incidence rates among circumcised and uncircumcised men, after *Soka Uncobe*, in a household-based nationally representative sample,
3) To compare the directly observed, longitudinal HIV incidence with cross-sectional laboratory-based incidence estimates derived using the LAg-Avidity EIA, BED EIA, and NAAT.

Secondary objectives

1) To examine the association of baseline demographic characteristics and HIV incidence and prevalence in a household-based representative sample of men and women before and after completion of *Soka Uncobe*.
2) To determine the prevalence of circumcision among a household-based representative sample of men before and after completion of *Soka Uncobe*.
3) To estimate HIV prevalence rates among men and women in a household-based representative sample of men and women before and after completion of *Soka Uncobe*.

This report describes data collected from the pre-cohort survey and the baseline longitudinal cohort which was conducted prior to the expansion of *Soka Uncobe*. It describes an updated national HIV prevalence estimate, a prevalence measure of male circumcision, and a directly observed HIV incidence rate. It also describes the validation of three laboratory-based methods, LAg-Avidity EIA, BED EIA, and NAAT, for estimating HIV incidence in a cross-sectional population.

METHODS

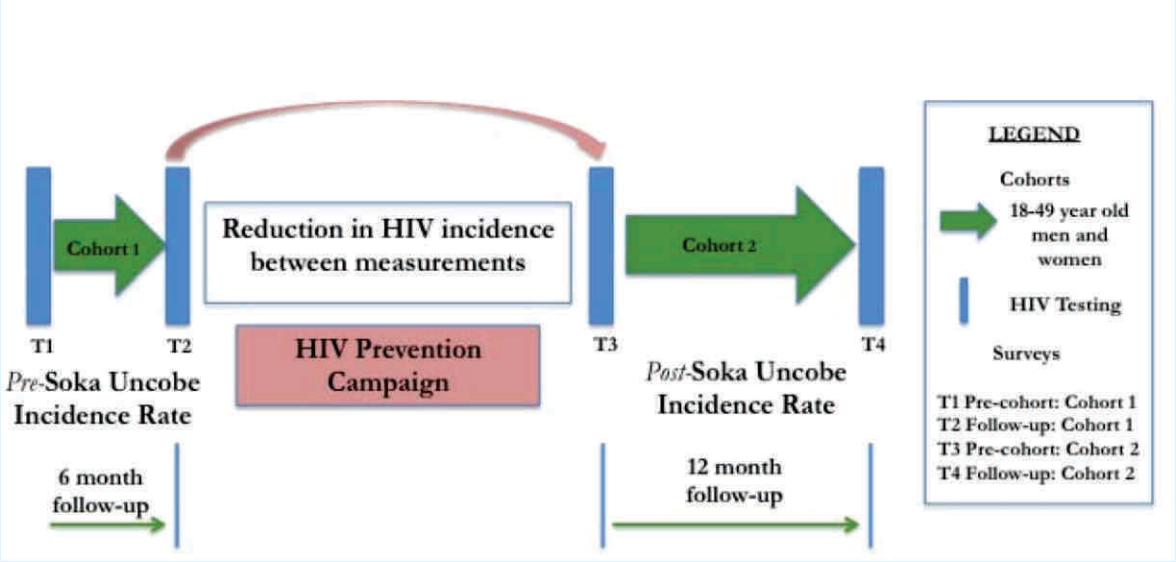
Subjects and Setting

From December 2010 through June 2011, participants were enrolled in a pre-cohort survey throughout the four regions of Swaziland. Inclusion criteria included residing or having slept the night before in the selected household, reported age between 18-49 years, agreement to study procedures, ability to provide consent and answers to survey questions in either English or siSwati. Among the survey participants, a subset of HIV-uninfected men and women were enrolled to participate in a longitudinal cohort. Participants were required to meet the eligibility criteria for the pre-cohort survey, to be confirmed HIV-negative by Swazi rapid HIV test algorithm, were willing to adhere and undergo all study visits and procedures, and were able to provide consent and answers to the study questionnaires in either English or siSwati. Persons were excluded if they stated intent to leave Swaziland indefinitely for work or any other reason in the following six months.

Study Design

SHIMS is a serial cohort study design with two independently selected, household-based, nationally representative longitudinal cohorts [Figure 1]. The first longitudinal cohort, Cohort 1, identifies the population-level, baseline HIV incidence rate over a six-month period, prior to *Soka Uncobe* and the scale-up of other combination prevention services. The second longitudinal cohort, Cohort 2, will identify the population-level HIV incidence rate over a 12-month period, after *Soka Uncobe* and scale-up of other combination prevention services.

Figure 1: SHIMS Study Design



At Time 1 (T1), a pre-cohort survey was conducted among a nationally-representative cross-sectional group of men and women, ages 18-49. Self-reported male circumcision prevalence was obtained during the pre-cohort survey interview. Home-based, HIV counseling and testing was also conducted and provided a pre-cohort HIV prevalence measure. Pre-cohort survey participants who tested at T1 as HIV-uninfected were recruited to participate in Cohort 1. At Time 2 (T2), approximately six months after recruitment, a follow-up survey was conducted among Cohort 1 participants. Home-based, HIV counseling and testing was also conducted and provided a HIV incidence rate among persons who tested HIV-positive at T2. A similar set of procedures will be conducted with Cohort 2 at Time 3 and 4.

Sampling Strategy

Participant sampling entailed a two-stage sampling scheme. In stage one, a representative sample of 575 enumeration areas (EA) were selected using a probability proportional to size sampling plan [Appendix B]. In stage two, all households in the 575 EAs were enumerated using Global Positioning Systems (GPS) receivers to record the geographic coordinates of each household. A random selection of 26 households was identified from each EA. A census of household residents was conducted in each of the randomly selected households. Household members meeting study inclusion criteria were recruited for participation in the pre-cohort survey at T1.

Sample size calculations were developed to achieve 80% power to detect a 45% reduction in male HIV incidence from before and after *Soka Uncobe*. Assuming a male HIV incidence rate of 2.0 per 100 person-years prior to *Soka Uncobe* [UNAIDS 2009], the targeted Cohort 1 male sample size was 5832.

To identify and enroll 5832 men, the following assumptions were made to estimate the number of households needed in the sample: 1) a refusal and non-contact rate of 18% of sampled households, 2) one male participant recruited into the study from every 2 households, 3) 0.5 years of follow-up time per participant in the longitudinal cohort, 4) a 10-15% loss-to-follow-up rate, and 5) a design effect of 1.25. These assumptions resulted in a sample of 14,884 households [Appendix C]. Among a sample of 14,884 households, it was estimated that 7106 women would be recruited for Cohort 1 [Appendix D].

Survey Data Collection

Survey teams were recruited and trained in tandem with the roll-out of field work. Trainings included modules on interviewer techniques, conducting informed consent for study participation, use of survey instruments, HIV testing and counseling, and human research ethics.

Survey teams approached sampled households to identify the head of household and to seek his/her permission to conduct a census of household members. The following definitions were applied:

> Household: a group of people who share a physical structure such as a compound or homestead and who consume or make some contribution to food and other shared household resources.
> Head of household: the person who is recognized within the household as being the head.
> Household member: an individual who: 1) has been sharing a physical structure such as a compound or homestead and who has been consuming or making some contribution to food and other shared household resources; this can include guests who

stayed at the household the night before; and 2) is listed by the head of household as being a household resident or overnight guest the prior night.

All household members who satisfied study inclusion criteria were asked about their interest in study participation, and if interested, were asked to provide informed consent for their participation. If an eligible household member was not at home, at least three follow-up visits were conducted to obtain contact.

Standardized questionnaires were administered at T1 [Appendix E] and at T2 [Appendix F]. The questionnaires included interviewer-administered questions about demographics, and clinical and behavioral factors, including sexual history and self-reported male circumcision status. Male participants were shown illustrations of a circumcised and an uncircumcised penis to help indicate their circumcision status [Appendix G]. Blood draws were administered by a study nurse or phlebotomist to conduct home-based, HIV counseling and rapid testing. At T2, prior to initiating data collection, field teams verified the identity of the participant using demographic data collected during the pre-cohort survey and use of national identification cards and/or witness verification.

At T1, study staff obtained locator information from all pre-cohort survey participants. Additionally, pre-cohort survey participants who tested HIV-negative were asked about their interest to enroll in Cohort 1. Study staff obtained informed consent for Cohort 1 participation among eligible persons who expressed interest.

To help ensure high study retention, Cohort 1 participants received an interim phone call three months after enrollment to confirm residence and other contact information. A second phone call was conducted six months after enrollment for appointment scheduling. Appointment information made during the 6-month post-baseline call was entered into a secure database and used to generate appointment reports for use in the field. Additionally, at least three visit attempts were made to complete Cohort 1 follow-up interviews.

HIV Testing

Sample Collection and Processing

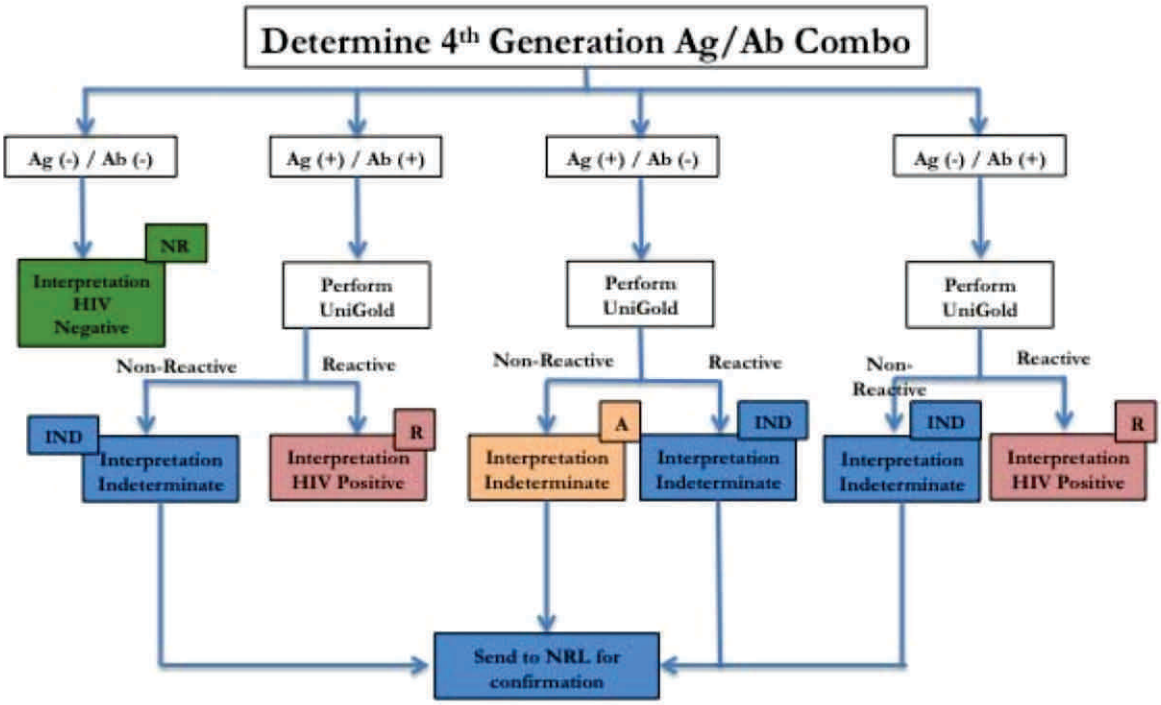
Blood samples were collected by venipuncture using 2ml and 9ml ethylenediaminetetracaetic acid (EDTA) vacutainer tubes. Each participant was assigned a unique participant identification number (PTID). Each EDTA tube and study form was labeled with a barcode sticker containing the PTID to ensure confidentiality, to enable linking between HIV test results and interviewer-collected data, and to reduce transcription errors. Blood specimens were transported to the National Reference Laboratory (NRL) within 24 hours of being drawn from the participant. Cold chain maintenance was ensured throughout the transportation process through the use of cooler boxes and cold packs. Sample integrity was routinely monitored between transport points. Standard biohazard safety procedures were followed in both field specimen collection and transport.

Receipt of the whole blood specimens at the NRL were logged using the Laboratory Data Management System (LDMS) by Frontier Sciences (Buffalo, NY); HIV test results were recorded in LDMS and freezer storage of participant specimens were also maintained by this software. Whole blood from the 9ml vacutainer was processed by centrifugation at 3000 rpm for 20 minutes. Plasma was separated and 1.2ml plasma aliquots were created and stored in ultra-freezers at -80°C following standard safety procedures. All plasma aliquots were labeled with the corresponding bar-coded PTID.

HIV Rapid Testing

At least 50 µL of whole blood from the 2 ml vacutainer was used for HIV rapid testing in the household while the remaining volume from the 2 ml tube was used for re-testing at the NRL in accordance with quality assurance procedures. Only the 2 ml tube was used for HIV rapid testing, while the 9 mL blood tube was used for archiving the sample and for additional testing. Rapid HIV testing was performed using Determine™ HIV-1/2 Ag/Ab Combo and Uni-Gold™ HIV Test, following a modified version of the national testing algorithm [Figure 2]. In an effort to identify acute HIV infections, the Determine Combo test was used which detects both HIV antibody and p24 antigen, the latter being a marker of acute infection. Pre and post counseling for HIV testing was conducted according to national HIV testing and counseling guidelines.

Figure 2: SHIMS Testing Algorithm

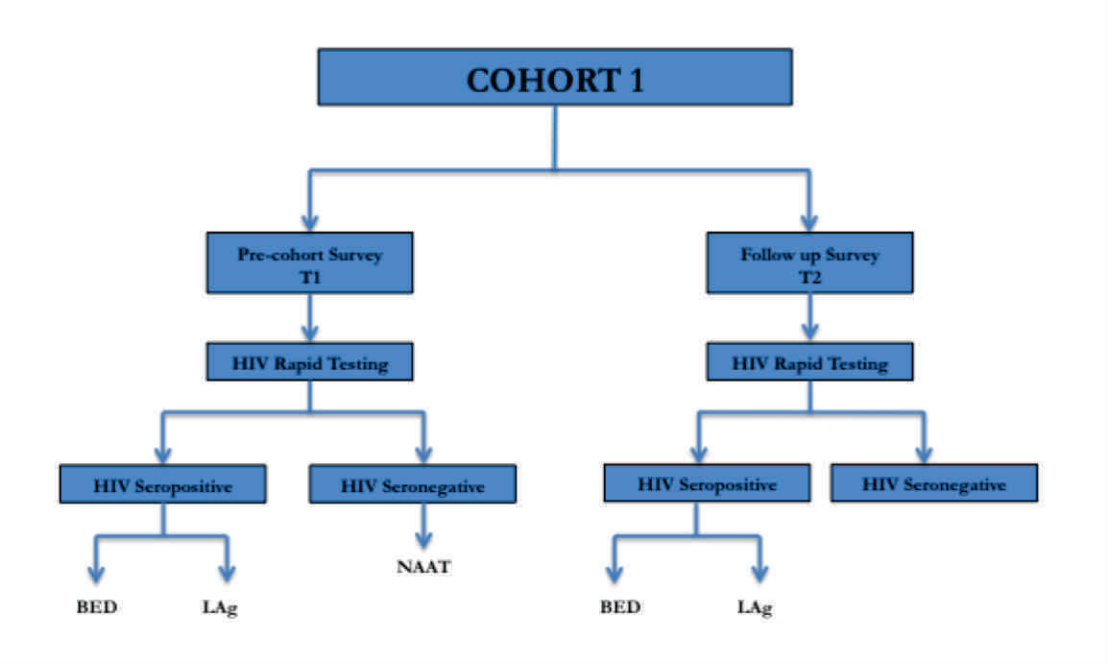


Laboratory Assays

Specimens collected during the pre-cohort survey at T1 were de-linked and de-identified for incidence assay testing. Plasma samples determined to be HIV-1 seropositive by rapid HIV testing from the cross-sectional survey (T1) were tested by the BED and LAg-Avidity assays (Sedia Biosciences, Portland, OR) for classification of recent or long-term infection [Figure 3]. CDC ILB staff provided training on the two HIV-1 incidence assays and all laboratory testing was performed at the NRL. All results from the laboratory testing were managed and stored in a dedicated Excel data management file developed by CDC Atlanta. There was no manual data entry to reduce any chance of data management error.

The testing procedure for both BED and LAg-Avidity EIAs involved testing each HIV seropositive specimen during the initial screening, followed by confirmatory testing in triplicate for specimens below 1.2 and 2.0 ODn, respectively. The BED cutoff for recent classification is 0.8 ODn, while the LAg-Avidity cutoff is 1.0 ODn. All specimens with final ODn values below those cutoffs were classified as recent infection, while those equal or greater than those cutoffs were classified as long-term infections. Individuals with low viral load (<1000 copies/mL) and self-reported ART use were classified as long-term infections. Total number of recent infections detected by BED and LAg assays were adjusted for these long-term infections. To ensure quality testing, quality control (QC) specimens were included in each run and analyzed for any discrepancies with expected values. Any invalid runs were repeated and concordance between initial and confirmatory runs was assessed as an additional measure of quality.

Figure 3: SHIMS Incidence Testing Algorithm



All HIV-1 plasma samples determined to be HIV-1 seronegative by rapid HIV testing during the pre-cohort survey were tested by pooled nucleic acid amplification test (NAAT). Ten plasma samples were pooled, and each pool was tested using the COBAS® Ampliprep/ COBAS® Taqman® HIV-1 test, version 2.0 in vitro nucleic acid amplification test. Positive pools were deconstructed and fresh plasma samples from the pool were tested as individual samples using the same in vitro nucleic acid amplification test to detect acute HIV-1 infection. Roche diagnostics provided a one-week training on operation of the CAP-CTM system prior to NAAT pooling. Each run had internal QC to detect failed runs and all instruments were validated prior to testing study specimens. All specimens with detectable nucleic acid were classified as acute infection. To ensure these individuals had not seroconverted, the specimens were retested by HIV rapid tests and were all found to be seronegative, indicating true acute infection.

The final number of recent infections by the BED and LAg-Avidity EIAs, along with the number of acute infections determined by NAAT, were used in the WHO recommended equation for incidence estimation using laboratory assays . The annualized incidence estimates were

calculated using reported window periods for both the BED (197 days [95% CI 173-220], Parekh 2011) and LAg-Avidity EIAs (141 days, [95% CI 119-160], Duong 2012). The window period for NAAT was estimated to be 15 days since there was no validated window period for this laboratory method for incidence estimation.

Quality Control and Quality Assurance

Quality control of HIV test kits was performed weekly by the survey team counselors who conducted the HIV rapid testing in the field. Counselors underwent multiple rounds of proficiency testing during both pre-study training and study implementation. Counselors demonstrating inadequate proficiency were provided additional training until proficiency was achieved. Additionally, the first 50 samples collected by each counselor underwent re-testing by NRL laboratory scientists to ensure accuracy of field-based HIV rapid testing. Repeat HIV rapid testing by NRL staff was reduced to testing every 20th sample from each tester, if there were no inconsistencies between the field HIV test result and the repeat HIV testing result in the first 50 samples. NRL staff also underwent training before conducting laboratory procedures.

Good laboratory practices were followed for all laboratory testing at NRL. Standard operating procedures (SOPs), as well as quality control (QC)/quality assurance (QA) procedures, were implemented. Procedures were established for performing and documenting the quality of a specimen, including storage and transport conditions, monitoring of equipment and temperatures, and function indicators. At the NRL, storage facilities consisting of refrigerators (4°C), freezers (20°C), and ultra-freezers (-80°C) were available for the short term and long term storage of specimens. An effective QA/QC system was maintained to ensure integrity of the specimens at the laboratory site.

Data Management

All completed case review forms (i.e. study instruments) were reviewed by field staff for completeness, accuracy, and legibility prior to leaving participant homesteads. An additional quality review check was conducted by survey team supervisors. Case review forms (CRF) data was uploaded into the study database using optical scanning software (DataFax) on an on-going basis throughout field implementation. All paper copies of files were stored in locked filing cabinets accessible only by study staff. Electronic data quality reports were reviewed and corrected by the study team. The study database was accessible to designated MOH and SHIMS study staff through a secured website portal.

At the NRL, the LDMS database was encrypted and password protected at the database and network levels. All paper copies of files were stored in locked filing cabinets accessible only by study staff. Specimens were delinked and de-identified so that no personal information was accessible.

Data capture for incidence assays laboratory testing used customized Excel spreadsheets which were developed for each of the assays to support data management and quality assurance (e.g. run validation, controls QC and calculation of ODn) using embedded formulas and macros. All files were backed up on PC and the local CDC network as well at the testing sites PCs using CDs.

Relevant data (example: PTID, demographic data, date of collection, HIV self-reported status, ARV self-reported status, GPS location) were extracted by SCHARP to generate a SHIMS master data file. All the laboratory testing results were sent to the CDC ILB where the files were reviewed, cross-checked by a supervisor, backed-up, and then merged with a SHIMS master data file for analysis according to the demographic data and ART use. Data files were retained in a secure folder on the ILB CDC site. Ownership of the data resides with MOH. The study will

follow the record retention policy of the MOH and SHIMS protocol, where no policy is stated records will be retained for a minimum two years after close-out of the SHIMS study.

Statistical Analysis

Poisson regression was used to estimate sero-incidence rates in Cohort 1. Proportional hazards regression was used to model risk factors for HIV seroconversion. Participants who tested as having acute HIV infection at T1 were censored from the incidence analysis. Independent variables included demographic, behavioral and biomedical characteristics. All statistical analyses require use of sample weights [Appendix H]. Separate models of risk factors for seroconversion were run for men and women. Observed incidence was calculated as number of incident infections/100 person-years (PY).

Sample weights were developed to account for the probability of selection in the two-stage cluster sampling procedure, non-response rates by age and gender, and adjustment to match the 2007 Swaziland Census demographics on age, urban-rural residence, and region. Sample weights were developed collaboratively by the Central Statistics Office (CSO) and SCHARP in order to produce nationally-representative estimates.

Ethical Considerations

Ethical approval for the study was obtained from the Swaziland Scientific and Ethics Committee (SEC), Columbia University Institutional Review Board (IRB) and Centers for Disease Control and Prevention (CDC) IRB before initiation of field work. All study participants were informed about the purpose and procedures of the study. Participants were asked to sign a consent form prior to initiation of any data and sample collection. For an illiterate participant, a witness chosen by the participant observed the consent process to ensure comprehension and non-coercion of study participation. The right to refuse was also explained to participants. Study participation was restricted to persons of legal age to consent for research participation (18 years).

Interviews were held in a private area chosen by the participant. Study staff underwent human research ethics training. Staff was also required to sign a confidentiality code. Names were not included on any study instruments. Only Participant ID numbers (PTIDs) assigned to each participant were recorded on study questionnaires and on labels used for blood sample collection tubes. HIV testing procedures were conducted according to national guidelines, including both pre and post-test counseling, as well as formal referral to health care services for persons testing either HIV-positive (e.g. HIV care) or HIV-negative (e.g. further preventive services), as needed. Study data were maintained in electronic databases which were password secured.

RESULTS

Study Participation

Overall, 14,927 households were selected for participation in the pre-cohort survey. Among them, 12,603 households participated, resulting in a household response rate of 94.4% [Table 1]. Household response rates did not differ substantially between urban (94.3%) and rural residence (94.4%). A total of 13,508 eligible women and 10,976 eligible men were identified among the participating households. Over four-fifths (81.7%) of eligible women and two-thirds (65.0%) of eligible men agreed to participate in the survey. Urban areas had higher participation rate for women and men [Table 1].

Table 1. Household and Individual Response Rates for Pre-cohort Survey, Ages 18-49

	Residence		
	Urban	**Rural**	**Total**
Household interviews			
Households selected	4215	10712	14927
Households occupied	3739	9613	13352
Households /no contact made	476	1099	1575
Households interviewed	3527	9076	12603
Household response rate[1] (%)	94.3%	94.4%	94.4%

Men and women age 18-49	Men	Women	Men	Women	Men	Women
Number of eligible	3008	3743	7968	9765	10976	13508
Number of eligible interviewed	2065	3194	5064	7846	7129	11040
Eligible response rate[2] (%)	68.7%	85.3%	63.6%	80.3%	65.0%	81.7%

[1] Household response rate = Households interviewed/households occupied x 100
[2] Eligible women (or men) response rate = Number of eligible women (or men) interviewed/number of eligible women (or men) x 100

A total of 24,484 men and women were eligible for the pre-cohort survey [Table 2]. Three-quarters (74.2%) of eligible persons agreed to participate. Differences in the age distribution of participants and non-participants were minimal. Differences were also few by urban/rural residence and region. Men, however, were more likely to refuse study participation; 60.9% of eligible men did not participate in the pre-cohort survey, compared to 39.1% of eligible women.

Table 2. Comparison of Characteristics of-SHIMS and Non-SHIMS Participants in Pre-cohort Survey, Ages 18-49

	Non-SHIMS participants	SHIMS participants	Total
Total	6315/24484 (25.8%)	18169/24484 (74.2%)	24484/24484 (100.0%)
	N=6315	N=18169	N=24484
Age			
18-19	647 (10.2%)	2216 (12.2%)	2863 (11.7%)
20-24	1495 (23.7%)	4795 (26.4%)	6290 (25.7%)
25-29	1369 (21.7%)	3657 (20.1%)	5026 (20.5%)
30-34	1001 (15.9%)	2575 (14.2%)	3576 (14.6%)
35-39	784 (12.4%)	1874 (10.3%)	2658 (10.9%)
40-44	607 (9.6%)	1622 (8.9%)	2229 (9.1%)
45-49	412 (6.5%)	1430 (7.9%)	1842 (7.5%)
Gender			
Male	3847 (60.9%)	7129 (39.2%)	10976 (44.8%)
Female	2468 (39.1%)	11040 (60.8%)	13508 (55.2%)
Residence			
Urban	1492 (23.6%)	5259 (28.9%)	6751 (27.6%)
Rural	4823 (76.4%)	12910 (71.1%)	17733 (72.4%)
Region			
Hhohho	1741 (27.6%)	5293 (29.1%)	7034 (28.7%)
Manzini	1802 (28.5%)	5226 (28.8%)	7028 (28.7%)
Shiselweni	1415 (22.4%)	3616 (19.9%)	5031 (20.5%)
Lubombo	1357 (21.5%)	4034 (22.2%)	5391 (22.0%)

Table 3. Weighted Characteristics of Participants in Pre-cohort Survey, Ages 18-49

	Total	Women	Men
Total	18169/18169 (100%)	9842/18169 (54.2%)	8327/18169 (45.8%)
	N=18169	N=9842	N=8327
Age			
18-19	1987 (10.9%)	989 (10.1%)	997 (12%)
20-24	4582 (25.2%)	2488 (25.3%)	2093 (25.1%)
25-29	3604 (19.8%)	1925 (19.6%)	1679 (20.2%)
30-34	2628 (14.5%)	1361 (13.8%)	1267 (15.2%)
35-39	2202 (12.1%)	1208 (12.3%)	993 (11.9%)
40-44	1702 (9.4%)	976 (9.9%)	726 (8.7%)
45-49	1464 (8.1%)	893 (9.1%)	571 (6.9%)
Residence			
Urban	5424 (29.9%)	2967 (30.1%)	2457 (29.5%)
Rural	12745 (70.1%)	6875 (69.9%)	5870 (70.5%)
Region			
Hhohho	5182 (28.5%)	2796 (28.4%)	2387 (28.7%)
Manzini	6090 (33.5%)	3347 (34%)	2743 (32.9%)
Shiselwe	3333 (18.3%)	1856 (18.9%)	1477 (17.7%)
Lubombo	3564 (19.6%)	1843 (18.7%)	1721 (20.7%)
Education[1]			
Did not attend	1174 (6.5%)	634 (6.4%)	540 (6.5%)
Primary	5246 (28.9%)	2911 (29.6%)	2335 (28%)
Secondary	9064 (49.9%)	4999 (50.8%)	4065 (48.8%)
Tertiary	2603 (14.3%)	1253 (12.7%)	1349 (16.2%)
Current marital status[2]			
Not married, ever had sex	7808 (43%)	4104 (41.7%)	3704 (44.5%)
Not married, never had sex	1875 (10.3%)	554 (5.6%)	1321 (15.9%)
Married, living with partner	4923 (27.1%)	2811 (28.6%)	2112 (25.4%)
Married, partner stays elsewhere[3]	2810 (15.5%)	1956 (19.9%)	854 (10.3%)
Married, unknown living situation	307 (1.7%)	250 (2.5%)	57 (0.7%)
Number of partners (past 6 months)[4]			
0	4062 (22.4%)	1793 (18.2%)	2268 (27.2%)
1	12083 (66.5%)	7617 (77.4%)	4466 (53.6%)
2 or more	1884 (10.4%)	372 (3.8%)	1512 (18.2%)

Table 3. Weighted Characteristics of Participants in Pre-cohort Survey, Ages 18-49 (cont.)

Currently pregnant[5]		
Yes	669 (6.8%)	
No	8860 (90.0%)	
Circumcision status[6]		
Circumcised		1374 (16.5%)
Uncircumcised		6631 (79.6%)

[1] Refers to highest level of education ever attended, whether or not that level was completed; # missing = 83(Total) : 45(Women) : 38(Men)
[2] # missing = 448 (Total): 167(Women) : 280 (Men)
[3] Among participants who are currently married or have regular partner
[4] # missing = 141 (Total): 59 (Women) : 81 (Men)
[5] # missing = 312 (Women)
[6] Refers to male participants only; # missing = 323 (Men)

Table 3 provides the weighted distribution of individual participants by selected characteristics (including age, education, marital status and circumcision status). Appendix H provides a comparison of weighted versus unweighted distributions.

All data presented in forthcoming sections incorporate the weighted distribution of individual participants (see section: *Statistical Analysis*) and can therefore be generalized to the national population.

The distribution of SHIMS participants across age categories reflects a younger Swazi population, with 55.9% of men and women between 18-29 years of age. Over a quarter (28.9%) of participants stated having attended only primary school. Another half of participants (49.9%) attended secondary school, while 14.3% reported tertiary education. About seven percent (6.5%) of participants reported never attending school. Level of completed education was similar between men and women.

Current marital status was defined as including legal marriage and cohabitation. Half of respondents reported never being married (53.3%). Similar proportions of women and men were not married but had ever had sex (41.7% vs. 44.5%), however men more frequently reported not being married and never having sex (15.9% vs. 5.6%). Women more commonly reported being married with their partner staying elsewhere (19.9% vs. 10.3%) or married with an unknown living situation (2.5% vs. 0.7%).

HIV Prevalence

Overall prevalence of HIV among men and women ages 18-49 was 31% [Figure 4]. Prevalence was higher in women (38%) compared to men (23%). In both men and women, HIV prevalence rises steeply from the youngest age groups, and peaks before age 40 [Figure 5]. While the shape of the prevalence curve is similar in men and women, the curve is slighter lower and shifted to older ages in men compared to women. Prevalence peaks at 47% among men 35-39 years and at 54% among women 30-34 years.

