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1. FOREWORD

It is with great pleasure that we present the final report of the Behavioral Surveillance Survey among Men who have Sex with Men in Rwanda (BSS-MSM 2015). This is the first survey of its kind conducted in Rwanda. The survey estimated the prevalence of HIV among MSM, assessed the sexual and risky behaviors and the use of health services among MSM population to inform the Key Populations (KP) HIV program in Rwanda.

Even though, numerous surveys provide information on HIV among the general population, it is crucial to have additional information about high-risk groups for HIV. The Rwanda HIV and AIDS national strategic plan 2013- 2018 clearly highlights this in its research agenda by defining key priority areas for research including gathering information on HIV risk among key population and other vulnerable populations.

The data from the MSM BSS, will allow the Rwanda Biomedical Center and its partners involved in HIV programs to implement specific HIV prevention and care interventions that will address the risks and other characteristics identified among MSM in Rwanda. This BSS serves as a baseline for future BSS rounds as part of national behavioral and surveillance system tracking the HIV epidemic.

We convey our gratitude to those who agreed and consented to participate in this survey as well as to the team of investigators, HIV counselors, community mobilizers, coupon managers and laboratory technicians. We thank the Centers for Disease Control and Prevention (CDC) for providing financial and technical support as well as Project San Francisco (PSF) for implementing the survey and providing space and rooms as the survey site.

2. EXECUTIVE SUMMARY

The HIV and AIDS Rwanda National Strategic Plan (2013 – 2018) considers men who have sex with men (MSM) as a high-risk group for HIV transmission. To prevent new HIV infections, the national strategic plan addresses this by setting up interventions directed to this susceptible high transmission group in particular with treatment as prevention as an added approach to the behavioral and other supportive interventions. Survey participants were sampled with a methodology known as respondent driven sampling (RDS), which is widely used for reaching hard to reach populations that are stigmatized or considered at high risk for HIV and sexually transmitted infections (STI's).

MSM who were 18 years and older, resided in Rwanda during the three months preceding the survey and who reported having had anal or oral sex with a male in the last 12 months were eligible to participate. In total 500 MSM were recruited to participate in the survey. The survey was conducted in 2015 and took 25 weeks to be completed.

Social Demographic Characteristics

Most of the MSM in the survey were relatively young as 65% of the sample were between the age of 18 and 25 years old. In terms of province of residence, the majority (70.8%) of MSM resided in the city of Kigali. The majority of MSM reported being single (98%). Among MSM, 43% and 40.3% have respectively completed secondary and primary school. The circumcision prevalence among MSM was high at 75%.

HIV Prevalence

The prevalence of HIV among MSM was 4% (95% confidence interval CI: 1.4 -6.6%). HIV prevalence did not differ significantly among MSM who were circumcised versus those who were not circumcised. Out of 17 HIV positive MSM, 10 were not circumcised and 7 were circumcised. HIV prevalence was significantly higher among MSM who reported not having been paid with money, goods, or services for sex (5%) while among those who reported having been paid with money, goods, or services for sex, HIV prevalence was 2.6%.

Sexual Behavior

57.5% of respondents reported that they have not consistently used a condom in the 30 days prior to the survey and 17.6% have never used a male condom.

Sexual History of MSM

36.7% had their first sexual experience at an age below 18 years while more than fifty percent of participants were aged between 18 and 24 years. Almost a half of MSM (47.5%) reported meeting their partners in clubs, bars or restaurants. In the last 12 months preceding the study, 38.9% reported paying a man for sex. 53% of participants reported to ever have had sex with a woman.

Condom and Lubricants use

In terms of using a condom or consistence use of condom every time MSM have had anal, vaginal or oral sex. 57.5% of respondents reported that they have not consistently used a condom in the 30 days prior to the survey and 17.6% have never used a male condom. 71.4 of participants having used condom with the last anal sex with a male partner. In addition, 81.2% of participants have reported to have ever used lubricants during anal sex however only nearly 1% of them reported using water based lubricants.

Knowledge, opinions and attitudes towards HIV/AIDS

Among MSM, 97% reported that using condom protects against HIV while 41.7% responded that abstinence from any sexual intercourse protects against HIV. Almost a fifth of respondents (17.2%) had the misconception that HIV can be transmitted by mosquito bites and 25% have responded that it can be transmitted through sorcery.

Exposure to HIV prevention programs

In terms of exposure to HIV prevention programs, 32% of respondents reported that in the six months preceding the survey, they have not heard or seen message/information about HIV and AIDS. Radio and television were the main source of information with respectively 52% and 31.5% of respondents reporting that radio and television were the source of information.

Sexual violence and stigma

Sexual violence (defined as being forced to have sex against one's will) occurred with 14.5% of participants reporting having been sexually assaulted. Among 43 MSM to have suffered any violence or abuse because they had sex with other men, 35.3% were physically abused while 48.2% were verbally abused through threats and insult.

HIV prevalence by demographic characteristics

HIV prevalence was high among MSM aged between 20 to 24 years old as out of 238 MSM, 9 were HIV positive (3.9%). In terms of province of residence, HIV prevalence was significantly higher among MSM whose area of residence was Kigali city (13/313) representing 79% of the total number of HIV positive MSM in the study sample. In terms of education level, HIV prevalence did not differ much for those who reported having completed primary, vocational and those with no formal education.

HIV prevalence by sex work

HIV prevalence was significantly higher among MSM who reported not having been paid with money, goods, or services for sex (5%) while among those who reported having been paid with money, goods, or services for sex, HIV prevalence was 2.6%. HIV prevalence was higher among MSM who reported selling sex for more than 2 years.

Syphilis Prevalence by sexual history

Syphilis prevalence was at 8.1% among MSM who reported being bottom passive partner. Syphilis was more prevalent (5.2%) among MSM who reported selling sex for more than 4 years.

HIV and Syphilis co-infection

The study found out that among MSM who had tested positive for HIV, 1,7% had syphilis.

3. ABBREVIATIONS AND ACRONYMS

| | |
|--------|---|
| AIDS: | Acquired Immune Deficiency Syndrome |
| ART: | Anti-retroviral treatment |
| CDC: | US Centers for Disease Control and Prevention |
| CI: | Confidence interval |
| CM: | Coupon Manager |
| ELISA: | Enzyme-Linked Immunosorbent Assay |
| FHI: | Family Health Initiative |
| FSW: | Female sex workers |
| HIV: | Human immunodeficiency virus |
| ID: | Identification number |
| IDU: | Injecting Drug users |
| IHDPC: | Institute of HIV/AIDS, Disease Prevention and Control |
| IRB: | Institutional Review Board |
| MOH: | Ministry of Health |
| MSM: | Men who have sex with men |
| NET: | Network (survey group) |
| NGO: | Non-Governmental Organization |
| NRL: | National Reference Laboratory |
| PDA: | Personal Digital assistant |
| PI: | Principal Investigator |
| PSF: | Project San Francisco |
| RBC: | Rwanda Biomedical Center |
| RDS: | Respondent-Driven Sampling |
| VCT: | Voluntary Counseling and Testing |
| WB: | Western Blot |

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| Collaborators | | |
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5. INTRODUCTION

In 2014, 36.9 million [34.3 million–41.4 million] people were living with HIV. The number of people living with HIV has continued to increase, in large part a positive tendency, because more than 15 million people globally as of March 2015 are on antiretroviral therapy and as a result are living longer. At the same time, even though new HIV infections have declined, there is still an unacceptable number of new HIV infections each year, contributing to the burden of the epidemic. Sub-Saharan Africa, with 25.8 million [24 million–28.7 million] people living with HIV, remains the region most heavily affected by the epidemic¹.

Sub-Saharan Africa continues to bear the greatest burden of the HIV epidemic and the East African region is among the most affected even if since 2000 the epidemic has been declining and stabilizing in many countries of East Africa.².

Transmission of HIV in sub-Saharan Africa is generally through unprotected heterosexual sex, however HIV prevalence is generally higher among key populations and the risk of infection among most-at-risk populations appears to be growing. Of these populations, men who have sex with men (MSM) are 19 times more likely to become HIV infected than members of the general population are³.

A recent 2012 global analysis of available epidemiological studies, found that HIV prevalence among men who have sex with men in the Americas, South and South-East Asia and sub-Saharan Africa ranged from 14% to 18%⁴. HIV prevalence is relatively high in different African countries such as in Kampala, Uganda where in a study conducted by Hladik et al⁵ in 2012 HIV prevalence was 13.7% among MSM. In Cape Town, HIV prevalence in MSM was 25.5%⁶ in 2011. In a study conducted by Baral et al⁷ in three southern African countries, they

¹ UNAIDS Report: How AIDS changed everything, 2015; UNAIDS 2014 Global Statistics

² UNAIDS (2010) 'UNAIDS report on the global AIDS epidemic

³ UNAIDS (2015): The gap report

⁴ Beyrer C, Baral SD, van Griensven F, Goodreau SM, Chariyalertsak S, Wirtz AL, Brookmeyer R. Global epidemiology of HIV infection in men who have sex with men. Lancet. 2012

⁵ Hladik W, Barker J, Ssenkus JM, Opio A, Tappero JW, Hakim A, et al. HIV infection among men who have sex with men in Kampala, Uganda—a respondent driven sampling survey. PloS One 2012

⁶ Baral S, Burrell E, Scheibe A, Brown B, Beyrer C, Bekker LG. HIV risk and associations of HIV infection among men who have sex with men in peri-urban Cape Town, South Africa. BMC Public Health 2011

⁷ Baral S, Trapence G, Motamedi F, Umar E, Lipinge S, Dausab F, et al. HIV prevalence, risks for HIV infection, and human rights among men who have sex with men (MSM) in Malawi, Namibia, and Botswana. PloS one 2009

found that HIV prevalence in Malawi, Botswana and Namibia was 21,4%, 19,6% and 12,4% respectively.

In Rwanda, HIV prevalence has been stable since 2005 and remains at 3% among adults age 15-49 (4% among women and 2% among men). HIV prevalence is higher in urban areas than rural areas with 6% and 2% respectively⁸.

In Rwanda there is no information on HIV prevalence among the MSM population, however there was an exploratory study conducted in 2008 to assess HIV risk within a sample of 99 MSM living in Kigali. Respondents reported having both male and female sexual partners, and considerable HIV risk behaviors including commercial sex with men and women, low condom use during both anal and vaginal sex and high mobility. Although all respondents were residents of Kigali, there was a significant amount of reported traveling to other major cities in Rwanda in the 12 months preceding the study⁹. In 2009, a Modes of Transmission modeling exercise concluded that 15% of new infections might be from MSM networks¹⁰.

The Government of Rwanda, Ministry of Health, and their development partners have implemented programs targeting MSM in the country as in the National HIV Strategic Plan 2013-2018 also prioritized interventions targeting HIV prevention and service provision among MSM¹¹.

HIV risk, the HIV prevention and care and treatment needs of MSM require more consideration. MSM are a largely hidden, stigmatized population which poses challenges to conducting the research and surveillance. Understanding behavioral and risk factor trends among MSM is crucial to HIV programming and evidence based decision making. Furthermore, it is a great opportunity to measure the prevalence of HIV and to explore associated risk factors for HIV infection as well as the behavioral component among MSM networks in Rwanda. The 2015 BSS among MSM will provide baseline information and evidence to policy makers on the current national response addressing HIV among MSM.

8 NISR (2015): Rwanda Demographic and Health Survey Report, 2015

9 Binagwaho, A., Chapman, J., Koleros, A., Utazirubanda, Y., Pegurri, E. (2009). Exploring HIV Risk among MSM in Kigali, Rwanda. Chapel Hill, NC: MEASURE Evaluation.

10 Asiimwe, A., Koleros, A., Chapman, J. (2009). Understanding the dynamics of HIV epidemic in Rwanda: Modeling the expected distribution of new HIV infections by exposure group. Chapel Hill, NC: MEASURE Evaluation.

¹¹ Rwanda Biomedical Center, Rwanda HIV and AIDS National Strategic Plan, July 2013-June 2018

6. OBJECTIVE

The overall goal of this BSS is to establish a routine surveillance system for MSM, to estimate the burden of HIV in MSM, to describe associated risk factors, and to provide data for HIV prevention programs and other services for this most at-risk population.

6.1. General Objective

The overall general objective of the BSS was to determine baseline information in a periodic surveillance system to better facilitate, inform, and evaluate the impact of preventive interventions targeting MSM.

6.1.1. Specific Objectives

To estimate HIV prevalence among the MSM community in Rwanda.

To determine risky behaviors for HIV among the MSM community in Rwanda

To determine risk factors for HIV infection among MSM in Rwanda.

To develop a baseline BSS MSM to assess behavior change among MSM in the future.

7. METHODS

7.1. Study design

This was a cross-sectional anonymous BSS for men who have sex with men using Respondent Driven Sampling (RDS). It consisted of a quantitative survey that was carried out using an interview with a standardized structured questionnaire and blood sample collection for HIV testing.

7.1.1. Sampling locations

This project targeted self-identified MSM residing in Rwanda and aimed to cover a large sample of MSM population in the country. The sampling locations have followed the MSM social networks structures in Rwanda.

7.2. Eligibility criteria

7.2.1. Inclusion criteria

| | Eligibility criteria | | |
|------------|----------------------|---|--|
| MSM | Age \geq 18 years | Residing in Rwanda for at least 3 months. | Reporting having had anal or oral sex with a male in the last 12 months. |

7.2.2. Exclusion criteria

- Unable to understand or provide informed consent
- Duplicate recruit
- Received coupon from a stranger (does not know recruiter): at the discretion of the PI or project manager, such recruits may be excluded or be used as a seed to start a new wave
- Being discovered as not being MSM after screening

7.3. Sample size

The sample size was based on an estimate of the proportion of MSM who consistently used condoms in the last 30 days prior to the survey. Assuming a value of 10% (95% CI 0.07 – 0.13) in 2012 we expected that by 2014, twenty-five percent of the MSM would have consistently used condoms in the

last 30 days. Assuming also a 95% CI, 80% power and a DEFF of 2, then the minimum target sample size of 440 is obtained by the following formula:

$$n = D \frac{[\sqrt{2P(1-P)}Z_{1-\alpha} + \sqrt{P_{2012}(1-P_{2012}) + P_{2014}(1-P_{2014})}Z_{1-\beta}]^2}{\Delta^2}$$

Or:

D = Design effect

P₂₀₁₂ = proportion estimated at the time of the first survey

P₂₀₁₄ = Proportion expected in a future period such as the quantity (**P₂₀₁₄ - P₂₀₁₂**) is the size of the change to be detected.