Figure 4: HIV Prevalence in Swaziland

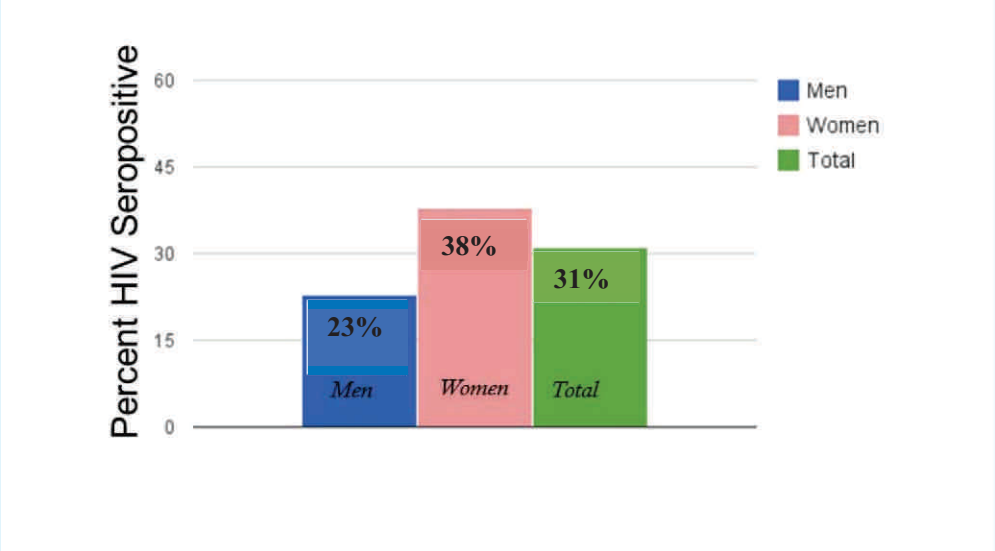
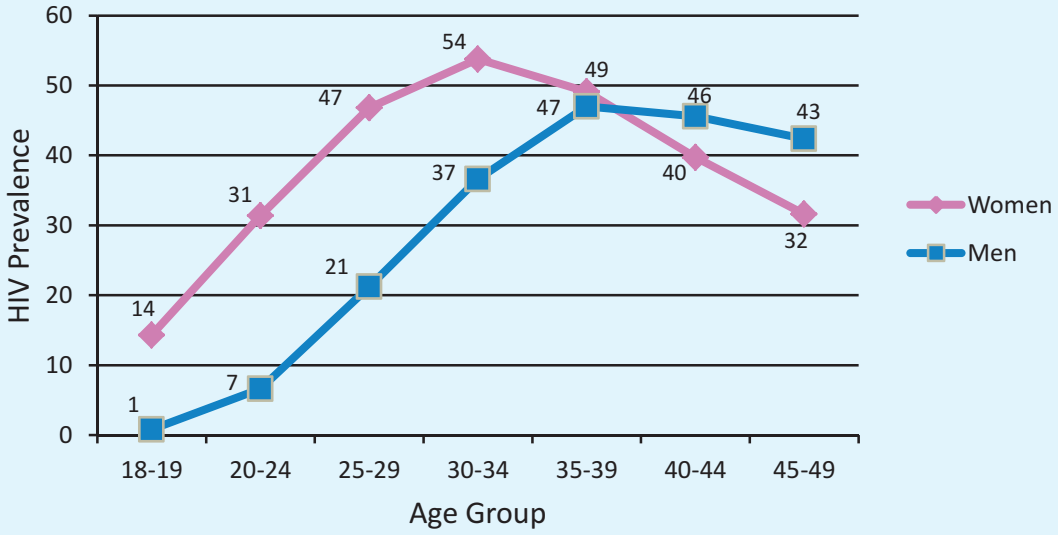


Figure 5: HIV Prevalence by Age and Gender



Prior knowledge of HIV status differed between men and women [Figure 6]. Among persons who tested HIV-seropositive in the pre-cohort survey, over two-thirds of women (68%) were previously aware of being HIV-positive. In contrast, only half of men (50%) were previously aware of their HIV status. Overall, nearly two-thirds of people with a positive HIV test in SHIMS (63%) were already aware of their HIV status.

Figure 6: Knowledge of HIV Status among HIV-seropositive Individuals

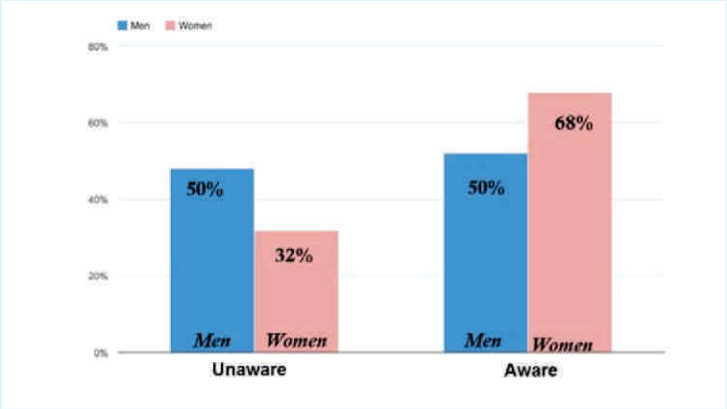


Figure 7: Self-reported ART Use among HIV-seropositive Individuals

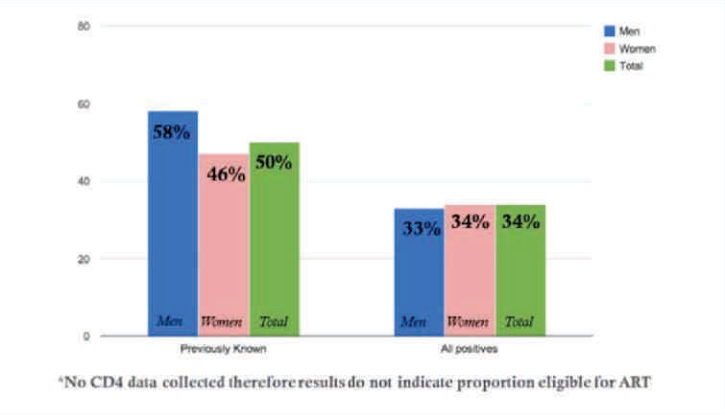


Figure 7 shows antiretroviral therapy (ART) use among HIV-positive participants who were already aware of their HIV status at the time of the pre-cohort survey and of all persons testing HIV-positive during the pre-cohort survey. Overall, half (50%) of HIV-positive participants, who were already aware of their HIV status were taking ARVs; this percentage was higher in men (58%) compared to women (46%). Amongst all subjects who tested positive for HIV during the pre-cohort survey, about one third (34%) was currently on ART; this percentage was almost the same in women (33%) and men (34%). HIV positive men who were aware of their status were more frequently on ART than women. However, the overall proportion of ART use in HIV-positive subjects was about the same in men and women.

Directly Observed HIV Incidence

Using unweighted data, 12,357 of pre-cohort participants tested as HIV-uninfected and were thus eligible for enrollment in the incidence cohort, Cohort 1 (Note: eligible participants were individuals who tested uninfected by rapid testing and by NAAT). Of eligible participants, 11,880 (96%) were enrolled and 477 (4%) refused. Among this enrolled cohort, 11,155 (94%) completed follow-up and 10,924 (88%) received HIV testing at the follow-up visit.

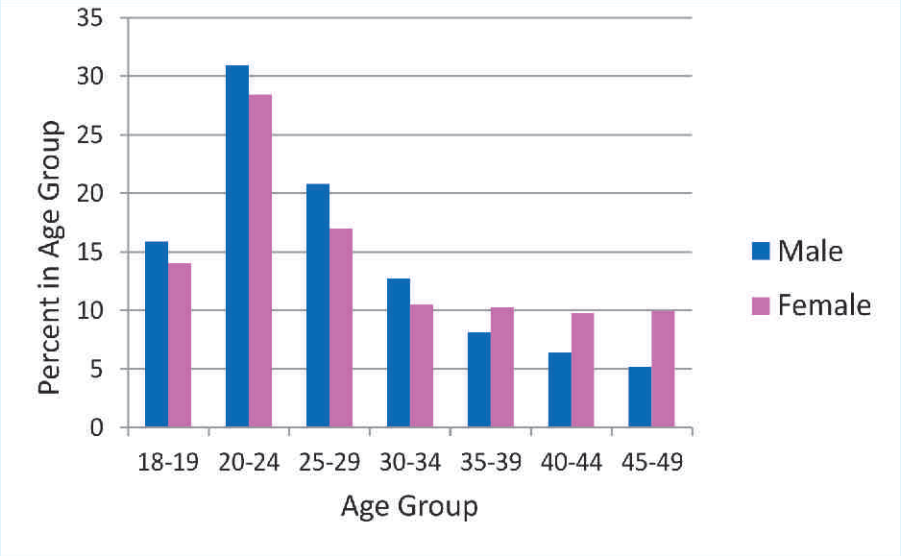
Table 4: Demographic Characteristics of HIV-uninfected Adults in Swaziland, by Gender*

	Total	Men	Women
Overall Number	11,840	6,025	5,815
Age, mean (years)	28.3	27.4	29.3
Rural dweller	70%	71%	70%
Education of completing high school or higher	68%	69%	68%
Unemployed	45%	34%	57%
Not married nor living with partner	59%	70%	48%
Sexually active**	70%	63%	78%
≥2 sex partners**	10%	17%	3%
Consistent condom use**	19%	20%	17%

*Weighted analysis
** In the 6 months prior to pre-cohort survey interview

Weighted analysis, which allows Cohort 1 data to be generalized to the national population, indicates that the mean age of HIV-uninfected adults in Swaziland in 2011 was 28 years and that 70% percent lived in rural areas [Table 4]. Sixty eight percent had a secondary education or higher, and almost half were unemployed (34% of men and 57% of women). Seventy percent of men and 48% of women were not married nor living with a partner. Sixty three percent of men and 78% of women reported being sexually active in the previous six months with 17% of men and three percent of women reporting two or more sexual partners in this time period. Among persons reporting being sexually active in the prior six months, approximately 20% of both men and women reported consistent condom use. The age distribution of HIV-uninfected adults in Swaziland is shown in Figure 8.

Figure 8: Age Distribution of HIV-uninfected Population in Swaziland



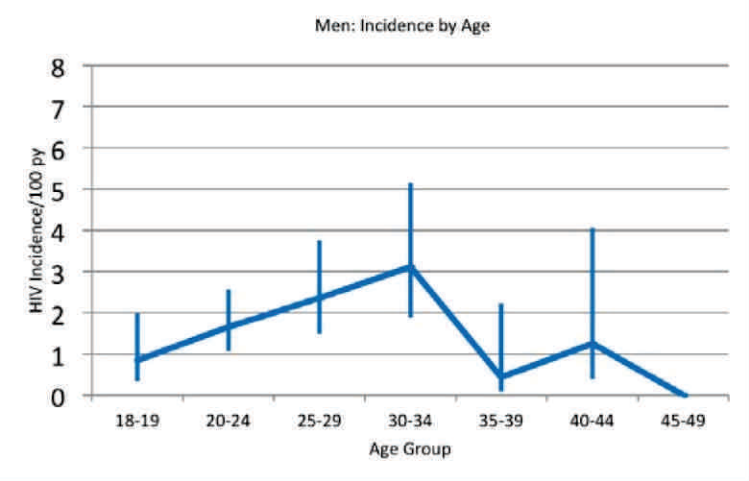
There were 143 seroconversions out of 6,019 person-years of observation, resulting in an overall incidence measurement of 2.4/100 PY. Incidence among men was 1.7/100 PY, and was almost twice as high among women at 3.1/100 PY [Table 5]. The patterns of HIV incidence for men and women were quite different with a peak of 3.1/100 PY in men aged 30-34, and two peaks seen in women at ages 20-24 and 35-39 of 4.2/100 PY and 4.1/100 PY respectively [Figure 9]. Among women, incidence was higher in those not married nor living with a partner (4.1/100 PY), those with 2 or more partners (9.6/100 PY) (which was only three percent of the study population), and reporting pregnancy (4.4/100 PY). Among men, incidence was higher in those not married nor living with a partner (1.8/100 PY), reporting inconsistent condom use (2.7/100 PY), those with 2 or more partners (3.2/100 PY), and those who were uncircumcised (1.7/100 PY) [Table 6].

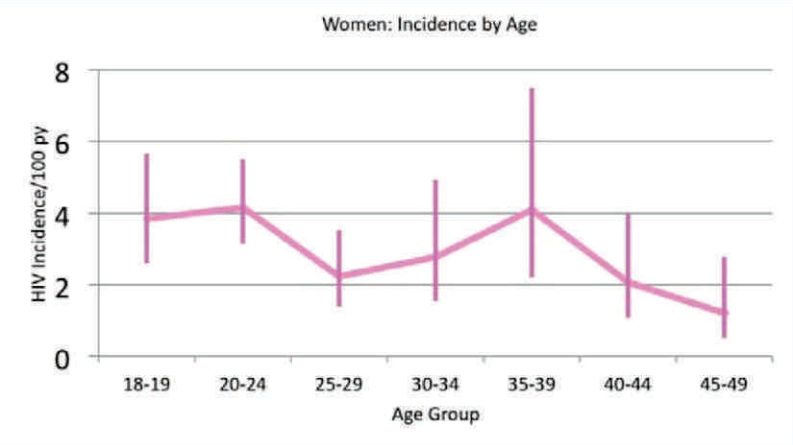
Table 5: HIV Incidence in Swaziland

	Sero-conversions	Person years (PY) of Follow-up	Incidence/ 100 PY	95% CI Incidence/ 100 PY
Overall	143*	6,019	2.38	2.06- 2.75
Men	51	3,070	1.65	1.28- 2.11
Women	93	2,949	3.14	2.63- 3.74

* Columns will not sum due to sample weighting

Figure 9: HIV Incidence in Swaziland by Age and Sex (95% confidence intervals represented with vertical bars)





The multivariable model, adjusted for education, employment, geography, number of sex partners, and pregnancy, showed that independent predictors of seroconversion among women were age (20-24, HR 2.03, 95% CI 1.01-4.05; 35-39 HR 2.85, 95% CI 1.02-7.98), not being married nor living with a partner (HR 3.05, 95% CI 1.64-5.69), having a partner that lived elsewhere (HR 2.81, 95%CI 1.53-5.15), and having an HIV positive partner (HR 1.88, 95% CI 1.09-3.27) or a partner of unknown HIV status (HR 2.74, 95% CI 1.53-4.92). Among men, significant predictors of seroconversion included not knowing a partner's HIV status (HR 3.72, 95% CI 1.97-7.05) and inconsistent condom use (HR 2.35, 95% CI 1.16-4.73). Though not statistically significant, we observed a trend that circumcision reduced men's risk of seroconversion (HR 0.50, 95% CI 0.22-1.12) [Table 7].

Table 6: HIV Incidence by Demographics and Behaviors

	Men		Women	
	Incidence/100PY	**95% CI**	**Incidence/100PY**	**95% CI**
Marital Status				
Married/living together	1.34	(0.79-2.27)	2.24	(1.52-3.02)
Not married/not living together	1.80	(1.36-2.38)	4.06	(3.28-5.03)
Condom Use, past 6 months*				
Consistent use	1.74	(1.05-2.89)	3.78	(2.65-5.37)
Inconsistent use	2.70	(2.01-3.61)	3.76	(3.03-4.66)
# Sex Partners, past 6 months				
Never had sex	0.15	(0.03-0.83)	0.71	(0.22-2.26)
0	0.40	(0.08-2.05)	1.21	(0.61-2.38)
1	1.92	(1.40-2.64)	3.64	(3.01-4.41)
> 2	3.21	(2.02-5.10)	9.64	(4.48-20.0)
MC Status, self report				
Circumcised	1.29	(0.71-2.33)	NA*	
Uncircumcised	1.74	(1.32-2.30)	NA*	
Pregnant, self report	NA*	-	4.38	(1.86-10.1)

* Among participants reporting sexual activity

Table 7: Predictors of Seroconversion

	Men (aHR*, 95% CI)	**Women (aHR*, 95% CI)**
Age (y)		
18-19	1	1
20-24	1.01 (0.38-2.67)	2.03 (1.01-4.05)
35-39	0.20 (0.03-1.34)	2.85 (1.02-7.98)
Relationship with Partner(s)		
Not married nor living w/partner	2.03 (0.91-4.53)	3.05 (1.64-5.69)
Married or living with partner	1	1
Location of partner		
Living elsewhere	2.31 (0.84-6.37)	2.81 (1.53-5.15)
Living with participant	1	1

Partner's HIV status (current partner)		
Not HIV-positive	1	1
`	2.06 (0.87-4.87)	1.88 (1.09-3.27)
Don't know partner's status	3.72 (1.97-7.05)	2.74 (1.53-4.92)
Condom use, past 6 months		
Inconsistent	2.35 (1.16-4.73)	0.92 (0.57-1.46)
Consistent	1	1
Circumcision status		
Uncircumcised	1	NA[$]
Circumcised	0.50 (0.22-1.12)	NA[$]

*Adjusted Hazard Ratio, adjusted for education, employment, geography, # sex partners and pregnancy (women)
[$] Not applicable

Laboratory-based HIV Incidence

A total of 18,154 men and women were initially tested at T1. Of these, 5797 were HIV-1 sero-positive; 63% were aware of their sero-positive status and among them, 49% reported current ART use. The unweighted HIV-1 incidence estimates by the LAg-Avidity EIA (2.6/100 PY [95% CI 2.1-3.1]) and NAAT (2.6/100 PY [95% CI 2.1-2.7]) were similar to the directly observed incidence (weighted and unweighted) 2.4/100 PY [95% CI 2.1-2.8]. The BED-incidence (13.1/100 PY) was more than five times as high as the observed incidence. Adjusted incidence, after exclusion of individuals with low viral load (<1000 copies/mL) and reporting ART use, was 1.9/100 PY by LAg-Avidity EIA and 7.9/100 PY by BED-CEIA [Table 8].

Table 8: Comparison of SHIMS Directly Observed HIV-1 Incidence Estimate with Laboratory Incidence Assays

Method	Adjustment	No. of individuals followed or tested	No. of recent or acute infections detected	Mean Recency period (in days)	HIV-1 incidence, per 100 PY (95% CI)[#]
Directly observed	Weighted	11,931, HIV-	146	NA	2.4 (2.1-2.7)
BED-CEIA	None	5,752*, HIV+	861	197	13.1 (11.0-15.2)
	Low VL + Self-reported ART[^]	5,752*, HIV+	517[^]	197	7.9 (6.6-9.2)
LAg-Avidity EIA	None	5,752*, HIV+	124	141	2.6 (2.1-3.1)
	Low VL + Self-reported ART[^]	5,752*, HIV+	89[^]	141	1.9 (1.5-2.3)
NAAT		11,944, HIV-	13	15[@]	2.6[#]

NA=not applicable
*5752 of 5797 HIV-positive participants were tested by the BED and LAg-Avidity EIA,
[^]Individuals with low viral load (<1000 copies/mL) and self-reporting ART use were classified as long-term and recent infections were adjusted
[@]Assumed mean window period for NAAT
[#]95% CI not calculated because of uncertainty around mean window period

Male Circumcision Prevalence

A total of 10,976 men were eligible for the pre-cohort survey; 7,129 (65%) eligible men agreed to participate in the study. The mean age was 29.2 years (SE = 0.09). Seventy nine percent reported ever having had sex, and the mean age of sexual debut was 19.4 years (SE = 0.05). Ninety seven percent (97%) of surveyed men provided a self-report of circumcision status. Among them, 89% also reported a date of circumcision.

Overall, 16% of men were circumcised, according to self-report with the aid of an illustration [Appendix G]. The mean age at time of circumcision was 20.7 years (SE=0.3). More circumcised men reported having an education higher than secondary school (25% vs. 14%). Thirty-six percent of uncircumcised men reported being unemployed compared to 24% of circumcised men.

Over two-thirds (69%) were circumcised after sexual debut. A substantial proportion (67%) reported being circumcised after the 2007 WHO recommendation for male circumcision as HIV prevention. In fact, 11% were circumcised in the six months prior to completing the pre-cohort survey at T1.

Table 9: Condom Use by Circumcision status in the past 6 months

	Always Used	**Didn't Always**	**p-value**
Uncircumcised	31.3%	63.8%	p=0.06
Circumcised*	35.6%	61.2%	61.2%
Circumcised Pre-March 2007*	31.0%	66.1%	p=0.03
Circumcised Post-March 2007*	39.6%	57.3%	57.3%
Circumcised Before Sexual Debut*	32.6%	64.7%	p=0.22
Circumcised After Sexual Debut*	38.2%	59.9%	59.9%

*Does not include men circumcised $\leq$ 6 months prior to time of survey

With marginal significance (p=.06), consistent condom use among circumcised men was higher (36%) than uncircumcised males (31%) [Table 9]. However, among circumcised men only, consistent condom use significantly increased after the 2007 WHO recommendation on MC for HIV prevention. Forty percent (40%) reported consistency after this recommendation compared to 31% prior to this period (p=.03). Consistent condom use did not differ between circumcised men by time of sexual debut (p=.22).

More circumcised men report prior HIV testing than uncircumcised men (78% vs. 52%, p<0.001). In total, 93 circumcised, HIV-positive men were aware of their HIV status prior to the

pre-cohort survey. Among them, 61% (n=57) reported being circumcised after knowing they were HIV-positive.

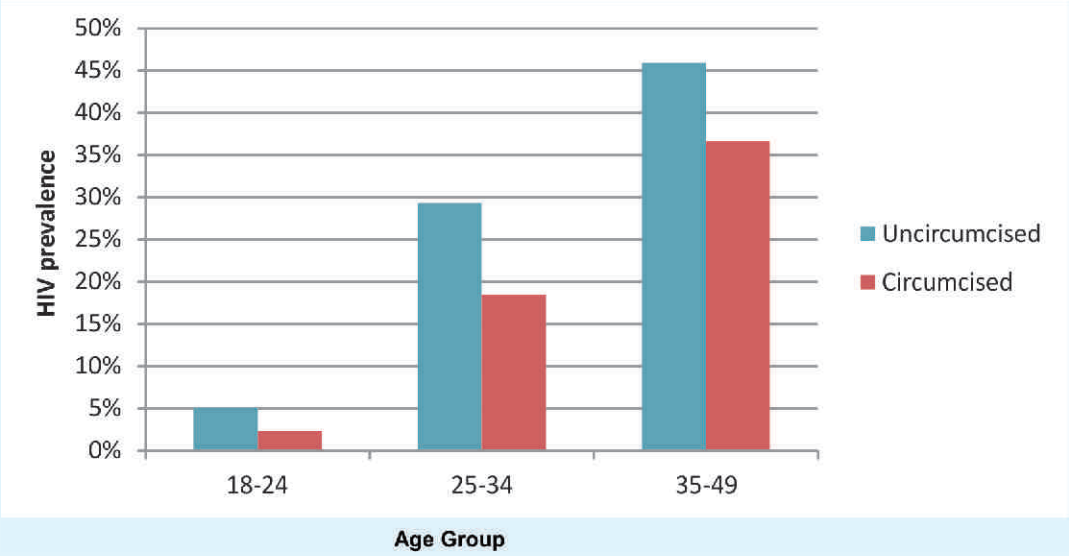
Almost all circumcised men believe that circumcision confers health benefits (94%) and protects against HIV infection (85%); of note, over three-quarters (76%) of uncircumcised men also hold these beliefs

Table 10: HIV prevalence by circumcision status

Participant Age	Overall/All Ages	18-24	25-34	35-49
Uncircumcised	1693/6769 (25.0%)	128/2507(5.1%)	692/2361(29.3%)	873/1901(45.9%)
Circumcised	214/1304(16.4%)	11.3/501.6 (2.3%)	92.3/502.0 (18.4%)	110/300.8 (36.6%)
p-value	p<0.001	p=0.011	p<0.001	p=0.012

Overall, HIV prevalence was significantly higher in uncircumcised men (25%) than in circumcised men (16.4%) (p<.001) [Table 10]. Statistically significant differences in HIV prevalence by circumcision status were apparent across all age groups [Table 10 and Figure 10].

Figure 10: HIV Prevalence by Circumcision Status



HIV Prevalence

HIV prevalence in men and women ages 18-49 years is 31%. Similarly, a reanalysis of the 2006-2007 SDHS data, restricted to 18-49 years of age, identified a prevalence of 31% among this population (SDHS 2007). This indicates that the overall HIV prevalence in Swaziland has remained nearly the same over the past 4 to 5 years. The expansion of HIV prevention, care and treatment services since 2006 is likely a significant factor.

Figure 11: HIV Prevalence among Women by Age and Survey (SHIMS 2011, SDHS 2007)

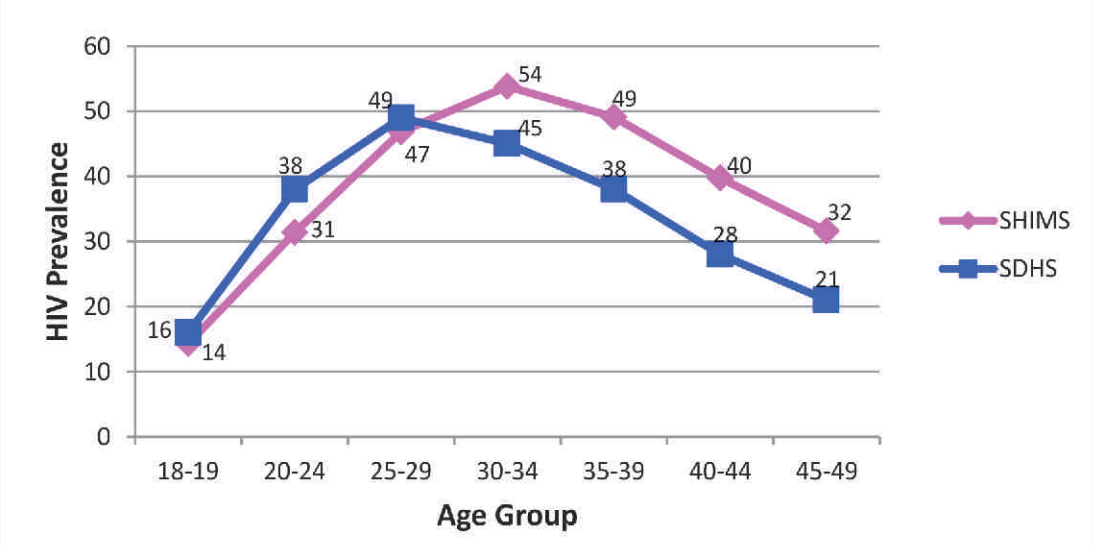
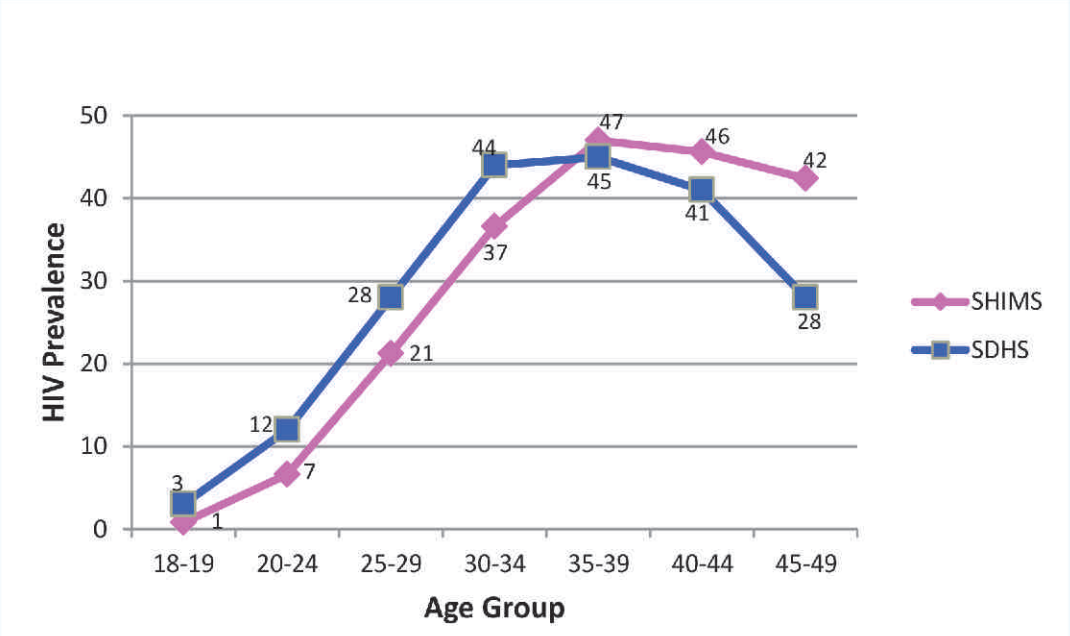


Figure 12: HIV Prevalence among Men by Age and Survey (SHIMS 2011, SDHS 2007)



In both men and women, from 2006-2007 SDHS to SHIMS 2011 there has been a substantial shift in HIV prevalence among age groups [Figure 11 and 12]. In both sexes, prevalence has declined at younger ages especially amongst men, and has increased at older ages with peak HIV prevalence occurring at a higher level in 2011. In women, HIV prevalence peaks at 54% among at ages 30-34; in men, peak prevalence is at 47% in men age 35-39. Another notable difference in age-specific HIV prevalence between the surveys is that in both men and women, post-peak HIV prevalence is higher in SHIMS 2011 compared to 2006-2007 SDHS; this pattern is notably more evident in women.

Taken together, the most likely explanations for these findings are 1) a reduction in HIV incidence in the past four to five years and 2) improved survival among HIV-positive people in older age groups. Since new infections are more common in younger age groups and mortality in HIV-infected people is higher in older age groups, the most plausible explanation for this trend in age-specific HIV prevalence is that both HIV incidence in younger age groups (<30) and HIV mortality in older age groups (≥30) have declined since the 2006-2007 SDHS. The shift in the age pattern between the 2006-2007 SDHS and SHIMS points towards an ART survival effect in older persons. Women demonstrate a higher post-peak HIV prevalence in SHIMS 2011 compared to the post-peak prevalence in 2006-2007 SDHS. This is likely due to women's better health seeking behaviors and more common enrollment in HIV care and ART services. In contrast, the smaller rise in HIV prevalence among men 35 and older may indicate that HIV-infected men in Swaziland are not benefitting from use of HIV Testing and Counseling (HTC) and/or ARV treatment services. Greater efforts are needed to increase access to HTC and ART among men in Swaziland. While the age specific trends in HIV prevalence are consistent with a drop in both HIV incidence in younger people and HIV mortality in older people, alternative explanations should also be considered. The observed trends could be explained by increasing mortality in younger HIV infected people coupled with increasing HIV incidence in older age groups. However, there is currently no evidence of either of these effects, thus this alternative explanation seems unlikely.

Another important finding is that nearly two-thirds of people with a positive HIV test in SHIMS (63%) were already aware of their HIV status. Nevertheless, a substantial proportion (38%) was unaware of their HIV status at the time of their test. More striking is that half (50%) of men with a positive HIV test in SHIMS were unaware of their HIV status, as compared to nearly one-third (32%) of women. These findings highlight the need for a sustained effort to increase HIV testing coverage levels and frequency in the general population of Swaziland, with a particular emphasis on increasing access in men.

Regarding ART use, half (50%) of SHIMS participants who already knew their HIV-positive status are currently on ART. Men were more commonly on ART than women (58% vs. 47%). It is important to note that ART eligibility by CD4 count or clinical staging was not determined in SHIMS. National data show that ART use is higher among women (64.9% vs. 35.1%) (SID, 2012). Therefore, the difference in ART uptake between men and women in this study might reflect that men test late when they are already eligible for ART.

Directly Observed HIV Incidence

Data from Cohort 1 shows that adult HIV incidence in Swaziland is high at 2.4%. The incidence in women is nearly twice as high as that in men. This mirrors prior estimates of incidence in Swaziland derived from modeling and suggests that adult incidence may have stabilized and perhaps started to decline. [UNAIDS, 2009]

Our data reveal two peaks in HIV incidence among women with an unexpected second peak between the ages of 35 and 39. It is not known whether other countries with high prevalence share this second peak. The first peak may reflect young out-of-school women leaving home and entering a transitional period. This stage, characterized by financial instability and independence from social support, makes them vulnerable to intergenerational sex.

Women in their late thirties experience a level of risk for HIV that mirrors that of women in their early twenties. Perhaps this reflects married women being infected by their husbands, however our results regarding marital status do not support this and in fact show that not being married, nor living with a partner, is a strong independent predictor of seroconversion. However, it has been shown by prior incidence estimates [MOH, 2009] that marriage conferred increased risk. These trends in women highlight the need for targeted, age-specific prevention programs. Further analyses of these sub-groups are also warranted.

In both men and women, being unaware of a partner's HIV status confers almost four and threefold increase in risk respectively, compared to knowing one's partner to be HIV-uninfected. This finding demonstrates the need for advocating HIV status discussions between partners and teaching disclosure skills, as well as, strengthening partner counseling and testing services. Inconsistent condom use is also a robust predictor for HIV seroconversion in men underscoring the ongoing and primary importance of consistent condom use coupled with other biomedical prevention approaches. Data from our study suggest that voluntary medical male circumcision may confer protection for men for the prevention of HIV consistent with results from randomized controlled trials.

The main limitation of the present findings is that all results were self-reported except HIV test results. In fact, this may account for the surprising finding that for those who report never having sex (both at T1 and T2), there was an incidence of 0.15 and 0.71 among men and women, respectively. It appears possible that these individuals may have failed to report their true sexual activity. Alternatively, it is possible that these incident infections resulted from exposure to HIV-infected blood (e.g. HIV contaminated needles or blood supply, intravenous drug use). SHIMS' strengths are that it is the first national-level study of HIV incidence through a representative, prospectively observed cohort, with a large sample size and high retention rates. In conclusion, overall HIV incidence in Swaziland is high with women having an incidence almost double that of men. Targeted interventions need to be strengthened to address particular groups at increased risk of acquiring HIV infection.

Laboratory-based HIV Incidence

Laboratory methods applied to cross-sectional samples have the potential to measure HIV incidence. In this study BED, LAg and NAAT were used to estimate incidence and each was evaluated against directly observed incidence, the current gold standard measure. The data observed in the study suggest that incidence estimates obtained using LAg-Avidity EIA (2.6/100 PY) and NAAT (2.6/100 PY), without any adjustment for ART and VL <1000 copies/ml, are statistically similar to directly observed incidence (2.4/100 PY). These results suggest that these assays can potentially provide accurate estimates of HIV incidence in cross-sectional populations, even in populations with high ART coverage. Additionally, the results validate the window period previously reported for the subtype C (Duong 2012) and suggest that the window period (141 days) is applicable in the Southern African context. In contrast, the incidence estimate derived from the BED assay (13.1/100 PY) is not plausible and is not comparable to directly observed incidence. These results indicate that the BED assay overestimates incidence by a large margin which is not surprising given previous reports of overestimation of the BED assay in

African populations (Kim 2010). This overestimation could result from HIV-1 subtype variability, population differences, high levels of total IgG in African populations, ART use, and malaria or TB co-infections.

NAAT pooling has been developed for the detection of acute infections and in this study has proven to be accurate for incidence measurement. However, this method is not ideal for wider use of incidence measurement due to the short duration of the acute stage of infection prior to seroconversion. Additionally, identification of an adequate number of acute infections, even in a high-incidence setting, requires a large sample size of HIV seronegative individuals and carries high cost implications.

The novel LAg-Avidity can potentially offer a simple and cost-effective method for accurately measuring incidence in a cross-sectional population, without the need of a costly longitudinal cohort study. The LAg-Avidity EIA can be a possible tool for HIV programs for understanding the current state of the epidemic in the population of interest, while also being used to measure the impact of combination prevention efforts.

Male Circumcision Prevalence

In 2007, the WHO recommended implementation of male circumcision services as a strategy for HIV prevention. Since then, prevalence of male circumcision among 18-49 year olds has doubled from 8% (CSO 2007) to 16%. While the vast majority of Swazi men remain uncircumcised, most are aware of the benefits. This increased understanding among men of the benefits of MC is likely due to strengthened national MC programming, including the *Soka Uncobe* campaign. Nevertheless, substantial efforts remain to encourage these men (as well as others who are less aware) to receive male circumcision services.

With the increase in MC programming and other HIV prevention services, it appears that men are responding to program efforts. Circumcised men appear to demonstrate better health-seeking behaviors. Circumcised men do not report riskier sexual behaviors compared to uncircumcised men but, in fact, report more consistent condom use. This is in contrast with public perception that circumcised men tend to not use condoms because of the low risk perception. Additionally, circumcised men are more likely to have previously tested for HIV. With significantly lower HIV prevalence among circumcised men, study data reinforce the prevailing notion of a protective effect of male circumcision at a population-level.

While not statistically significant, consistent condom use was more frequent among men who circumcised after sexual debut compared to those who circumcise before sexual debut. This may be due to the sensitivity associated with discussion of sexuality with young people. Health care workers may be more likely to emphasize abstinence and to downplay condom use with young persons, although in contrast with national guidelines.

MC programming in Swaziland, including the *Soka Uncobe* campaign, has raised awareness of the beneficial effects of MC. The campaign offered not only VMMC services but also broader HIV prevention messaging (e.g. abstinence and condom use), HCT, condom distribution, and linkages to HIV care and treatment for those who tested HIV-positive (MOH 2010). This is a demonstration of the importance of integrating Sexual and Reproductive Health (SRH) and HIV services for better health outcomes. The access to HTC and HIV care linkage at VMMC services is especially important for men ages 35-49 years, who have a higher HIV prevalence and greater need for HIV treatment and care services.

CONCLUSION

HIV remains a considerable health concern in Swaziland. Among 18-49 year olds, HIV prevalence and incidence remain high at 31% and 2.4%, respectively. Women experience the greater burden of disease with 15% higher HIV prevalence than men and nearly double the rate of new infections. Nevertheless, prevalence has remained relatively consistent over the past five years and infers a possible stabilization of the number of persons living with HIV. The expansion of HIV prevention, care and treatment services since 2006 is likely a significant factor. Broadened access to ART and HTC, in particular, may account for a substantial portion of the apparent leveling of HIV prevalence. Male circumcision is a less probable influence since the vast majority of Swazi men currently remain uncircumcised.

Findings from SHIMS show that incidence estimates obtained using LAg-Avidity EIA and NAAT are statistically similar to directly observed incidence. Although NAAT is not a practical method for estimating incidence, the LAg-Avidity assay shows promise as an easy and cost-effective tool for routine surveillance and impact evaluations. The promising performance of the LAg-Avidity in Swaziland suggests that this assay is less impacted by high ART coverage, unlike the BED EIA which produced an implausible incidence estimate. The results of this validation study indicate that the LAg-Avidity assay may be well suited for inclusion in future surveillance studies to measure both prevalence and incidence, either in ANC or DHS studies.

National HTC programs are making great progress with nearly two-thirds of HIV-positive persons aware of their HIV status. Sustained efforts are needed to further increase HIV testing coverage and frequency of testing in the general population. Since expansion of HIV testing will identify HIV-infected persons at earlier stages of disease, it is critical for HTC roll-out to occur with stronger linkage to and retention in HIV care and ART services. Although national linkage rates in Swaziland are unknown, the estimated retention rate of ART patients at 12 months is 82% [MOH/SNAP, 2012].

At the same time, with 76% and 61% of Swazi men and women, 18-49 years, testing HIV-negative, the challenge remains to support HIV negative persons to access high-quality HTC services and linkage to effective prevention programming, such as voluntary medical male circumcision. Targeted interventions addressing groups at increased risk of acquiring HIV must be strengthened. Higher risk groups include men who are less than 35 years old or who have at least two sexual partners in the prior six months and women who are not married or living with their spouse, who have at least two sexual partners within the prior six months and who are pregnant. Since being unaware of a partner's HIV status confers substantial increased risk in HIV acquisition, strengthened programming on support for disclosure skills and partner HIV testing are key.

For the continued success of national HIV prevention, care and treatment programming in Swaziland, the continued promotion of comprehensive combination HIV prevention services is essential. Data from SHIMS allows some inference that the national HIV program is benefiting the population of Swaziland. The HIV service delivery infrastructure has allowed for increased knowledge of one's HIV status, more HIV-positive persons accessing HIV care and treatment services, and greater numbers of persons accessing HIV prevention services. Continued strengthening of these services will ideally lead to reduced risk of HIV acquisition in the population, as well as better health outcomes among persons living with HIV.
strengthening of these services will ideally lead to reduced risk of HIV acquisition in the population, as well as better health outcomes among persons living with HIV.

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APPENDICES

Appendix A: HIV-1 incidence assays used in SHIMS
Appendix B: Map of SHIMS sample by enumeration areas
Appendix C: Male sample size and power calculations for Cohorts 1 and 2
Appendix D: Female sample size and power calculations for Cohorts 1 and 2
Appendix E: Case review forms at Time 1 (pre-cohort survey)
Appendix F: Case review forms at Time 2 (follow-up survey)
Appendix G: Male circumcision illustration
Appendix H: Sample weights
Appendix I: Weighted and unweighted characteristics of participants in pre-cohort survey

Appendix A: HIV-1 incidence assays used in SHIMS

BED EIA

The HIV-1 BED Incidence assay or BED Capture-EIA is an IgG-capture EIA which measures the proportion of HIV-1 specific IgG in a given plasma specimen with respect to total IgG. Early seroconverters have a lower proportion of HIV-1 specific IgG than those with long-term infection. The BED EIA may misclassify a proportion of long-term infections as recent infection, thus resulting in an overestimation of population incidence when applied to cross-sectional settings with moderate to high HIV prevalence. Overestimation especially in African populations could result from HIV-1 subtype variability, population differences or high levels of total IgG in African populations [Wei, 2010]. Performance of the BED assay is also affected by other factors such as coinfections with malaria or tuberculosis or antiretroviral therapy. These conditions are prevalent in sub-Saharan Africa, including Swaziland.

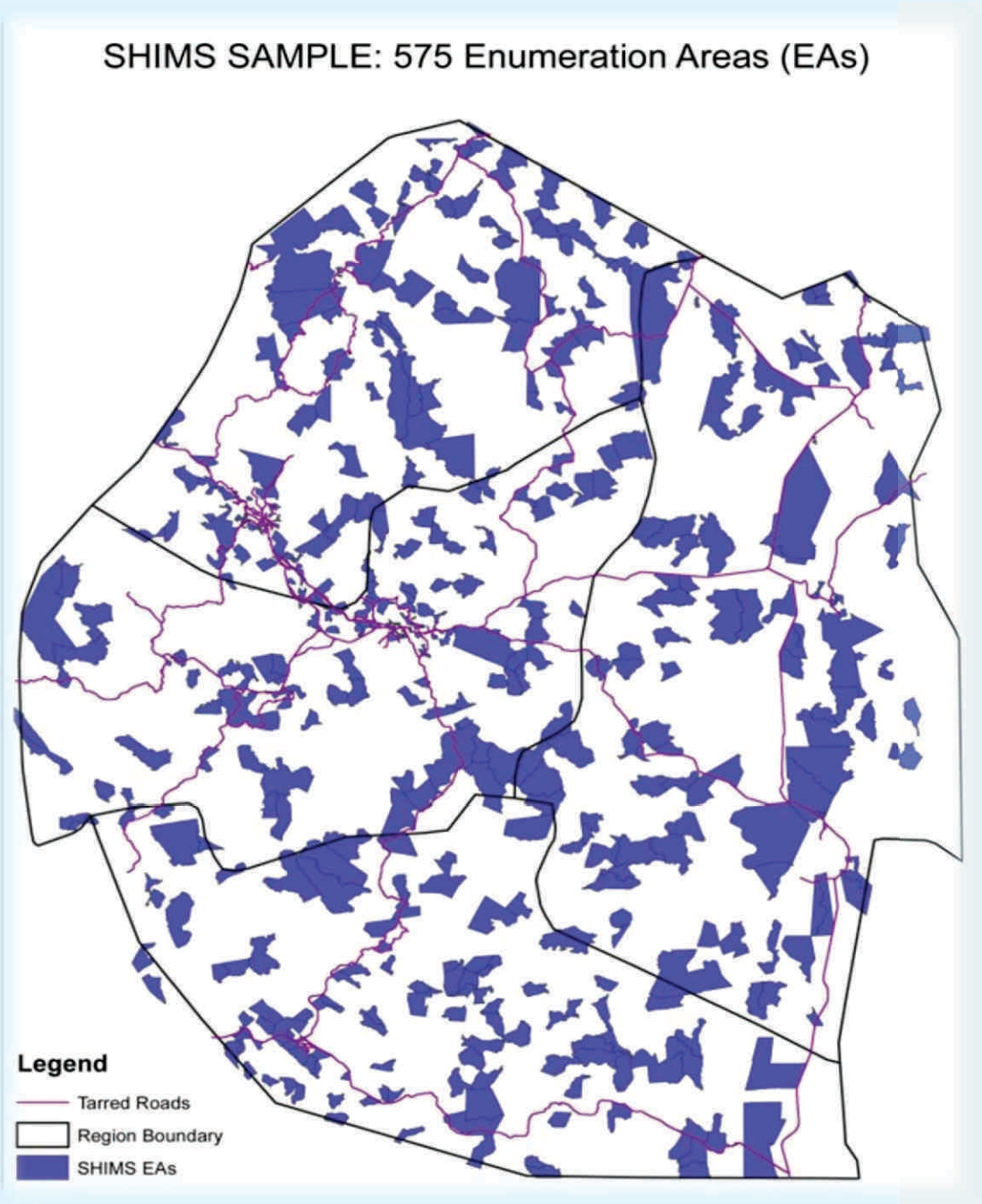
LAg Avidity EIA

The HIV-1 Limiting Antigen (LAg) Avidity EIA is a new incidence assay developed by the CDC International Laboratory Branch (ILB) for detecting recent infection and estimating incidence. The assay is focused on the measurement of antibody avidity or binding strength of antibodies which increases over time following seroconversion. Antibody avidity is a functional property of maturing antibodies and is a robust parameter to distinguish recent from long-term infection [Rutherford, 2000]. The LAg Avidity EIA incorporates a recombinant protein (rIDR-M) containing the major variants of gp41 immunodominant regions among the HIV-1 group M viruses in order to minimize subtype bias. It is a single-well avidity assay and provides a measure of antibody avidity as normalized optical density (ODn). Since this assay measures a functional parameter of HIV antibodies, it is less likely to be impacted by the use of ART and the AIDS stage of disease, as both of these factors result in a decreased antibody response. This novel single-well avidity assay has performance characteristic suitable for detecting recent HIV-1 infection with high accuracy in divergent subtypes or populations and should provide a reliable laboratory tool to estimate HIV-1 incidence worldwide.

Nucleic Acid Amplification Tests (NAAT)

Nucleic acid amplification tests (NAAT) detect HIV-1 genetic material and have a shorter window period after HIV acquisition than antibody tests. NAAT testing has been developed to detect genetic material during viral replication in the window period prior to seroconversion for the diagnosis of acute infection. Acute infection detection methods are not ideal for incidence measurement due to the short duration of the HIV-1 genetic material detection period [Duong, 2012]. Another limitation of this approach is that it requires testing of a large number of HIV-seronegative individuals which can be costly and labor intensive.

Appendix B


SHIMS SAMPLE: 575 Enumeration Areas (EAs)
Legend
Tarred Roads
Region Boundary
SHIMS EAs

Appendix C: Male sample size and power calculations for Cohorts 1 and 2

Objective: To estimate HIV incidence in a household-based representative sample of men before and after *Soka Uncobe* (Cohort 1 vs Cohort 2)

The sample size for the men's Cohort 1 is 5,823 and for Cohort 2 is 6,165. Each person enrolled in Cohort 1 contributes 6 months of follow-up and in Cohort 2, each contributes 12 months of follow-up. The sample size is chosen to achieve sufficient "effective" person years among men to achieve 80% power to detect a 45% reduction in ratio of infection rates, assuming a Poisson distribution in each cohort of number of seroconversion events in total accumulated person years.

The total number of person-years among men required to detect a 45% reduction in the HIV incidence rate from 2.0 per 100 person years (approximated baseline rate) to 1.1 per 100 person years (post-intervention) with a 1:2 ratio of person years in the two cohorts is 6,288. With a design effect of 1.25 and loss to follow-up of 10% and 15% in the pre- and post-*Soka Uncobe*, this yields a sample size of 5,823 men followed for 6 months and 6,165 men followed for 12 months in Cohort 1 and Cohort 2 respectively. (See Tables 1 and 2)

Table 1:

Effective person years required to detect 30-60% difference between infection rates with 6 month follow-up in Cohort 1, 12 month follow-up in Cohort 2, for two sided alpha of 0.05, and 80% power. Wald test st atistic for slope in Poisson regression, under assumption of simple random sample.

λ_1	λ_2	Ratio λ_2/λ_1	Total Effective[1] Person Years (Both serocohorts combined)
0.0200	0.0140	0.70	15865
0.0200	0.0130	0.65	11224
0.0200	0.0120	0.60	8272
0.0200	0.0110	0.55	6289
0.0200	0.0100	0.50	4901
0.0200	0.0090	0.45	3898
0.0200	0.0080	0.40	3155
0.0300	0.0210	0.70	10577
0.0300	0.0195	0.65	7483
0.0300	0.0180	0.60	5514
0.0300	0.0165	0.55	4192
0.0300	0.0150	0.50	3267
0.0300	0.0135	0.45	2599
0.0300	0.0120	0.40	2103

[1]Effective person years assume a simple random sample.

The number of households required to achieve the effective sample size is shown in Table 2. The derivation of each of the adjustment factors is as follows:

- Design Effect:
  - Design effect for HIV in men ages 15-49 of 1.25, and the DEFT of 1.32, are both based on the 2006-07 SDHS.
- Household adjustment:
  - 13% of households will be vacant/non-contactable, 5% will refuse participation at the household level. Adjustment factor = 1/0.87x0.95 = 1.21
- Household individual adjustment
  - 92% of households will have male residents within the eligible age range, 77%of men will be HIV uninfected, 99% will agree to cohort enrollment, 90% will be contactable, 95% will agree to pre-cohort survey. Adjustment factor = 1/(0.92x0.77x0.99x0.90x0.95)=2.11
- Loss to follow-up
  - 90% and 85% of men will complete follow-up in the 6 and 12 month cohorts, respectively (accounting for loss-to-follow-up, interview/HIV test refusal at follow-up, data loss, and specimen loss totaling 10% and 15%, respectively). Lost to follow-up adjustment = 1.11 and 1.18

Table 2:
Number of enrolled male participants, participating households and households in sample required to achieve the targeted effective number of person years.

Effective number person years	Design effect	Loss to follow-up adjustment	Number Males enrolled	Male household adjustment	Number of households participate	Household adjustment	Number of households sampled
Pre-*Soka Uncobe* Male Seroincidence Cohort (Cohort 1) – 6 month follow-up period							
2096	1.25	1.11	**5823**	2.11	**12301**	1.21	14884
Post-*Soka Uncobe* Male Seroincidence Cohort(Cohort 2) – 12 month follow-up period							
4192	1.25	1.18	**6165**	2.11	**13023**	1.21	15758

The decision to power the evaluation to detect a 45% reduction in incidence in men is based upon a combination of factors: 1) mathematical modeling estimations of HIV incidence reduction anticipated in men following MC scale-up to 80% coverage in 2011; and 2) meta-analyses of efficacy results from the 3 MC RCTs. The proportional hazard risk ratio (efficacy) from the 2009 Cochrane Review meta-analysis using case analyses from the three MC RCTs was 0.46 (95% CI, 0.34 – 0.62), which equates to a 54% risk reduction against HIV acquisition [Sigfried, 2009].

Appendix D: Female sample size and power calculations for Cohorts 1 and 2

Objective: To estimate HIV incidence in household-based representative sample of women before and after *Soka Uncobe* (Cohort 1 vs Cohort 2)

Mathematical modeling estimation of HIV incidence reduction anticipated in women following male circumcision scale-up to 80% coverage is expected to produce less than a 45% reduction in women. Newly diagnosing approximately 35,000 men and enrolling approximately 4,500 on ART may also contribute to reductions in HIV incidence.

The household sample of 14,884 and 15,758 in pre- and post- *Soka Uncobe* is expected to yield an enrolled cohort of 7106 women and 7,524 in Cohorts 1 and 2, respectively. (See Table 1)

The number of effective women years accumulated from the household sample of 14,884 and 15,758 in pre- and post- *Soka-Uncobe* is shown in Table 1. The derivation of each of the adjustment factors is as follows:

- Design Effect:
  - Design effect for HIV in women ages 15-49 of 1.25, and the DEFT of 1.32, are both based on the 2006-07 DHS.
- Household adjustment
  - 13% of households will be vacant/non-contactable, 5% will refuse participation at the household level. Adjustment factor = 1/0.87x0.95 = 1.21
- Household individual adjustment
  - 105% of households will have female residents within the eligible age range, 65% will be HIV uninfected, 99% will agree to cohort enrollment, 90% will be contactable, 95% will agree to pre-cohort survey. Adjustment factor = 1/(1.05x0.65x0.99x0.90x0.95)=1.73
- Loss to follow-up
  - 92% and 88% of women will complete follow-up in the 6 and 12 month cohorts, respectively (accounting for loss-to-follow-up, interview/HIV test refusal, data loss, and specimen loss totaling 8% and 12%, respectively). Adjustment factor = 1/0.92=1.09 and 1/0.88=1.14 respectively.

Table 1:
Number of enrolled female participants, given sample of 14,884 and 15.758 households in the pre- and post-*Soka Uncobe* cohorts.

Effective number person years	Design effect	Loss to follow-up adjustment	Number Females enrolled	Female household adjustment	Number of households participating	Household adjustment	Number of households sampled
Pre-*Soka Uncobe* Female Seroincidence Cohort (Cohort 1) – 6 month follow-up period							
2615	1.25	1.09	7106	1.73	12,301	1.21	14884
Post-*Soka Uncobe* Female Seroincidence Cohort (Cohort 2) – 12 month follow-up period							
5297	1.25	1.14	**7524**	1.73	13,023	1.21	15758

With total effective person years of 7912 among women, and assuming a seroincidence rate of 3.0 per 100 person years and a sample ratio of 1:2, there is 68% power to detect a 30% reduction in HIV seroincidence and 82% power to detect a 35% reduction in HIV seroincidence.

Appendix E: Case review forms at Time 1 (pre-cohort survey)

SHIMS001 (186) RQ-1 (021)

PTID ☐☐☐☐-☐☐☐-☐☐-☐-☐☐

Routine Questionnaire (A1)

Enrollment Date ☐☐ ☐☐☐ ☐☐ (*dd* *MMM* *yy*)

Staff ID: ☐☐☐ ☐☐ *Team ID:* ☐☐

Instructions: *Use this Routine Questionnaire for all participants meeting the eligibility criteria who have provided written informed consent to participate. Please do not leave any questions blank. Instead, mark the "DK" box if the participant states that they "don't know" the answer to a question. If the participant is willing to answer but doesn't know the exact answer, encourage him/her to estimate, as this is better than a DK answer. If the participant refuses to answer a question, mark the "REF" box for "refused" to answer.*

1. *Mark the sex of participant:* ☐ *male* ☐ *female*

Interviewer reads:
Thank you for agreeing to participate. First, I would like to ask you a few questions. Some of these questions may be uncomfortable to answer. Please remember that you do not have to answer any questions that you do not want to answer and you may discontinue the interview at any time. If I ask a question that you don't want to answer, just let me know and I will go on to the next question. Our discussion will last no more than 30 minutes.

2. In what month and year were you born? *MMM* ☐☐☐ *yy* ☐☐ → ***If unknown, record age at last birthday: Estimate OK.*** *years* ☐☐

3. What is the highest level of school you attended? *primary* ☐ *secondary* ☐ *higher* ☐ *did not attend* ☐ *DK* ☐ *REF* ☐ → ***If did not attend, DK, or REF, skip to 4.***

   3a. What is the highest grade/form/year you completed at that level? ☐☐ *years* ☐ *DK* ☐ *REF*

SHIMS001 (186) RQ-2 (022)

PTID

☐ - ☐☐☐ - ☐☐ - ☐ - ☐☐

Routine Questionnaire (A1)

Question 4 Instructions: *Read choices out loud to participant. Mark the one best answer.*

4. I would like to ask you about your employment status. Are you now...

- ☐ regularly employed full time?
- ☐ employed part-time?
- ☐ employed seasonally?
- ☐ self-employed?
- ☐ unemployed/looking for work?
- ☐ unemployed/not looking for work?
- ☐ retired or disabled?
- ☐ other? If other, specify: _____
- ☐ *REF*

5. Are you currently married (civil or traditional) or living together with a man/woman as married?

- ☐ *yes, currently married*
- ☐ *yes, living with a man/woman*
- ☐ *no*
- ☐ *REF*

→ ***If no or REF, skip to Question 7 Instructions.***

6. Is your husband/wife or partner living with you now or is he/she staying elsewhere?

- ☐ *living with me*
- ☐ *staying elsewhere*
- ☐ *REF*

Question 7 Instructions: *This question for women only. If participant is male, skip to Sexual Activity section.*

7. Are you currently pregnant? ☐ *yes* ☐ *no* ☐ *DK* ☐ *REF*

SEXUAL ACTIVITY

Instructions: *This section of the form addresses sexual behaviors and asks that the participant recall his/her sexual partners over the* ***past 6 months****.*

Interviewer reads:

Now I would like to ask you some questions about your recent sexual activity. I know these questions are sensitive and want to remind you that your answers are completely private. This means that they will not be shared with anyone outside of the study team. No one will know what particular answers you give. This form will not have your name anywhere on it. Instead, you will only be identified by a number. If we should come to any questions that you don't want to answer, just let me know and we will go on to the next one.

Different people have different definitions of "sex" or "sexual intercourse." For this study, when we say "sex" we mean:

- Vaginal sex, which is when a man puts his penis in a woman's vagina.
- Anal sex, which is when a man puts his penis in another person's anus.

Do you have any questions before continuing?

SHIMS001 (186) RQ-3 (023)

PTID

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Routine Questionnaire (A1)

8. How old were you when you had sexual intercourse for the very first time?

age (years) __

☐ *have never had sex* → ***If have never had sex, skip to HIV Status section.***

☐ *REF*

9. In total, with how many different people have you had sexual intercourse in the last 6 months? It is okay to estimate the number if you do not remember exactly.

number of partners __ → ***If zero, skip to HIV Status section.***

☐ *REF*

10. With the _____ (*insert number of partners from question 9 or say "this or these" if 9 = REF*) sex partners that you have had in the last 6 months, how often did you use a condom when you had sexual intercourse?

☐ *sometimes* ☐ *DK*
☐ *always* ☐ *REF*
☐ *never*

Instructions: *Read* ***down*** *each column of the table (for each partner, one at a time),* ***not*** *across each row.*

Interviewer reads:
Now I would like to ask you more details about your most recent sex partners in the last 6 months. Please tell me about them starting with the most recent sex partner.

	Partner 1	☐ *no 2nd partner* ***Skip to HIV Status section.*** ***Partner 2***	☐ *no 3rd partner* ***Skip to HIV Status section.*** ***Partner 3***
11. First name, nickname, or marker of each partner	_____ ☐ *REF*	_____ ☐ *REF*	_____ ☐ *REF*
12. Month/year sexual relationship began	*MMM* *yy* ☐ *REF*	*MMM* *yy* ☐ *REF*	*MMM* *yy* ☐ *REF*
13. Month/year sexual relationship ended ***Interviewer:*** *Record today's date if relationship has not ended.*	*MMM* *yy* ☐ *REF*	*MMM* *yy* ☐ *REF*	*MMM* *yy* ☐ *REF*
14. Partner's sex	☐ *male* ☐ *female* ☐ *REF*	☐ *male* ☐ *female* ☐ *REF*	☐ *male* ☐ *female* ☐ *REF*

PTID

__ - ___ - __ - __ - __

Routine Questionnaire (A1)

Instructions: *If response to Question 14 is female or REF, skip to 15. If response to Question 14 is "male", continue to Question 14a.*

	Partner 1	***Partner 2***	***Partner 3***
14a. Was his penis circumcised or uncircumcised? ***Interviewer:*** *Show participant male circumcision drawings on Interview Card #1.*	☐ *circumcised* ☐ *uncircumcised* ☐ *became circumcised during relationship* ☐ *DK* ☐ *REF*	☐ *circumcised* ☐ *uncircumcised* ☐ *became circumcised during relationship* ☐ *DK* ☐ *REF*	☐ *circumcised* ☐ *uncircumcised* ☐ *became circumcised during relationship* ☐ *DK* ☐ *REF*
15. About how old was she/he the first time you had sex with her/him?	*years* __ ☐ *REF*	*years* __ ☐ *REF*	*years* __ ☐ *REF*

For the next question, I am going to ask you if your partner was a husband/wife, a regular partner, or a casual partner:

- By husband/wife we mean someone who you are married to or living with as if married.
- By regular partner we mean someone who you are NOT married to or living with as married, but who is a steady partner such as a girlfriend or boyfriend.
- By casual partner we mean someone who is NOT your spouse or a regular partner, but with whom you have had sex with in the last 6 months.