P = (**P₂₀₁₂ + P₂₀₁₄**)/2

Δ = **P₂₀₁₄ - P₂₀₁₂**

Z_{1-α} , **Z_{1-β}** = the appropriate values from the standard normal distribution;

And

$\alpha = 0.05$ ($Z_{1-\alpha} = 1.645$) $\beta = 0.20$ ($Z_{1-\beta} = 0.83$)

A minimum sample size of 440 participants was proposed but the actual sample size achieved may vary. The primary goal was to reach equilibrium for key indicators.

7.4. Recruitment

7.4.1. Recruitment of Seeds

Seeds were individuals who marked the beginning of each referral chain. A seed was a recruit “recruited” not by peers but by the investigators.

The study team has recruited initially four MSM as “**seeds**,” who then recruited participants to the study. Seeds were well connected within their networks (among their peers), respected by their peers, sympathetic to the survey’s goals and diverse with regard to education, socioeconomic status (unemployed, manual labor, professional), age and place of residence. Seeds were encouraged to recruit participants in the whole country based on their network. However, in case a seed is none active, an additional seed is recruited.

7.4.2. Recruitment of study participants

After the recruitment of seeds, each received three recruitment coupons, which they used to recruit their MSM peers. Thus, seeds recruited the first wave of the participants for the study.

Each coupon was uniquely coded in order to link recruiters and recruits. The coupon ID numbers were carefully recorded in each questionnaire.

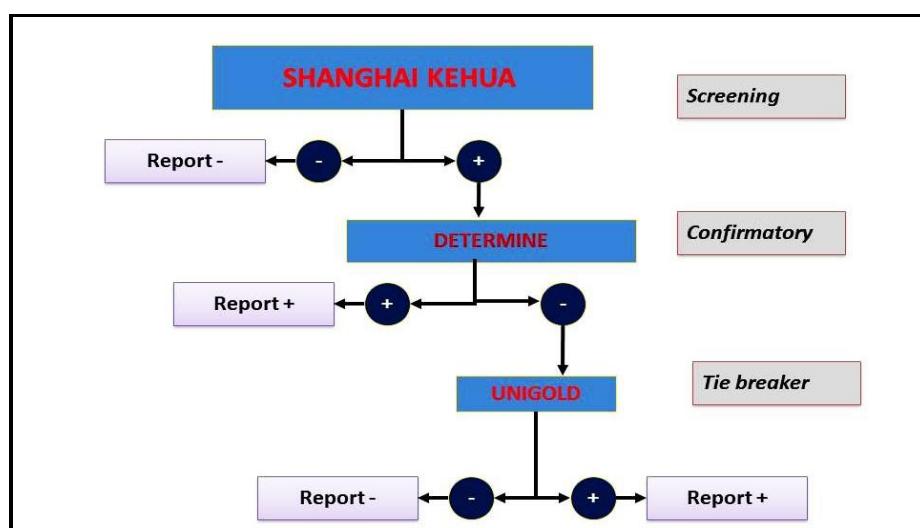
7.5. Laboratory methods

7.5.1. Sample collection and storage

Trained laboratory technicians for the survey collected 4 ml of blood by venipuncture into an EDTA tube from eligible survey participants who consented for testing. In total, 452 (90.4%) individual blood samples were taken. The participants who tested positive at any test were referred to the nearest health facility of their choice upon completion of post-test counselling.

The remaining whole blood was shipped to the National Reference Laboratory (NRL) at the end of each day at 4°C in a cool box, to prepare plasma sample for HIV testing by ELISA and Western Blot. In addition, the on-site laboratory technician prepared a Dried Blood Spot (DBS) card to be shipped to NRL along with the whole blood specimens, which were used for HIV RNA PCR testing, as required according to the national testing algorithm. At NRL, the plasma was aliquoted into approximately 4 cryovials of 500 µl each (approximately 1.5-2 ml plasma can be extracted from 4 ml of blood) and appropriately labeled under the supervision of RBC-IHDPC and NRL managers. For long-term storage, the specimens (plasma and DBS) were stored at the NRL at minus 20°C for pending testing. Syphilis testing was done using RPR test at the survey site and TPHA as a confirmatory test at the NRL.

Figure 1: National HIV Rapid Test Algorithm



7.6. Data collection

7.6.1. Pre-data collection phase

A. Training of research team

Before data collection begins, a one-week intensive training program was organized for the study team. RBC staff team in collaboration with CDC and other relevant partners provided the training.

Members of the survey team (office manager, data collector, nurse counselors, coupon/data manager and laboratory technician) were trained according to their respective tasks and received training on ethics aspects related to this type of survey.

Specifically, data collectors were trained on the administration of the questionnaires and the use of computer tools to directly process the information provided by the interviewee. Laboratory technicians were trained on blood sample taking procedures.

Coupon managers were informed of all survey procedures and have trained participants to recruit their peers. Recruiter training was provided at the end of each interview. This training focused on how to recruit eligible MSM peers, eligibility criteria and coupon distribution to minimize the loss of circulating coupons. Confidentiality and ethical aspects of the survey were highlighted for the coupon managers who trained participants on peer recruitment. These two aspects were essential for the success of the survey.

After the training session, the team got to be familiar with the study objectives, the characteristics of the target group, rapport-building techniques, RDS principles, the contents of the questionnaire, ethical issues and consent form.

The survey office was located in Kigali City at Project San Francisco premises. Based on an exploratory study conducted in 2009, the City of Kigali has a larger number of MSM and most of those outside the capital city travel frequently to Kigali¹².

¹² Binagwaho, A., Chapman, J., Koleros, A., Utazirubanda, Y., Pegurri, E. (2009). Exploring HIV Risk among MSM in Kigali, Rwanda. Chapel Hill, NC: MEASURE Evaluation

7.6.2. Data Collection Phase

7.6.2.1. Participants interviews

The questionnaire was programmed in tablets with technical support from EGPAF in collaboration with RBC-IHDPC team. The questionnaire was administrated face to face and collected data on demographics, HIV-relevant behaviors, symptoms of HIV/STIs, as well as on HIV/STI-related knowledge, attitude, practices, stigma, perceptions, and questions related to other health-related domains.

Data collectors were trained as end users for questionnaire administration. Interviewers consecutively administered questionnaire to participants at the survey office. Questionnaires were saved daily in data manager's database.

For quality assurance and validation, data entered were checked and a daily back up was done and stored with a secured password. Also, to avoid the risk of losing data, the data were daily saved on external hard disk.

7.6.2.2. Laboratory results

HIV and Syphilis testing were performed using tests approved by the Rwanda Ministry of Health following national standardized testing protocols. The rapid tests for HIV and syphilis were performed and results given to the participants. After a pre-test counseling, HIV test was performed by a trained laboratory technician using rapid test according to the national algorithm of HIV rapid testing. Syphilis testing was performed using the RPR test and TPHA for confirmation at the NRL.

7.7. Data management and analysis

Data was collected among 500 participants and analyzed using RDS-Analyst and STATA 95% Confidence intervals, frequency, proportions and mean were computed for major indicators. The unit of analysis was individual, with population estimates made based on the analysis of the entire complete network/sample.

Final analysis included the following key indicators:

- Social-demographic characteristics,
- Participants Sexual Orientation
- Sexual history of MSM
- Male Circumcision
- Knowledge of HIV
- Condom and Lubricant use
- Exposure to HIV prevention programs
- Prevalence of HIV
- Prevalence of Syphilis and STIs,
- Reported risk behaviors,
- Factors associated with HIV infection or STIs

7.8. Ethical Considerations

Appropriate measures were taken to ensure survey participant protection, voluntary participation, and confidentiality. First, prior to the implementation of this survey, the research protocol was reviewed and approved by the Rwanda National Ethics Committee and CDC, Atlanta. Second, all data collection team were trained on research ethics including good clinical practice. Third, during the data collection, no personal identifiable information i.e names of the participants, national ID number were collected; rather a unique ID survey code was used to link participant's information to their laboratory results and to identify recruitment chains. Finally, all participants included in the survey gave their consent after being informed about aims of the survey, their rights including the right to refuse to participate, to withdraw from the study at any time or to refuse to answer any question. They were also explained about the potential risks and benefits associated with the study, compensation, confidentiality, provided with contact for more information or questions. People were consented to participate in the survey as well as for HIV testing. All people who conducted the interviews signed a confidentiality form.

8. FINDINGS

8.1. Summary of Survey recruitment and eligibility

The survey took 25 weeks and the survey site was in Kigali at Projet San Francisco premises. Four seeds were randomly selected and were people who are well known and respected in their networks and communities. Of the four seeds, one was not recruiting enough participants therefore the study team decided to add one more seed to make it five seeds in total. The longest chain from seed number one consisted of 208 participants representing 41.5% of the sample size. Seed number three contributed up to 36.7% of the sample size. Seed 2 and 5 had short recruitment chains as their recruits respectively represented 3.8% and 1.6%. The maximum number of waves was 10 with the average number of waves per seed equal to 7.2. Figure 1 and 2 illustrate the recruitment chain per seed and the recruitment network per wave.

Table 1: Summary of recruitment of MSM with RDS in Rwanda BSS, 2015

| Seed | Number of participants recruited per seed | Percentage contribution to the total seed participant | Max Number of waves per seed | Average Number of waves per seed | Duration of recruitment |
|------|---|---|------------------------------|----------------------------------|-------------------------|
| 1 | 208 | 41.5 | 10 | 7.2 | 25 |
| 2 | 19 | 3.8 | 6 | | |
| 3 | 184 | 36.7 | 9 | | |
| 4 | 82 | 16.4 | 8 | | |
| 5 | 8 | 1.6 | 3 | | |

Figure 2 : Recruitment chain per seed

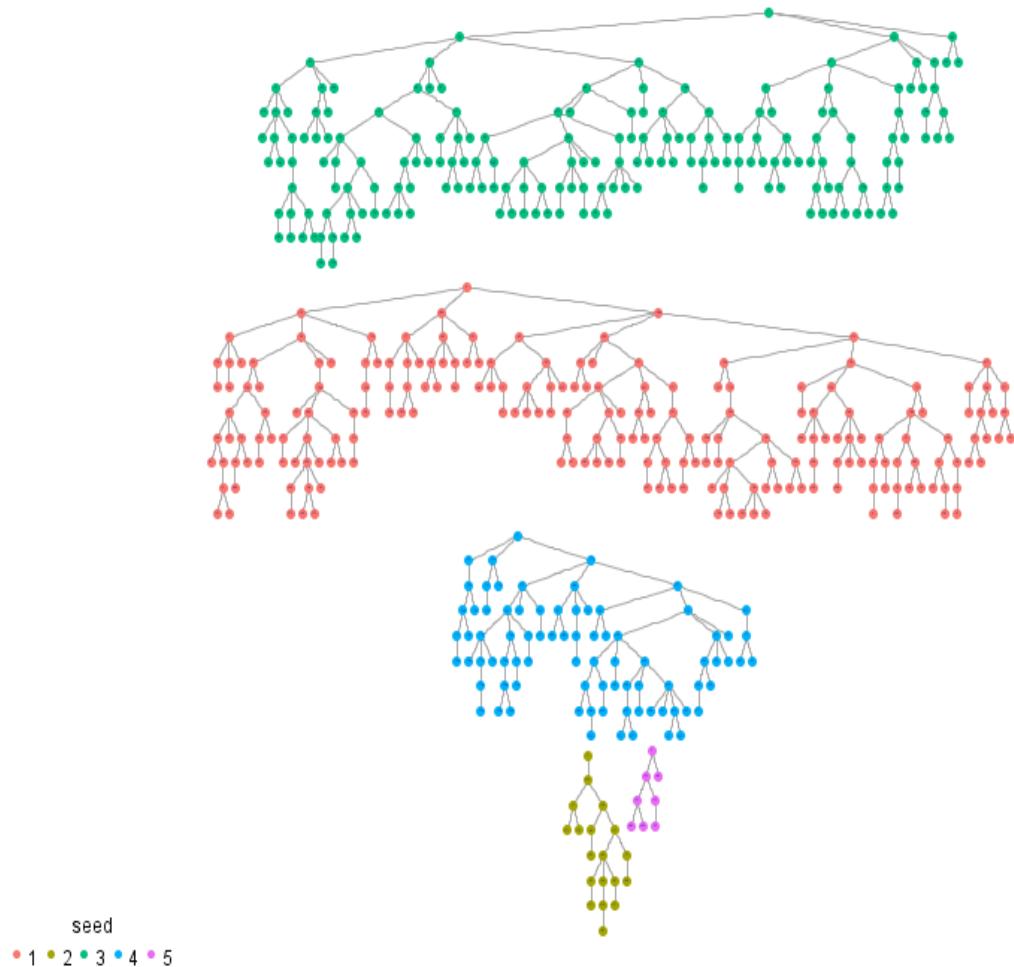
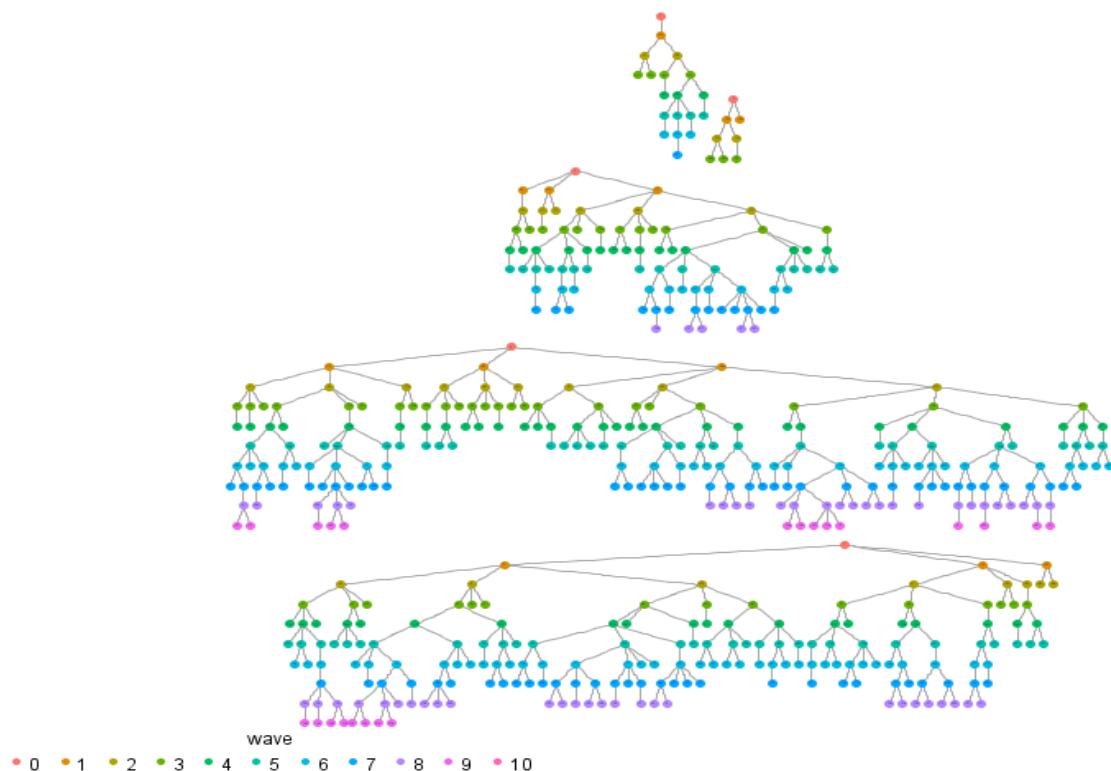
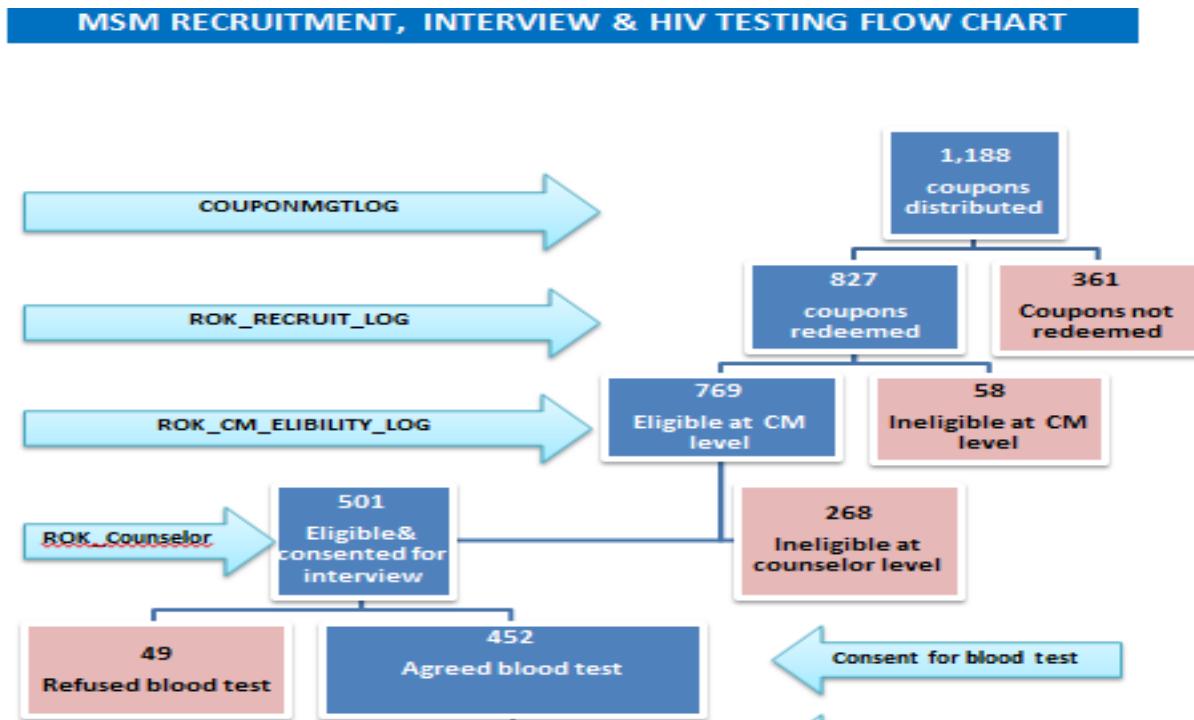