16. Keeping these definitions in mind, is this partner your spouse, a regular partner, or a casual partner?	☐ *husband/wife* ☐ *regular partner* ☐ *casual partner* ☐ *REF*	☐ *husband/wife* ☐ *regular partner* ☐ *casual partner* ☐ *REF*	☐ *husband/wife* ☐ *regular partner* ☐ *casual partner* ☐ *REF*
17. On approximately how many days did you have sex with him/her in the last 6 months?	☐ *1* ☐ *between 2–5* ☐ *between 6–10* ☐ *more than 10* ☐ *REF*	☐ *1* ☐ *between 2–5* ☐ *between 6–10* ☐ *more than 10* ☐ *REF*	☐ *1* ☐ *between 2–5* ☐ *between 6–10* ☐ *more than 10* ☐ *REF*

Instructions: *For questions 18–25, show participant Interview Card #2 to help them remember the response options: always, sometimes, or never.*

18. How often did you use a condom when you had sexual intercourse?	☐ *always* ☐ *sometimes* ☐ *never* ☐ *REF*	☐ *always* ☐ *sometimes* ☐ *never* ☐ *REF*	☐ *always* ☐ *sometimes* ☐ *never* ☐ *REF*

PTID

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Routine Questionnaire (A1)

	Partner 1	Partner 2	Partner 3
19. How often did you give or receive money or gifts so that you would have sex with this person?	☐ *always* ☐ *sometimes* ☐ *never* ☐ *REF*	☐ *always* ☐ *sometimes* ☐ *never* ☐ *REF*	☐ *always* ☐ *sometimes* ☐ *never* ☐ *REF*
20. Did you and your partner engage in *vaginal* sex in the last 6 months?	☐ *yes* ☐ *REF* ☐ *no*	☐ *yes* ☐ *REF* ☐ *no* ***If no, skip to 22.***	☐ *yes* ☐ *REF* ☐ *no*
21. How often did you and your partner use a condom when you had *vaginal* sex in the last 6 months?	☐ *always* ☐ *sometimes* ☐ *never* ☐ *REF*	☐ *always* ☐ *sometimes* ☐ *never* ☐ *REF*	☐ *always* ☐ *sometimes* ☐ *never* ☐ *REF*
22. Did you and your partner engage in *anal* sex in the last 6 months?	☐ *yes* ☐ *REF* ☐ *no*	☐ *yes* ☐ *REF* ☐ *no* ***If no, skip to Questions 24–25 Instructions.***	☐ *yes* ☐ *REF* ☐ *no*
23. How often did you and your partner use a condom when you had *anal* sex in the last 6 months?	☐ *always* ☐ *sometimes* ☐ *never* ☐ *REF*	☐ *always* ☐ *sometimes* ☐ *never* ☐ *REF*	☐ *always* ☐ *sometimes* ☐ *never* ☐ *REF*

Questions 24–25 Instructions: *Complete questions 24–25 for all male participants who had a male sex partner(s) in the past 6 months. All other participants, skip to question 26.*

24. Did you and your partner have *anal* sex in the last 6 months?	☐ *yes* ☐ *REF* ☐ *no*	☐ *yes* ☐ *REF* ☐ *no* ***If no, skip to 26.***	☐ *yes* ☐ *REF* ☐ *no*
25. How often did you and your partner use a condom when you had *anal* sex in the last 6 months?	☐ *always* ☐ *sometimes* ☐ *never* ☐ *REF*	☐ *always* ☐ *sometimes* ☐ *never* ☐ *REF*	☐ *always* ☐ *sometimes* ☐ *never* ☐ *REF*

SHIMS001 (186) RQ-6 (026)

PTID

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Routine Questionnaire (A1)

	Partner 1	Partner 2	Partner 3
26. When you were having a sexual relationship with this partner, do you think that he/she was HIV positive?	☐ yes ☐ DK ☐ no ☐ REF	☐ yes ☐ DK ☐ no ☐ REF	☐ yes ☐ DK ☐ no ☐ REF
27. Do you think that this partner was taking ART for HIV/AIDS?	☐ yes ☐ DK ☐ no ☐ REF	☐ yes ☐ DK ☐ no ☐ REF	☐ yes ☐ DK ☐ no ☐ REF

HIV STATUS INFORMATION

Instructions: *This section of the form addresses prior HIV testing.*

Interviewer reads:
Now I would like to ask you some questions about HIV testing. Your answers are completely private. This form will not have your name anywhere on it; instead you will only be identified by a number.

28. Have you ever been tested to see if you have the AIDS virus?
    yes ☐ *no* ☐ *DK* ☐ *REF* ☐ → ***If no, DK, or REF, skip to 34.***

29. How many times have you had an HIV test in your lifetime?
    number of times ☐☐ ☐ *REF*

30. When was the last time you had an HIV test? Give best approximate date.
    MMM ☐☐☐ *yy* ☐☐ ☐ *REF*

31. Did you get the result of your last HIV test?
    yes ☐ *no* ☐ *DK* ☐ *REF* ☐ → ***If DK or REF, skip to 34.***
    If yes, skip to 33.

Question 32 Instructions: *Do not read. Record reason as described by participant.*

32. What are some of the reasons that you did not get your HIV test result?

- ☐ *I did not want to know/was afraid to know my test result*
- ☐ *provider did not give result to me*
- ☐ *had to get partner permission to test*
- ☐ *wanted to test with partner*
- ☐ *did not have time to wait for result*
- ☐ *other* _____

SHIMS001 (186) RQ-7 (027)

PTID ☐-☐☐☐-☐☐-☐-☐☐

Routine Questionnaire (A1)

Instructions: *If question 32 was answered, skip to HIV Prevention Exposure Information section..*

33. I would like to ask you the result of your latest HIV test, but I want to remind you again that you should only answer the question if you feel comfortable. If you feel comfortable, could you tell me the result of your latest HIV test?

positive ☐ *negative* ☐ *indeterminate* ☐ *DK* ☐ *REF* ☐

34. Has a doctor or nurse ever told you that you should be taking ART to treat HIV (including during pregnancy)?

yes ☐ *no* ☐ *DK* ☐ *REF* ☐

35. Are you currently taking ART to treat HIV?

yes ☐ *no* ☐ *DK* ☐ *REF* ☐

HIV PREVENTION EXPOSURE INFORMATION

Instructions: *Read each question and mark yes or no, as appropriate. Each time a participant answers 'yes', ask the participant "What is the source of this information?" Read the list of sources of information aloud. Show participant Interviewer Card #4 with response categories. Use the key below to indicate the source(s) that correspond to the participant's answer(s). More than one response is acceptable.*

1 = Billboard
2 = Radio
3 = Television
4 = Community group/organization
5 = Health care provider
6 = Religions leader/organization
7 = Friend
8 = Family member
9 = Other

Interviewer reads:
Now I would like to ask you some questions about HIV prevention messages that you may have heard or seen in the past 6 months and how or where you heard or saw them. Please use this card to help you answer.

36. In the past 6 months, have you heard or seen any messages about the following topics related to HIV?

	yes	*no*	*REF*	***If yes, ask:*** What is the source of this information? *Mark all that apply.* 1 2 3 4 5 6 7 8 9
36a. Get an HIV test to know your status.	☐	☐	☐	☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐
36b. Reduce your number of sex partners.	☐	☐	☐	☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐
36c. Use condoms every time you have sex.	☐	☐	☐	☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐

PTID

Routine Questionnaire (A1)

If yes, ask: What is the source of this information? *Mark all that apply.*

36d. Male circumcision for HIV prevention.					1	2	3	4	5	6	7	8	9
36e. ART is available in clinics to treat HIV.					1	2	3	4	5	6	7	8	9
36f. All pregnant women should get an HIV test.					1	2	3	4	5	6	7	8	9
36g. ART is available to prevent a mother from transmitting HIV to her baby.					1	2	3	4	5	6	7	8	9
36h. Other, specify: _____ _____					1	2	3	4	5	6	7	8	9

Instructions: *If the participant is female, skip to Final Statement section. If the participant is male, continue to Male Circumcision Status section.*

MALE CIRCUMCISION STATUS

Interviewer reads:
Now I would like to ask you about male circumcision. I am going to show you some drawings to help answer the questions. As a reminder, by male circumcision, I mean removal of the foreskin of the penis. Before we begin, do you have any questions?

Instructions: *Show participant male circumcision drawings on Interview Card #1.*

37. Based on these drawings, when you do NOT have an erection, would you say your penis is uncircumcised (more like the first drawing) or circumcised (more like the second drawing)?

circumcised *uncircumcised* *DK* *REF*

If uncircumcised, DK, or REF, skip to Final Statement.

38. When were you circumcised? *MMM* *yyyy* *REF*

If REF, skip to Final Statement.

FINAL STATEMENT

Interviewer reads:
Thank you very much for your cooperation. The information you provided is very helpful and we appreciate your time and assistance. Do you have any final questions or comments that you would like to share with me?

PTID ☐☐-☐☐☐-☐☐-☐-☐☐

Routine Questionnaire (A1)

Enrollment Date ☐☐ dd ☐☐☐ MMM ☐☐ yy

Staff ID: ☐☐☐☐☐ *Team ID:* ☐☐

Instructions: *Use this Routine Questionnaire for all participants meeting the eligibility criteria who have provided written informed consent to participate. Please do not leave any questions blank. Instead, mark the "DK" box if the participant states that they "don't know" the answer to a question. If the participant is willing to answer but doesn't know the exact answer, encourage him/her to estimate, as this is better than a DK answer. If the participant refuses to answer a question, mark the "REF" box for "refused" to answer.*

1. *Mark the sex of participant:* ☐ *male* ☐ *female*

Interviewer reads:
Ngiyabonga kuvuma kungenela lolucwaningo. Ngitawucala ngekukubuta imibuto lembalwa. Leminye yalemibuto ingakwenta utive ungakakhululeki kutsi ungayiphendvula. Ngicela kukukhumbuta kutsi awukaphoceleleki kutsi uphendvule yonkhe imibuto futsi unelilungelo lekuyekela kuphendvula noma ngunini. Uma ngikubuta umbuto longatsandzi kuwuphendvula ngicela ukusho loko ngitaweca ngichubekele kulolandzelako. Kucocisana kwetfu angeke kwendlule imzuzu lendlula emashumi lamatsatfu.

2. Ngabe watalwa ngayiphi inyanga nemnyaka?
   MMM ☐☐☐ *yy* ☐☐ → ***If unknown, record age at last birthday: Estimate OK.*** *years* ☐☐

3. Wafundza wagcina kuliphi libanga lemfundvo?
   primary ☐ *secondary* ☐ *higher* ☐ *did not attend* ☐ *DK* ☐ *REF* ☐ → ***If did not attend, DK, or REF, skip to 4.***

   3a. Ingabe ufundze wagcina kuphi kulelibanga, ngisho iminyaka lowayifundza wayicedza? ☐☐ *years* ☐ *DK* ☐ *REF*

PTID

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Routine Questionnaire (A1)

Question 4 Instructions: *Read choices out loud to participant. Mark the one best answer.*

4. Ngingatsanda kukubuta ngesimo sakho semsebenti. Ngabe nyalo u ...

- ☐ ucashwe sonkhe sikhatsi?
- ☐ ucashwe ngesikhatsi lesitsite?
- ☐ ucashwa ngesikhatsi lesitsite emnyakeni?
- ☐ uyatisebenta?
- ☐ awusebenti, ufuna umsebenti?
- ☐ awusebenti, kantsi awuwufuni umsebenti?
- ☐ watsatsa umhlalaphansi noma ukhubatekile?
- ☐ lokunye? Chaza kabanti: _____
- ☐ *REF*

5. Ingabe utsetse/wendzile yini nyalo (ngekwemshado noma ngekwesintfu) noma ukhona lohlalisana naye ungatsi nitsetsene?

- ☐ *yes, currently married*
- ☐ *yes, living with a man/woman*
- ☐ *no*
- ☐ *REF*

→ ***If no or REF, skip to Question 7 Instructions.***

6. Ingabe indvodza/umfati/singani yakho/wakho/sakho uhlala/sihlala nawe nyalo noma uhlala/sihlala encenye?

- ☐ *living with me*
- ☐ *staying elsewhere*
- ☐ *REF*

Question 7 Instructions: *This question for women only. If participant is male, skip to Sexual Activity section.*

7. Ngabe ukhulelwe yini nyalo? ☐ *yes* ☐ *no* ☐ *DK* ☐ *REF*

SEXUAL ACTIVITY

Instructions: *This section of the form addresses sexual behaviors and asks that the participant recall his/her sexual partners over the* ***past 6 months****.*

Interviewer reads:

Nyalo-ke ngingatsandza kubuta imibuto lemayelana nekulala kwakho kulesikhashana lesendlulile. Ngiyati kutsi lemibuto iyahhedleta/itsintsana ne-buntfu bakho, kungako nje ngikukhumbuta kutsi timphendvulo takho titawugcineka kahle. Loku kusho kutsi akukho lomunye longatati ngaphandle kwalaba labachuba lolucwaningo. Angeke libhalwe ligama lakho kuleli-phepha letimphendvulo. Utawunikwa inombolo lotawatiwa ngayo. Uma kunemibuto longatsandzi kuyiphendvula ngicela ungatise ngitewuyeca ngichubekele kuleminye.

Bantfu labehlukene banetinchazelo letahlukene ngekulala noma kulalana. Kulolucwaningo kulala kufaka ekhatsi naku lokulandzelako:

- Kulalana ngekwelicansi kwalomdvuna nalomsikati, lokusho kutsi lomdvuna ufaka indvuku yakhe kulentfombi yalonalomsikati.
- Kulalana ngemuva, lona wesilisa ufaka indvuku yakhe etibunu noma embotjeni lengemuva kulomunye umuntfu.

Ingabe unayo yini imibuto ngaphambi kwekutsi ngichubekele embili?

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PTID

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Routine Questionnaire (A1)

8. Bewuneminyaka lemingakhi uma ucala ngca kulala?

age (years) __

☐ *have never had sex* → ***If have never had sex, skip to HIV Status section.***

☐ *REF*

9. Sebabonkhe ngabe bangakhi bantfu labehlukene lolelene nabo kuletinyanga letisitfupha letendlulile? Uma ungasakhumbuli kahle, ungabekisa.

number of partners __ → ***If zero, skip to HIV Status section.***

☐ *REF*

10. Kulabantfu labangu _____ (*insert number of partners from question 9 or say "this or these" if 9 = REF*) lolele nabo kuletinyanga letisitfupha letendlulile bewuyisebentisa ngemahlandla lamangaki ikhondomu?

☐ *sometimes* ☐ *DK*
☐ *always* ☐ *REF*
☐ *never*

Instructions: *Read* ***down*** *each column of the table (for each partner, one at a time),* ***not*** *across each row.*

Interviewer reads:
Nyalo ngicela kukubuta kabanti ngabophathina logcine kulalana nabo kuletinyanga letisitfupha letengcile. Ngicela ungitjele ngabo ucale ngalogcine kulalana naye.

	Partner 1	☐ *no 2nd partner* ***Skip to HIV Status section.*** ***Partner 2***	☐ *no 3rd partner* ***Skip to HIV Status section.*** ***Partner 3***
11. Ngiphe ligama lakhe, ligama lekuteketisa, noma indlela letsite yekumbekisa	_____ ☐ *REF*	_____ ☐ *REF*	_____ ☐ *REF*
12. Ngiphe inyanga nemnyaka lenacala kulalana ngawo	*MMM* ___ *yy* __ ☐ *REF*	*MMM* ___ *yy* __ ☐ *REF*	*MMM* ___ *yy* __ ☐ *REF*
13. Ngiphe inyanga nemnyaka lenahlukana ngawo ***Interviewer:*** *Record today's date if relationship has not ended.*	*MMM* ___ *yy* __ ☐ *REF*	*MMM* ___ *yy* __ ☐ *REF*	*MMM* ___ *yy* __ ☐ *REF*
14. Bulili bakhe	☐ *male* ☐ *REF* ☐ *female*	☐ *male* ☐ *REF* ☐ *female*	☐ *male* ☐ *REF* ☐ *female*

PTID

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Routine Questionnaire (A1)

Instructions: *If response to Question 14 is female or REF, skip to 15. If response to Question 14 is "male", continue to Question 14a.*

	Partner 1	***Partner 2***	***Partner 3***
14a. Indvuku yakhe beyisokiwe yini noma beyingakasokwa? ***Interviewer:*** *Show participant male circumcision drawings on Interview Card #1.*	☐ *circumcised* ☐ *uncircumcised* ☐ *became circumcised during relationship* ☐ *DK* ☐ *REF*	☐ *circumcised* ☐ *uncircumcised* ☐ *became circumcised during relationship* ☐ *DK* ☐ *REF*	☐ *circumcised* ☐ *uncircumcised* ☐ *became circumcised during relationship* ☐ *DK* ☐ *REF*
15. Bekaneminyaka lemingakhi ngesikhatsi nicala ngca kulalana?	*years* ☐☐ ☐ *REF*	*years* ☐☐ ☐ *REF*	*years* ☐☐ ☐ *REF*

Kulombuto lolandzelako ngitakubuta kutsi ngabe lomuntfu lolalana naye nitsatsene , nivame kuhlangana /singani sakho nomake ngumuntfu lokwetfuka kwenteka kutsi ulalanenaye:

- Nge ndvodza nemfati sisho lotsetsene naye waba yindvodza noma umfati wakho nomake lohlalisana naye njengemfati noma indvodza yakhko .
- Nge kuvamisa kuhlangana sisho umuntfu leningakatsatsani naye futsi leningahlalisani naye, kodvwa lenenta lutfo naye noma losingani sakho.
- Umumntfu nje sisho umuntfu leningakatsatsani futsi longasiso nesingani, kodvwa loke walala naye kuletinyanga letisitfupha letengcile.

16. Uma ulandzela lenchazelo lesengikunikete yona, ungamchaza utsi bekayini lomuntfu kuwe, benitsetsene, benivame kulalana naye/bekusingani sakho, noma ngumuntfu lewehle ulalana naye nje?	☐ *husband/wife* ☐ *regular partner* ☐ *casual partner* ☐ *REF*	☐ *husband/wife* ☐ *regular partner* ☐ *casual partner* ☐ *REF*	☐ *husband/wife* ☐ *regular partner* ☐ *casual partner* ☐ *REF*
17. Ungabekisa utsi nilalene emalanga lamangakhi kuletinyanga letisitfupha letendlulile?	☐ *1* ☐ *between 2–5* ☐ *between 6–10* ☐ *more than 10* ☐ *REF*	☐ *1* ☐ *between 2–5* ☐ *between 6–10* ☐ *more than 10* ☐ *REF*	☐ *1* ☐ *between 2–5* ☐ *between 6–10* ☐ *more than 10* ☐ *REF*

Instructions: *For questions 18–25, show participant Interview Card #2 to help them remember the response options: always, sometimes, or never.*

18. Ingabe ikhondomu bewuyisebentisa sonkhe sikhatsi, ngalesinye sikhatsi noma bewungayisebentisi?	☐ *always* ☐ *sometimes* ☐ *never* ☐ *REF*	☐ *always* ☐ *sometimes* ☐ *never* ☐ *REF*	☐ *always* ☐ *sometimes* ☐ *never* ☐ *REF*

PTID

__ - ___ - __ - __ - __

Routine Questionnaire (A1)

	Partner 1	Partner 2	Partner 3
19. Ngemahlandla lamangakhi lawuke wakhipha noma watfola imali noma lokusipho kuze kutsi alalene nawe lomuntfu?	☐ *always* ☐ *sometimes* ☐ *never* ☐ *REF*	☐ *always* ☐ *sometimes* ☐ *never* ☐ *REF*	☐ *always* ☐ *sometimes* ☐ *never* ☐ *REF*
20. Ngabe wena naphathina wakho nilalene yini *entfombini* kuletinyanga letisitfupha letendlulile?	☐ *yes* ☐ *REF* ☐ *no*	☐ *yes* ☐ *REF* ☐ *no* → ***If no, skip to 22.***	☐ *yes* ☐ *REF* ☐ *no*
21. Ngabe uma nilalana *entfombini* kuletinyanga letisitfupha letendlulile ikhondomu beniyisebentisa ngaso sonkhe sikhatsi, ngalesinye sikhatsi noma beningayisebentisi?	☐ *always* ☐ *sometimes* ☐ *never* ☐ *REF*	☐ *always* ☐ *sometimes* ☐ *never* ☐ *REF*	☐ *always* ☐ *sometimes* ☐ *never* ☐ *REF*
22. Ngabe wena naphathina wakho nilalene yini ngemuva *(embotjeni lengemuva)* kuletinyanga letisitfupha letendlulile?	☐ *yes* ☐ *REF* ☐ *no*	☐ *yes* ☐ *REF* ☐ *no* → ***If no, skip to Questions 24–25 Instructions.***	☐ *yes* ☐ *REF* ☐ *no*
23. Ngabe niyisebentise emahlandla lamangakhi ikhondomu uma nilalana ngemuva *(embotjeni lengemuva)* kuletinyanga letisitfupha letendlulile?	☐ *always* ☐ *sometimes* ☐ *never* ☐ *REF*	☐ *always* ☐ *sometimes* ☐ *never* ☐ *REF*	☐ *always* ☐ *sometimes* ☐ *never* ☐ *REF*

Questions 24–25 Instructions: *Complete questions 24–25 for all male participants who had a male sex partner(s) in the past 6 months. All other participants, skip to question 26.*

24. Ngabe wena naphathina wakho nilalene yini ngemuva *(embotjeni lengemuva)* kuletinyanga letisitfupha letendlulile?	☐ *yes* ☐ *REF* ☐ *no*	☐ *yes* ☐ *REF* ☐ *no* → ***If no, skip to 26.***	☐ *yes* ☐ *REF* ☐ *no*
25. Ngabe niyisebentise emahlandla lamangakhi ikhondomu uma nilalana ngemuva *(embotjeni lengemuva)* kuletinyanga letisitfupha letendlulile?	☐ *always* ☐ *sometimes* ☐ *never* ☐ *REF*	☐ *always* ☐ *sometimes* ☐ *never* ☐ *REF*	☐ *always* ☐ *sometimes* ☐ *never* ☐ *REF*

SHIMS001 (186) RQ-6 (026)

PTID ☐-☐☐☐-☐☐-☐-☐☐

Routine Questionnaire (A1)

	Partner 1	Partner 2	Partner 3
26. Ngalesikhatsi ulalana nalophathina lona, ucabanga kutsi abenalo yini ligciwane leHIV?	☐ yes ☐ DK ☐ no ☐ REF	☐ yes ☐ DK ☐ no ☐ REF	☐ yes ☐ DK ☐ no ☐ REF
27. Nawucabanga, ngabe lophathina wakho abedla imitsi/emaphilisi ekutsintsibalisa ligciwane leHIV yini, pheceleti ema ARVs?	☐ yes ☐ DK ☐ no ☐ REF	☐ yes ☐ DK ☐ no ☐ REF	☐ yes ☐ DK ☐ no ☐ REF

HIV STATUS INFORMATION

Instructions: *This section of the form addresses prior HIV testing.*

Interviewer reads:
Nyalo ngicela kukubuta imibuto lephatselene nekuhlola ligciwane le HIV. Timphendvulo takho titawugcineka kahle. Angeke libhalwe ligama lakho kuleliphepha letimphendvulo, Utawunikwa inombolo lotawatiwa ngayo.

28. Ingabe wake wahlola kutsi unalo ligciwane leHIV yini? *yes* ☐ *no* ☐ *DK* ☐ *REF* ☐ → ***If no, DK, or REF, skip to 34.***

29. Sewutihlole emahlandla lamangakhi ligciwane leHIV emphilweni yakho? *number of times* ☐☐ ☐ *REF*

30. Wagcina nini kuhlola leligciwane leHIV? Tama kukhumbula lusuku, inyanga kanye nemnyaka. *MMM* ☐☐☐ *yy* ☐☐ ☐ *REF*

31. Ngabe wawutfola yini umphumela walokuhlolwa kwakho ligciwane leHIV nawugcina kuhlolwa? *yes* ☐ *no* ☐ *DK* ☐ *REF* ☐ → ***If DK or REF, skip to 34.***
If yes, skip to 33.

Question 32 Instructions: *Do not read. Record reason as described by participant.*

32. Ngutiphi letinye tizatfu letenta kutsi ungatfoli umphumela wakho wekuhlola iHIV?

- ☐ *I did not want to know/was afraid to know my test result*
- ☐ *provider did not give result to me*
- ☐ *had to get partner permission to test*
- ☐ *wanted to test with partner*
- ☐ *did not have time to wait for result*
- ☐ *other* _____

SHIMS001 (186) RQ-7 (027)

PTID

☐-☐☐☐-☐☐-☐-☐☐

Routine Questionnaire (A1)

Instructions: *If question 32 was answered, skip to HIV Prevention Exposure Information section.*

33. Nyalo ngingatsandza kukubuta umphumela wakho nawuhlola ligciwane leHIV, ngiyaphindza ngiyakukhumbuta kutsi lombuto ungawuphendvula uma utiva ukhululekile. Uma utiva ukhululekile, ngicela kwati ngemphumela wekuhlolwa logcine ngawo?

positive	*negative*	*indeterminate*	*DK*	*REF*
☐	☐	☐	☐	☐

34. Ngabe dokotela noma nesi wake wakutjela yini kutsi udle emaphilisi ekutsintsibalisa ligciwane leHIV pheceleti ema ARVs (lokufaka ekhatsi make lotetfwele)?

yes	*no*	*DK*	*REF*
☐	☐	☐	☐

35. Ngabe uyawadla yini lamaphilisi ekutsintsibalisa ligciwane leHIV, pheceleti ema ARVs kulesikhatsi sanyalo?

yes	*no*	*DK*	*REF*
☐	☐	☐	☐

HIV PREVENTION EXPOSURE INFORMATION

Instructions: *Read each question and mark yes or no, as appropriate. Each time a participant answers 'yes', ask the participant "What is the source of this information?" Read the list of sources of information aloud. Show participant Interviewer Card #4 with response categories. Use the key below to indicate the source(s) that correspond to the participant's answer(s). More than one response is acceptable.*

1 = Billboard
2 = Radio
3 = Television
4 = Community group/organization
5 = Health care provider
6 = Religions leader/organization
7 = Friend
8 = Family member
9 = Other

Interviewer reads:
Nyalo ngicela kukubuta imibuto lephatselene nemilayeto yekuvikela ligciwane le HIVlokewayiva noma wayibona kuletinyanga letisitfupha letendlulile. Ngicela usebentise nali likhadi kukusita kuphendvula.

36. Kuletinyanga letisitfupha letendlulile, uke weva noma wabona imilayeto mayelana nanati tihloko letilandzelako letiphatselene ne HIV?

	yes	*no*	*REF*	***If yes, ask:*** Ingabe uyive noma uyibone kuphi lemilayeto? *Mark all that apply.* 1 2 3 4 5 6 7 8 9
36a. Hlola ligciwane leHIV utokwati simo sakho.	☐	☐	☐	☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐
36b. Nciphisa bantfu lolalana nabo.	☐	☐	☐	☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐
36c. Sebentisa ikhondomu ngaso sonkhe sikhatsi uma ulalana nemuntfu.	☐	☐	☐	☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐

PTID

- - - - -

Routine Questionnaire (A1)

		If yes, ask: Ingabe uyive noma uyibone kuphi lemilayeto? *Mark all that apply.*								
		1	2	3	4	5	6	7	8	9
36d.	Kusoka kwebesilisa kunciphisa ematfuba ekutfola ligciwane leHIV.	☐	☐	☐	☐	☐	☐	☐	☐	☐
36e.	Emaphilisi ekutsintsibalisa ligciwane leHIV (emaARVs) ayatfolakala emitfolamphilo.	☐	☐	☐	☐	☐	☐	☐	☐	☐
36f.	Bonkhe besifazane labatetfwele bayakhutsatwa kutsi bahlole ligciwane leHIV.	☐	☐	☐	☐	☐	☐	☐	☐	☐
36g.	Ema ARVs ayatfolakala ekuvikela make kutsi angamutseleli umntwanakhe iHIV.	☐	☐	☐	☐	☐	☐	☐	☐	☐
36h.	Lokunye, chaza kabanti: _____ _____	☐	☐	☐	☐	☐	☐	☐	☐	☐

Instructions: *If the participant is female, skip to Final Statement section. If the participant is male, continue to Male Circumcision Status section.*

MALE CIRCUMCISION STATUS

Interviewer reads:
Nyalo ngitakubuta imibuto ngekusoka kwabantfu besilisa. Ngitakukhombisa imidvwebo lesita kuphendvula lemibuto. Kukukhumbuta, kusoka kwebantfu besilisa kusho kususwa kwelijwabu endvukwini yabo. Ngabe unayo yini imibuto?

Instructions: *Show participant male circumcision drawings on Interview Card #1.*

37. Uma ubuka lemidvwebo ungasho yini kutsi indvuku yakho uma ingakavuki kutsi ayikasokwa (cishe njengalomdvwebo wekucala) noma isokiwe (cishe njengalomdvwebo wesibili)?

circumcised ☐ *uncircumcised* ☐ *DK* ☐ *REF* ☐ → ***If uncircumcised, DK, or REF, skip to Final Statement.***

38. Usoke/wasoka nini?

MMM ☐☐☐ *yyyy* ☐☐☐☐ ☐ *REF*

→ ***If REF, skip to Final Statement.***

FINAL STATEMENT

Interviewer reads:
Ngiyabonga kakhulu kakhulu kutsi sibambisane. Letimphendvulo losinike tona titosita kakhulu. Siyalubonga lusito lwakho kanye nesikhatsi sakho. Ingabe unayoyini leminye imibuto nomakukhona yini longatsandza kungatisa kona?

SHIMS001 (186) HC-1 (001)

Household ID

[ ]-[ ][ ][ ]-[ ][ ]-[ ]-[0][0]

Household Composition (A1)

Team ID: [ ][ ]

1. Indicate the questionnaire that will be completed for this household: ☐ *Routine* ☐ *Extended*

Attempts to Survey Household			
	1	**2**	**3**
	dd MMM yy	*dd MMM yy*	*dd MMM yy*
2. Date	[ ][ ] [ ][ ][ ] [ ][ ]	[ ][ ] [ ][ ][ ] [ ][ ]	[ ][ ] [ ][ ][ ] [ ][ ]
3. Staff ID	[ ][ ][ ] [ ][ ]	[ ][ ][ ] [ ][ ]	[ ][ ][ ] [ ][ ]
4. Result Code	[ ]	[ ]	[ ] ***Note**: 5 and 6 are not valid codes for third attempt.*
Result Code Key	***1** = members listed; **2** = household refused; **3** = household absent for extended period of time; **4** = vacant/destroyed/not found/not residential; **5** = postponed; **6** = no one home → **If 5 or 6, complete Next Visit Date/Time.***		
Next Visit Date/Time	_____	_____	
5. Total number in household	[ ][ ]	***6. Total eligible*** [ ][ ]	***7. Total given PTID*** [ ][ ]

HOUSEHOLD PARTICIPATION

Instructions: *Ask these questions of the head of the household or an adult member of the household who has information about the household to determine the household composition. For each eligible member of the household, complete all questions. Please do not leave any questions blank.*

Interviewer reads:
Thank you for taking the time to speak with me about this study. We would like to first ask you some questions about your household and then I am going to ask you about household members.

Ngiyabonga kutsatsa sikhatsi sakho kukhuluma nami ngaloluhlolo. Ngitawucela kukubuta imibuto ngendlu yakakho kanye nalabo lopheka noma lodla nabo.

8. What is the main source of drinking water for members of your household? *Mark only one.*

   Emanti leniwanatsako achamuka kuphi?

- ☐ 8a. *Piped into dwelling*
- ☐ 8b. *Piped yard/plot*
- ☐ 8c. *Public taps/standpipe*
- ☐ 8d. *Borehole*
- ☐ 8e. *Protected well*
- ☐ 8f. *Unprotected well*
- ☐ 8g. *Protected spring*
- ☐ 8h. *Unprotected spring*
- ☐ 8i. *Rainwater*
- ☐ 8j. *Tanker truck*
- ☐ 8k. *Surface water* *(river/dam/lake/ponds/stream/canal/irrigation channel)*
- ☐ 8l. *Bottled water*
- ☐ 8m. *Other, specify:* _____
- ☐ 8n. *DK/REF*

Household ID

[ ] - [ ][ ][ ] - [ ][ ] - [ ] - [0][0]

Household Composition (A1)

Question 9 Instructions: *Read choices out loud to member. Mark all that apply.*

9. Which of the following does your household have?

Ngukuphi lokukhona endlini yakakho noma lanako emalunga endlu yakakho (labo lopheka noma lodla nabo)?

- [ ] 9a. Electricity / Gesi
- [ ] 9b. Radio / Umsakato wemoya (iradio)
- [ ] 9c. Television / Umsakato wetitfombe (iTV)
- [ ] 9d. Mobile telephone / Lucingo lolungumahlalekhikhini
- [ ] 9e. Non-mobile telephone / Lucingo lwasendlini
- [ ] 9f. Refrigerator / Kwekubandzisa (iFriji)
- [ ] 9g. Stove / Sitofu
- [ ] 9h. Watch / Liwashi
- [ ] 9i. REF

HOUSEHOLD MEMBERS

Interviewer reads: Now I would like you to give me the names of the persons who live in your household and guests who stayed here last night starting with the head of the household.

Nyalo ngidzinga (ngitawucela) kutsi unginike emagama ebantfu labahlala endlini yakakho noma lenipheka nidle nabo kanye nalabo labakufikele balala itolo ebusuku, ucale ngaloyinhloko yendlu.

Member #1

Initials	Usual member?	Slept here last night?	Gender	Age	Eligible?
	[ ] yes [ ] no	[ ] yes [ ] no	[ ] male [ ] female	[ ][ ] years	[ ] yes [ ] no → *If no, skip to next member.*

Enrollment Status

- [ ] *Enrolled* → ***Assign PTID.*** → [ ] - [ ][ ][ ] - [ ][ ] - [ ] - [ ][ ]
- [ ] *Refused*
- [ ] *Unable to contact* → ***No PTID assigned.***

Member #2

Initials	Usual member?	Slept here last night?	Gender	Age	Eligible?
	[ ] yes [ ] no	[ ] yes [ ] no	[ ] male [ ] female	[ ][ ] years	[ ] yes [ ] no → *If no, skip to next member.*

Enrollment Status

- [ ] *Enrolled* → ***Assign PTID.*** → [ ] - [ ][ ][ ] - [ ][ ] - [ ] - [ ][ ]
- [ ] *Refused*
- [ ] *Unable to contact* → ***No PTID assigned.***

Member #3

Initials	Usual member?	Slept here last night?	Gender	Age	Eligible?
	[ ] yes [ ] no	[ ] yes [ ] no	[ ] male [ ] female	[ ][ ] years	[ ] yes [ ] no → *If no, skip to next member.*

Enrollment Status

- [ ] *Enrolled* → ***Assign PTID.*** → [ ] - [ ][ ][ ] - [ ][ ] - [ ] - [ ][ ]
- [ ] *Refused*
- [ ] *Unable to contact* → ***No PTID assigned.***

[ ] ***No additional members. Complete/verify questions 5, 6, and 7 on page 1. End of form.***

SHIMS001 (186) HC-3 (003)

Household ID

[ ] - [ ][ ][ ] - [ ][ ] - [ ] - [0][0]

Household Composition (A1)

Member #4

Initials	Usual member?	Slept here last night?	Gender	Age	Eligible?
	☐ yes ☐ no	☐ yes ☐ no	☐ male ☐ female	[ ][ ] years	☐ yes ☐ no → *If no, skip to next member.*

Enrollment Status

☐ Enrolled → *Assign PTID.* → [ ] - [ ][ ][ ] - [ ][ ] - [ ] - [ ][ ]

☐ Refused

☐ Unable to contact → ***No PTID assigned.***

Member #5

Initials	Usual member?	Slept here last night?	Gender	Age	Eligible?
	☐ yes ☐ no	☐ yes ☐ no	☐ male ☐ female	[ ][ ] years	☐ yes ☐ no → *If no, skip to next member.*

Enrollment Status

☐ Enrolled → *Assign PTID.* → [ ] - [ ][ ][ ] - [ ][ ] - [ ] - [ ][ ]

☐ Refused

☐ Unable to contact → ***No PTID assigned.***

Member #6

Initials	Usual member?	Slept here last night?	Gender	Age	Eligible?
	☐ yes ☐ no	☐ yes ☐ no	☐ male ☐ female	[ ][ ] years	☐ yes ☐ no → *If no, skip to next member.*

Enrollment Status

☐ Enrolled → *Assign PTID.* → [ ] - [ ][ ][ ] - [ ][ ] - [ ] - [ ][ ]

☐ Refused

☐ Unable to contact → ***No PTID assigned.***

Member #7

Initials	Usual member?	Slept here last night?	Gender	Age	Eligible?
	☐ yes ☐ no	☐ yes ☐ no	☐ male ☐ female	[ ][ ] years	☐ yes ☐ no → *If no, skip to next member.*

Enrollment Status

☐ Enrolled → *Assign PTID.* → [ ] - [ ][ ][ ] - [ ][ ] - [ ] - [ ][ ]

☐ Refused

☐ Unable to contact → ***No PTID assigned.***

Member #8

Initials	Usual member?	Slept here last night?	Gender	Age	Eligible?
	☐ yes ☐ no	☐ yes ☐ no	☐ male ☐ female	[ ][ ] years	☐ yes ☐ no → *If no, skip to next member.*

Enrollment Status

☐ Enrolled → *Assign PTID.* → [ ] - [ ][ ][ ] - [ ][ ] - [ ] - [ ][ ]

☐ Refused

☐ Unable to contact → ***No PTID assigned.***

☐ ***No additional members. Complete/verify questions 5, 6, and 7 on page 1. End of form.***

SHIMS001 (186) HC-3 (003)

Household ID

- - - - - 0 0

Household Composition (A1)

Member #4

Initials	Usual member?	Slept here last night?	Gender	Age	Eligible?
	☐ yes ☐ no	☐ yes ☐ no	☐ male ☐ female	☐☐ years	☐ yes ☐ no → *If no, skip to next member.*

Enrollment Status

☐ Enrolled
☐ Refused
→ *Assign PTID.* → ☐ - ☐☐☐ - ☐☐ - ☐ - ☐☐

☐ Unable to contact → ***No PTID assigned.***

Member #5

Initials	Usual member?	Slept here last night?	Gender	Age	Eligible?
	☐ yes ☐ no	☐ yes ☐ no	☐ male ☐ female	☐☐ years	☐ yes ☐ no → *If no, skip to next member.*

Enrollment Status

☐ Enrolled
☐ Refused
→ *Assign PTID.* → ☐ - ☐☐☐ - ☐☐ - ☐ - ☐☐

☐ Unable to contact → ***No PTID assigned.***

Member #6

Initials	Usual member?	Slept here last night?	Gender	Age	Eligible?
	☐ yes ☐ no	☐ yes ☐ no	☐ male ☐ female	☐☐ years	☐ yes ☐ no → *If no, skip to next member.*

Enrollment Status

☐ Enrolled
☐ Refused
→ *Assign PTID.* → ☐ - ☐☐☐ - ☐☐ - ☐ - ☐☐

☐ Unable to contact → ***No PTID assigned.***

Member #7

Initials	Usual member?	Slept here last night?	Gender	Age	Eligible?
	☐ yes ☐ no	☐ yes ☐ no	☐ male ☐ female	☐☐ years	☐ yes ☐ no → *If no, skip to next member.*

Enrollment Status

☐ Enrolled
☐ Refused
→ *Assign PTID.* → ☐ - ☐☐☐ - ☐☐ - ☐ - ☐☐

☐ Unable to contact → ***No PTID assigned.***

Member #8

Initials	Usual member?	Slept here last night?	Gender	Age	Eligible?
	☐ yes ☐ no	☐ yes ☐ no	☐ male ☐ female	☐☐ years	☐ yes ☐ no → *If no, skip to next member.*

Enrollment Status

☐ Enrolled
☐ Refused
→ *Assign PTID.* → ☐ - ☐☐☐ - ☐☐ - ☐ - ☐☐

☐ Unable to contact → ***No PTID assigned.***

☐ ***No additional members. Complete/verify questions 5, 6, and 7 on page 1. End of form.***

SHIMS001 (186) HC-4 (004)

Household ID

- - - - - 0 0

Household Composition (A1)

Member #9

Initials	Usual member?	Slept here last night?	Gender	Age	Eligible?
	☐ yes ☐ no	☐ yes ☐ no	☐ male ☐ female	☐☐ years	☐ yes ☐ no → *If no, skip to next member.*

Enrollment Status

☐ Enrolled
☐ Refused
→ *Assign PTID.* → ☐ - ☐☐☐ - ☐☐ - ☐ - ☐☐

☐ Unable to contact → *No PTID assigned.*

Member #10

Initials	Usual member?	Slept here last night?	Gender	Age	Eligible?
	☐ yes ☐ no	☐ yes ☐ no	☐ male ☐ female	☐☐ years	☐ yes ☐ no → *If no, skip to next member.*

Enrollment Status

☐ Enrolled
☐ Refused
→ *Assign PTID.* → ☐ - ☐☐☐ - ☐☐ - ☐ - ☐☐

☐ Unable to contact → *No PTID assigned.*

Member #11

Initials	Usual member?	Slept here last night?	Gender	Age	Eligible?
	☐ yes ☐ no	☐ yes ☐ no	☐ male ☐ female	☐☐ years	☐ yes ☐ no → *If no, skip to next member.*

Enrollment Status

☐ Enrolled
☐ Refused
→ *Assign PTID.* → ☐ - ☐☐☐ - ☐☐ - ☐ - ☐☐

☐ Unable to contact → *No PTID assigned.*

Member #12

Initials	Usual member?	Slept here last night?	Gender	Age	Eligible?
	☐ yes ☐ no	☐ yes ☐ no	☐ male ☐ female	☐☐ years	☐ yes ☐ no → *If no, skip to next member.*

Enrollment Status

☐ Enrolled
☐ Refused
→ *Assign PTID.* → ☐ - ☐☐☐ - ☐☐ - ☐ - ☐☐

☐ Unable to contact → *No PTID assigned.*

Member #13

Initials	Usual member?	Slept here last night?	Gender	Age	Eligible?
	☐ yes ☐ no	☐ yes ☐ no	☐ male ☐ female	☐☐ years	☐ yes ☐ no → *If no, skip to next member.*

Enrollment Status

☐ Enrolled
☐ Refused
→ *Assign PTID.* → ☐ - ☐☐☐ - ☐☐ - ☐ - ☐☐

☐ Unable to contact → *No PTID assigned.*

☐ ***No additional members. Complete/verify questions 5, 6, and 7 on page 1. End of form.***

SHIMS001 (186) HC-5 (005)

Household ID

[ ] - [ ][ ][ ] - [ ][ ] - [ ] - [0][0]

Household Composition (A1)

Member #14

Initials	Usual member?	Slept here last night?	Gender	Age	Eligible?
	☐ yes ☐ no	☐ yes ☐ no	☐ male ☐ female	[ ][ ] years	☐ yes ☐ no → *If no, skip to next member.*

Enrollment Status

☐ Enrolled
☐ Refused
→ *Assign PTID.* → [ ] - [ ][ ][ ] - [ ][ ] - [ ] - [ ][ ]

☐ Unable to contact → *No PTID assigned.*

Member #15

Initials	Usual member?	Slept here last night?	Gender	Age	Eligible?
	☐ yes ☐ no	☐ yes ☐ no	☐ male ☐ female	[ ][ ] years	☐ yes ☐ no → *If no, skip to next member.*

Enrollment Status

☐ Enrolled
☐ Refused
→ *Assign PTID.* → [ ] - [ ][ ][ ] - [ ][ ] - [ ] - [ ][ ]

☐ Unable to contact → *No PTID assigned.*

Member #16

Initials	Usual member?	Slept here last night?	Gender	Age	Eligible?
	☐ yes ☐ no	☐ yes ☐ no	☐ male ☐ female	[ ][ ] years	☐ yes ☐ no → *If no, skip to next member.*

Enrollment Status

☐ Enrolled
☐ Refused
→ *Assign PTID.* → [ ] - [ ][ ][ ] - [ ][ ] - [ ] - [ ][ ]

☐ Unable to contact → *No PTID assigned.*

Member #17

Initials	Usual member?	Slept here last night?	Gender	Age	Eligible?
	☐ yes ☐ no	☐ yes ☐ no	☐ male ☐ female	[ ][ ] years	☐ yes ☐ no → *If no, skip to next member.*

Enrollment Status

☐ Enrolled
☐ Refused
→ *Assign PTID.* → [ ] - [ ][ ][ ] - [ ][ ] - [ ] - [ ][ ]

☐ Unable to contact → *No PTID assigned.*

Member #18

Initials	Usual member?	Slept here last night?	Gender	Age	Eligible?
	☐ yes ☐ no	☐ yes ☐ no	☐ male ☐ female	[ ][ ] years	☐ yes ☐ no → *If no, skip to next member.*

Enrollment Status

☐ Enrolled
☐ Refused
→ *Assign PTID.* → [ ] - [ ][ ][ ] - [ ][ ] - [ ] - [ ][ ]

☐ Unable to contact → *No PTID assigned.*

☐ ***No additional members. Complete/verify questions 5, 6, and 7 on page 1. End of form.***

SHIMS001 (186) HC-6 (006)

Household ID

- - - - - - 0 0

Household Composition (A1)

	Initials	Usual member?	Slept here last night?	Gender	Age	Eligible?	
Member #19		☐ yes ☐ no	☐ yes ☐ no	☐ male ☐ female	☐☐ years	☐ yes ☐ no →	*If no, skip to next member.*
Member #20		☐ yes ☐ no	☐ yes ☐ no	☐ male ☐ female	☐☐ years	☐ yes ☐ no →	*If no, skip to next member.*
Member #21		☐ yes ☐ no	☐ yes ☐ no	☐ male ☐ female	☐☐ years	☐ yes ☐ no →	*If no, skip to next member.*
Member #22		☐ yes ☐ no	☐ yes ☐ no	☐ male ☐ female	☐☐ years	☐ yes ☐ no →	*If no, skip to next member.*
Member #23		☐ yes ☐ no	☐ yes ☐ no	☐ male ☐ female	☐☐ years	☐ yes ☐ no →	*If no, skip to next member.*

Enrollment Status (Member #19)

- ☐ Enrolled → ***Assign PTID.*** → ☐ - ☐☐☐ - ☐☐ - ☐ - ☐☐
- ☐ Refused
- ☐ Unable to contact → ***No PTID assigned.***

Enrollment Status (Member #20)

- ☐ Enrolled → ***Assign PTID.*** → ☐ - ☐☐☐ - ☐☐ - ☐ - ☐☐
- ☐ Refused
- ☐ Unable to contact → ***No PTID assigned.***

Enrollment Status (Member #21)

- ☐ Enrolled → ***Assign PTID.*** → ☐ - ☐☐☐ - ☐☐ - ☐ - ☐☐
- ☐ Refused
- ☐ Unable to contact → ***No PTID assigned.***

Enrollment Status (Member #22)

- ☐ Enrolled → ***Assign PTID.*** → ☐ - ☐☐☐ - ☐☐ - ☐ - ☐☐
- ☐ Refused
- ☐ Unable to contact → ***No PTID assigned.***

Enrollment Status (Member #23)

- ☐ Enrolled → ***Assign PTID.*** → ☐ - ☐☐☐ - ☐☐ - ☐ - ☐☐
- ☐ Refused
- ☐ Unable to contact → ***No PTID assigned.***

☐ ***No additional members. Complete/verify questions 5, 6, and 7 on page 1. End of form.***

SHIMS001 (186) HC-7 (007)

Household ID

[ ] - [ ][ ][ ] - [ ][ ] - [ ] - [0][0]

Household Composition (A1)

Member #24

Initials	Usual member?	Slept here last night?	Gender	Age	Eligible?
	☐ yes ☐ no	☐ yes ☐ no	☐ male ☐ female	[ ][ ] years	☐ yes ☐ no → *If no, skip to next member.*

Enrollment Status

☐ Enrolled → *Assign PTID.* → [ ] - [ ][ ][ ] - [ ][ ] - [ ] - [ ][ ]

☐ Refused

☐ Unable to contact → *No PTID assigned.*

Member #25

Initials	Usual member?	Slept here last night?	Gender	Age	Eligible?
	☐ yes ☐ no	☐ yes ☐ no	☐ male ☐ female	[ ][ ] years	☐ yes ☐ no → *If no, skip to next member.*

Enrollment Status

☐ Enrolled → *Assign PTID.* → [ ] - [ ][ ][ ] - [ ][ ] - [ ] - [ ][ ]

☐ Refused

☐ Unable to contact → *No PTID assigned.*

Member #26

Initials	Usual member?	Slept here last night?	Gender	Age	Eligible?
	☐ yes ☐ no	☐ yes ☐ no	☐ male ☐ female	[ ][ ] years	☐ yes ☐ no → *If no, skip to next member.*

Enrollment Status

☐ Enrolled → *Assign PTID.* → [ ] - [ ][ ][ ] - [ ][ ] - [ ] - [ ][ ]

☐ Refused

☐ Unable to contact → *No PTID assigned.*

Member #27

Initials	Usual member?	Slept here last night?	Gender	Age	Eligible?
	☐ yes ☐ no	☐ yes ☐ no	☐ male ☐ female	[ ][ ] years	☐ yes ☐ no → *If no, skip to next member.*

Enrollment Status

☐ Enrolled → *Assign PTID.* → [ ] - [ ][ ][ ] - [ ][ ] - [ ] - [ ][ ]

☐ Refused

☐ Unable to contact → *No PTID assigned.*

Member #28

Initials	Usual member?	Slept here last night?	Gender	Age	Eligible?
	☐ yes ☐ no	☐ yes ☐ no	☐ male ☐ female	[ ][ ] years	☐ yes ☐ no → *If no, end of form.*

Enrollment Status

☐ Enrolled → *Assign PTID.* → [ ] - [ ][ ][ ] - [ ][ ] - [ ] - [ ][ ]

☐ Refused

☐ Unable to contact → *No PTID assigned.*

SHIMS001 (186) HTR-1 (145) Visit Code . 1

PTID - - - -

HIV Test Results (A1)

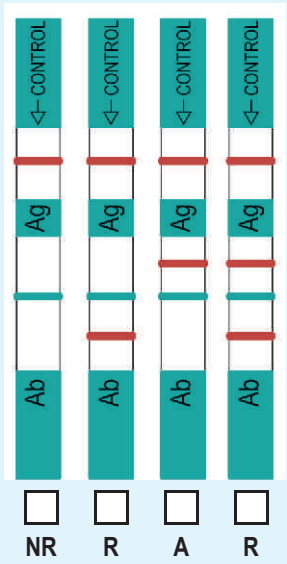
Specimen Collection Date dd MMM yy

Staff ID: Team ID:

1. Test #1: Determine 4th Generation

Lot No. _____ Exp. Date _____

Mark **one** box indicating the results from the Determine test strip:



NR R A R

☐ If test is invalid (no control line), **mark box** and **repeat** Determine Test.

Valid Determine Test Results

1. If **NR**, **STOP** and record as **NR** in Sample Test Result and Participant Result sections. No further testing is required.
2. If **R** or **A**, test blood sample with Unigold test.

2. Specimen Collection/Storage

	yes	no
2a. Was a 9ml tube of blood fully or partially collected?	☐	☐
2b. Was consent given for long-term storage?	☐	☐

3. Test #2: Unigold

Lot No. _____ Exp. Date _____

Mark the box indicating the result from the Unigold test strip:

☐ REACTIVE (**R**)

☐ NON-REACTIVE (**NR**)

If Valid Unigold Results, record in both Sample Test Result and Participant Result sections.

Test Results Interpretation

1. Determine Test = **R** and Unigold Test = **R:**
   Record **R** in both Sample Test Result and Participant Result sections.
2. Determine Test = **R** and Unigold Test = **NR**:
   Record as **IND** in both Sample Test Result and Participant Result sections
3. Determine Test = **A** and Unigold Test = **R**:
   Record as **IND** in both Sample Test Result and Participant Result sections
4. Determine Test = **A** and Unigold Test = **NR**:
   Record as **A** in Sample Test Result section and **IND** in Participant Result section.

4. Sample Test Result

Mark box and record on Sample Tube Label.

☐ **R** (Determine = **R** and Unigold = **R**)

☐ **NR** (Determine **NR** only)

☐ **IND** (Determine = **R** and Unigold = **NR** *or* Determine = **A** and Unigold = **R**)

☐ **A** (Determine = **A** and Unigold = **NR**)

5. Participant Result

☐ **NR**

☐ **R**

☐ **IND (IND** or **A)***

** In both cases, counsel as indeterminate result.*

6. Were the results given to the participant?

☐ **Yes**

☐ **No, participant refused**

☐ **No, other:** _____

☐ ☐ ☒ ☐ 02-FEB-11 T0_A1_TestResult_7

0 1 Language

SHIMS001 (186) NRL-1 (155)

Visit Code . 1

PTID - - - -

Specimen Collection Date dd MMM yy

Indeterminate: NRL Results (A1)

1. EIA RESULT *(To be completed by lab staff)*

- ☐ REACTIVE (**R**)
- ☐ NON-REACTIVE (**NR**)
- ☐ Not tested

Initials _____

Test Date dd MMM yy

2. VIRAL LOAD RESULT *(To be completed by lab staff)*

> = <

viral copies/mL

Initials _____

Test Date dd MMM yy

☐ Not tested ☐ Target not detected ☐ Invalid specimen

3. ACTION FOR FIELD STAFF *(To be completed by Manager or designee)*

- ☐ POSITIVE DIAGNOSIS
- ☐ NEGATIVE DIAGNOSIS
- ☐ INDETERMINATE/ REPEAT TESTING NEEDED

FOLLOW-UP TIMELINE

Notify participant/repeat test on: dd MMM yy

4. Were results given to the participant? *(To be completed by Field Counselor)*

Staff ID: *Team ID:*

- ☐ YES
- ☐ NO, PARTICIPANT REFUSED
- ☐ NO, UNABLE TO LOCATE
- ☐ NO, OTHER (specify): _____

SHIMS001 (186) EQ-1 (021)

PTID ☐☐-☐☐☐-☐☐-☐-☐☐

Extended Questionnaire (A1)

Enrollment Date ☐☐ dd ☐☐☐ MMM ☐☐ yy

Staff ID: ☐☐☐☐☐ Team ID: ☐☐

Instructions: *Use this Extended Questionnaire for all participants meeting the eligibility criteria who have provided written informed consent to participate. Please do not leave any questions blank. Instead, mark the "DK" box if the participant states that they "don't know" the answer to a question. If the participant is willing to answer but doesn't know the exact answer, encourage him/her to estimate, as this is better than a DK answer. If the participant refuses to answer a question, mark the "REF" box for "refused" to answer.*

1. *Mark the sex of participant:* ☐ *male* ☐ *female*

Interviewer reads:
Thank you for agreeing to participate. First, I would like to ask you a few questions. Some of these questions may be uncomfortable to answer. Please remember that you do not have to answer any questions that you do not want to answer and you may discontinue the interview at any time. If I ask a question that you don't want to answer, just let me know and I will go on to the next question. Our discussion will last no more than 45 minutes.

2. In what month and year were you born? *MMM* ☐☐☐ *yy* ☐☐ → ***If unknown, record age at last birthday: Estimate OK.*** *years* ☐☐

3. What is the highest level of school you attended? *primary* ☐ *secondary* ☐ *higher* ☐ *did not attend* ☐ *DK* ☐ *REF* ☐ → ***If did not attend, DK, or REF, skip to 4.***

   3a. What is the highest grade/form/year you completed at that level? ☐☐ *years* ☐ *DK* ☐ *REF*

PTID

__ - ___ - __ - __ - __

Extended Questionnaire (A1)

4. What is your usual occupation? ***[Interviewer probe**: What kind of work do you most of the time?]*
Mark all that apply.

- ☐ *farmer, forestry, fishing*
- ☐ *soldier, policeman*
- ☐ *driver*
- ☐ *manual worker*
- ☐ *sales, service worker*
- ☐ *factory worker*
- ☐ *take care of my home/children (housewife, homemaker)*
- ☐ *clerical*
- ☐ *professional/manager (includes teacher, accountant, nurse, etc.)*
- ☐ *student*
- ☐ *none*
- ☐ *other? If other, specify:* _____
- ☐ *REF*

Question 5 Instructions: *Read choices out loud to participant. Mark the one best answer.*

5. I would like to ask you about your employment status. Are you now...

- ☐ regularly employed full time?
- ☐ employed part-time?
- ☐ employed seasonally?
- ☐ self-employed?
- ☐ unemployed/looking for work?
- ☐ unemployed/not looking for work?
- ☐ retired or disabled?
- ☐ other? If other, specify: _____
- ☐ *REF*

6. Are you currently married (civil or traditional) or living together with a man/woman as married?

- ☐ *yes, currently married*
- ☐ *yes, living with a man/woman*
- ☐ *no*
- ☐ *REF*

→ ***If no or REF, skip to question 11 instructions.***

7. Is your husband/wife or partner living with you now or is he/she staying elsewhere?

- ☐ *living with me*
- ☐ *staying elsewhere*
- ☐ *REF*

Question 8 Instructions: *For women, skip to question 11 instructions.*

8. How many wives/live-in partners do you have?

number of wives/partners __

REF ☐

9. In the last 12 months, have you been away from your home for more than one month at a time?

☐ *yes* ☐ *no* → ***If no, skip to Binge Drinking section.*** ☐ *REF*

PTID

☐☐☐☐-☐☐☐-☐☐-☐-☐☐

Extended Questionnaire (A1)

10. In the last 12 months, how many times have you been away from your home for more than one month at a time?

number of trips ☐☐ *REF* ☐ → ***If REF, skip to Binge Drinking section.***

Question 11 Instructions: *This question for women only. If participant is male, skip to Binge Drinking section.*

11. Are you currently pregnant? ☐ *yes* ☐ *no* ☐ *DK* ☐ *REF*

EXPERIENCE WITH BINGE DRINKING

Instructions: *Show participants the picture of the different alcoholic beverages on Interview Card #3. Then ask questions 12–14.*

Interviewer reads:
Now I would like to ask you some questions about drinking alcohol. This picture shows common types of alcoholic beverages in our area. Some types of beverages contain more alcohol than other types of beverages. Below each beverage in this picture is a number. This number refers to how many drinks of alcohol each type of beverage contains. For example, one jar of umcombotsi is the same as 4 drinks, and one bottle of Spirits is the same as 30 drinks. Before we being, do you have any questions?

Question 12 Instructions: *Do not read responses. Allow participant to answer in own words, but okay to prompt.*

12. How frequently do you drink alcohol?

- ☐ *I don't drink*
- ☐ *every day or almost daily*
- ☐ *weekly but not daily*
- ☐ *monthly but not weekly*
- ☐ *less than monthly*
- ☐ *REF*

13. Using the information from this picture, have you ever had 6 or more drinks in one day?

☐ *yes* ☐ *no* → ***If no, skip to Beliefs Regarding Male Circumcision section.*** ☐ *DK* ☐ *REF*

14. In the past year, how often did you have 6 or more drinks in one day?

- ☐ *more than a year ago*
- ☐ *every day or almost daily*
- ☐ *weekly but not daily*
- ☐ *monthly but not weekly*
- ☐ *less than monthly*
- ☐ *REF*

PTID

__ - ___ - __ - __ - __

Extended Questionnaire (A1)

BELIEFS REGARDING MALE CIRCUMCISION ASKED OF BOTH MEN AND WOMEN

Interviewer reads:
Now I would like to ask you some questions about male circumcision, and I am going to show you some drawings to help answer the questions. By male circumcision, I mean removal of the foreskin of the penis. Because circumcision is only performed on males, I will show you drawings only of the male genitalia/penis. Do you have any questions?

Instructions: *Show participant male circumcision drawings on Interview Card #1.*

15. Do you think male circumcision has any benefits? ☐ *yes* ☐ *no* ☐ *DK* ☐ *REF* → ***If no, DK, or REF, skip to 16.***

15a. What benefits? *Do not read choices aloud. Mark all that apply.*

- ☐ *reduce risk of HIV infection*
- ☐ *reduce risk of other STI infection*
- ☐ *better hygiene/cleaner*
- ☐ *HIV cure*
- ☐ *boost sexual performance*
- ☐ *reduce women's risk of HIV infection*
- ☐ *women prefer/enjoy sex more*
- ☐ *cultural requirement/identity*
- ☐ *cancer prevention*
- ☐ *other:* _____
- ☐ *DK*
- ☐ *REF*

16. Do you believe that if a man's penis is circumcised, his risk of getting HIV will be increased, decreased, or remain the same?

increased	*decreased*	*remain the same*	*DK*	*REF*
☐	☐	☐	☐	☐

SEXUAL ACTIVITY

Instructions: *This section of the form addresses sexual behaviors and asks that the participant recall his/her sexual partners over the* ***past 6 months****.*

Interviewer reads:
Now I would like to ask you some questions about your recent sexual activity. I know these questions are sensitive and want to remind you that your answers are completely private. This means that they will not be shared with anyone outside of the study team. No one will know what particular answers you give. This form will not have your name anywhere on it. Instead, you will only be identified by a number. If we should come to any questions that you don't want to answer, just let me know and we will go on to the next one.

Different people have different definitions of "sex" or "sexual intercourse." For this study, when we say "sex" we mean:

- Vaginal sex, which is when a man puts his penis in a woman's vagina.
- Anal sex, which is when a man puts his penis in another person's anus.