Figure 3: RDS Recruitment network by wave in Rwanda, BSS-MSM, 2015



In total, 1188 coupons were distributed in all the provinces of Rwanda. Of these distributed coupons, 827 returned to the survey site with MSM who had received a coupon from their network peers corresponding to a return coupon rate of 69.6%. All 827 recruits who arrived at the survey site with a coupon, have undergone an eligibility screening. Of these, 58 were ineligible at the coupon management level. Out of the remaining 761, 501 were screened eligible at the counselor level and have consented for interview. The reasons of ineligibility included being under 18 years of age, not living in Rwanda in the last three months at least and not having had sex with a man in the last 12 months. Of the 501 eligible participants, 49 have refused blood sample collection.

Figure 4: Recruitment flow diagram

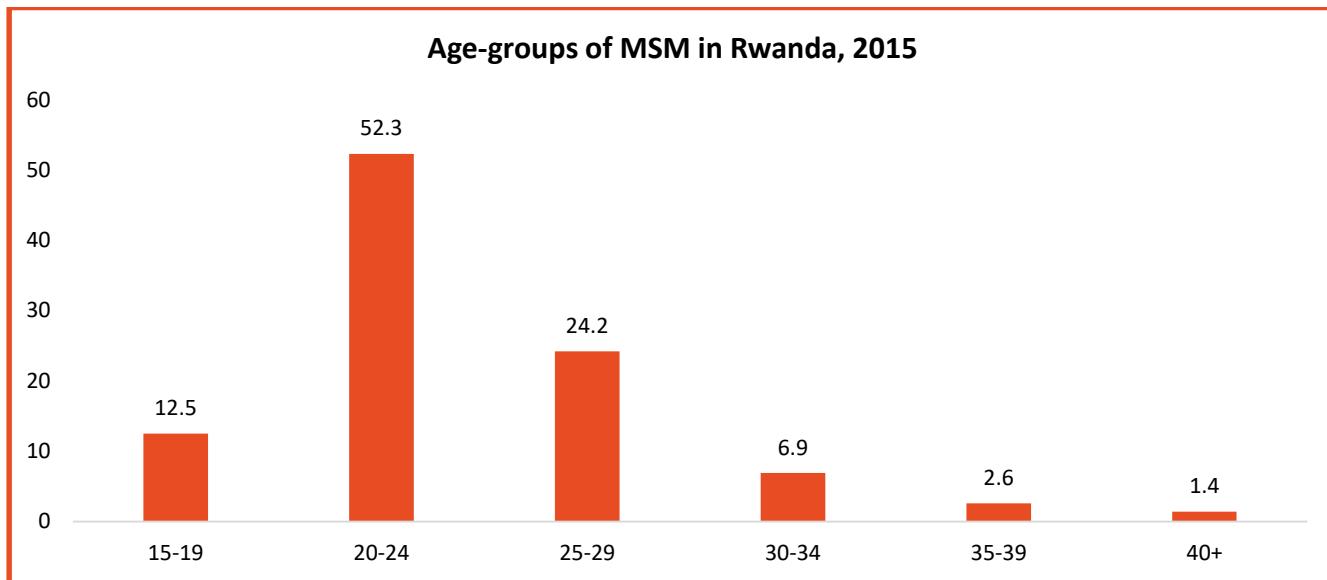


8.2. Social-demographic characteristics of the study participants

KEY FINDINGS

- The majority of MSM in Rwanda were aged 20-24 years (52%).
- In Rwanda, the majority of MSM were found to be in Kigali City (70.8%).
- Most MSM were single (98%).
- 43% and 40.3% of MSM have respectively attained secondary school and primary school

Figure 5: Age groups of MSM, Rwanda 2015



In the MSM BSS, more than the half of the MSM were aged between 20 and 24 years old (52%), and those aged between 25 to 29 years old represented 24% of the sample. 7% and 3% of the MSM sample respectively represented the age groups of 30 to 34 and 35 to 39 years. Only 1% of the MSM was aged 40 years and more.

In terms of province of residence, the majority (70.8%) of MSM resided in the Kigali City whereas 11.1% were residing in the Southern Province and 9.8% from the Western Province.

There were 43% and 40.3% of MSM who have respectively attained secondary school and primary school. MSM who have attained vocational training represented 7% and only 2.8% were able to attain higher education. MSM who had not attained any sort of education represented 7%.

In terms of religion, 46.2% were Catholics while 19.7% and 15.7% were respectively Muslims and Protestants. About 13% reported non-religion. For marital status, the great majority of MSM were single (98%).

On main occupation, 16.5% of MSM have reported being unemployed at the time of the survey while 26.3% reported being part time or casual laborers. 22% of the respondents reported being full time students and 14.4% and 13.5% reported being self-employed and permanent workers respectively.

Only 1.5% of respondents reported sex work as their main occupation.

Table 2: Social-demographics characteristics of MSM, Rwanda 2015

| | N: Unadjusted | Adjusted % | Adjusted 95% CI |
|--|------------------|------------|-----------------|
| Age group | | | |
| 18-19 | 62 | 13.5 | [8.8 – 18.2] |
| 20-24 | 259 | 51.0 | [44.4 – 57.3] |
| 25-29 | 120 | 25.0 | [18 – 32] |
| 30-34 | 34 | 6.4 | [5 – 8] |
| 35-39 | 13 | 1.8 | [0.2 – 3.4] |
| 40+ | 7 | 2.4 | [1 – 4] |
| Province | | | |
| Kigali | 371 | 70.8 | [63.1-78.5] |
| Northern | 12 | 1.7 | [0.0 -3.4] |
| Southern | 51 | 11.1 | [6.7-15.5] |
| Western | 37 | 9.8 | [5.5-14.0] |
| Eastern | 30 | 6.7 | [2.9-10.4] |
| Highest level of education attained | | | |
| None | 34 | 7.0 | [4.7 – 9.2] |
| Primary | 198 | 40.3 | [36.0 – 45.0] |
| Vocational | 28 | 7.0 | [2.6 – 11.1] |
| Secondary | 207 | 43.0 | [38.0 – 48.0] |
| Higher education | 20 | 2.8 | [1.2 – 4.4] |
| Religion | | | |
| Catholic | 216 | 46.2 | [40.2 – 52.3] |
| Protestant | 81 | 15.7 | [13.0 – 19.0] |
| Muslim | 107 | 19.7 | [14.1 – 25.2] |
| 7th day Adventist | 18 | 4.0 | [2.1 – 5.7] |
| None | 70 | 12.8 | [10.0 – 15.5] |
| Other | 7 | 1.3 | [0.4 – 3.1] |
| Current Marital Status | | | |
| Single | 489 | 98.0 | [95.6 – 100] |
| Cohabiting | 1 | 0.1 | [0.0 – 0.3] |
| Married (Monogamous) | 2 | 0.1 | [0.0 – 0.16] |
| Divorced | 1 | 0.1 | |
| Separated | 7 | 1.6 | [0.8 – 4.0] |
| Main Occupation | | | |

| | | | |
|-----------------------------|-----|------|---------------|
| Have no work | 81 | 16.5 | [11.8 – 21.3] |
| Student | 104 | 22.1 | [18.3 – 25.7] |
| Permanent work for salary | 68 | 13.5 | [10.4 – 16.6] |
| Casual/part time labourer | 129 | 26.3 | [21.1 – 31.5] |
| Domestic worker | 2 | 0.2 | [0.0 – 0.3] |
| Self employed | 76 | 14.4 | [11.2 – 17.5] |
| Restaurant/hotel/bar worker | 19 | 3.5 | [1.9 – 5.1] |
| Sex worker | 10 | 1.5 | [0.7 – 3.6] |
| Other | 10 | 1.5 | [0.7 – 3.6] |

8.3. Sexual orientation of the MSM BSS participants in Rwanda, 2015

KEY FINDINGS

- Sixty-eight percent of the study participants described themselves as gay/homosexuals
- Thirty-one percent reported having sex with both men and women
- Fifty one percent of participants reported to be attracted only to men

In terms of sexual orientation, 97.3% of the study participants were aware of their sexual orientation and 68% described themselves as being gay/homosexual. 31% reported being bisexual. Those who reported being attracted only to men and mostly male but sometimes female were respectively 51% and 35%.

Table 3 : Sexual Orientation of MSM, Rwanda 2015

| | N: Unadjusted | Adjusted % | Adjusted 95% CI |
|-------------------------------------|---------------|------------|-----------------|
| Awareness of own sexual orientation | | | |
| Yes | 489 | 97.3% | [96.5 – 98.1] |
| Sex most attracted to | | | |
| Only male | 265 | 51% | [47 – 55] |
| Mostly male but sometimes female | 170 | 35 | [29.5 – 40] |
| Equally male and female | 22 | 6.7% | [2.3 – 10.2] |
| Mostly female but sometimes male | 36 | 6.3% | [4 – 10] |
| Only female | 5 | 1.3% | [0.3 – 2.2] |
| Self-description as | | | |
| Gay/Homosexual | 342 | 68% | [62.4 – 73] |
| Bisexual | 153 | 31% | [26.2 – 36.5] |
| Straight/Heterosexual | 4 | 1% | [0 – 2] |

8.4. Sexual history of MSM in Rwanda, 2015

KEY FINDINGS

- 36.7% had their first sexual experience at an age below 18 years while more than fifty percent of participants were aged between 18 and 24 years
- Almost a half of MSM (47.5%) reported meeting their partners in clubs, bars or restaurants
- In the last 12 months preceding the study, 38.9% reported paying a man for sex

The age on which MSM had first sex with a man, it was reported that 36.7% of the respondents were aged below 18 years of age, while 24.3% and 29.1% were respectively in the age groups between 18 – 19 years and 20 – 24 years. In terms of their area where MSM do usually meet other men they have sex with, 47.5% (CI: 45.6-49.4) of MSM reported meeting their partners in club, bars or restaurants. Other areas of meeting included MSM associations, school or university and others. 38.9% of MSM have reported having paid a man for sex in the 12 months preceding the survey. Among those MSM who have reported having paid a man for sex in the 12 months preceding the survey (N: 207), 74.9% reported having been selling sex and 16.3% were buying whereas the rest was both buying and selling sex. Among those who reported buying sex (N: 35), 28.6% never used a condom with their paid male partner.

Table 4: Sexual History of MSM, Rwanda 2015

| | N: Unadjusted | Adjusted % | Adjusted | 95% CI |
|---|---------------|------------|-------------|--------|
| Age at first sexual intercourse with a man | | | | |
| <18 | 181 | 36.7 | [31.9-41.5] | |
| 18-19 | 125 | 24.3 | [18.7-29.9] | |
| 20-24 | 150 | 29.1 | [23.4-34.9] | |
| 25-29 | 38 | 8.0 | [4.6-11.4] | |
| 30-34 | 5 | 0.9 | [0.5-1.3] | |
| 35-39 | 1 | 1.0 | [-3.3-5.3] | |
| Meeting areas/places with men you have sex with | | | | |
| At my work place | 26 | 4.4 | [2.4-6.5] | |
| Church, mosque, temple | 2 | 0.7 | [-4.9-6.2] | |

| | | | |
|--|-----|------|-------------|
| Club, bar, hotel, restaurant | 241 | 47.5 | [45.6-49.4] |
| MSM association/group reunion | 51 | 10.2 | [7.9-12.4] |
| Other | 50 | 11.0 | [7.6-14.4] |
| Private place | 15 | 4.6 | [3.9-5.2] |
| School/university | 67 | 11.7 | [8.7-14.8] |
| Social media | 34 | 6.9 | [4.7-9.1] |
| Spa/Sauna/Gym | 2 | 0.2 | [-0.4-0.8] |
| Street, field, park | 12 | 2.8 | [1.9-3.7] |
| Ever paid a man for sex in the last 12 months | | | |
| Yes | 207 | 38.9 | [32.1-45.7] |
| Buying or selling if commercial sex partners | | | |
| Buying | 35 | 16.3 | [6.3-26.4] |
| Selling | 158 | 74.9 | [64.9-84.9] |
| Both buying and selling | 14 | 8.8 | [3.4-14.2] |
| Condom use with paid male partners | | | |
| Every time | 18 | 38.5 | [29.4-47.7] |
| Sometimes | 9 | 32.9 | [14.1-51.7] |
| Never | 8 | 28.6 | [12.9-44.3] |

8.5. Sexual history of MSM with females in Rwanda, 2015

KEY FINDINGS

- Fifty-three percent of participants reported to ever have had sex with a woman
- Almost a half of participants who have reported to ever have had sex with women were aged below eighteen years at their first sexual relationship with a woman
- Fourteen percent of those who had sex with women had also children

Approximately 53% of MSM have reported having ever had sex with a woman. Almost the half of those were below 18 years of age and 24.6% were aged between 18 and 19 years old. Among those who have had sex with women (264), 14.2% have fathered children and 16.6% have had anal sex with women they had sex with.

Table 5: Sexual history of MSM with females in Rwanda, 2015

| | N: Unadjusted | Adjusted % | Adjusted 95% CI |
|--------------------------------|---------------|------------|-----------------|
| Ever had sex with a woman | | | |
| Yes | 264 | 53 | [46.54-58.81] |
| Age at first sex with a woman? | | | |
| Under18 | 132 | 47.838 | [46.93-48.75] |
| 18-19 | 67 | 24.606 | [17.15-32.06] |
| 20-24 | 53 | 22.881 | [18.28-27.48] |
| 25-29 | 10 | 2.831 | [1.21-4.45] |
| 30+ | 2 | 1.842 | [-3.12-6.80] |
| Have children | | | |
| Yes | 44 | 14.23 | [9.18-19.29] |
| Ever had anal sex with a woman | | | |
| Yes | 34 | 16.6 | [11.96-21.23] |

8.6. History of being paid for sex work with males : MSM BSS in Rwanda, 2015

KEY FINDINGS

- Out of 213 MSM, 96.3% have had anal or oral sex with a man who paid them with money, goods or services
- Among them, 16.8% have had more than three men who paid for anal or oral sex
- Among the participants who reported having sex with men who paid for sex in the three months preceding the survey, 30.6% have not used a condom

Out of 213 MSM, 96.3% have had anal or oral sex with a man who paid them with money, goods or services. Among them, 16.8% have had more than three men who paid for anal or oral sex. In the 3 months preceding the survey, 148 MSM have reported having had sex with men who paid them something in the three months preceding the survey. Among them 93.1% have had sex up to 12 times during that period. In 30.6% of the cases, a condom was never used while 50.8% reported having used a condom every time.

Table 6: History of being paid for sex work with males: MSM BSS in Rwanda, 2015

| | N: Unadjusted | Adjusted % | Adjusted 95% CI |
|---|---------------|------------|-----------------|
| Did you ever have anal or oral sex with a man who paid you with money, goods, or services | | | |
| Yes | 206 | 96.3 | [93.5-99.2] |
| In the last 3 months, how many different men paid you for anal or oral sex | | | |
| 1 | 63 | 33.0 | [26.9-39.1] |
| 2 | 36 | 18.8 | [10.6-26.9] |
| 3+ | 49 | 16.8 | [8.1-25.5] |
| Refuse to answer | 58 | 31.4 | [23.1-39.8] |
| In the last 3 months, how many times did you have sex with a man who paid you something? | | | |
| 1-12 | 132 | 93.1 | [89.2-96.9] |
| 13-24 | 9 | 4.0 | [1.2-6.8] |
| 25+ | 7 | 2.9 | [0.3-5.5] |
| Out of these times, how often was a condom used | | | |
| Every time | 78 | 50.8 | [40.5-61.1] |
| Never | 38 | 30.6 | [22.9-38.2] |
| Sometimes | 32 | 18.6 | [9.4-27.8] |

8.7. Condom and Lubricants : MSM BSS in Rwanda, 2015

KEY FINDINGS

- 57.5% of respondents reported that they have not consistently used a condom in the 30 days prior to the survey
- Among the respondents, 17.6% have never used a male condom
- 71.4% of participants having used condom in the last anal sex with a male partner
- Less than twenty percent (18%) of respondents have never used a lubricant

Table 7 presents results about ever having used a condom or consistent condom use during anal, vaginal or oral sex. 57.5% of respondents reported that they have not consistently used a condom in

the 30 days prior to the survey and 17.6% have never used a male condom. 71.4% of participants having used condom with the last anal sex with a male partner. 81.2% of participants have reported to have ever used lubricants during anal sex however only nearly 1% of them reported using water based lubricants. The rest reported using commonly other liquids, oils or petroleum jelly.

Table 7: Condom and Lubricants use

| | N: Unadjusted | Adjusted d % | Adjusted 95% CI |
|---|------------------|-----------------|--------------------|
| Have you ever used a male condom during sex? | | | |
| Yes | 415 | 82.2 | [81.0 – 83.5] |
| In the last 30 days, did you consistently use condoms every time you had oral, anal or vaginal sex? | | | |
| Yes | 183 | 40.2 | [33.6 – 46.8] |
| No | 223 | 57.5 | [57.4 – 57.7] |
| Have used condom with the last anal sex with a male partner | | | |
| Yes | 355 | 71.4 | [67.4 – 75.4] |
| Have you ever used lubricants during anal sex? | | | |
| Yes, have used | 403 | 81.2 | [80.7 – 81.8] |
| No, have never used | 94 | 18 | [13.0 – 22.5] |
| Refused to answer | 3 | 0.8 | [0.0 – 5.0] |
| Commonly used lubricants | | | |
| Saliva | 11 | 2.6 | [0.6 – 5.0] |
| Petroleum jelly or vaseline (sleeping baby, Samona) | 194 | 50.5 | [42.0 – 59.0] |
| Hand lotion | 12 | 2.7 | [1.0 – 4.3] |
| Vaginal gel | 10 | 1.8 | [0.2 – 3.4] |
| Baby oil | 8 | 2.1 | [0.3 – 3.8] |
| KY Jelly | 144 | 32.0 | [24.0 – 40.0] |
| Butter, blue band, ghee, cooking oil | 1 | 0.3 | [0.0 – 1.2] |
| Water | 2 | 0.1 | [0.0 – 1.7] |
| Water based lubricants | 3 | 0.7 | [0.0 – 1.7] |
| Eggs | 52 | 12.7 | [8.0 – 17.0] |
| Other | 57 | 14.2 | [9.5 – 19.0] |

8.8. Knowledge, opinions and attitudes towards HIV/AIDS : MSM BSS in Rwanda, 2015

KEY FINDINGS

- 90.8% responded that a healthy looking person can transmit HIV to another person
- The results indicate that 97% of respondents reported that using condom protects against HIV
- Almost a fifth of respondents (17.2%) had the misconception that HIV can be transmitted by mosquito bites

The 2015 MSM BSS included questions on knowledge and common misconceptions about HIV transmission. Respondents were asked if it is possible for a healthy-looking person to transmit HIV to someone else and whether a person can contract HIV from mosquito bites, sharing meals with a person infected with HIV or by sorcery. The results in Table 8 indicate that 97% of respondents reported that using condom protects against HIV while 41.7% responded that abstinence from any sexual intercourse protects against HIV. Only 3% said that having few sexual partners protects against HIV. 90.8% responded that a healthy looking person could transmit HIV to another person. The results indicate that some MSM lack accurate knowledge about HIV transmission as almost a fifth of respondents (17.2%) had the misconception that HIV can be transmitted by mosquito bites and 25% have responded that it can be transmitted through sorcery.

Table 8: Knowledge, opinions and attitudes towards HIV/AIDS: MSM BSS in Rwanda, 2015

| | N: Unadjusted | Adjusted % | Adjusted 95% CI |
|--|------------------|---------------|--------------------|
| What to do to protect ourselves against HIV/AIDS? | | | |
| We cannot avoid HIV/AIDS virus | 5 | 0.9 | [0.0 – 1.8] |
| Using a condom | 482 | 97.0 | [95.0 – 98.0] |
| Having very few partners | 13 | 3.0 | [1.0 – 5.0] |
| Being faithful | 46 | 7.0 | [0.0 – 17.0] |
| Avoiding casual sex | 9 | 2.8 | [0.9 – 4.8] |
| Abstinence | 209 | 41.7 | [37.0 – 46.0] |
| Avoiding used soiled sharp objects | 72 | 14.0 | [7.0 – 20.0] |

| | | | |
|--|------------|------|---------------|
| Avoiding blood transfusion | 3 | 0.8 | [0.0 – 1.8] |
| Avoiding intravenous drug use | 5 | 0.6 | [0.0 – 1.3] |
| Other | 25 | 5.0 | [2.2 – 7.8] |
| A person can be infected by HIV/AIDS in the following ways: | | | |
| Sharing a meal with a person infected with HIV? | 19 | 3.6 | [2.8 – 4.5] |
| Being bitten by a mosquito? | 86 | 17.2 | [11.6 – 22.7] |
| Sharing a needle (for injection) that was used for another person? | 492 | 98.6 | [97.8 – 99.3] |
| Through sorcery? | 137 | 25.0 | [19.0 – 30.5] |
| Shaking hands with an infected person? | 7 | 1.8 | [0.8 – 2.8] |
| A healthy looking person can transmit HIV to someone else | | | |
| Yes | 459 | 90.8 | [90.0 – 91.5] |
| No | 40 | 9.0 | [5.2 – 12.8] |
| Total | 500 | | |

8.9. Male circumcision in MSM : MSM BSS in Rwanda, 2015

KEY FINDINGS

- The majority of MSM reported being circumcised (75.8%)
- 74.2% of those not circumcised would like to get circumcised for HIV and STIs prevention

The results indicate that the majority of MSM reported being circumcised (75.8%). One-third (35%) of them reported having been circumcised when they were aged more than 18 years old. Among those who reported not being circumcised, 89.7% reported that they would like to be circumcised and among them 74.2% said that the main reason why they would like to be circumcised is for HIV and STI prevention.

Table 9: Male circumcision in MSM: MSM BSS in Rwanda, 2015

| | N: Unadjusted | Adjusted % | Adjusted 95% CI |
|------------------------------------|---------------|------------|-----------------|
| Heard about male circumcision | N:500 | | |
| Yes | 497 | 99.4 | [98.4-100.5] |
| Are you circumcised?(n=500) | | | |
| yes | 379 | 75.8 | [68.4-79.1] |
| Age when circumcised | | | |
| At birth(<1 year) | 1 | 0.2 | [-3.6-4.0] |
| 1-4 | 45 | 13.8 | [7.4-20.3] |
| 5-17 | 121 | 27.2 | [23.1-31.3] |
| 18+ | 125 | 35.1 | [27.9-42.4] |
| Don't know | 87 | 23.6 | [22.5-24.7] |
| Would you like to get circumcised? | | | |
| yes | 107 | 89.7 | [83.0-96.3] |
| If yes, reason why? | | | |
| Health/hygiene | 22 | 20.1 | [7.5-32.7] |
| Other | 2 | 1.3 | [-11.3-13.9] |
| Sexual satisfaction | 4 | 4.3 | [3.9-4.8] |
| HIV/other STIs prevention | 79 | 74.2 | [72.9-75.5] |

8.10. Exposure to HIV prevention programs among MSM, 2015

KEY FINDINGS

- One-third of respondents reported not having heard or seen message/information about HIV and AIDS during the six months preceding the survey
- Radio and Television were the main source of information with respectively 52% and 31.5%

In terms of exposure to HIV prevention programs, 32% of respondents reported that in the six months preceding the survey, they have not heard or seen message/information about HIV and AIDS. Radio and television were the main source of information with respectively 52% and 31.5% of respondents reporting that radio and television were the source of information. Twenty-five percent reported that peer educators and their colleagues were their source of information while 21% reported that they had the information from healthcare providers.

Table 10 : Exposure to HIV prevention programs among MSM, 2015

| | N: Unadjusted | Adjusted percentage | Adjusted 95% CI |
|---|------------------|------------------------|-----------------|
| During the last six months have you heard or seen message/information on HIV or AIDS? | | | |
| Yes | 337 | 68.0 | [62 – 74] |
| From which source have you heard or seen information about HIV/AIDS? | | | |
| Radio | 169 | 52.0 | [44 – 59] |
| Television | 108 | 31.5 | [25 – 38] |
| Religious leaders | 2 | 1.5 | [1.3 – 1.7] |
| Street board/ posters/leaflets | 37 | 12.5 | [7.5 – 18] |
| Video film/ mobile cinema | 21 | 6.0 | [2.7 – 9.4] |
| Friends | 20 | 6.0 | [3 – 9] |
| Family members/ parents | 6 | 2.1 | [0.15 – 4] |
| Peer educators /colleagues | 87 | 25.0 | [19 – 31] |
| At school | 23 | 8.2 | [4 – 12.5] |
| From my workplace | 8 | 3.0 | [0 – 6] |
| Healthcare providers | 86 | 21.0 | [14 – 28] |
| Other | 36 | 12.0 | [7.5 – 17] |

8.11. Sexual violence and stigma among MSM : MSM BSS in Rwanda, 2015

KEY FINDINGS

- 14.5% of participants reported that they have been sexually assaulted
- Physical and verbal violence were the most reported form of violence with respectively 35.3% and 48.2% among those who have suffered any violence due to the fact of having sex with other men

Results in table 11 indicate that sexual violence (defined as being forced to have sex against one's will) occurred with 14.5% of participants reporting having been sexually assaulted. Among 43 MSM to have suffered any violence or abuse because they had sex with other men, 35.3% were physically beaten while 48.2% were verbally abused through threats and insult.