Do you have any questions before continuing?

PTID ☐☐☐-☐☐☐-☐☐-☐-☐☐

Extended Questionnaire (A1)

17. How old were you when you had sexual intercourse for the very first time?
age (years) ☐☐ ☐ have never had sex → ***If have never had sex, skip to HIV Status section.*** ☐ REF

18. Have you had sexual intercourse with a girl or woman in the last 6 months? ☐ yes ☐ no ☐ REF

19. Have you had sexual intercourse with a boy or man in the last 6 months? ☐ yes ☐ no ☐ REF

20. In total, how many different people have you had sexual intercourse with in the last 6 months? It is okay to estimate the number if you do not remember exactly.
number of partners ☐☐ → ***If zero, skip to HIV Status section.*** ☐ REF

21. With the _____ (*insert number of partners from question 20 or say "this or these" if 20 = REF*) sex partners that you have had in the last 6 months, how often did you use a condom when you had sexual intercourse?
☐ sometimes ☐ always ☐ never ☐ DK ☐ REF

22. Did you know the HIV status of these partners?
yes, for all of them ☐ yes, for some of them ☐ no, for none of them ☐ REF ☐ → ***If no, for none of them or REF, skip to Question 24 Instructions.***

23. How many of these partners did you know were HIV-positive?
all of them ☐ some of them ☐ none of them ☐ REF ☐

Instructions: *Read* ***down*** *each column of the table (for each partner, one at a time),* ***not*** *across each row. First list the last three partners by name/nickname, then ask questions in order (most recent first) about the partners.*

Interviewer reads:
Now I would like to ask you more details about the three most recent sex partners that you have had in the **last 6 months**. Please tell me about them starting with the most recent sex partners.

	Partner 1	☐ no 2nd partner ***Skip to HIV Status section.*** ***Partner 2***	☐ no 3rd partner ***Skip to HIV Status section.*** ***Partner 3***
24. First name, nickname, or marker of each partner	_____ ☐ REF	_____ ☐ REF	_____ ☐ REF
25. Month/year sexual relationship began	MMM ☐☐☐ yy ☐☐ ☐ REF	MMM ☐☐☐ yy ☐☐ ☐ REF	MMM ☐☐☐ yy ☐☐ ☐ REF

☐ ☐ ☐ ☒ 18-FEB-11 T0_A1_CRFExtended_6

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PTID

__ - ___ - __ - __ - __

Extended Questionnaire (A1)

	Partner 1	Partner 2	Partner 3
26. Month/year sexual relationship ended ***Interviewer:*** *Record today's date if relationship has not ended.*	*MMM* ___ *yy* __ ☐ *REF*	*MMM* ___ *yy* __ ☐ *REF*	*MMM* ___ *yy* __ ☐ *REF*
27. Partner's sex	☐ *male* ☐ *DK* ☐ *female* ☐ *REF*	☐ *male* ☐ *DK* ☐ *female* ☐ *REF*	☐ *male* ☐ *DK* ☐ *female* ☐ *REF*

Instructions: *If response to Question 27 is female or REF, skip to 28. If response to Question 27 is "male", continue to Question 27a.*

27a. Was his penis circumcised or uncircumcised? ***Interviewer:*** *Show participant male circumcision drawings on Interview Card #1.*	☐ *circumcised* ☐ *uncircumcised* ☐ *became circumcised during relationship* ☐ *DK* ☐ *REF*	☐ *circumcised* ☐ *uncircumcised* ☐ *became circumcised during relationship* ☐ *DK* ☐ *REF*	☐ *circumcised* ☐ *uncircumcised* ☐ *became circumcised during relationship* ☐ *DK* ☐ *REF*
28. About how old was she/he the first time you had sex with her/him?	*years* __ ☐ *REF*	*years* __ ☐ *REF*	*years* __ ☐ *REF*

For the next question, I am going to ask you if your partner was a husband/wife, a regular partner, or a casual partner:

- By spouse we mean someone who you are married to or living with as if married.
- By regular partner we mean someone who you are NOT married to or living with as married, but who is a steady partner such as a girlfriend or boyfriend.
- By casual partner we mean someone who is NOT your spouse or a regular partner, but with whom you have had sex with in the last 6 months.

29. Keeping these definitions in mind, is this partner your husband/wife, a regular partner, or a casual partner?	☐ *husband/wife* ☐ *regular partner* ☐ *casual partner* ☐ *REF*	☐ *husband/wife* ☐ *regular partner* ☐ *casual partner* ☐ *REF*	☐ *husband/wife* ☐ *regular partner* ☐ *casual partner* ☐ *REF*
30. On approximately how many days did you have sex with him/her in the last 6 months?	☐ *1* ☐ *between 2–5* ☐ *between 6–10* ☐ *more than 10* ☐ *REF*	☐ *1* ☐ *between 2–5* ☐ *between 6–10* ☐ *more than 10* ☐ *REF*	☐ *1* ☐ *between 2–5* ☐ *between 6–10* ☐ *more than 10* ☐ *REF*

SHIMS001 (186) EQ-7 (037)

PTID ☐☐☐☐-☐☐☐-☐☐-☐-☐☐

Extended Questionnaire (A1)

☐ *No data recorded on this page.*

Instructions: *For questions 31–38, show participant Interview Card #2 to help them remember the response options: always, sometimes, or never.*

	Partner 1	***Partner 2***	***Partner 3***
31. How often did you use a condom when you had sexual intercourse?	☐ *always* ☐ *sometimes* ☐ *never* ☐ *REF*	☐ *always* ☐ *sometimes* ☐ *never* ☐ *REF*	☐ *always* ☐ *sometimes* ☐ *never* ☐ *REF*
32. How often did you give or receive money or gifts so that you would have sex with this person?	☐ *always* ☐ *sometimes* ☐ *never* ☐ *REF*	☐ *always* ☐ *sometimes* ☐ *never* ☐ *REF*	☐ *always* ☐ *sometimes* ☐ *never* ☐ *REF*
33. Did you and your partner engage in *vaginal* sex in the last 6 months?	☐ *yes* ☐ *REF* ☐ *no*	☐ *yes* ☐ *REF* ☐ *no* → ***If no, skip to 35.***	☐ *yes* ☐ *REF* ☐ *no*
34. How often did you and your partner use a condom when you had *vaginal* sex in the last 6 months?	☐ *always* ☐ *sometimes* ☐ *never* ☐ *REF*	☐ *always* ☐ *sometimes* ☐ *never* ☐ *REF*	☐ *always* ☐ *sometimes* ☐ *never* ☐ *REF*
35. Did you and your partner engage in *anal* sex in the last 6 months?	☐ *yes* ☐ *REF* ☐ *no*	☐ *yes* ☐ *REF* ☐ *no* → ***If no, skip to Questions 37–40 Instructions.***	☐ *yes* ☐ *REF* ☐ *no*
36. How often did you and your partner use a condom when you had *anal* sex in the last 6 months?	☐ *always* ☐ *sometimes* ☐ *never* ☐ *REF*	☐ *always* ☐ *sometimes* ☐ *never* ☐ *REF*	☐ *always* ☐ *sometimes* ☐ *never* ☐ *REF*

PTID ☐☐☐-☐☐☐-☐☐-☐-☐☐

Extended Questionnaire (A1)

☐ *No data recorded on this page.*

Questions 37–40 Instructions: *Complete questions 37–40 for all male participants who had a male sex partner(s) in the past 6 months. All other participants, skip to question 39.*

	Partner 1	Partner 2	Partner 3
37. Did you and your partner have *anal* sex in the last 6 months?	☐ *yes* ☐ *REF* ☐ *no*	☐ *yes* ☐ *REF* ☐ *no*	☐ *yes* ☐ *REF* ☐ *no*
		If no, skip to 39.	
38. How often did you and your partner use a condom when you had *anal* sex in the last 6 months?	☐ *always* ☐ *sometimes* ☐ *never* ☐ *REF*	☐ *always* ☐ *sometimes* ☐ *never* ☐ *REF*	☐ *always* ☐ *sometimes* ☐ *never* ☐ *REF*
39. When you were having a sexual relationship with this partner, do you think that he/she was HIV positive?	☐ *yes* ☐ *DK* ☐ *no* ☐ *REF*	☐ *yes* ☐ *DK* ☐ *no* ☐ *REF*	☐ *yes* ☐ *DK* ☐ *no* ☐ *REF*
		If no, skip to 41.	
40. Do you think that this partner was taking ART for HIV/AIDS?	☐ *yes* ☐ *DK* ☐ *no* ☐ *REF*	☐ *yes* ☐ *DK* ☐ *no* ☐ *REF*	☐ *yes* ☐ *DK* ☐ *no* ☐ *REF*

Question 41 is for women only. If participant is male, skip to 42.

41. Have you had any of the following symptoms of a sexually transmitted infection in the last 12 months?

41a. abnormal or unusual discharge from your vagina ☐ *yes* ☐ *no* ☐ *DK* ☐ *REF*

41b. sores in your genital area ☐ *yes* ☐ *no* ☐ *DK* ☐ *REF*

Question 42 is for men only. If participant is female, skip to HIV Status Information section.

42. Have you had any of the following symptoms of a sexually transmitted infection in the last 12 months?

42a. abnormal or unusual discharge from your penis ☐ *yes* ☐ *no* ☐ *DK* ☐ *REF*

42b. sores in your genital area ☐ *yes* ☐ *no* ☐ *DK* ☐ *REF*

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PTID

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Extended Questionnaire (A1)

HIV STATUS INFORMATION

Instructions: *This section of the form addresses prior HIV testing.*

Interviewer reads:
Now I would like to ask you some questions about HIV testing. Your answers are completely private. This form will not have your name anywhere on it; instead you will only be identified by a number.

43. Have you ever been tested to see if you have the AIDS virus?
    yes ☐ *no* ☐ *DK* ☐ *REF* ☐ ***If no, DK, or REF, skip to 49.***

44. How many times have you had an HIV test in your lifetime?
    number of times ☐☐ ☐ *REF*

45. When was the last time you had an HIV test? Give best approximate date.
    MMM ☐☐☐ *yy* ☐☐ *REF* ☐

46. Did you get the result of your last HIV test?
    yes ☐ *no* ☐ *DK* ☐ *REF* ☐ ***If DK or REF, skip to 49.***
    If yes, skip to 48.

Question 47 Instructions: *Do not read. Record reason as described by participant.*

47. What are some of the reasons that you did not get your HIV test result?

- ☐ *I did not want to know/was afraid to know my test result*
- ☐ *provider did not give result to me*
- ☐ *had to get partner permission to test*
- ☐ *wanted to test with partner*
- ☐ *did not have time to wait for result*
- ☐ *other* _____

Instructions: *If question 47 was answered, skip to HIV Prevention Exposure Information section.*

48. I would like to ask you the result of your latest HIV test, but I want to remind you again that you should only answer the question if you feel comfortable. If you feel comfortable, could you tell me the result of your latest HIV test?
    positive ☐ *negative* ☐ *indeterminate* ☐ *DK* ☐ *REF* ☐

49. Has a doctor or nurse ever told you that you should be taking ART to treat HIV (including during pregnancy)?
    yes ☐ *no* ☐ *DK* ☐ *REF* ☐

50. Are you currently taking ART to treat HIV?
    yes ☐ *no* ☐ *DK* ☐ *REF* ☐

PTID ☐☐☐☐-☐☐☐-☐☐-☐-☐☐

Extended Questionnaire (A1)

HIV PREVENTION EXPOSURE INFORMATION

Instructions: *Read each question and mark yes or no, as appropriate. Each time a participant answers 'yes', ask the participant "What is the source of this information?" Read the list of sources of information aloud. Show participant Interviewer Card #4 with response categories. Use the key below to indicate the source(s) that correspond to the participant's answer(s). More than one response is acceptable.*

1 = Billboard
2 = Radio
3 = Television
4 = Community group/organization
5 = Health care provider
6 = Religions leader/organization
7 = Friend
8 = Family member
9 = Other

Interviewer reads:
Now I would like to ask you some questions about HIV prevention messages that you may have heard or seen in the past 6 months and how or where you heard or saw them. Please use this card to help you answer.

51. In the **past 6 months**, have you heard or seen any messages about the following topics related to HIV?

	yes	no	REF	***If yes, ask:*** What is the source of this information? *Mark all that apply.* 1 2 3 4 5 6 7 8 9
51a. Get an HIV test to know your status.	☐	☐	☐	☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐
51b. Reduce your number of sex partners.	☐	☐	☐	☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐
51c. Use condoms every time you have sex.	☐	☐	☐	☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐
51d. Male circumcision for HIV prevention.	☐	☐	☐	☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐
51e. ART is available in clinics to treat HIV.	☐	☐	☐	☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐
51f. All pregnant women should get an HIV test.	☐	☐	☐	☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐
51g. ART is available to prevent a mother from transmitting HIV to her baby.	☐	☐	☐	☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐
51h. Other, specify: _____ _____	☐	☐	☐	☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐

PTID

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Extended Questionnaire (A1)

Instructions: *If the participant is female, skip to Final Statement section. If the participant is male, continue to Male Circumcision Status section.*

MALE CIRCUMCISION STATUS

Interviewer reads:
Now I would like to ask you about male circumcision. I am going to show you some drawings to help answer the questions. As a reminder, by male circumcision, I mean removal of the foreskin of the penis. Before we begin, do you have any questions?

Instructions: *Show participant male circumcision drawings on Interview Card #1.*

52. Based on these drawings, when you do NOT have an erection, would you say your penis is uncircumcised (more like the first drawing) or circumcised (more like the second drawing)?

☐ *circumcised* ☐ *uncircumcised* ☐ *DK* ☐ *REF*

If uncircumcised, DK, or REF, skip to Final Statement.

53. When were you circumcised? *MMM* ☐☐☐ *yyyy* ☐☐☐☐ ☐ *REF*

If REF, skip to Final Statement.

FINAL STATEMENT

Interviewer reads:
Thank you very much for your cooperation. The information you provided is very helpful and we appreciate your time and assistance. Do you have any final questions or comments that you would like to share with me?

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Extended Questionnaire (A1)

Enrollment Date ☐☐ ☐☐☐ ☐☐ (dd MMM yy)

Staff ID: ☐☐☐ ☐☐ *Team ID:* ☐☐

Instructions: *Use this Extended Questionnaire for all participants meeting the eligibility criteria who have provided written informed consent to participate. Please do not leave any questions blank. Instead, mark the "DK" box if the participant states that they "don't know" the answer to a question. If the participant is willing to answer but doesn't know the exact answer, encourage him/her to estimate, as this is better than a DK answer. If the participant refuses to answer a question, mark the "REF" box for "refused" to answer.*

1. *Mark the sex of participant:* ☐ *male* ☐ *female*

Interviewer reads:
Ngiyabonga kuvuma kungenela lolucwaningo. Ngitawucala ngekukubuta imibuto lembalwa. Leminye yalemibuto ingakwenta utive ungakakhululeki kutsi ungayiphendvula. Ngicela kukukhumbuta kutsi awukaphoceleleki kutsi uphendvule yonkhe imibuto futsi unelilungelo lekuyekela kuphendvula noma ngunini. Uma ngikubuta umbuto longatsandzi kuwuphendvula ngicela ukusho loko ngitaweca ngichubekele kulolandzelako. Kucocisana kwetfu angeke kwendlule imzuzu lendlula emashumi lamane nasihlanu.

2. Ngabe watalwa ngayiphi inyanga nemnyaka? *MMM* ☐☐☐ *yy* ☐☐ → ***If unknown, record age at last birthday: Estimate OK.*** *years* ☐☐

3. Wafundza wagcina kuliphi libanga lemfundvo? *primary* ☐ *secondary* ☐ *higher* ☐ *did not attend* ☐ *DK* ☐ *REF* ☐ → ***If did not attend, DK, or REF, skip to 4.***

   3a. Ingabe ufundze wagcina kuphi kulelibanga, ngisho iminyaka lowayifundza wayicedza? ☐☐ *years* ☐ *DK* ☐ *REF*

PTID

☐-☐☐☐-☐☐-☐-☐☐ **Extended Questionnaire (A1)**

4. Ingabe uvame kusebenta hlobo luni lwemsebenti? *[**Interviewer probe**: What kind of work do you most of the time?]*

- ☐ *farmer, forestry, fishing*
- ☐ *soldier, policeman*
- ☐ *driver*
- ☐ *manual worker*
- ☐ *sales, service worker*
- ☐ *factory worker*
- ☐ *take care of my home/children (housewife, homemaker)*
- ☐ *clerical*
- ☐ *professional/manager (includes teacher, accountant, nurse, etc.)*
- ☐ *student*
- ☐ *none*
- ☐ *other? If other, specify:* _____
- ☐ *REF*

Question 5 Instructions: *Read choices out loud to participant. Mark the one best answer.*

5. Ngingatsanda kukubuta ngesimo sakho semsebenti. Ngabe nyalo u ...

- ☐ ucashwe sonkhe sikhatsi?
- ☐ ucashwe ngesikhatsi lesitsite?
- ☐ ucashwa ngesikhatsi lesitsite emnyakeni?
- ☐ uyatisebenta?
- ☐ awusebenti, ufuna umsebenti?
- ☐ awusebenti, kantsi awuwufuni umsebenti?
- ☐ watsatsa umhlalaphansi noma ukhubatekile?
- ☐ lokunye? Chaza kabanti: _____
- ☐ *REF*

6. Ingabe utsetse/wendzile yini nyalo (ngekwemshado noma ngekwesintfu) noma ukhona lohlalisana naye ungatsi nitsetsene?

- ☐ *yes, currently married*
- ☐ *yes, living with a man/woman*
- ☐ *no*
- ☐ *REF*

→ ***If no or REF, skip to question 11 instructions.***

7. Ingabe indvodza/umfati/singani yakho/wakho/sakho uhlala/sihlala nawe nyalo noma uhlala/sihlala encenye?

- ☐ *living with me*
- ☐ *staying elsewhere*
- ☐ *REF*

Question 8 Instructions: *For women, skip to question 11 instructions.*

8. Bangakhi bafati lonabo noma besifazane lohlalisana nabo shengatsi nitsatsene? *number of wives/partners* ☐☐ *REF* ☐

9. Kuletinyanga letilishumi natimbili letendlulile, uke wahamba wangabi khona ekhaya, sikhatsi lesingetulu kwenyanga? Lapha sisho inyanga yonkhe ungekho ekhaya? ☐ *yes* ☐ *no* → ***If no, skip to Binge Drinking section.*** ☐ *REF*

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☐☐☐☐-☐☐☐-☐☐-☐-☐☐

Extended Questionnaire (A1)

10. Kuletinyanga letilishumi natimbili letendlulile, uhambe kangakhi wangabi khona ekhaya, sikhatsi lesingetulu kwenyanga?

number of trips ☐☐ *REF* ☐ → ***If REF, skip to Binge Drinking section.***

Question 11 Instructions: *This question for women only. If participant is male, skip to Binge Drinking section.*

11. Ngabe ukhulelwe yini nyalo? ☐ *yes* ☐ *no* ☐ *DK* ☐ *REF*

EXPERIENCE WITH BINGE DRINKING

Instructions: *Show participants the picture of the different alcoholic beverages on Interview Card #3. Then ask questions 12–14.*

Interviewer reads:
Nyalo ngicela kukubuta imibuto mayelana nekunatsa tjwala. Lesitfombe sikhombisa tinhlobo tetjwala letahlukahlukene kuleli. Tinhlobo tetjwala atidzakisani ngekufana. Ngaphansi kweluhlobo lwetjwala kulesitfombe kunenombolo. Lenombolo imele linani lelikhomba tikali tetjwala letitfolaka kuleso sinatfo. Kubekisa, lijeke linye lemucombotsi lilingana netinatfo letine (4), kantsi libhodlela leliphose libe yi-litre (750ml) lenkantini/mashisa lilingana netinatfo letingemashumi lamatsatfu (30) etjwala. Ngabe unayo imibuto?

Question 12 Instructions: *Do not read responses. Allow participant to answer in own words, but okay to prompt.*

12. Ngabe uvame kubunatsa langanani tjwala?

- ☐ *I don't drink*
- ☐ *every day or almost daily*
- ☐ *weekly but not daily*
- ☐ *monthly but not weekly*
- ☐ *less than monthly*
- ☐ *REF*

13. Ngekusebentisa lesitfombe, ngabe kwake kwenteka yini kutsi unatse tinatfo letisitfupha noma ngetulu ngelilanga linye?

☐ *yes* ☐ *no* → ***If no, skip to Beliefs Regarding Male Circumcision section.*** ☐ *DK* ☐ *REF*

14. Kulomnyaka lowendlulile, mahlandla lamangakhi lakhona unatse tinatfo letisitfupha noma ngetulu ngelilanga linye?

- ☐ *more than a year ago*
- ☐ *every day or almost daily*
- ☐ *weekly but not daily*
- ☐ *monthly but not weekly*
- ☐ *less than monthly*
- ☐ *REF*

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☐-☐☐☐-☐☐-☐-☐☐ **Extended Questionnaire (A1)**

BELIEFS REGARDING MALE CIRCUMCISION ASKED OF BOTH MEN AND WOMEN

Interviewer reads:
Nyalo-ke ngitakubuta imibuto mayelana nekusoka kwebantfu besilisa. Ngitakutjengisa imidvwebo letawusita kutsi ungiphendvule leminye yalemibuto. Kusoka kwebatfu besilisa kusho kususwa kwalelijwabu kulendvuku yabo. Ngitakutjengisa imidvwebo yendvuku yemuntfu wesilisa. Ngabe unayo yini imibuto?

Instructions: *Show participant male circumcision drawings on Interview Card #1.*

15. Ngabe ucabanga kutsi ikhona yini inzuzo ngekusoka? ☐ *yes* ☐ *no* ☐ *DK* ☐ *REF* → ***If no, DK, or REF, skip to 16.***

15a. Tinzuzo tini? *Do not read choices aloud. Mark all that apply.*

- ☐ *reduce risk of HIV infection*
- ☐ *reduce risk of other STI infection*
- ☐ *better hygiene/cleaner*
- ☐ *HIV cure*
- ☐ *boost sexual performance*
- ☐ *reduce women's risk of HIV infection*
- ☐ *women prefer/enjoy sex more*
- ☐ *cultural requirement/identity*
- ☐ *cancer prevention*
- ☐ *other:* _____
- ☐ *DK*
- ☐ *REF*

16. Ngabe ukholelwa kutsi nangabe lomdvuna asokile ematfuba ekutfola iHIV ayakhula, ayancipha noma kuyafana nje?

increased	*decreased*	*remain the same*	*DK*	*REF*
☐	☐	☐	☐	☐

SEXUAL ACTIVITY

Instructions: *This section of the form addresses sexual behaviors and asks that the participant recall his/her sexual partners over the* ***past 6 months****.*

Interviewer reads:
Nyalo-ke ngingatsandza kubuta imibuto lemayelana nekulala kwakho kulesikhashana lesendlulile. Ngiyati kutsi lemibuto iyahhedleta/itsintsana ne-buntfu bakho, kungako nje ngikukhumbuta kutsi timphendvulo takho titawugcineka kahle. Loku kusho kutsi akukho lomunye longatati ngaphandle kwalaba labachuba lolucwaningo. Angeke libhalwe ligama lakho kuleli-phepha letimphendvulo. Utawunikwa inombolo lotawatiwa ngayo. Uma kunemibuto longatsandzi kuyiphendvula ngicela ungatise ngitewuyeca ngichubekele kuleminye.

Bantfu labehlukene banetinchazelo letahlukene ngekulala noma kulalana. Kulolucwaningo kulala kufaka ekhatsi naku lokulandzelako:

- Kulalana ngekwelicansi kwalomdvuna nalomsikati, lokusho kutsi lomdvuna ufaka indvuku yakhe kulentfombi yalonalomsikati.
- Kulalana ngemuva, lona wesilisa ufaka indvuku yakhe etibunu noma embotjeni lengemuva kulomunye umuntfu.

Ingabe unayo yini imibuto ngaphambi kwekutsi ngichubekele embili?

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Extended Questionnaire (A1)

17. Bewuneminyaka lemingakhi uma ucala ngca kulala?
age (years) ☐☐ ☐ *have never had sex* ☐ *REF* → ***If have never had sex, skip to HIV Status section.***

18. Uke walala yini nemuntfu wesifazane kuletinyanga letisitfupha letendlulile?
☐ *yes* ☐ *no* ☐ *REF*

19. Uke walalana nemfana noma nendvodza kuletinyanga letisitfupha letendlulile?
☐ *yes* ☐ *no* ☐ *REF*

20. Sebabonkhe ngabe bangakhi bantfu labehlukene lolelene nabo kuletinyanga letisitfupha letendlulile? Uma ungasakhumbuli kahle, ungabekisa.
number of partners ☐☐ → ***If zero, skip to HIV Status section.***
☐ *REF*

21. Kulabantfu labangu (_____ *insert number of partners from question 20 or say "this or these" if 20 = REF*) lolele nabo kuletinyanga letisitfupha letendlulile bewuyisebentisa ngemahlandla lamangaki ikhondomu?
☐ *sometimes* ☐ *DK*
☐ *always* ☐ *REF*
☐ *never*

22. Bewusati yini simo seHIV salabo bophathina?

yes, for all of them	*yes, for some of them*	*no, for none of them*	*REF*
☐	☐	☐	☐

→ ***If no, for none of them or REF, skip to Question 24 Instructions.***

23. Bangakhi kulabo phathina lobobati kutsi banalo ligciwane leHIV?

all of them	*some of them*	*none of them*	*REF*
☐	☐	☐	☐

Instructions: *Read* ***down*** *each column of the table (for each partner, one at a time),* ***not*** *across each row. First list the last three partners by name/nickname, then ask questions in order (most recent first) about the partners.*

Interviewer reads:
Nyalo ngicela kukubuta kabanti ngabophathina logcine kulalana nabo kuletinyanga letisitfupha letengcile. Ngicela ungitjele ngabo ucale ngalogcine kulalana naye.

	Partner 1	☐ *no 2nd partner* ***Skip to HIV Status section.*** ***Partner 2***	☐ *no 3rd partner* ***Skip to HIV Status section.*** ***Partner 3***
24. Ngiphe ligama lakhe, ligama lekuteketisa, noma indlela letsite yekumbekisa.	_____ ☐ *REF*	_____ ☐ *REF*	_____ ☐ *REF*
25. Ngiphe inyanga nemnyaka lenacala kulala ngawo	*MMM* ☐☐☐ *yy* ☐☐ ☐ *REF*	*MMM* ☐☐☐ *yy* ☐☐ ☐ *REF*	*MMM* ☐☐☐ *yy* ☐☐ ☐ *REF*

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Extended Questionnaire (A1)

	Partner 1	Partner 2	Partner 3
26. Ngiphe inyanga nemnyaka lenahlukana ngawo ***Interviewer:*** *Record today's date if relationship has not ended.*	MMM ☐☐☐ yy ☐☐ ☐ REF	MMM ☐☐☐ yy ☐☐ ☐ REF	MMM ☐☐☐ yy ☐☐ ☐ REF
27. Bulili bakhe	☐ male ☐ female ☐ DK ☐ REF	☐ male ☐ female ☐ DK ☐ REF	☐ male ☐ female ☐ DK ☐ REF

Instructions: *If response to Question 27 is female or REF, skip to 28. If response to Question 27 is "male", continue to Question 27a.*

27a. Indvuku yakhe beyisokiwe yini noma beyingakasokwa? ***Interviewer:*** *Show participant male circumcision drawings on Interview Card #1.*	☐ circumcised ☐ uncircumcised ☐ became circumcised during relationship ☐ DK ☐ REF	☐ circumcised ☐ uncircumcised ☐ became circumcised during relationship ☐ DK ☐ REF	☐ circumcised ☐ uncircumcised ☐ became circumcised during relationship ☐ DK ☐ REF
28. Bekaneminyaka lemingakhi ngesikhatsi nicala ngca kulalana?	years ☐☐ ☐ REF	years ☐☐ ☐ REF	years ☐☐ ☐ REF

Kulombuto lolandzelako ngitakubuta kutsi ngabe lomuntfu lolalana naye nitsatsene , nivame kuhlangana /singani sakho nomake ngumuntfu lokwetfuka kwenteka kutsi ulalanenaye:

- Nge ndvodza nemfati sisho lotsetsene naye waba yindvodza noma umfati wakho nomake lohlalisana naye njengemfati noma indvodza yakhko .
- Nge kuvamisa kuhlangana sisho umuntfu leningakatsatsani naye futsi leningahlalisani naye, kodvwa lenenta lutfo naye noma losingani sakho.
- Umumntfu nje sisho umuntfu leningakatsatsani futsi longasiso nesingani, kodvwa loke walala naye kuletinyanga letisitfupha letengcile.