Table 11: Sexual violence and stigma among MSM: MSM BSS in Rwanda, 2015

| | N: Unadjusted | Adjusted percenta ge | Adjusted percenta ge | 95% CI |
|--|------------------|----------------------------|----------------------------|-------------|
| Have you ever been forced to have sex against your will? | | | | |
| Yes | 69 | 14.5 | | [10 – 19] |
| Did you ever suffer any violence or abuse because you have sex with other men? | | | | |
| Yes | 43 | 5.5 | | [3.3 – 7.7] |
| What sort of violence or abuse was that? | | | | |
| Physical (beaten) | 18 | 35.3 | | [19.5 – 51] |
| Verbal (threats, insults) | 15 | 48.2 | | [23 – 74] |
| Moral (isolation, exclusion) | 7 | 11.0 | | [0 – 22] |
| Sexual (forced to have sexual contact) | 0 | 0.0 | | |
| Other | 3 | 5.0 | | [0 – 30] |

8.12. Self-report of Sexually Transmitted Infections (STI) treatment seeking behavior among MSM in Rwanda, MSM BSS, 2015

KEY FINDINGS

- More than a third of MSM (38%) did not stop having sex while having STIs symptoms such as anal or genital discharge
- Among those who reported having had an STI, 51.4% did not seek treatment

Regarding STIs, 62% of respondents reported stopping sex while having genital or anal discharge, ulcer or wart. Among MSM who have reported having had an STI, 51.4% did not go for treatment. Among those who went for treatment, only 47.5% have attended a health center to seek treatment. Those who reported that they went to a private clinic represented 21.5% while 18.4% did go directly to a pharmacy to get medication.

Table 12: Self-report of Sexually Transmitted Infections (STI) treatment seeking behavior among MSM in Rwanda, MSM BSS, 2015

| | N: Unadjusted | Adjusted % | Adjusted 95% CI |
|--|------------------|------------|-----------------|
| The last time you had a genital or anal discharge, ulcer, or wart, did you stop having sex while you had this problem? | | | |
| Yes | 54 | 62.0 | [53 – 71] |
| The last time you had a genital or anal discharge, ulcer, or wart, did you go for treatment? | | | |
| Yes | 41 | 48.6 | [35 – 62] |
| Where did you get treatment for this problem? | | | |
| Pharmacy | 9 | 18.4 | [4 – 32] |
| Private Clinic | 8 | 21.5 | [10 – 32] |
| Hospital | 3 | 7.0 | [0 – 17] |
| Health center | 20 | 47.5 | [36 – 59] |
| Herbalist, traditional healer | 1 | 5.0 | [0 – 17] |
| Witchcraft | 0 | 0.0 | |
| My peer MSM | 0 | 0.0 | |
| Nowhere | 0 | 0.0 | |

8.13. HIV prevalence by demographic characteristics

The MSM BSS estimated the prevalence of HIV among MSM in Rwanda in 2015. This survey was the first of its kind conducted among MSM in Rwanda.

KEY FINDINGS

- HIV prevalence was higher among MSM aged 20 – 24 years old compared to other age-group categories (3.9%)
- HIV prevalence was higher among MSM whose area of residence was Kigali (4.3%)
- The prevalence of HIV was higher (11.8%) among MSM who reported to be self-employed

The prevalence of HIV among MSM was 4% (CI: 1.4 – 6.6). However, out of 501 participants, 49 have not consented for blood test.

HIV prevalence was high among MSM aged between 20 to 24 years old as out of 238 MSM, 9 were HIV positive (3.9%). In terms of province of residence, HIV prevalence was significantly higher among MSM whose area of residence was Kigali city (13/313) representing 79% of the total number of HIV positive MSM in the study sample. In terms of education level, HIV prevalence did not differ much for those who reported having completed primary, vocational and those with no formal education.

In terms of main occupation, the highest HIV prevalence was found among those who reported being self-employed (11.8%) representing 41.1% of all the HIV positive MSM in the study sample (7/17).

Figure 6: HIV prevalence among MSM by age-group

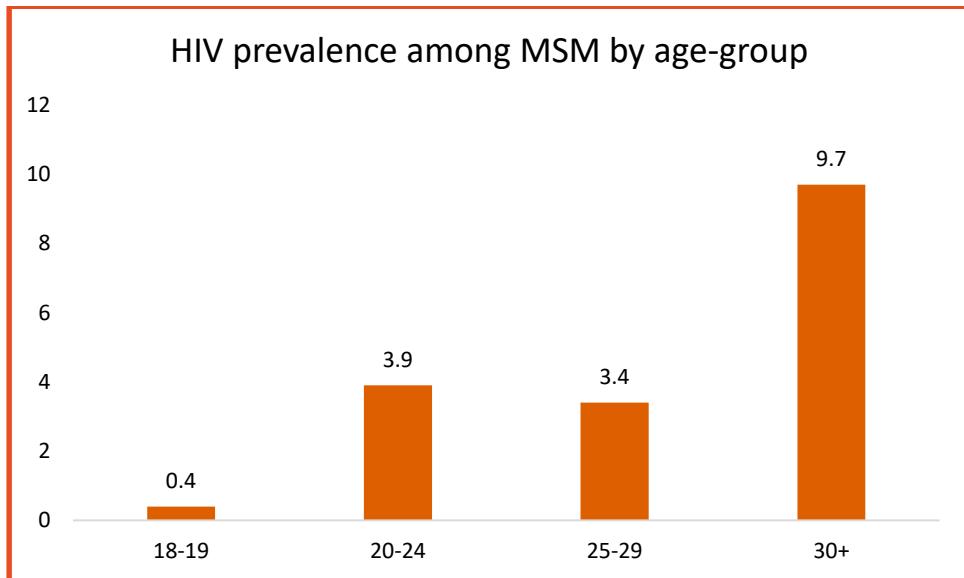


Figure 7: Prevalence among MSM by province

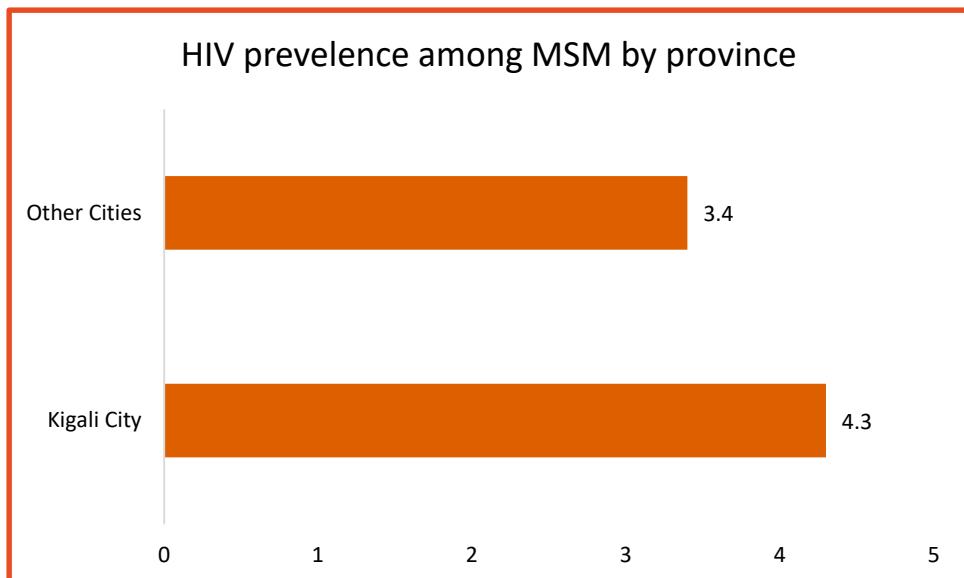


Table 13: HIV prevalence by social demographic characteristics

| | N | % | 95%CI |
|---|-----|------|------------|
| Overall | 452 | 4.0 | [2.2,5.8] |
| Age Group | | | |
| 18-19 | 56 | 0.4 | [0.0,2.2] |
| 20-24 | 238 | 3.9 | [1.5,6.4] |
| 25-29 | 109 | 3.4 | [0.0,7.0] |
| 30+ | 49 | 9.7 | [1.2,18.2] |
| Province of residence | | | |
| Kigali City | 313 | 4.3 | [2.1,6.5] |
| Other provinces | 139 | 3.4 | [0.1,6.7] |
| Highest completed education level | | | |
| None | 46 | 8.6 | [0.2,17.0] |
| Primary | 179 | 4.3 | [1.3,7.3] |
| Vocational | 33 | 2.9 | [0.0,9.6] |
| Secondary+ | 194 | 2.8 | [0.5,5.2] |
| Main occupation | | | |
| Have no work | 66 | 3.8 | [0.0,8.5] |
| Student | 106 | 1.7 | [0.0,4.3] |
| Permanent work for salary | 60 | 3.5 | [0.0,8.5] |
| casual/ part time labourer/domestic work | 123 | 2.6 | [0.0,5.5] |
| Self-employed | 66 | 11.8 | [3.9,19.6] |
| restaurant/hotel/bar worker/Sex work/ other | 31 | 2.0 | [0.0,6.8] |

8.14. HIV Prevalence by sexual history of MSM in Rwanda, 2015

In terms of sexual history, there was a higher HIV prevalence among MSM who have ever lived with a sexual partner (10.5%) than those who have never lived with a sexual partner. Regarding age at first sexual intercourse with a man, HIV prevalence was higher among MSM who had their first sex with a man at the age of 25 or more. The prevalence of HIV was higher among those who did not receive anything in exchange for sex (4.4%).

Table 14: HIV prevalence by sexual history

| | N | % | 95%CI |
|---|-----|------|------------|
| Overall | 452 | 4.0 | [2.2,5.8] |
| Have you ever lived with a male sex partner? | | | |
| Yes | 94 | 10.5 | [4.3,16.7] |
| No | 358 | 2.3 | [0.7,3.9] |
| Are you currently living with a male sex partner? | | | |
| Yes | 17 | 7.5 | [0.0,19.4] |
| No | 80 | 11.1 | [3.8,18.4] |
| Age at first sex with a man | | | |
| <15 | 41 | 2.9 | [0.0,8.6] |
| 15-19 | 234 | 3.8 | [1.4,6.3] |
| 20-24 | 130 | 3.7 | [0.5,6.9] |
| 25+ | 47 | 6.6 | [0.2,14.5] |
| Age of first sexual partner | | | |
| <15 | 11 | 3.7 | [0.0,17.8] |
| 15-19 | 98 | 3.4 | [0.3,7.2] |
| 20-24 | 174 | 1.7 | [0.2,3.6] |
| 25+ | 165 | 6.6 | [2.8,10.5] |
| Did he pay or give you something in exchange for sex? | | | |
| yes | 108 | 2.8 | [0.3,5.9] |
| no | 343 | 4.4 | [2.2,6.6] |
| How would you describe the first man you had sex with? | | | |
| friend/colleague | 314 | 4.3 | [2.0,6.6] |
| relative | 8 | 14.8 | [0.2,39.8] |
| acquaintance | 40 | 0.0 | |
| foreign | 21 | 3.3 | [0.0,11.1] |
| prison inmate | 39 | 6.0 | [0.0,13.5] |
| Authority figure (religious leader, teacher, police, army...) | 12 | 1.9 | [0.0,9.8] |
| other | 16 | 0.0 | |

8.15. HIV prevalence by alcohol and drug use among MSM in Rwanda, 2015

Table 16 shows HIV prevalence data as it relates to alcohol consumption and drug use. There was no statistically significant difference between those who reported ever drinking alcohol and those who didn't. However, in the 30 days preceding the survey those who reported taking alcohol about every

day and those who took it at least once a week, there was a higher HIV prevalence than those who reported having consumed alcohol a few times in the month preceding the survey.

Table 15: HIV prevalence by alcohol and drug use

| | N | % | 95% CI |
|---|-----|-----|------------|
| Overall | 452 | 4.0 | [2.2,5.8] |
| Did you ever drink alcohol? | | | |
| yes | 352 | 3.1 | [1.3,4.9] |
| no | 100 | 7.2 | [1.6,12.8] |
| Over the last 30 days, how often did you drink alcohol? | | | |
| About every day | 74 | 5.6 | [0.3,10.8] |
| At least once a week | 137 | 4.7 | [1.3,8.1] |
| A few times in the last month | 129 | 0.6 | [0.0,2.2] |
| None | 27 | 0.0 | |
| Ever took drugs for pleasure | | | |
| yes | 86 | 3.1 | [0.0,6.8] |
| no | 366 | 4.2 | [2.1,6.3] |
| Ever injected drugs for pleasure | | | |
| yes | 6 | 0.0 | |
| no | 446 | 4.1 | [2.2,5.9] |

8.16. HIV prevalence by male circumcision

HIV prevalence did not differ significantly among MSM who were circumcised versus those who were not circumcised. Out of 17 HIV positive MSM, 10 were not circumcised and 7 were circumcised. However, in the sample the majority of the MSM was circumcised (324/500) representing 64.8%.