29. Uma ulandzela lenchazelo lesengikunikete yona, ungamchaza utsi bekayini lomuntfu kuwe, benitsetsene, benivame kulalana naye/bekusingani sakho, noma ngumuntfu lewehle ulalana naye nje?	☐ husband/wife ☐ regular partner ☐ casual partner ☐ REF	☐ husband/wife ☐ regular partner ☐ casual partner ☐ REF	☐ husband/wife ☐ regular partner ☐ casual partner ☐ REF
30. Ungabekisa utsi nilalene emalanga lamangakhi kuletinyanga letisitfupha letendlulile?	☐ 1 ☐ between 2–5 ☐ between 6–10 ☐ more than 10 ☐ REF	☐ 1 ☐ between 2–5 ☐ between 6–10 ☐ more than 10 ☐ REF	☐ 1 ☐ between 2–5 ☐ between 6–10 ☐ more than 10 ☐ REF

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Extended Questionnaire (A1)

☐ *No data recorded on this page.*

Instructions: *For questions 31–38, show participant Interview Card #2 to help them remember the response options: always, sometimes, or never.*

	Partner 1	***Partner 2***	***Partner 3***
31. Ingabe ikhondomu bewuyisebentisa sonkhe sikhatsi, ngalesinye sikhatsi noma bewungayisebentisi?	☐ *always* ☐ *sometimes* ☐ *never* ☐ *REF*	☐ *always* ☐ *sometimes* ☐ *never* ☐ *REF*	☐ *always* ☐ *sometimes* ☐ *never* ☐ *REF*
32. Ngemahlandla lamangakhi lawuke wakhipha noma watfola imali noma lokusipho kuze kutsi alalene nawe lomuntfu?	☐ *always* ☐ *sometimes* ☐ *never* ☐ *REF*	☐ *always* ☐ *sometimes* ☐ *never* ☐ *REF*	☐ *always* ☐ *sometimes* ☐ *never* ☐ *REF*
33. Ngabe wena naphathina wakho nilalene yini *entfombini* kuletinyanga letisitfupha letendlulile?	☐ *yes* ☐ *REF* ☐ *no*	☐ *yes* ☐ *REF* ☐ *no* ***If no, skip to 35.***	☐ *yes* ☐ *REF* ☐ *no*
34. Ngabe uma nilalana *entfombini* kuletinyanga letisitfupha letendlulile ikhondomu beniyisebentisa ngaso sonkhe sikhatsi, ngalesinye sikhatsi noma beningayisebentisi?	☐ *always* ☐ *sometimes* ☐ *never* ☐ *REF*	☐ *always* ☐ *sometimes* ☐ *never* ☐ *REF*	☐ *always* ☐ *sometimes* ☐ *never* ☐ *REF*
35. Ngabe wena naphathina wakho nilalene yini ngemuva *(embotjeni lengemuva)* kuletinyanga letisitfupha letendlulile?	☐ *yes* ☐ *REF* ☐ *no*	☐ *yes* ☐ *REF* ☐ *no* ***If no, skip to Questions 37–40 Instructions.***	☐ *yes* ☐ *REF* ☐ *no*
36. Ngabe niyisebentise emahlandla lamangakhi ikhondomu uma nilalana ngemuva *(embotjeni lengemuva)* kuletinyanga letisitfupha letendlulile?	☐ *always* ☐ *sometimes* ☐ *never* ☐ *REF*	☐ *always* ☐ *sometimes* ☐ *never* ☐ *REF*	☐ *always* ☐ *sometimes* ☐ *never* ☐ *REF*

PTID

☐-☐☐☐-☐☐-☐-☐☐

Extended Questionnaire (A1)

☐ *No data recorded on this page.*

Questions 37–40 Instructions: *Complete questions 37–40 for all male participants who had a male sex partner(s) in the past 6 months. All other participants, skip to question 39.*

	Partner 1	***Partner 2***	***Partner 3***
37. Ngabe wena naphathina wakho nilalene yini ngemuva *(embotjeni lengemuva)* kuletinyanga letisitfupha letendlulile?	☐ *yes* ☐ *REF* ☐ *no*	☐ *yes* ☐ *REF* ☐ *no* ***If no, skip to 39.***	☐ *yes* ☐ *REF* ☐ *no*
38. Ngabe niyisebentise emahlandla lamangakhi ikhondomu uma nilalana ngemuva *(embotjeni lengemuva)* kuletinyanga letisitfupha letendlulile?	☐ *always* ☐ *sometimes* ☐ *never* ☐ *REF*	☐ *always* ☐ *sometimes* ☐ *never* ☐ *REF*	☐ *always* ☐ *sometimes* ☐ *never* ☐ *REF*
39. Ngalesikhatsi ulalana nalophathina lona ucabanga kutsi abenalo yini ligciwane leHIV?	☐ *yes* ☐ *DK* ☐ *no* ☐ *REF*	☐ *yes* ☐ *DK* ☐ *no* ☐ *REF* ***If no, skip to 41.***	☐ *yes* ☐ *DK* ☐ *no* ☐ *REF*
40. Nawucabanga, ngabe lophathina wakho abedla imitsi/emaphilisi ekutsintsibalisa ligciwane leHIV yini, pheceleti ema ARVs?	☐ *yes* ☐ *DK* ☐ *no* ☐ *REF*	☐ *yes* ☐ *DK* ☐ *no* ☐ *REF*	☐ *yes* ☐ *DK* ☐ *no* ☐ *REF*

Question 41 is for women only. If participant is male, skip to 42.

41. Ingabe uke waba nato yini letimphawu letilandzelako tabogcunsula kuletinyanga letilishumi namhili letendlulile?

41a. lokuphumako lokungakavami lapha noma lokungaketayeleki lapha entfombini ☐ *yes* ☐ *no* ☐ *DK* ☐ *REF*

41b. tilondza kulendzawo yesitfo sakho sangasese ☐ *yes* ☐ *no* ☐ *DK* ☐ *REF*

Question 42 is for men only. If participant is female, skip to HIV Status Information section.

42. Ngabe uke waba nato yini letimphawu letilandzelako tetifo tekulalana/tasecansini kuletinyanga letilishumi nambhili letendlulile?

42a. lokuphumako lokungakavami noma lokungaketayeleki kulendvuku yakho ☐ *yes* ☐ *no* ☐ *DK* ☐ *REF*

42b. tilondza kulendzawo yesitfo sakho sangasese ☐ *yes* ☐ *no* ☐ *DK* ☐ *REF*

PTID

__ - ___ - __ - __ - __

Extended Questionnaire (A1)

HIV STATUS INFORMATION

Instructions: *This section of the form addresses prior HIV testing.*

Interviewer reads: Nyalo ngicela kukubuta imibuto lephatselene nekuhlola ligciwane le HIV. Timphendvulo takho titawugcineka kahle. Angeke libhalwe ligama lakho kuleliphepha letimphendvulo, Utawunikwa inombolo lotawatiwa ngayo.

43. Ingabe wake wahlola kutsi unalo ligciwane leHIV yini? *yes* ☐ *no* ☐ *DK* ☐ *REF* ☐ ***If no, DK, or REF, skip to 49.***

44. Sewutihlole emahlandla lamangakhi ligciwane leHIV emphilweni yakho? *number of times* ☐☐ ☐ *REF*

45. Wagcina nini kuhlola leligciwane leHIV? Tama kukhumbula lusuku, inyanga kanye nemnyaka. *MMM* ☐☐☐ *yy* ☐☐ *REF* ☐

46. Ngabe wawutfola yini umphumela walokuhlolwa kwakho ligciwane leHIV nawugcina kuhlolwa? *yes* ☐ *no* ☐ *DK* ☐ *REF* ☐ ***If DK or REF, skip to 49.*** ***If yes, skip to 48.***

Question 47 Instructions: *Do not read. Record reason as described by participant.*

47. Ngutiphi letinye tizatfu letenta kutsi ungatfoli umphumela wakho wekuhlola iHIV?

- ☐ *I did not want to know/was afraid to know my test result*
- ☐ *provider did not give result to me*
- ☐ *had to get partner permission to test*
- ☐ *wanted to test with partner*
- ☐ *did not have time to wait for result*
- ☐ *other* _____

Instructions: *If question 47 was answered, skip to HIV Prevention Exposure Information section.*

48. Nyalo ngingatsandza kukubuta umphumela wakho nawuhlola ligciwane leHIV, ngiyaphindza ngiyakukhumbuta kutsi lombuto ungawuphendvula uma utiva ukhululekile. Uma utiva ukhululekile, ngicela kwati ngemphumela wekuhlolwa logcine ngawo? *positive* ☐ *negative* ☐ *indeterminate* ☐ *DK* ☐ *REF* ☐

49. Ngabe dokotela noma nesi wake wakutjela yini kutsi udle emaphilisi ekutsintsibalisa ligciwane leHIV pheceleti ema ARVs (lokufaka ekhatsi make lotetfwele)? *yes* ☐ *no* ☐ *DK* ☐ *REF* ☐

50. Ngabe uyawadla yini lamaphilisi ekutsintsibalisa ligciwane leHIV, pheceleti ema ARVs kulesikhatsi sanyalo? *yes* ☐ *no* ☐ *DK* ☐ *REF* ☐

PTID

__ - ___ - __ - __ - __

Extended Questionnaire (A1)

HIV PREVENTION EXPOSURE INFORMATION

Instructions: *Read each question and mark yes or no, as appropriate. Each time a participant answers 'yes', ask the participant "What is the source of this information?" Read the list of sources of information aloud. Show participant Interviewer Card #4 with response categories. Use the key below to indicate the source(s) that correspond to the participant's answer(s). More than one response is acceptable.*

1 = Billboard
2 = Radio
3 = Television
4 = Community group/organization
5 = Health care provider
6 = Religions leader/organization
7 = Friend
8 = Family member
9 = Other

Interviewer reads:
Nyalo ngicela kukubuta imibuto lephatselene nemilayeto yekuvikela ligciwane le HIVlokewayiva noma wayibona kuletinyanga letisitfupha letendlulile. Ngicela usebentise nali likhadi kukusita kuphendvula.

51. Kuletinyanga letisitfupha letendlulile, uke weva noma wabona imilayeto mayelana nanati tihloko letilandzelako letiphatselene ne HIV?

	yes	no	REF	***If yes, ask:*** Ingabe uyive noma uyibone kuphi lemilayeto? *Mark all that apply.* 1 2 3 4 5 6 7 8 9
51a. Hlola ligciwane leHIV utokwati simo sakho.	☐	☐	☐	☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐
51b. Nciphisa bantfu lolalana nabo.	☐	☐	☐	☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐
51c. Sebentisa ikhondomu ngaso sonkhe sikhatsi uma ulalana nemuntfu.	☐	☐	☐	☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐
51d. Kusoka kwebesilisa kunciphisa ematfuba ekutfola ligciwane leHIV.	☐	☐	☐	☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐
51e. Emaphilisi ekutsintsibalisa ligciwane leHIV (emaARVs) ayatfolakala emitfolamphilo.	☐	☐	☐	☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐
51f. Bonkhe besifazane labatetfwele bayakhutsatwa kutsi bahlole ligciwane leHIV.	☐	☐	☐	☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐
51g. Ema ARVs ayatfolakala ekuvikela make kutsi angamutseleli umntwanakhe iHIV.	☐	☐	☐	☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐
51h. Lokunye, chaza kabanti: _____ _____	☐	☐	☐	☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐

PTID

☐ - ☐☐☐ - ☐☐ - ☐ - ☐☐

Extended Questionnaire (A1)

Instructions: *If the participant is female, skip to Final Statement section. If the participant is male, continue to Male Circumcision Status section.*

MALE CIRCUMCISION STATUS

Interviewer reads:
Nyalo ngitakubuta imibuto ngekusoka kwabantfu besilisa. Ngitakukhombisa imidvwebo lesita kuphendvula lemibuto. Kukukhumbuta, kusoka kwebantfu besilisa kusho kususwa kwelijwabu endvukwini yabo. Ngabe unayo yini imibuto?

Instructions: *Show participant male circumcision drawings on Interview Card #1.*

52. Uma ubuka lemidvwebo ungasho yini kutsi indvuku yakho uma ingakavuki kutsi ayikasokwa (cishe njengalomdvwebo wekucala) noma isokiwe (cishe njengalomdvwebo wesibili)?

circumcised ☐ *uncircumcised* ☐ *DK* ☐ *REF* ☐ → ***If uncircumcised, DK, or REF, skip to Final Statement.***

53. Usoke/wasoka nini?

MMM ☐☐☐ *yyyy* ☐☐☐☐ ☐ *REF*

→ ***If REF, skip to Final Statement.***

FINAL STATEMENT

Interviewer reads:
Ngiyabonga kakhulu kakhulu kutsi sibambisane. Letimphendvulo losinike tona titosita kakhulu. Siyalubonga lusito lwakho kanye nesikhatsi sakho. Ingabe unayoyini leminye imibuto nomakukhona yini longatsandza kungatisa kona?

SHIMS001 (186) ENR-1 (045)

PTID ☐☐☐-☐☐☐-☐☐-☐-☐☐

Enrollment Status: Short-term Cohort (A1)

Enrollment Date ☐☐ ☐☐☐ ☐☐ (*dd* *MMM* *yy*)

Staff ID: ☐☐☐ ☐☐ *Team ID:* ☐☐

1. Was the participant eligible for the Short-term Cohort A1? *yes* ☐ *no* ☐

   → ***If yes, go to item 2.***

   1a. What is the primary reason the participant was not eligible?

   - ☐ Did not complete Pre-cohort survey
   - ☐ HIV reactive/positive → *Referral #:* A☐☐☐☐☐ ☐ No referral
   - ☐ Not planning to be in Swaziland in 6 months
   - ☐ Did not receive HIV test results
   - ☐ Other, specify: _____

2. If the participant was eligible, did the participant enroll in the short-term cohort A1? ..... *yes* ☐ *no* ☐

   → ***If yes, end of form.***

   2a. What is the primary reason the participant did not enroll?

   - ☐ Refused → ***Complete Refusal:Short-term Cohort A1***
   - ☐ Other, specify: _____

SHIMS001 (186) RPC-1 (011)

PTID ☐☐☐-☐☐☐-☐☐-☐-☐☐

Refusal: Pre-cohort Survey (A1)

Visit Date ☐☐ ☐☐☐ ☐☐ (*dd* *MMM* *yy*)

Staff ID: ☐☐☐☐☐ *Team ID:* ☐☐

Instructions: *Complete this form for participants who decline to complete the Pre-cohort Survey. Read the following statement to the participant to determine his/her willingness to provide the reason(s) for their refusal to participate in the survey. If the participant declines to give a reason, note that in question 1. If the participant agrees to provide a reason, record their reason(s) in question 2.*

Interviewer reads:
Thank you for considering taking part in this survey. If it is okay with you, I would like to ask you about the reasons you decided not to participate in the survey. If you don't wish to answer, that is fine, but your answers will help us better understand why persons like you may not wish to participate.

Ngiyabonga kutsatsa sikhatsi sakho ucabange ngaloluhlolo. Nangabe kukulungela bengingafisa kwati tizatfu letikwente kutsi ungafisi kuba yincenye yalo.Nawungafisi kunika letizatfu kulungile, kodvwa timphendvulo takho betingasisita kucondza kancono tizatfu letingenta bantfu bangafisi kubayincenye yaloluhlolo.

1. *Was participant willing to give a reason for not wanting to participate in the pre-cohort survey?* *yes* ☐ *no* ☐ → ***If no, go to Final Statement section.***

2. What are the reasons that you did not wish to participate in the survey?
   Yini tizatfu letente ungafisi kuba yincenye yaloluhlolo?

   Do not read reasons aloud. Mark all that apply.

   - ☐ *I don't have time to participate in the survey*
   - ☐ *I already know that I am HIV positive*
   - ☐ *I don't wish to be tested for HIV/get my test results*
   - ☐ *I don't want you to draw my blood/take my blood away*
   - ☐ *I find the topic uncomfortable or embarrassing*
   - ☐ *Need partner permission/partner wouldn't allow it*
   - ☐ *Need parental permission/parent wouldn't allow it*
   - ☐ *Prefer to test away from home*
   - ☐ *Prefer to test without partner present*
   - ☐ *Fear breach of confidentiality*
   - ☐ *Other, specify:* _____

Instructions: *Make certain that the correct information is marked above.*

FINAL STATEMENT

Interviewer reads: Thank you very much for your time. Do you have any final questions or comments?
Ngiyabonga kunginika sikhatsi sakho. Ingabe unayo yini imibuto noma longakwengeta?

Comments:

SHIMS001 (186) RSC-1 (013)

PTID ☐☐☐-☐☐☐-☐☐-☐-☐☐

Refusal: Short-term Cohort (A1)

Visit Date ☐☐ ☐☐☐ ☐☐ (dd MMM yy)

Staff ID: ☐☐☐ ☐☐ *Team ID:* ☐☐

Instructions: *Complete this form for participants who decline to enroll in the longitudinal cohort. Read the following statement to the participant to determine his/her willingness to provide the reason(s) for their refusal to participate in the cohort. If the participant declines to give a reason, note that in question 1. If the participant agrees to provide a reason, record their reason(s) in question 2.*

Interviewer reads:
Thank you for completing the household survey and considering taking part in the cohort study. If it is okay with you, I would like to ask you about the reasons you decided not to participate in the cohort study. If you don't wish to answer, that is fine, but your answers will help us better understand why persons like you may not wish to participate.

Ngiyabonga kuphendvula imibuto ngaloluhlolo nekutinika sikhatsi kucabanga kuchubeka ube yincenye yaloluhlolo etikhatsini letitako. Nawungafisi kunika letizatfu kulungile, kodvwa timphendvulo takho betingasisita kucondza kancono tizatfu letingenta bantfu bangafisi kubayincenye yaloluhlolo.

1. *Was participant willing to give a reason for not wanting to participate in the cohort study?* *yes* ☐ *no* ☐ → ***If no, go to Final Statement section.***

2. What are the reasons that you did not wish to participate in the survey?
   Yini tizatfu letente ungafisi kuba yincenye yaloluhlolo?

   Do not read reasons aloud. Mark all that apply.

   - ☐ *I don't have time to participate in the survey*
   - ☐ *I already know that I am HIV positive*
   - ☐ *I don't wish to be tested for HIV/get my test results*
   - ☐ *I don't want you to draw my blood/take my blood away*
   - ☐ *I find the topic uncomfortable or embarrassing*
   - ☐ *Need partner permission/partner wouldn't allow it*
   - ☐ *Need parental permission/parent wouldn't allow it*
   - ☐ *Prefer to test away from home*
   - ☐ *Prefer to test without partner present*
   - ☐ *Fear breach of confidentiality*
   - ☐ *Other, specify:* _____

     _____

Instructions: *Make certain that the correct information is marked above.*

FINAL STATEMENT

Interviewer reads: Thank you very much for your time. Do you have any final questions or comments?
Ngiyabonga kunginika sikhatsi sakho. Ingabe unayo yini imibuto noma longakwengeta?

☐ ☐ ☐ ☒ 07-DEC-10 T0_A1_RefPreCohortSurv_4 0 1 Language

Comments:

SHIMS001 (186) AHA-1 (051)

Household ID

__ - ___ ___ ___ - __ __ - __ - __ __

Household Contacts - Additional Attempts (A1)

Instructions: If Final Result Code = 1, complete questions 5–8 on this form, and complete question 9 and Household Members information on the original Household Composition (A1) form, starting with page 2.

Team ID: __

1. Indicate the questionnaire that will be completed for this household: ☐ *Routine* ☐ *Extended*

Additional Attempts to Survey Household			
	1	**2**	**3**
2. Date	*dd* __ *MMM* ___ *yy* __	*dd* __ *MMM* ___ *yy* __	*dd* __ *MMM* ___ *yy* __
2a. Time	*hr* __ : *min* __ *24-hr clock*	*hr* __ : *min* __ *24-hr clock*	*hr* __ : *min* __ *24-hr clock*
3. Staff ID	___ __	___ __	___ __
4. Result Code	☐ ***If 5 or 6, complete Next Visit/Time.***	☐ ***If 5 or 6, complete Next Visit/Time.***	☐ ***Note**: 5 is not a valid code for final attempt.*
Next Visit Date/Time	_____	_____	
5. Total number in household	__	***6. Total eligible*** __	***7. Total given PTID*** __

Result Code Key ***1** = members listed* ***2** = household refused* ***3** = household absent for extended period of time* ***4** = vacant/destroyed/not found/not residential* ***5** = postponed* ***6** = no one home*

HOUSEHOLD PARTICIPATION

Instructions: *Ask these questions of the head of the household or an adult member of the household who has information about the household to determine the household composition. For each eligible member of the household, complete all questions. Please do not leave any questions blank.*

Interviewer reads:

Thank you for taking the time to speak with me about this study. We would like to first ask you some questions about your household and then I am going to ask you about household members.

Ngiyabonga kutsatsa sikhatsi sakho kukhuluma nami ngaloluhlolo. Ngitawucela kukubuta imibuto ngendlu yakakho kanye nalabo lopheka noma lodla nabo.

8. What is the main source of drinking water for members of your household? *Mark only one.*

Emanti leniwanatsako achamuka kuphi?

☐ 8a. *Piped into dwelling*
☐ 8b. *Piped yard/plot*
☐ 8c. *Public taps/standpipe*
☐ 8d. *Borehole*
☐ 8e. *Protected well*
☐ 8f. *Unprotected well*
☐ 8g. *Protected spring*
☐ 8h. *Unprotected spring*
☐ 8i. *Rainwater*
☐ 8j. *Tanker truck*
☐ 8k. *Surface water (river/dam/lake/ponds/stream/canal/irrigation channel)*
☐ 8l. *Bottled water*
☐ 8m. *Other, specify:* _____
_____
☐ 8n. *DK/REF*

☐ ☐ ☐ ☒ 29-APR-11

0 1
Language

Appendix F: Case review forms at Time 2 (follow-up survey)

Not a DataFax page. Do not fax this page to DataFax.

SHIMS001 (186)

PTID

__ - ___ - __ - __ - __

Short-term Cohort Follow-up (A1)

		1	2	3
1.	Date	dd MMM yy	dd MMM yy	dd MMM yy
1a.	Time	hr : min 24-hr clock	hr : min 24-hr clock	hr : min 24-hr clock
2.	Staff ID			
3.	Result Code	***If 54, specify:***	***If 54, specify:***	***If 54, specify:***
	Next Visit Date/Time & Location			

		4	5	6
4.	Date	dd MMM yy	dd MMM yy	dd MMM yy
4a.	Time	hr : min 24-hr clock	hr : min 24-hr clock	hr : min 24-hr clock
5.	Staff ID			
6.	Result Code	***If 54, specify:***	***If 54, specify:***	***If 54, specify:***
	Next Visit Date/Time & Location			

		7	8	9
7.	Date	dd MMM yy	dd MMM yy	dd MMM yy
7a.	Time	hr : min 24-hr clock	hr : min 24-hr clock	hr : min 24-hr clock
8.	Staff ID			
9.	Result Code	***If 54, specify:***	***If 54, specify:***	***If 54, specify:***
	Next Visit Date/Time & Location			

Result Code Key

Complete Completion/Termination and Status forms
10 = *visit completed*
20 = *refused visit*
51 = *incarcerated*
52 = *deceased*
53 = *incapacitated*
54 = *other (specify)*
70 = *relocated outside of Swaziland indefinitely*

Complete Locator Update and Status forms
60 = *relocated in Swaziland*

Complete Next visit/time and Status form
30 = *unable to contact ppt; visit to be scheduled*
40 = *visit postponed*

After all attempts, complete Completion/Termination and Status forms
80 = *unable to contact ppt; no revisit scheduled for now*

SHIMS001 (186) SCF-2 (082)

PTID ☐☐☐-☐☐☐-☐☐-☐-☐☐

Short-term Cohort Follow-up (A1)

Interview Date ☐☐ ☐☐☐ ☐☐ (*dd* *MMM* *yy*)

Staff ID: ☐☐☐☐☐ *Team ID:* ☐☐

ATTEMPTS TO CONTACT PARTICIPANT

1. **Total contact attempts:** ☐☐

2. **At the time of the terminal result code, where did the participant reside?**

☐ *original EA*
☐ *outside of Swaziland*
☐ *in Swaziland but different EA*

→ *GPS coordinates:*

– ☐☐ θ ☐☐ . ☐☐☐ χ LATITUDE

☐☐ θ ☐☐ . ☐☐☐ χ LONGITUDE

3. **Terminal result code:**

☐ *visit completed (10)*

Skip to Instructions below.

For these codes, end of form. Only fax this page to SCHARP DataFax.

☐ *refused visit (20)*
☐ *incarcerated (51)*
☐ *deceased (52)*
☐ *incapacitated (53)*
☐ *other (54), specify:* _____
☐ *relocated outside of Swaziland indefinitely (70)*
☐ *unable to contact participant; no revisit scheduled for now (80)*

***Instructions**: Use this Short-term Cohort Follow-up form for all participants in Cohort A1 who agree to participate in follow-up evaluation. Please do not leave any questions blank. Instead, mark the "DK" box if the participant states that they "don't know" the answer to a question. If the participant is willing to answer but doesn't know the exact answer, encourage him/her to estimate, as this is better than a DK answer. If the participant refuses to answer a question, mark the "REF" box for "refused" to answer.*

HIV RAPID TESTING

Interviewer reads:

Thank you for continuing to participate in the study. I am going to draw a small sample of your blood for an HIV test. I will then place a drop of your blood on the HIV test kit. The test will take about 30 minutes to process. During that time, I will ask you some questions which you answered during your last interview. Then I will give you your HIV test results. Before we begin, do you have any questions?

Ngiyakubonga kuchubeka kwakho kutsi ube yincenye yalolucwaningo. Ngitawutsatsa ingati lencane kuwe kute ngikwati kukuhlola ligciwane leHIV. Ngalesosikhatsi ngitakubuta leminye yemibuto lengakubuta yona nasigcina kukuvakashela. Lokuhlola kutawutsatsa sikhatsi lesingangemizuzu lengemashumi lamatsatfu, bese ngikunika imiphumela yakho. Ingabe unayo yini imibuto ngaphambi kwekutsi ngicale?

***Instructions:** If the participant declines to have his/her blood drawn, mark the "Participant refused venipuncture" box.*

☐ ***Participant refused venipuncture***

PTID

☐-☐☐☐-☐☐-☐-☐☐

Short-term Cohort Follow-up (A1)

SEXUAL ACTIVITY

Instructions: *This section of the form addresses sexual behaviors and asks that the participant recall his/her sexual partners over the* ***past 6 months****.*

Question 4 Instructions: *This question for women only. If participant is male, skip to Interview Reads paragraph after question 4a.*

4. Are you currently pregnant? ☐ *yes* ☐ *no* ☐ *DK* ☐ *REF*

   → ***If yes, skip to Interviewer Reads paragraph after question 4a.***

   Ngabe ukhulelwe yini nyalo?

   4a. Have you been pregnant since your last visit? ☐ *yes* ☐ *no* ☐ *DK* ☐ *REF*

   Uke wakhulelwa yini kusukela esikhatsini nasigcina ngaso kukuvakashela?

Interviewer reads:

Now I would like to ask you some questions about your recent sexual activity. I know these questions are sensitive and want to remind you that your answers are completely private. This means that they will not be shared with anyone outside of the study team. No one will know what particular answers you give. This form will not have your name anywhere on it. Instead, you will only be identified by a number. If we should come to any questions that you don't want to answer, just let me know and we will go on to the next one.

Different people have different definitions of "sex" or "sexual intercourse." For this study, when we say "sex" we mean:

- Vaginal sex, which is when a man puts his penis in a woman's vagina.
- Anal sex, which is when a man puts his penis in another person's anus.

Do you have any questions before continuing?

Interviewer reads:

Nyalo-ke ngingatsandza kubuta imibuto lemayelana nekulala kwakho kulesikhashana lesendlulile. Ngiyati kutsi lemibuto iyahhedleta/itsintsana ne-buntfu bakho, kungako nje ngikukhumbuta kutsi timphendvulo takho titawugcineka kahle. Loku kusho kutsi akukho lomunye longatati ngaphandle kwalaba labachuba lolucwaningo. Angeke libhalwe ligama lakho kuleli-phepha letimphendvulo. Utawunikwa inombolo lotawatiwa ngayo. Uma kunemibuto longatsandzi kuyiphendvula ngicela ungatise ngitewuyeca ngichubekele kuleminye.

Bantfu labehlukene banetinchazelo letahlukene ngekulala noma kulalana. Kulolucwaningo kulala kufaka ekhatsi naku lokulandzelako:

- Kulalana ngekwelicansi kwalomdvuna nalomsikati, lokusho kutsi lomdvuna ufaka indvuku yakhe kulentfombi yalonalomsikati.
- Kulalana ngemuva, lona wesilisa ufaka indvuku yakhe etibunu noma embotjeni lengemuva kulomunye umuntfu.

Ingabe unayo yini imibuto ngaphambi kwekutsi ngichubekele embili?

5. How old were you when you had sexual intercourse for the very first time? *age (years)* ☐☐

   ☐ *have never had sex* → ***If have never had sex, skip to Follow-up HIV Test Results CRF.***

   ☐ *REF*

   Bewuneminyaka lemingakhi uma ucala ngca kulala?

6. In total, with how many different people have you had sexual intercourse in the last 6 months? It is okay to estimate the number if you do not remember exactly. *number of partners* ☐☐

   → ***If zero, skip to Follow-up HIV Test Results CRF.***

   ☐ *REF*

   Sebabonkhe ngabe bangakhi bantfu labehlukene lolelene nabo kuletinyanga letisitfupha letendlulile? Uma ungasakhumbuli kahle, ungabekisa.

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□ - □□□ - □□ - □ - □□

Short-term Cohort Follow-up (A1)

7. With the _____ (*insert number of partners from question 6 or say "this or these" if 9 = REF*) sex partners that you have had in the last 6 months, how often did you use a condom when you had sexual intercourse?

   Kulabantfu labangu *(insert number of partners from question 9 or say "this or these" if 9 = REF)* lolele nabo kuletinyanga letisitfupha letendlulile bewuyisebentisa ngemahlandla lamangaki ikhondomu?

□ *sometimes*
□ *always*
□ *never*
□ *DK*
□ *REF*

Instructions: *Read **down** each column of the table (for each partner, one at a time), **not** across each row.*

Interviewer reads:
Now I would like to ask you more details about your most recent sex partners in the last 6 months. Please tell me about them starting with the most recent sex partner.

Nyalo ngicela kukubuta kabanti ngabophathina logcine kulalana nabo kuletinyanga letisitfupha letengcile. Ngicela ungitjele ngabo ucale ngalogcine kulalana naye.

	Partner 1	□ *no 2nd partner* ***Skip to Providing HIV Test Results section.*** ***Partner 2***	□ *no 3rd partner* ***Skip to Providing HIV Test Results section.*** ***Partner 3***
8. First name, nickname, or marker of each partner Ngiphe ligama lakhe, ligama lekuteketisa, noma indlela letsite yekumbekisa	_____ □ *REF*	_____ □ *REF*	_____ □ *REF*
9. Month/year sexual relationship began Ngiphe inyanga nemnyaka lenacala kulalana ngawo	*MMM* □□□ *yy* □□ □ *REF*	*MMM* □□□ *yy* □□ □ *REF*	*MMM* □□□ *yy* □□ □ *REF*
10. Month/year sexual relationship ended Ngiphe inyanga nemnyaka lenahlukana ngawo ***Interviewer:*** *Record today's date if relationship*	*MMM* □□□ *yy* □□ □ *REF*	*MMM* □□□ *yy* □□ □ *REF*	*MMM* □□□ *yy* □□ □ *REF*
11. Partner's sex Bulili bakhe	□ *male* □ *female* □ *REF*	□ *male* □ *female* □ *REF*	□ *male* □ *female* □ *REF*

Instructions: *If response to Question 11 is female or REF, skip to 12. If response to Question 11 is "male", continue to Question 11a.*

11a. Was his penis circumcised or uncircumcised? Indvuku yakhe beyisokiwe yini noma beyingakasokwa? ***Interviewer:*** *Show participant male circumcision drawings on Interview Card #1.*	□ *circumcised* □ *uncircumcised* □ *became circumcised during relationship* □ *DK* □ *REF*	□ *circumcised* □ *uncircumcised* □ *became circumcised during relationship* □ *DK* □ *REF*	□ *circumcised* □ *uncircumcised* □ *became circumcised during relationship* □ *DK* □ *REF*

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Short-term Cohort Follow-up (A1)

	Partner 1	☐ no 2nd partner **Skip to Providing HIV Test Results section.** Partner 2	☐ no 3rd partner **Skip to Providing HIV Test Results section.** Partner 3
12. About how old was she/he the first time you had sex with her/him? Bekaneminyaka lemingakhi ngesikhatsi nicala ngca kulalana?	years ☐☐ ☐ REF	years ☐☐ ☐ REF	years ☐☐ ☐ REF

Interviewer reads:

For the next question, I am going to ask you if your partner was a husband/wife, a regular partner, or a casual partner:

- By husband/wife we mean someone who you are married to or living with as if married.
- By regular partner we mean someone who you are NOT married to or living with as married, but who is a steady partner such as a girlfriend or boyfriend.
- By casual partner we mean someone who is NOT your spouse or a regular partner, but with whom you have had sex with in the last 6 months.

Interviewer reads:

Kulombuto lolandzelako ngitakubuta kutsi ngabe lomuntfu lolalana naye nitsatsene, nivame kuhlangana /singani sakho nomake ngumuntfu lokwetfuka kwenteka kutsi ulalanenaye:

- Nge ndvodza nemfati sisho lotsetsene naye waba yindvodza noma umfati wakho nomake lohlalisana naye njengemfati noma indvodza yakhko.
- Nge kuvamisa kuhlangana sisho umuntfu leningakatsatsani naye futsi leningahlalisani naye, kodvwa lenenta lutfo naye noma losingani sakho.
- Umumntfu nje sisho umuntfu leningakatsatsani futsi longasiso nesingani, kodvwa loke walala naye kuletinyanga letisitfupha letengcile.

	Partner 1	☐ no 2nd partner **Skip to Providing HIV Test Results section.** Partner 2	☐ no 3rd partner **Skip to Providing HIV Test Results section.** Partner 3
13. Keeping these definitions in mind, is this partner your spouse, a regular partner, or a casual partner? Uma ulandzela lenchazelo lesengikunikete yona, ungamchaza utsi bekayini lomuntfu kuwe, benitsetsene, benivame kulalana naye/ bekusingani sakho, noma ngumuntfu lewehle ulalana naye nje?	☐ husband/wife ☐ regular partner ☐ casual partner ☐ REF	☐ husband/wife ☐ regular partner ☐ casual partner ☐ REF	☐ husband/wife ☐ regular partner ☐ casual partner ☐ REF
14. On approximately how many days did you have sex with him/her in the last 6 months? Ungabekisa utsi nilalene emalanga lamangakhi kuletinyanga letisitfupha letendlulile?	☐ 1 ☐ between 2–5 ☐ between 6–10 ☐ more than 10 ☐ REF	☐ 1 ☐ between 2–5 ☐ between 6–10 ☐ more than 10 ☐ REF	☐ 1 ☐ between 2–5 ☐ between 6–10 ☐ more than 10 ☐ REF

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Short-term Cohort Follow-up (A1)

Instructions: *For questions 15–22, show participant Interview Card #2 to help them remember the response options: always, sometimes, or never.*

		Partner 1	☐ *no 2nd partner* ***Skip to Providing HIV Test Results section.*** ***Partner 2***	☐ *no 3rd partner* ***Skip to Providing HIV Test Results section.*** ***Partner 3***
15.	How often did you use a condom when you had sexual intercourse? Ingabe ikhondomu bewuyisebentisa sonkhe sikhatsi, ngalesinye sikhatsi noma bewungayisebentisi?	☐ *always* ☐ *sometimes* ☐ *never* ☐ *REF*	☐ *always* ☐ *sometimes* ☐ *never* ☐ *REF*	☐ *always* ☐ *sometimes* ☐ *never* ☐ *REF*
16.	How often did you give or receive money or gifts so that you would have sex with this person? Ngemahlandla lamangakhi lawuke wakhipha noma watfola imali noma lokusipho kuze kutsi alalene nawe lomuntfu?	☐ *always* ☐ *sometimes* ☐ *never* ☐ *REF*	☐ *always* ☐ *sometimes* ☐ *never* ☐ *REF*	☐ *always* ☐ *sometimes* ☐ *never* ☐ *REF*
17.	Did you and your partner engage in *vaginal* sex in the last 6 months? Ngabe wena naphathina wakho nilalene yini *entfombini* kuletinyanga letisitfupha letendlulile?	☐ *yes* ☐ *REF* ☐ *no*	☐ *yes* ☐ *REF* ☐ *no* → ***If no, skip to 19.***	☐ *yes* ☐ *REF* ☐ *no*
18.	How often did you and your partner use a condom when you had *vaginal* sex in the last 6 months? Ngabe uma nilalana entfombini kuletinyanga letisitfupha letendlulile ikhondomu beniyisebentisa ngaso sonkhe sikhatsi, ngalesinye sikhatsi noma beningayisebentisi?	☐ *always* ☐ *sometimes* ☐ *never* ☐ *REF*	☐ *always* ☐ *sometimes* ☐ *never* ☐ *REF*	☐ *always* ☐ *sometimes* ☐ *never* ☐ *REF*
19.	Did you and your partner engage in *anal* sex in the last 6 months? Ngabe wena naphathina wakho nilalene yini ngemuva (*embotjeni lengemuva*) kuletinyanga letisitfupha letendlulile?	☐ *yes* ☐ *REF* ☐ *no*	☐ *yes* ☐ *REF* ☐ *no* → ***If no, skip to Questions 21–22 Instructions.***	☐ *yes* ☐ *REF* ☐ *no*
20.	How often did you and your partner use a condom when you had *anal* sex in the last 6 months? Ngabe niyisebentise emahlandla lamangakhi ikhondomu uma nilalana ngemuva (*embotjeni lengemuva*) kuletinyanga letisitfupha letendlulile?	☐ *always* ☐ *sometimes* ☐ *never* ☐ *REF*	☐ *always* ☐ *sometimes* ☐ *never* ☐ *REF*	☐ *always* ☐ *sometimes* ☐ *never* ☐ *REF*

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Short-term Cohort Follow-up (A1)

Questions 21–22 Instructions: *Complete questions 21–22 for all male participants who had a male sex partner(s) in the past 6 months. All other participants, skip to question 23.*

	Partner 1	☐ *no 2nd partner* ***Skip to Providing HIV Test Results section.*** ***Partner 2***	☐ *no 3rd partner* ***Skip to Providing HIV Test Results section.*** ***Partner 3***
21. Did you and your partner have *anal* sex in the last 6 months? Ngabe wena naphathina wakho nilalene yini ngemuva (*embotjeni lengemuva*) kuletinyanga letisitfupha letendlulile?	☐ *yes* ☐ *REF* ☐ *no*	☐ *yes* ☐ *REF* ☐ *no* ***If no, skip to 23.***	☐ *yes* ☐ *REF* ☐ *no*
22. How often did you and your partner use a condom when you had *anal* sex in the last 6 months? Ngabe niyisebentise emahlandla lamangakhi ikhondomu uma nilalana ngemuva (*embotjeni lengemuva*) kuletinyanga letisitfupha letendlulile?	☐ *always* ☐ *sometimes* ☐ *never* ☐ *REF*	☐ *always* ☐ *sometimes* ☐ *never* ☐ *REF*	☐ *always* ☐ *sometimes* ☐ *never* ☐ *REF*
23. When you were having a sexual relationship with this partner, do you think that he/she was HIV positive? Ngalesikhatsi ulalana nalophathina lona, ucabanga kutsi abenalo yini ligciwane leHIV?	☐ *yes* ☐ *DK* ☐ *no* ☐ *REF*	☐ *yes* ☐ *DK* ☐ *no* ☐ *REF*	☐ *yes* ☐ *DK* ☐ *no* ☐ *REF*
24. Do you think that this partner was taking ART for HIV/AIDS? Nawucabanga, ngabe lophathina wakho abedla imitsi/emaphilisi ekutsintsibalisa ligciwane leHIV yini, pheceleti ema ARVs?	☐ *yes* ☐ *DK* ☐ *no* ☐ *REF*	☐ *yes* ☐ *DK* ☐ *no* ☐ *REF*	☐ *yes* ☐ *DK* ☐ *no* ☐ *REF*

PROVIDING HIV TEST RESULTS TO PARTICIPANT

Instructions: *Complete the HIV Tests, provide the result to the participant, and complete the Follow-up HIV Test Result CRF. After completing the Follow-up HIV Test Result CRF, continue with this form (starting with HIV Status Information section).*

HIV STATUS INFORMATION

Instructions: *Ask these questions **only** if the participant has a positive test today.*

25. Before today's test, have you ever tested HIV positive?
Ngaphambi kwanamuhla, wake wahlolwa yini kwakhandzakala kutsi unalo ligciwane leHIV emtimbeni wakho?

yes ☐ *no* ☐ *DK* ☐ *REF* ☐ → ***If no, DK, or REF, skip to Male Circumcision section.***

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Short-term Cohort Follow-up (A1)

26. When did you first test HIV-positive? Give best approximate date.

    MMM *yy* *REF*

    Kwakukunini mawuhlola kwekucala utfolakala uneligciwane leHIV? Tama kukhumbula lusuku, inyanga kanye nemnyaka.

27. After you tested HIV-positive, did you see/go to see a doctor or nurse about your HIV infection? *yes* *no* *DK* *REF*

    Emuva kwekuhlola utfole kutsi unalo ligciwane leHIV, waya yini kuyawubona dokotela/ noma nesi kute ucocisane nawe ngekutsi utfolakele uneligciwane le HIV emtimbeni?

28. Has a doctor or nurse ever told you that you should be taking ART to treat HIV (including during your pregnancy)? *yes* *no* *DK* *REF*

    Ngabe dokotela noma nesi wake wakutjela yini kutsi udle emaphilisi ekutsintsibalisa ligciwane leHIV pheceleti ema ARVs (lokufaka ekhatsi make lotetfwele)?

Instructions: *If the participant is female, mark the "Participant is female. No data recorded on this page." box on page 9. Then skip to Final Statement section. If the participant is male, continue to Male Circumcision Status section.*

MALE CIRCUMCISION STATUS

Interviewer reads:

Now I would like to ask you about male circumcision. I am going to show you some drawings to help answer the questions. As a reminder, by male circumcision, I mean removal of the foreskin of the penis. Because circumcision is only performed on males, I will show you drawings only of the male genitalia/penis. Before we begin, do you have any questions?

Nyalo ngitakubuta imibuto ngekusoka kwabantfu besilisa. Ngitakukhombisa imidvwebo lesita kuphendvula lemibuto. Kukukhumbuta, kusoka kwebantfu besilisa kusho kususwa kwelijwabu endvukwini yabo. Ngesizatfu sekutsi kusoka besilisa kuphela, ngitakukhombisa imidvwebo yebulili bemuntfu wesilisa/yendvuku yemuntfu wesilisa. Ngabe unayo yini imibuto?

Instructions: *Show participant male circumcision drawings on Interview Card #1.*

25. Based on these drawings, when you do NOT have an | rection, would you say your penis is uncircumcised (more like the first drawing) or circumcised (more like the second drawing)?

    circumcised *uncircumcised* *DK* *REF*

    If uncircumcised, DK, or REF, skip to Final Statement.

    Uma ubuka lemidvwebo ungasho yini kutsi indvuku yakho uma ingakavuki kutsi ayikasokwa (njengalomdvwebo wekucala) noma isokiwe (njengalomdvwebo wesibili)?

26. *Mark the circumcision status that was reported by the participant during the Pre-cohort Survey (Routine or Extended Questionnaires).*

    circumcised *uncircumcised* *DK* *REF*

    If circumcised, skip to Final Statement.

27. When you completed the survey approximately 6 months ago, you reported being uncircumcised. When, in the last 6 months, did you become circumcised?

    MMM *yy* *REF*

    If REF, skip to Final Statement.

    Ngesikhatsi ucala kuba yincenye yalolucwaningo esikhatsini lesingaphasana noma ngetudlwana kwetinyanga letisitfupha, bewutsite awukasoki. Kusukakela kuleso sikhatsi kute kube ngunyalo, ngabe usoke nini?

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☐ Participant is female. No data recorded on this page.

Short-term Cohort Follow-up (A1)

28. Did you get circumcised at a location providing medical circumcision services in Swaziland? *yes* ☐ *no* ☐ *REF* ☐ → ***If no or REF, skip to Final Statement.***

    Ngabe wasoka endzaweni leniketa luhlelo lwekusoka kwebesilisa lolulapha eSwatini?

29. What is the name of the site where you had your circumcision done? _____ *DK* ☐

    Yini ligama lalendzawo lapho wasoka khona?

30. On the day you got circumcised, did you have an HIV test? *yes* ☐ *no* ☐ *REF* ☐ → ***If no or REF, skip to Interviewer reads text after question 31.***

    Ngabe walihlola yini ligciwane leHIV ngelilanga usoka?

31. I would like to ask you the result of your HIV test on the day of your circumcision surgery. Please tell me the result of your HIV test on the day of your circumcision surgery. *positive* ☐ *negative* ☐ *indeterminate* ☐ *DK* ☐ *REF* ☐

    Ngitawutsandza kwati kabanti ngemphumela wakho weHIV nawuhlola ngelilanga utawusoka. Ngicela ungitjele imiphumela yakho yeHIV nawuhlolela ligciwane ngelilanga usoka.

Interviewer reads:

Thank you for answering questions about your circumcision surgery. I would now like to ask you to complete a release of medical information form.

Ngiyabonga kutsi uphendvule lemibuto mayelana nekusoka kwakho. Ngitocela imvume yakho yekutsi ngitfole emarekhodi ngekusoka kwakho.

Question 32 Instructions: *Ask the participant to complete the release of medical information form.*

32. *Indicate if the participant completed the release of medical information:* *completed* ☐ *REF* ☐

FINAL STATEMENT

Interviewer reads:

Thank you very much for your time. Do you have any final questions or comments that you would like to share with me?

Siyabongeka kakhulu sikhatsi sakho. Ingabe unayoyini leminye imibuto nomakukhona yini longatsandza kungatisa kona?

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Visit Code 2.[ ] 1

PTID [ ]-[ ][ ][ ]-[ ][ ]-[ ]-[ ][ ]

Follow-up HIV Test Results (A1)

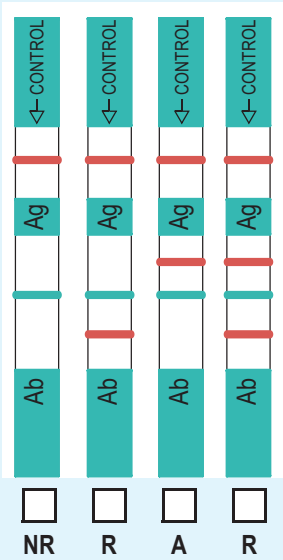
Specimen Collection Date [ ][ ] dd [ ][ ][ ] MMM [ ][ ] yy

Staff ID: [ ][ ][ ][ ][ ] Team ID: [ ][ ]

1. Test #1: Determine 4th Generation

Lot No. _____ Exp. Date _____

Mark **one** box indicating the results from the Determine test strip:



☐ If test is invalid (no control line), **mark box** and **repeat** Determine Test.

Valid Determine Test Results

1. If **NR**, **STOP** and record as **NR** in Sample Test Result and Participant Result sections. No further testing is required.
2. If **R** or **A**, test blood sample with Unigold test.

2. Specimen Collection/Storage

	yes	*no*
Was a 9ml tube of blood fully or partially collected?	☐	☐

3. Test #2: Unigold

Lot No. _____ Exp. Date _____

Mark the box indicating the result from the Unigold test strip:

☐ **R**EACTIVE (**R**)

☐ **N**ON-**R**EACTIVE (**NR**)

If Valid Unigold Results, record in both Sample Test Result and Participant Result sections.

Test Results Interpretation

1. Determine Test = **R** and Unigold Test = **R:** Record **R** in both Sample Test Result and Participant Result sections.
2. Determine Test = **R** and Unigold Test = **NR**: Record as **IND** in both Sample Test Result and Participant Result sections
3. Determine Test = **A** and Unigold Test = **R**: Record as **IND** in both Sample Test Result and Participant Result sections
4. Determine Test = **A** and Unigold Test = **NR**: Record as **A** in Sample Test Result section and **IND** in Participant Result section.

4. Sample Test Result

Mark box and record on Sample Tube Label.

☐ **R** (Determine = **R** and Unigold = **R**)

☐ **NR** (Determine **NR** only)

☐ **IND** (Determine = **R** and Unigold = **NR** *or* Determine = **A** and Unigold = **R**)

☐ **A** (Determine = **A** and Unigold = **NR**)

5. Participant Result

☐ **NR**

☐ **R**

☐ **IND (IND** or **A)***

** In both cases, counsel as indeterminate result.*

6. Were the results given to the participant?

☐ **Yes**

☐ **No, participant refused**

☐ **No, other:** _____

7. If the participant is HIV-positive, provide the name of the nearest health facility, recommend that the participant go to th at facility for care and treatment, and record the referral number: **A** [ ][ ][ ][ ][ ]

[ ][ ][ ][x] 27-JUL-11

If conducting a follow-up interview, return to the Short-term Follow-up (A1) CRF.

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Visit Code . 1

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Specimen Collection Date dd MMM yy

Indeterminate: NRL Results (A1)

1. EIA RESULT *(To be completed by lab staff)*

- ☐ REACTIVE (**R**)
- ☐ NON-REACTIVE (**NR**)
- ☐ Not tested

Initials _____

Test Date dd MMM yy

2. VIRAL LOAD RESULT *(To be completed by lab staff)*

> ☐ = ☐ < ☐

viral copies/mL

Initials _____

Test Date dd MMM yy

☐ Not tested ☐ Target not detected ☐ Invalid specimen

3. ACTION FOR FIELD STAFF *(To be completed by Manager or designee)*

- ☐ POSITIVE DIAGNOSIS
- ☐ NEGATIVE DIAGNOSIS
- ☐ INDETERMINATE/ REPEAT TESTING NEEDED

FOLLOW-UP TIMELINE

Notify participant/repeat test on: dd MMM yy

4. Were results given to the participant? *(To be completed by Field Counselor)*

Staff ID: *Team ID:*

- ☐ YES
- ☐ NO, PARTICIPANT REFUSED
- ☐ NO, UNABLE TO LOCATE
- ☐ NO, OTHER (specify): _____

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PTID ☐☐☐-☐☐☐-☐☐-☐-☐☐

Completion/Termination

Staff ID: ☐☐☐☐☐

Team ID: ☐☐

1. Did the participant complete the follow-up visit? *yes* ☐ *no* ☐ → ***If no, skip to 2.***

   1a. What is the date the visit was completed? *dd* ☐☐ *MMM* ☐☐☐ *yy* ☐☐ → ***End of form.***

Instructions: *This section is used to determine why the participant was unable to complete a follow-up visit.*

2. Did the participant refuse participation? *yes* ☐ *no* ☐ → ***If no, skip to 3.***

   2a. If yes, what was the reason for refusal? *Mark all that apply.*

- ☐ 2a1. participant declined to give reason for refusal
- ☐ 2a2. I don't have time to participate in the survey
- ☐ 2a3. I already know that I am HIV positive
- ☐ 2a4. I don't wish to be tested for HIV/get my test results
- ☐ 2a5. I don't want you to draw my blood/take my blood away
- ☐ 2a6. I find the topic uncomfortable or embarrassing
- ☐ 2a7. need partner permission/partner wouldn't allow it
- ☐ 2a8. need parental permission/parent wouldn't allow it
- ☐ 2a9. prefer to test away from home
- ☐ 2a10. prefer to test without partner present
- ☐ 2a11. fear breach of confidentiality
- ☐ 2a12. other, specify: _____

3. Has the participant died? *yes* ☐ *no* ☐ → ***If no, skip to 4.***

   3a. date of death *dd* ☐☐ *MMM* ☐☐☐ *yy* ☐☐ 3b. cause of death _____

4. Has the participant been incarcerated? *yes* ☐ *no* ☐ → ***If no, skip to 5.*** 4a. Duration of incarceration: *days* ☐☐☐

5. Is the participant permanently incapacitated, i.e. mentally ill/challenged, severely ill, unable to speak, etc.)? *yes* ☐ *no* ☐ → ***If no, skip to 6.*** 5a. Specify: _____

6. If you believe the participant is unable to complete the follow-up visit for reasons other than outlined in questions #1-5, please write your comments here and refer to your supervisor (i.e., moved outside of Swaziland, unable to contact after three attempts, unable to locate, etc.). _____

ONLY A SUPERVISOR SHOULD COMPLETE THE FOLLOWING ITEMS.

Supervisor ID: ☐☐☐☐☐

- ☐ 7. participant relocated outside of Swaziland
- ☐ 8. inappropriate enrollment → ***Complete a Field Incident Report.***
- ☐ 9. unable to contact participant after several attempts. Specify actions taken to follow-up with participant. _____
- ☐ 10. other, specify: _____

11. In consultation with a manager and based on the information above, should the participant be terminated? *yes* ☐ *no* ☐ → ***If no, end of form.***

    11a. What is the date termination was determined? *dd* ☐☐ *MMM* ☐☐☐ *yy* ☐☐

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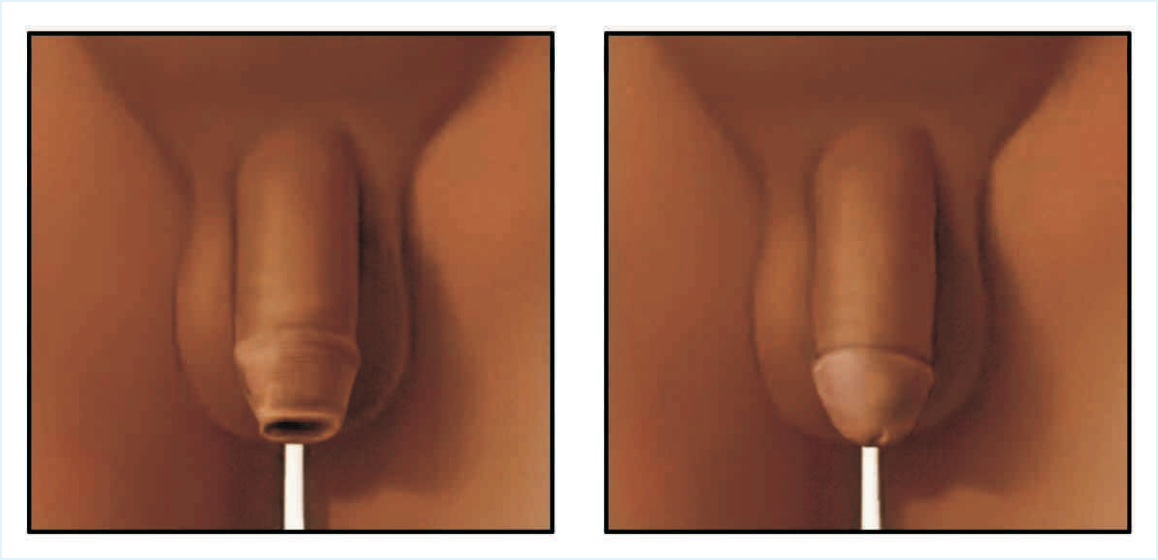
Appendix G: Male circumcision illustration



Appendix H: Sample weights

A weight was assigned to each participant which reflects the inverse of their probability of selection and adjusts for non-response rates in the overall sample. Final participant weights were developed using the design weight (DW) and the post-adjustment weight (PSw):

Final participant weight = DW x PSw

The design weight (DW) reflects the inverse of each participant's sampling fraction. Under the two-stage sampling design, the sampling fraction is the product of the stage 1 and stage 2 sampling fractions:

DW = 1 / (Stage 1 sampling fraction x Stage 2 sampling fraction)

The Stage 1 sampling fraction is the probability of selection of the enumeration area (EA) of the participant. For first stage sampling of EAs, probability proportional to number of households was used for each of 8 strata formed by region x urbal/rural, with the number of EA selected per strata selected proportional to the number of EAs in the strata.

The Stage 2 sampling fraction is the probability of household selection within an EA. Simple random sampling was used for selection of 26 households per EA. EAs with fewer than 26 households were replaced. Thus, the Stage 2 sampling fraction for each participant is calculated as the number of households selected in the participant's EA divided by the total number of households in the respective EA (i.e. 26/x, where x was determined as the total number of households identified in the household listing, see section, Sampling Strategy).

Calculation of the PSw was calculated based on demographic data collected on both participants and non-participants in SHIMS. This information was collected as part of the household composition data provided by the head of household (see section, Sampling Strategy). Four-way cross-tabulations of age, gender, rural/urban EA, and region were developed. The PSws were computed to match the selected sample characteristic, such that an adult in the $_{ijkl}$ cell of the four-way table is assigned the weight: $w_{ijkl} = \frac{p_{ijkl}}{s_{ijkl}}$, where s_{ijkl} is the proportion in the SHIMS enrollees and p_{ijkl} the proportion in the selected SHIMS sample.

Finally, we using raking to adjust the sample characteristics to match the 2007 Swaziland Census composition for Gender, Age, Region and Urban/Rural.

Appendix I

Weighted and Unweighted Characteristics of participants in SHIMS pre-cohort survey

	Weighted			Unweighted		
	Total	**Women**	**Men**	**Total**	**Women**	**Men**
Total	18169/18169 (100%)	9842/18169 (54.2%)	8327/18169 (45.8%)	18169/18169 (100.0%)	11040/18169 (60.8%)	7129/18169 (39.2%)
Age						
18-19	1987/18169 (10.9%)	989/9842 (10.1%)	997/8327 (12%)	2216/18169 (12.2%)	1205/11040 (10.9%)	1011/7129 (14.2%)
20-24	4582/18169 (25.2%)	2488/9842 (25.3%)	2093/8327 (25.1%)	4795/18169 (26.4%)	2830/11040 (25.6%)	1965/7129 (27.6%)
25-29	3604/18169 (19.8%)	1925/9842 (19.6%)	1679/8327 (20.2%)	3657/18169 (20.1%)	2233/11040 (20.2%)	1424/7129 (20.0%)
30-34	2628/18169 (14.5%)	1361/9842 (13.8%)	1267/8327 (15.2%)	2575/18169 (14.2%)	1523/11040 (13.8%)	1052/7129 (14.8%)
35-39	2202/18169 (12.1%)	1208/9842 (12.3%)	993/8327 (11.9%)	1874/18169 (10.3%)	1196/11040 (10.8%)	678/7129 (9.5%)
40-44	1702/18169 (9.4%)	976/9842 (9.9%)	726/8327 (8.7%)	1622/18169 (8.9%)	1074/11040 (9.7%)	548/7129 (7.7%)
45-49	1464/18169 (8.1%)	893/9842 (9.1%)	571/8327 (6.9%)	1430/18169 (7.9%)	979/11040 (8.9%)	451/7129 (6.3%)
Residence						
Urban	5424/18169 (29.9%)	2967/9842 (30.1%)	2457/8327 (29.5%)	5259/18169 (28.9%)	3194/11040 (28.9%)	2065/7129 (29.0%)
Rural	12745/18169 (70.1%)	6875/9842 (69.9%)	5870/8327 (70.5%)	12910/18169 (71.1%	7846/11040 (71.1%)	5064/7129 (71.0%)
Region						
Hhohho	5182/18169 (28.5%)	2796/9842 (28.4%)	2387/8327 (28.7%)	5293/18169 (29.1%)	3179/11040 (28.8%)	2114/7129 (29.7%)
Manzini	6090/18169 (33.5%)	3347/9842 (34%)	2743/8327 (32.9%)	5226/18169 (28.8%)	3205/11040 (29.0%)	2021/7129 (28.3%)
Shiselwe	3333/18169 (18.3%)	1856/9842 (18.9%)	1477/8327 (17.7%)	3616/18169 (19.9%)	2297/11040 (20.8%)	1319/7129 (18.5%)
Lubombo	3564/18169 (19.6%)	1843/9842 (18.7%)	1721/8327 (20.7%)	4034/18169 (22.2%)	2359/11040 (21.4%)	1675/7129 (23.5%)
Education[1]						
Did not attend	1174/18169 (6.5%)	634/9842 (6.4%)	540/8327 (6.5%)	1181/18169 (6.5%)	727/11040 (6.6%)	454/7129 (6.4%)
Primary	5246/18169 (28.9%)	2911/9842 (29.6%)	2335/8327 (28%)	5230/18169 (28.8%)	3251/11040 (29.4%)	1979/7129 (27.8%)
Secondary	9064/18169 (49.9%)	4999/9842 (50.8%)	4065/8327 (48.8%)	9189/18169 (50.6%)	5637/11040 (51.1%)	3552/7129 (49.8%)
Tertiary	2603/18169 (14.3%)	1253/9842 (12.7%)	1349/8327 (16.2%)	2491/18169 (13.7%)	1379/11040 (12.5%)	1112/7129 (15.6%)

Current marital status[2]						
Not married, ever had sex	7808/18169 (43%)	4104/9842 (41.7%)	3704/8327 (44.5%)	7811/18169 (43.0%)	4589/11040 (41.6%)	3222/7129 (45.2%)
Not married, never had sex	1875/18169 (10.3%)	554/9842 (5.6%)	1321/8327 (15.9%)	1945/18169 (10.7%)	662/11040 (6.0%)	1283/7129 (18.0%)
Married, living with partner	4923/18169 (27.1%)	2811/9842 (28.6%)	2112/8327 (25.4%)	4799/18169 (26.4%)	3135/11040 (28.4%)	1664/7129 (23.3%)
Married, partner stays elsewhere[3]	2810/18169 (15.5%)	1956/9842 (19.9%)	854/8327 (10.3%)	2861/18169 (15.7%)	2185/11040 (19.8%)	676/7129 (9.5%)
Married, unknown living situation	307/18169 (1.7%)	250/9842 (2.5%)	57/8327 (0.7%)	324/18169 (1.8%)	279/11040 (2.5%)	45/7129 (0.6%)
Number of partners (past 6 months)[4]						
0	4062/18169 (22.4%)	1793/9842 (18.2%)	2268/8327 (27.2%)	4133/18169 (22.7%)	2027/11040 (18.4%)	2106/7129 (29.5%)
1	12083/18169 (66.5%)	7617/9842 (77.4%)	4466/8327 (53.6%)	12205/18169 (67.2%	8538/11040 (77.3%)	3667/7129 (51.4%)
2 or more	1884/18169 (10.4%)	372/9842 (3.8%)	1512/8327 (18.2%)	1689/18169 (9.3%)	404/11040 (3.7%)	1285/7129 (18.0%)
Currently pregnant[5]						
Yes		669/9842 (6.8%)			764/11040 (6.9%)	
No		8860/9842 (90%)			9928/11040 (89.9%)	
Circumcision status[6]						
Circumcised			1374/8327 (16.5%)			1183/7129 (16.6%)
Uncircumcised			6631/8327 (79.6%)			5664/7129 (79.5%)

[1] Refers to highest level of education ever attended, whether or not that level was completed; # missing = 83(Total) : 45(Women) : 38(Men)
[2] # missing = 448 (Total) : 167(Women) : 280 (Men)
[3] Among participants who are currently married or have regular partner
[4] # missing = 141 (Total) : 59 (Women) : 81 (Men)
[5] # missing = 312 (Women)
[6] Refers to male participants only; # missing = 323 (Men)

Notes

Notes