Table 16: HIV prevalence by male circumcision

| | N | % | 95%CI |
|--|-----|------|------------|
| Overall | 452 | 4.0 | [2.2,5.8] |
| Have you heard about male circumcision? | | | |
| Yes | 449 | 3.8 | [2.0,5.5] |
| No | 3 | 34.9 | [0.0,12.2] |
| Some men are circumcised. Are you circumcised? | | | |
| Yes | 324 | 2.3 | [0.7,3.9] |
| No | 128 | 8.4 | [3.3,13.6] |

8.17. HIV prevalence by sex work

HIV prevalence was significantly higher among MSM who reported not having been paid with money, goods, or services for sex (5%) while among those who reported having been paid with money, goods, or services for sex, HIV prevalence was 2.6%. HIV prevalence was higher among MSM who reported selling sex for more than 2 years (4.5%)

Table 17: HIV prevalence by sex work

| | N | % | 95%CI |
|--|-----|-----|-----------|
| Overall | 452 | 4.0 | [2.2,5.8] |
| Have you ever been paid with money, goods, or services for sex? | | | |
| Yes | 189 | 2.6 | [0.3,4.9] |
| No | 263 | 5.0 | [2.4,7.7] |
| For how many years have you been selling sex* | | | |
| <=2 years | 115 | 1.4 | [0.8,3.7] |
| >2 years | 72 | 4.5 | [0.0,9.1] |
| So you started selling sex at what age* | | | |
| <20 years | 91 | 2.6 | [0.0,5.9] |
| 20+ | 96 | 2.6 | [0.0,5.9] |
| In the last 3 months, have you sold sex for money, goods, or services? * | | | |
| Yes | 110 | 1.3 | [0.0,3.3] |
| No | 77 | 4.4 | [0.0,9.5] |

8.18. Prevalence of Syphilis among MSM in Rwanda

Syphilis was also tested among respondents who have provided their consent for blood test and results have shown a syphilis prevalence of 4% (95% CI: 1.0 – 6.0) at the time of the survey among MSM. Syphilis was tested using the RPR test.

KEY FINDINGS

- Syphilis prevalence was higher among MSM who have had none regular male sexual partners followed by those who reported having had one to three at respectively 9.9% and 4.2%
- Syphilis prevalence was at 8.1% among MSM who reported being bottom passive partner
- Syphilis was more prevalent (5.2%) among MSM who reported selling sex for more than 4 years

The prevalence of syphilis varied according socio-demographic characteristic. For example, regarding the prevalence of syphilis in different age groups, it was higher among MSM aged between 20 and 24 years old (3.7%) while it was low at 0.8% among those aged between 18 to 19 years old. Syphilis was less prevalent in Kigali city comparing to its prevalence among MSM who reported residing from other provinces than Kigali city. In terms of education level, syphilis was found to be 3.4% and 3.9% respectively among MSM who had secondary and primary education.

In terms of main occupation, syphilis prevalence was higher (9.5%) among MSM who reported that they had a permanent work with a salary followed by those who had a casual/part-time work (4.1%).

Table 18: Prevalence of syphilis by socio-demographic characteristics

| | N | % | [95% CI] |
|---|-----|-----|------------|
| Overall | 439 | 3.4 | [1.7,5.2] |
| Age Group | | | |
| 18-19 | 54 | 0.9 | [0.0,3.5] |
| 20-24 | 230 | 3.7 | [1.3,6.1] |
| 25-29 | 107 | 2.6 | [0.0,5.7] |
| 30+ | 48 | 7 | [0.0,14.5] |
| Province of residence | | | |
| Kigali City | 305 | 2.5 | [0.8,4.3] |
| Other provinces | 134 | 5.5 | [1.4,9.6] |
| Highest education level | | | |
| None | 45 | 4.3 | [0.0,10.5] |
| Primary | 177 | 3.9 | [1.0,6.8] |
| Vocational | 31 | 0 | |
| Secondary+ | 186 | 3.4 | [0.8,5.9] |
| Main occupation | | | |
| Unemployed | 64 | 1.9 | [0.0,5.3] |
| Student | 101 | 1.9 | [0.0,4.6] |
| Permanent work for salary | 59 | 9.5 | [1.6,17.5] |
| Casual/ part time labourer/domestic work | 119 | 4.1 | [0.5,7.8] |
| Self-employed | 66 | 0.9 | [0.0,3.3] |
| Restaurant/hotel/bar worker/Sex work/ other | 29 | 2.7 | [0.0,8.6] |

8.19. Syphilis Prevalence by sexual history of MSM in Rwanda, 2015

KEY FINDINGS

- Syphilis prevalence was higher among MSM who have had none regular male sexual partners followed by those who reported having had one to three at respectively 9.9% and 4.2%
- Syphilis prevalence was at 8.1% among MSM who reported being bottom passive partner
- Syphilis was more prevalent (5.2%) among MSM who reported selling sex for more than 4 years

Table 19: Syphilis prevalence by sexual history of MSM

| | N | % | 95%CI |
|---|-----|-----|------------|
| Overall | 439 | 3.4 | [1.7,5.2] |
| Number of regular male partners in the last 12 months | | | |
| None | 15 | 9.9 | [0.0,25.6] |
| 1-3 | 308 | 4.2 | [1.8,6.5] |
| 4+ | 117 | 0.8 | [0.7,2.3] |
| In the past 12 months, how many male casual sex partner did you have? | | | |
| None | 221 | 5.6 | [2.5,8.7] |
| 1-3 | 164 | 1.7 | [0.3,3.7] |
| 4+ | 53 | 0 | |
| Number of male commercial sex partners did you have in the last 12 months | | | |
| None | 270 | 3.7 | [1.4,6.0] |
| 1-3 | 121 | 0.8 | [0.8,2.4] |
| 4+ | 47 | 7.9 | [0.5,15.2] |
| Approximate travel outside of your city/town/village to seek clients | | | |
| Weekly | 13 | 4.5 | [0.0,17.6] |
| Monthly | 56 | 1.7 | [1.8,5.2] |
| Just a few times per year | 57 | 2.7 | [1.4,6.9] |
| Rarely | 77 | 6.7 | [1.4,12.0] |
| None | 235 | 2.9 | [0.7,5.1] |

| | | | |
|---|-----|-----|------------|
| Bottom (passive) or the top (active) partner? | | | |
| Top-active | 283 | 1.8 | [0.3,3.3] |
| Bottom-passive | 124 | 8.1 | [3.0,13.1] |
| Both | 25 | 0 | |
| Was a condom used that time? | | | |
| Yes | 302 | 2.9 | [0.9,4.7] |
| No | 130 | 5 | [1.1,8.8] |
| For how many years have you been selling sex | | | |
| <=1 | 79 | 1.5 | [1.4,4.4] |
| 2-3 | 54 | 1.4 | [1.7,4.5] |
| 4+ | 47 | 5.2 | [1.2,11.6] |

8.20. Syphilis prevalence by circumcision

KEY FINDINGS

- Syphilis prevalence was found to be 3.4% and 3.6% respectively among MSM who were circumcised and those who were not.

Table 20 illustrates that there was no significant difference in syphilis prevalence between MSM who were circumcised and those who were not.

Table 20 : Syphilis prevalence by circumcision

| | N | % | CI |
|-------------------|-----|-----|-----------|
| Overall | 439 | 3.4 | [1.7,5.2] |
| Male circumcision | | | |
| Yes | 313 | 3.4 | [1.4,5.4] |
| No | 125 | 3.6 | [0.1,7.1] |

8.21. Syphilis prevalence by alcohol and drug use among MSM in Rwanda, 2015

In terms of syphilis and alcohol and drug use, syphilis prevalence was 3.8% among MSM who reported use of alcohol at least once a week and 2.8% among those who used alcohol at least once a week in the 30 days preceding the survey.

Table 21: Syphilis prevalence by alcohol and drug use among MSM in Rwanda, 2015

| | N | % | CI |
|--------------------------------------|-----|-----|------------|
| Overall | 439 | 3.4 | [1.7,5.2] |
| Ever injected drugs for pleasure | | | |
| Yes | 6 | 0 | |
| No | 433 | 3.5 | [1.8,5.2] |
| Use of alcohol over the last 30 days | | | |
| About every day | 73 | 2.8 | [0.0,6.5] |
| At least once a week | 133 | 3.8 | [0.7,6.9] |
| A few times in the last month | 124 | 4.1 | [0.2,8.1] |
| None | 26 | 3.6 | [0.0,10.7] |

8.22. Risk factors of HIV- infection among MSM in Rwanda

To assess the risk factors associated with HIV-infection among MSM in Rwanda, we used both uni-and multi-variable logistic regression analysis. A number of independent variables were considered as potential determinants of HIV-infection among MSM and variables that were not significant contributors to HIV-infection in the univariate model were removed in the table.

Being exclusively an MSM, living with a male partner, travelling out, never having an HIV test, never being forced to have sex, suffering from violence/abuse because you have sex with other men, having syphilis and being not circumcised were significant risk factors to HIV-infection among MSM in the univariate logistic regression model. However, only few variables remained significant in the multivariable model. As per the reduced model, results show that never living with a male partner is a significant protective predictor of HIV-infection among MSM ($OR= 0.202 [0.054-0.759]$, $p=0.018$). Not travelling out one's village increases the risk almost 10 times [$OR= 9.745 (1.203-78.954)$, $p=0.033$] compared to those who have been travelling out their home villages. Never being forced to have sex with other men is also a protective factor [$OR=0.219(0.056-0.860)$, $p=0.03$] as opposed to those who have ever been forced to have sex with other men. And finally not being circumcised increase the risk three times higher than circumcised MSM among [$OR=3.084 (1.070-8.888)$, $p=0.037$].

Table 22: Risk factors of HIV- infection among MSM in Rwanda

| Population characteristics | Total Unweighted | | Weighted N (%) | Unadjusted Univariate Model | | Adjusted Final Model | |
|---|---------------------|-------|-------------------|--------------------------------|--------------|-------------------------|--------------|
| | (N= 452) | (%) | | OR (95%CI) | p-value | OR (95%CI) | p-value |
| Describe self as (n0403) | | | | | | | |
| Gay/Homosexual | 312 | 69 | 14 (4.5) | 1 | | | |
| Bisexual | 136 | 31 | 2 (1.5) | 0.104 (0.021-0.512) | 0.005 | | |
| Ever lived with male partner (n0501) | | | | | | | |
| Yes | 97 | 21.5 | 9 (9.3) | 1 | | | |
| No | 355 | 78.5 | 8 (2.3) | 0.202 (0.054-0.759) | 0.018 | 0.253 (0.088-0.727) | 0.011 |
| Travelled outside your village in last 3 months (n0528) | | | | | | | |
| Yes | 121 | 26.8 | 1 (0.8) | 1 | | | |
| No | 330 | 73.2 | 16 (4.9) | 17.668 (2.183-143.021) | 0.007 | 9.745 (1.203-78.954) | 0.033 |
| How often did you travel in the past 12 months (travel freq) | | | | | | | |
| Rarely | 224 | 49.7 | 4 (1.8) | 1 | | | |
| Not been away | 227 | 50.3 | 13 (5.7) | 4.414 (1.045-18.642) | 0.043 | | |
| Ever had an HIV test (n1101) | | | | | | | |
| Yes | 375 | -83.2 | 11 (2.9) | 1 | | | |
| No | 76 | -16.9 | 6 (7.9) | 7.247 (2.025-25.937) | 0.002 | | |
| Ever been forced to have sex against your will (n1701) | | | | | | | |
| Yes | 61 | 13.5 | 1 (1.6) | | | | |
| No | 390 | 86.5 | 16 (4.1) | 14.053 (1.710-115.479) | 0.014 | | |
| Violence/Abuse because you have sex with other men (n1702) | | | | | | | |
| Yes | 32 | 7.1 | 4 (12.5) | 1 | | | |
| No | 419 | 92.9 | 13 (3.1) | 0.298 (0.072-1.239) | 0.096 | 0.219 (0.056-0.860) | 0.03 |
| Physical Violence (Beaten) (n1703_1) | | | | | | | |
| No | 440 | 97.3 | 15 (3.4) | 1 | | | |
| Yes | 12 | 2.7 | 2 (16.7) | 5.102 (0.739-35.210) | 0.098 | | |

| | | | | | |
|----------------------------------|-----|------|----------|----------------------|--------------|
| Syphilis RPR test (n_rpr) | | | | | |
| Negative | 431 | 95.6 | 13 (3.0) | 1 | |
| Positive | 20 | 4.4 | 4 (20.0) | 4.661 (1.093-19.871) | 0.037 |
| Male Circumcision (n1202) | | | | | |
| Circumcised | 335 | 74.3 | 9 (2.7) | 1 | |
| Not Circumcised | 116 | 25.7 | 8 (6.9) | 4.007 (1.114-14.410) | 0.034 |
| | | | | 3.084 (1.070-8.888) | 0.037 |

9. CONCLUSION

Key Findings

This survey was the first of its kind ever implemented in Rwanda among MSM. The MSM BSS has proven the possibility of recruiting MSM using RDS as a reliable recruitment method in Rwanda in order to estimate the prevalence of HIV among MSM. More than the half of the study participants were aged between 20 and 24 years old (52%) and 75% of MSM reported being circumcised.

The majority of MSM (98%) were single and have never been married and 17% reported sex work as their main source of income. 75% of MSM reported being circumcised. On the highest level of education attained, 43% and 40.3% of MSM have respectively attained secondary school and primary school however there is no significant difference on HIV prevalence versus level of education completed.

HIV prevalence was estimated to be 4%. This level does not differ significantly with the 3% HIV prevalence among the general population in Rwanda. However, it is significantly low comparing to HIV prevalence among MSM in different African countries such as in Kampala, Uganda where in 2012 HIV prevalence among MSM was 13.7%. In Cape Town, HIV prevalence in MSM was 25.5% in 2011 and in Malawi, Botswana and Namibia it was estimated at 21.4%, 19.6% and 12.4% respectively. In the Americas, South and South-East Asia HIV prevalence ranged from 14% to 18%.

HIV prevalence was significantly higher among MSM whose area of residence was Kigali city representing 79% of the total number of HIV positive MSM in the study sample.

Concerning risk behaviors, many MSM have multiple partners including female partners and more than a half have reported not using a condom consistently every time they had sex during the month preceding the survey. More than three quarters (83%) of MSM tested for HIV and this is lower to the testing rate in the general population for men in the same age groups.

In terms of sexual history, there was a higher HIV prevalence among MSM who have ever lived with a sexual partner (10.5%) than those who have never lived with a sexual partner. In terms of male

circumcision, it was revealed that there was no significant difference in HIV prevalence between circumcised MSM and non-circumcised ones. Syphilis prevalence was almost the same as the HIV prevalence. HIV and syphilis co-infection was 1,7% of HIV positive MSM had syphilis.

These data highlight the importance of improving the understanding of the risks associated to male sex, understand the networks of MSM in Rwanda and improve access to HIV services, expand access to safer sex commodities, and promote safer sex decision-making among MSM.

10. STUDY LIMITATIONS

Although the survey used sampling method captured members of MSM networks countrywide, it is possible that certain sub-population of MSM were under represented in the sample. For example, in the sample, many participants were young and educated. Furthermore, the majority were from the city of Kigali therefore those from other areas may have been under-represented.

There results suggest a high HIV prevalence in Kigali city compared to other areas, this can suggest that HIV positive MSM from other areas may have been under-represented in the recruitment process

This report does not include multivariate analysis techniques, which can control the interaction between various factors, due to analytical limitations of RDS methods.

11. RECOMMENDATIONS

The study findings indicate that participants were young, educated and with the majority residing in the city of Kigali and mostly circumcised with an HIV prevalence not significantly different from the prevalence in the general population. Furthermore, the results indicate that access to HIV programs, testing and counselling, contact with per educators as well as consistent condom use among MSM remain low.

Therefore, it is recommended that KP programs and interventions include the following:

- Expand targeted HIV and STI prevention programs for MSM, including through peer education and outreach programs.
- Expand key population-friendly STI services and build the capacity of health care providers in communication, the screening and treatment of STIs, and partner notification.
- Increase access to HIV counseling and testing, particularly for key populations who have never tested before,
- Expand access and linkage to ART services for HIV-positive MSM as part of biomedical prevention
- Expand access to condoms and water-based lubricant for key populations, particularly outside of Kigali
- Expand behavioral interventions aimed at empowering MSM to increase consistent and correct use of condoms
- Increase awareness of the link between excessive alcohol consumption and risk behaviors.
- Plan for another BSS associated with a size estimates of MSM in Rwanda

12. REFERENCES

1. UNAIDS Report: How AIDS changed everything, 2015; UNAIDS 2014 Global Statistics
2. UNAIDS (2010) 'UNAIDS report on the global AIDS epidemic
3. UNAIDS (2015): The gap report
4. Beyrer C, Baral SD, van Griensven F, Goodreau SM, Chariyalertsak S, Wirtz AL, Brookmeyer R. Global epidemiology of HIV infection in men who have sex with men. *Lancet*. 2012
5. Hladik W, Barker J, Ssenkusu JM, Opio A, Tappero JW, Hakim A, et al. HIV infection among men who have sex with men in Kampala, Uganda—a respondent driven sampling survey. *PLoS One* 2012
6. Baral S, Burrell E, Scheibe A, Brown B, Beyrer C, Bekker LG. HIV risk and associations of HIV infection among men who have sex with men in peri-urban Cape Town, South Africa. *BMC Public Health* 2011
7. Baral S, Trapence G, Motamedi F, Umar E, lipinge S, Dausab F, et al. HIV prevalence, risks for HIV infection, and human rights among men who have sex with men (MSM) in Malawi, Namibia, and Botswana. *PLoS one* 2009
8. NISR (2015): Rwanda Demographic and Health Survey Report, 2015
9. Binagwaho, A., Chapman, J., Koleros, A., Utazirubanda, Y., Pegurri, E. (2009). Exploring HIV Risk among MSM in Kigali, Rwanda. Chapel Hill, NC: MEASURE Evaluation.
10. Asiimwe, A., Koleros, A., Chapman, J. (2009). Understanding the dynamics of HIV epidemic in Rwanda: Modeling the expected distribution of new HIV infections by exposure group. Chapel Hill, NC: MEASURE Evaluation.
11. Rwanda Biomedical Center, Rwanda HIV and AIDS National Strategic Plan, July 2013-June 2018
12. Binagwaho, A., Chapman, J., Koleros, A., Utazirubanda, Y., Pegurri, E. (2009). Exploring HIV Risk among MSM in Kigali, Rwanda. Chapel Hill, NC: MEASURE Evaluation

13. APPENDIXES



A Healthy People. A Healthy Nation

INSTITUTE OF HIV/AIDS, DISEASE PREVENTION& CONTROL

HIV-AIDS, STIs & Other Blood Borne Infections Division

SECTION 0: COUPON CHECKING

| NO | Variable name | Questions | Answers and code | Skip |
|--|---------------|----------------------------------|---|------|
| Clarify to recruit: This part of the interview has nothing to do with his eligibility | | | | |
| CM001 | CMID | Coupon Manager ID | ____\ | |
| CM002 | DATE | Date checked in | __ / __ / 2015 DD MM | |
| CM003 | TIME | Time checked in | __ / __ H H MM | |
| CM004 | RECID | Recruit ID | ____ ____ | |
| CM005 | CPVERIF | Coupon verified? | Yes –unique 1 | |
| CM006 | CORGIN | Check the Coupon of the recruit: | YES NO Original 1 2 Coupon 1 2 unexpired | |

| | | | | |
|-------|----------|--|--|--|
| CM007 | DATE_REC | Which date did recruiter give you the coupon? | Date _____ / _____ / 2015 Don't remember 998 Refuse to answer 999 | |
| CM008 | CPEXCHA | Was your coupon exchanged for something? <i>Click on all that apply</i> | No, nothing 1 Money or goods 2 Favours or services 3 Sexual favours 4 Refuse to answer 999 | |
| CM009 | RELATE | Is the person who gave you the coupon someone you met for the first time? If Answer is Yes, stop here; do not send the person for eligibility screening | Yes 1 No 2 | |
| CM010 | PARTIPT | For how long do you know the person who gave you the coupon (some weeks, or some months, or for years?) | Weeks 1 Months 2 Years 3 | |
| CM011 | PARTIP30 | How many times have you seen the person who gave you this coupon in the last 30 days? Range :1-30 | Number __ __ Don't remember 998 Refuse to answer 999 | |

| | | | | |
|-------|-----------|--|--|--|
| CM012 | LEAFROK | Before we started this survey we distributed some leaflets about the ROK Survey in the community. Did you receive one? | Yes 1 No 2 | |
| CM013 | SHOW_LEAF | Did you bring any leaflet today? Can you show it to me? | Yes 1 No 2 | |
| CM014 | NUM_LEAF | How many such leaflets did you receive? | Number __ __ | |
| CM015 | TIMEUMO | Probe: When did respondent receive the UMO (leaflet)? | Before the initiation of the study 1 During the study 2 | |
| CM016 | PAYUMO | Probe: Did respondent buy or pay for UMO (leaflet)? | Yes 1 No 2 | |
| CM017 | YEARBOR | What year were you born? | Year [1 9 __ __] Don't know 997 | |
| | CALCAGE | Automatic age calculation | | |
| CM018 | ROBEAGE | I calculated your age. Is this the right age? Show value in rounded years. | Yes 1 No 2 | |

| | | | | | |
|--------------|-----------|--|-----|---|--|
| CM019 | AGE_RECRU | Is the recruit 18 years or older? [If the recruit aged less than 18 years old not eligible] | Yes | 1 | |
| CM020 | LIVRWA_3M | Have you been living in Rwanda for at least the last 3 months? (2=not eligible) | Yes | 1 | |

SECTION 01: ELIGIBILITY SCREENING QUESTIONNAIRE

| Nº | Variable name | Questions | Answer & Code | Skip |
|--|---------------|--|---|------|
| <p>To recruit: Nurse Counselor introduces herself, gives explanations about the study, and obtains informed consent. Now we will ask you some questions about your eligibility to participate in the study. We will ask you to respond to some questions on sexual behavior, please give your best answers.</p> | | | | |
| N0101 | INTERVID | Interviewer ID | __ __ | |
| N0102 | TODAY | Date of interview | __ __ / __ __ / 2015 DD MM | |
| N0103 | TIME_INT | Time of Interview | __ __ / __ __ MM HH | |
| N0104 | RECID | Recruit ID | __ __ __ __ | |
| N0105 | INFO_CONS | Global verbal informed consent | Obtained 1 Not obtained 2 | |
| N0106 | NAT1 | What is your nationality? | Rwandan 1 Other 996 Refuse to answer 999 | |
| N0107 | DIV_LIV | In which district do you currently live? | Name of _____ District Refuse to answer 999 | |
| N0108 | MONTH_LIV | How many months have you lived in this place? | Month __ __ __ | |
| N0109 | WEEKSP_KI | In the past 3 months, how many weekends have you spent in Kigali | Weekends: __ __ __ | |

| | | | | |
|--------------|-------------|---|--|--|
| | | City? | | |
| N0110 | EV_SEX MAN | Have you ever had sex with a man (oral/anal) in your life? | Yes 1 No 2 | 1→N0115 |
| N0111 | SEXMAN_12 M | Have you ever had sex with a man (oral/anal) in the last 12 months? <i>(Oral sex: your or your partner's penis entered your or your partners' mouth)</i> <i>(Anal sex: you or your partner's penis entered you or your partners' anus) (2=not eligible)</i> | Oral sex 1 Anal sex 2 Both oral and anal 3 No sex Refuse to answer | 1→N0112 2→N0113 3→N0114 |
| N0112 | LAST_ORSX | When was the last time you had oral sex with a man? <i>(Fill in months)</i> | Months Ago __ __ __ | |
| N0113 | LAST_ANSX | When was the last time you had anal sex with a man? <i>(Fill in months)</i> | Months Ago __ __ __ | |
| N0114 | EXPMSX | Have you had any other sexual experiences with men? Probe and check all that apply. | None 1 Mutual 2 masturbation Not applicable 3 Other 996 | |

| | | | | |
|--------------|------------|---|---|--|
| N0115 | SCREEN_INT | Screening interview? | Completed – eligible 1 Completed – not eligible 2 Not completed 3 | |
| N0116 | OPENCOM | Open text field for nurse counselor comments: | | |

SECTION 02: QUESTIONS FOR MSM WHO ARE NOT ELIGIBLE

| Nº | Variable name | Questions | Answers & Code | Skip |
|-------|---------------|---|--|------|
| N0201 | ORIENT | Would you describe yourself as: | Homosexual 1 Bisexual 2 Straight/heterosexual 3 Other 996 | |
| N0202 | ATTRACT | What gender (sex) would you say you are most sexually attracted to? | Only male 1 Mostly male but sometimes female 2 Equally male and female 3 Mostly female but sometimes male 4 Only female 5 None 6 Refuse to answer 99 | |

SECTION 03: BACKGROUND CHARACTERISTICS

| Nº | Variable name | Questions | Answers & Code | Skip |
|-------|---------------|---|---|--|
| N0301 | JOINSURV | Why did you decide to join this survey? <i>Click on all that apply.</i> | Interested in MSM survey 1 Want to know my HIV 2 status Want to know if I have 3 sexually transmitted disease Want treatment for STD 4 Want money for 5 participation Was pressured into 6 participating Other 996 Refuse to answer 999 | |
| N0302 | RELATE | Think about the person who gave you the coupon. What is your relationship with that person? | A sexual partner 1 Someone you knew, but 2 not closely A close friend, someone 3 you knew very well A stranger, someone you 4 met for the first time A family member or 5 other relative Refuse to answer 999 | 4 ➔ End interview If not 1 ➔ N0304 |

| | | | | | | | | | | | | |
|-------------------|------------|--|--|-------------------|----------|--------|----------|------------|----------|------------------|------------|--|
| N0303 | PARTIP | <p>If the person who gave you the coupon is your sexual partner, what kind of sex partner is that person? .</p> <p>-Regular sexual partner: current or past live-in sexual partners (married or cohabiting).</p> <p>-Casual sexual partner: sex partners that you are not married to and have never lived with and did not have sex in exchange for money (do not include current live in partners).</p> <p>-Commercial sexual partner: partner with whom you bought or sold sex in exchange for money or goods</p> | <table border="1"> <tr> <td>Primary (regular)</td><td>1</td></tr> <tr> <td>Casual</td><td>2</td></tr> <tr> <td>Commercial</td><td>3</td></tr> <tr> <td>Refuse to answer</td><td>999</td></tr> </table> | Primary (regular) | 1 | Casual | 2 | Commercial | 3 | Refuse to answer | 999 | |
| Primary (regular) | 1 | | | | | | | | | | | |
| Casual | 2 | | | | | | | | | | | |
| Commercial | 3 | | | | | | | | | | | |
| Refuse to answer | 999 | | | | | | | | | | | |

| | | | | |
|--------------|----------|--|--|--------------------------|
| N0304 | SCH | Have you ever attended school? | Yes 1 No 2 Refuse to answer 999 | 2 ➔ N0306 999 ➔ N0306 |
| N0305 | YRSSCH | What is your highest level of education completed? | None 1 Primary 2 Vocational 3 Secondary 4 Higher education 5 | |
| N0306 | RELIGION | What is your religion | Catholic 1 Protestant 2 Muslim 3 Seventh day Adventist 4 None 5 Other 996 Refuse to answer 999 | |
| N0307 | CUR_MAR | What is your current marital status? | Single 1 Cohabiting 2 Married (monogamously) 3 Married/ cohabitating (polygamously) 4 Divorced 5 Separated 6 Widowed 7 Refuse to answer 999 | |
| N0308 | OCC | What is your main occupation? | Have no work 1 Student 2 Permanent work for salary 3 Casual/ part time labourer 4 | |

| | | | | |
|--------------|----------|--|---|--|
| | | | Domestic work 5 Self-employed 6 Restaurant/hotel/bar 7 worker 8 Sex work Other 996 Refuse to answer 999 | |
| N0309 | DRINK1 | Did you ever drink alcohol? | Yes 1 No 2 Refuse to answer 999 | 2→N0311 999→N0311 |
| N0310 | DRINK_30 | Over the last 30 days, how often did you drink alcohol? | About every day 1 At least once a week 2 A few times in the last month 3 None 4 Refuse to answer 999 | |
| N0311 | PLEASURE | Some people use drugs for pleasure. Did you ever take drugs for pleasure? | Yes 1 No 2 Refuse to answer 999 | 2 →N0313 999→ N0313 |

| N0312 | DRUG_TYX | Have you ever used: <i>(probe all)</i> | | Yes | No | D/K | N/R | |
|-------|----------|---|-----------|-----|----|-----|-----|--|
| | | | | 1 | 2 | 997 | 999 | |
| | | | Glue | 1 | 2 | 997 | 999 | |
| | | | Petrol | 1 | 2 | 997 | 999 | |
| | | | Marijuana | 1 | 2 | 997 | 999 | |
| | | | Khat | 1 | 2 | 997 | 999 | |
| | | | Cocaine | 1 | 2 | 997 | 999 | |
| | | | Heroin | 1 | 2 | 997 | 999 | |

| | | | | | | |
|-------|---------|--|------------------|-----|--|--|
| N0313 | PLE_INJ | Some people inject drugs with a syringe for pleasure. Have you ever injected drugs for pleasure? | Yes | 1 | | |
| | | | No | 2 | | |
| | | | Refuse to answer | 999 | | |

SECTION 04: SEXUAL ORIENTATION

| Nº | Variable name | Questions | Answer & Code | Skip |
|--|---------------|--|--|---------------|
| <p><i>The next few questions are about your sexual identity about having sex with both women and men."</i></p> | | | | |
| N0401 | DESCRIPT | <p>Are you aware of your sexual orientation? (if not explain what orientation is)</p> <p><i>It is a self sex orientation (identification) of the participant</i></p> | <p>Yes 1 No 2 Don't know 997 Refuse to answer 999</p> | 999→ N0501 |
| N0402 | ATTRACT1 | What sex would you say you are most sexually attracted to? | <p>Only male 1 Mostly male but sometimes female 2 Equally male and female 3 Mostly female but sometimes male 4 Only female 5 None 6 Refuse to answer 999</p> | |

| | | | | | |
|-------|---------|--|---|--------------------|--|
| N0403 | ORIENT1 | Would you describe yourself as: | Gay/homosexual Bisexual Straight/heterosexual Refuse to answer | 1 2 3 999 | |
| N0404 | IDENT | Do you mostly identify yourself as woman or man? | Man Woman Both Refuse to answer | 1 2 3 999 | |

SECTION 05: SEXUAL HISTORY WITH MALES

| Nº | Variable name | Questions | Answers & Code | Skip |
|--------------|---------------|---|--|---|
| N0501 | LIVM | Have you <i>ever</i> lived with a <i>male</i> sex partner? | Yes 1 No 2 Refuse to answer 999 | |
| N0502 | LIVMC | Are you <i>currently</i> living with a <i>male</i> sex partner? | Yes 1 No 2 Refuse to answer 999 | |
| N0503 | EX1STM | How old were you when you first had sex with a man? | Years [__ __] Refuse to answer 999 | |
| N0504 | AGEPART | Approximately how old was your male sexual partner? | Years [__ __] Don't know 997 Refuse to answer 999 | |
| N0505 | PARTPAY | Did he pay or give you something in exchange for sex? | Yes 1 No 2 Refuse to answer 999 | |
| N0506 | KIND | How would you describe the first man you had sex with? | Friend/colleague 1 Relative 2 Acquaintance 3 Foreign 4 Prison inmate 5 'Authority figure' 6 (religious leader, teacher, police, army...) | 1,2,3,4,5,996,999→ N0508 |

| | | | | | |
|--------------|---------|---|---------------------|-----|----------------------|
| | | | Other | 996 | |
| | | | Refuse to answer | 999 | |
| N0507 | AUTFIG1 | What kind of “authority” figure? | Religious leader | 1 | |
| | | | Teacher | 2 | |
| | | | Military man | 3 | |
| | | | Police officer | 4 | |
| | | | Government official | 5 | |
| | | | Health Provider | 6 | |
| | | | Other | 996 | |
| | | | Don't know | 997 | |
| | | | Refuse to answer | 999 | |
| N0508 | TOLDM | Other than your male sex partners, have you told anyone about having sex with men? | Yes | 1 | |
| | | | No | 2 | 2, 999→ N0510 |
| | | | Refuse to answer | 999 | |

| | | | | | | | |
|--------------|--------|--|--|-----|----|-----|--|
| N0509 | TOLDPX | <p>Who have you told about having sex with men? <i>Check all that apply</i></p> | Male friends who have sex with men | YES | NO | N/R | |
| | | | Other friends, Spouse (other) family | 1 | 2 | 999 | |
| | | | Health care worker | 1 | 2 | 999 | |
| | | | Other | 1 | 2 | 999 | |
| | | | | | | | |
| N0510 | MEETMX | <p>In general, where do you usually <u>meet</u> men you have sex with? <i>Check all that apply</i></p> | MSM Association/group meeting | 1 | | | |
| | | | School / university | 2 | | | |
| | | | Club, bar, hotel, restaurant | 3 | | | |
| | | | Private place | 4 | | | |
| | | | Church, mosque, temple | 5 | | | |
| | | | Military barracks | 6 | | | |
| | | | Spa/health/fitness center | 7 | | | |
| | | | At my work place | 8 | | | |
| | | | Social media | 9 | | | |
| | | | Street, field, park | 10 | | | |
| | | | Other | 996 | | | |
| N0511 | VENUEX | <p>Where do you usually <i>have sex</i> with men? <i>Check all that apply</i></p> | My own place | 1 | | | |
| | | | Someone else's home | 2 | | | |
| | | | Other private venue | 3 | | | |
| | | | Commercial venue (hotel, bar, club, etc.) | 4 | | | |
| | | | Open space (park, field, | 5 | | | |
| | | | | | | | |

| | | | | |
|--------------|----------------|--|--|--------------------------------------|
| | | | etc) Work place 6 Church, mosque, temple 7 School, Campus, 8 University Other 996 | |
| N0512 | REGPART _12 | How many regular (primary) male partners did you have in the last 12 months? | Number <u> </u> <u> </u> | If 0 or 999→ N0517 |
| N0513 | PRIM | In the last 3 months, did you have a <i>primary male</i> sex partner? | Yes 1 No 2 Refuse to answer 999 | 2 or 999→ N05 17 |
| N0514 | MPRIMN 0 | In the last 3 months, how many <i>primary male</i> sex partners did you have? <i>No greater than N0512</i> | Number of primary male <i> </i> <u> </u> <u> </u> partners Refuse to answer 999 | 999→N05 17 |
| N0515 | MPRIM6 | How many times did you have anal sex with all of your primary male partners in the last 3 months? <i>Give your best estimate</i> <i>Not lower than N0514</i> | Number of times <u> </u> <u> </u> <u> </u> Refuse to answer 999 | 999→N05 17 |
| N0516 | MPRIMC 0 | Out of these times, how many times was a condom used? <i>Give your best estimate</i> Max: previous question value | Number of times <u> </u> <u> </u> <u> </u> condom was used Refuse to answer 999 | |

| | | | | |
|-------|----------------|--|---|-----------------------|
| N0517 | CASPART _12 | How many male casual partners did you have in the last 12 months? | Number [__ __] | 0 or 999→N05 22 |
| N0518 | CAS | In the last 3 months, did you have a <i>casual</i> sex male partner? | Yes 1 No 2 Refuse to answer 999 | 2 or 999→N05 22 |
| N0519 | MCASNO | In the last 3 months, how many <i>male</i> casual sex partners did you have? Not greater than N0517 | Number of male casual partners __ __ __ Refuse to answer 999 | 999→N05 22 |
| N0520 | MCASAN | How many times did you have anal sex with all of your male casual partners in the last 3 months? <i>Give your best estimate. Not lower than N0519</i> | Number of times __ __ __ Refuse to answer 999 | 999→N05 22 |
| N0521 | MCASCO | Out of these times, how many times was a condom used? <i>Give your best estimate</i> Max: previous question value | Number of times condom was used __ __ __ Refuse to answer 999 | |
| N0522 | COMPAR T_12 | How many male commercial sex partners did you have in the last 12 months? | Number [__ __] | 0 or 999→N05 22 |
| N0523 | COMPAR T | <i>If recruit has commercial sex partners: probe if recruit is buying or selling sex.</i> | Buy sex 1 Sells sex 2 Both buying and selling 3 | 2→N0527 |

| | | | | | |
|-------|-----------|--|--|--------------------|-------------|
| N0524 | PAYSX | Have you ever paid a man for sex? | Yes No Refuse to answer | 1 2 999 | 2,999→N0527 |
| N0525 | AYSX6P | In the last 3 months, how many male partners did you pay something for sex? Range 0-999 <i>Give your best estimate. Not greater than 522</i> | Number of male partners you paid for sex Refuse to answer | __ __ __ 999 | 999→N0527 |
| N0526 | PAYSXCO | How often did you use condom with your paid male partners? | Every time Sometimes Never Refuse to answer | 1 2 3 999 | |
| N0527 | TOTNUM_12 | Confirm total number of all male sex partners (all three partner types above) with recruit in the past 12 months. (N0512+N0517+N0522) | Number | [__ __ __] | |
| N0528 | MOBIL1 | In the past 3 months, have you travelled outside of your city/town/village and had sex with a man at the destination? | Yes No Refuse to answer | 1 2 999 | |
| N0529 | MOBIL3 | In the past 3 months, where is the furthest you have travelled outside of your city/town/village and had sex with a man at the destination? | Different cities within same district Different district within same province Different province | 1 2 3 | |

| | | | | |
|--------------|---------|--|---|-----------------------|
| | | | Outside of Rwanda 4 Refuse to answer 999 | |
| N0530 | MOBIL2 | Approximately how often do you travel outside of your city/town/village to seek other MSM for sex? | Weekly 1 Monthly 2 Just a few times per year 3 Rarely 4 Never 5 | |
| N0531 | MLAST | Think about the last time you had anal sex with a man. What kind of partner was he? | Regular (steady) partner 1 Casual partner 2 Sex worker – I paid him 3 Client – he paid me 4 Other 996 Refuse to answer 999 | 999→N05 39 |
| N0532 | ROLE | Were you the top (active) or the bottom (passive) partner? | Top-active 1 Bottom-passive 2 Both 3 Refuse to answer 999 | |
| N0533 | FINTCO | Was a condom used that time? | Yes 1 No 2 Refuse to answer 999 | |
| N0534 | FINTALC | Did you drink alcohol just before you had the last anal sex? | Yes 1 No 2 Refuse to answer 999 | |
| N0535 | FINTDR | Did you take drugs for pleasure just before you had the last anal sex? | Yes 1 No 2 Refuse to answer 999 | |

| | | | | |
|--------------|---------|--|--|--------------------------------|
| | | | | |
| N0536 | MINTAGE | How old was he? <i>Please give your best answer</i> | Age in years Refuse to answer | [__ __] 999 |
| N0537 | MINTNAT | What was his nationality? | Rwandan Other Don't know Refuse to answer | 1 996 997 999 |
| N0538 | MINTHIV | What was his HIV status? | I know he was HIV Positive I know he was HIV Negative I think he was negative I think he was positive Don't know Refuse to answer | 1 2 3 4 997 999 |
| N0539 | DMCOM | Comments (Open field): | | |

SECTION 06: SEXUAL HISTORY WITH FEMALES

| Nº | Variable name | Questions | Answers & Code | Skip |
|-------|---------------|---|--|------------------|
| N0601 | WOMSX | Did you ever have sex with a woman? | Yes 1 No 2 Refuse to answer 999 | 2, 999→ N0701 |
| N0602 | EX1STW | How old were you when you first had sex with a woman? | Years __ __ __ Refuse to answer 999 | |
| N0603 | LIVF | Have you <i>ever</i> lived with a <i>female</i> sex partner? | Yes 1 No 2 Refuse to answer 999 | 2, 999→ N0605 |
| N0604 | LIVFC | Are you <i>currently</i> living with a <i>female</i> sex partner? | Yes 1 No 2 Refuse to answer 999 | |
| N0605 | KIDS | Have you fathered children? | Yes 1 No 2 Refuse to answer 999 | |
| N0606 | FEM_SX1 | Did you ever have anal sex with a woman? | Yes 1 No 2 Refuse to answer 999 | |
| N0607 | REGPF_12 | How many “ regular ” female partners did you have in the last 12 months? | Number [__ __] | 2, 999→ N0612 |

| | | | | | |
|--------------|----------|--|--|-----------------------|--------------------------|
| N0608 | PRIMF_3M | In the last 3 months, did you have a female <i>primary sex partner?</i> | Yes No Refuse to answer | 1 2 999 | 2, 999→ N0612 |
| N0609 | FPRIMNO | In the last 3 months, how many primary <i>female sex partners</i> did you have? <i>Not greater than N0607</i> | Number of primary female partners Refuse to answer | __ __ 999 | 999→ N0612 |
| N0610 | FPRIM6 | How many <i>times</i> , did you have sex with all of your primary female partners in the last 3 months? <i>Give your best estimate</i> <i>Not lower than N0609</i> | Number of times Refuse to answer | __ __ __ 999 | 999→ N0612 |
| N0611 | FPRIMCO | Out of these times, how many times was a condom used? <i>Give your best estimate</i> Max: previous question value | Number of times condom was used Refuse to answer | __ __ __ 999 | |
| N0612 | CASPF_12 | How many female casual partners did you have in the last 12 months? | Number Refuse to answer | [__ __] 999 | 999→ N0617 |

| | | | | | |
|--------------|---------|---|---|------------------|--------------------------------|
| N0613 | FCSX_3M | In the last 3 months, did you have a female <i>casual</i> sex partner? | Yes No Refuse to answer | 1 2 999 | 2, 999→ N0617 |
| N0614 | FCASNO | In the last 3 months, how many <i>female</i> casual sex partners did you have? <i>Range 0-999</i> <i>No greater than N0612</i> | Number of female casual partners Refuse to answer | __ __ __ 999 | 999→ N0617 |
| N0615 | FCASIN | How many times did you have sex with all of your female casual partners in the last 3 months? <i>Range 0-999</i> <i>Give your best estimate. Not lower than N0614</i> | Number of times Refuse to answer | __ __ __ 999 | 999→ N0617 |
| N0616 | FCASCO | Out of these times, how many times was a condom used? <i>Give your best estimate</i> Max: previous question value | Number of times condom was used Refuse to answer | __ __ __ 999 | |

| | | | | | |
|--------------|----------|---|--|----------------------|-------------------------|
| N0617 | COMPF_12 | How many female commercial sex partners did you have in the last 12 months? (include both: paying and selling) | Number Refuse to answer | [__ __] 999 | 2,999→ N0622 |
| N0618 | HASCOMF | <i>If recruit has commercial sex partners: probe if recruit is buying or selling sex.</i> | Buysex Sells sex Both buying and selling | 1 2 3 | 2→ N0622 |
| N0619 | PAYFSFX | Have you ever paid a woman for sex? | Yes No Refuse to answer | 1 2 999 | 2,999→ N0622 |
| N0620 | PAYFSX6P | In the last 3 months, how many female partners did you pay something for sex? Range 0-999 Give your best estimate | Number of female partners you paid for sex Refuse to answer | [__ __ __ __] 999 | 999→ N0622 |
| N0621 | PAYFSXCO | How often did you use condom with your paid female partners? | Every time Sometimes Never Refuse to answer | 1 2 3 999 | |

| | | | | |
|--------------|----------|--|--|--|
| N0622 | NUMFP_12 | Total of Female sexual partners in the last 12 months (N0607+N0612+N0617) | Number of Female sexual partners [_____ _____ _____ | |
|--------------|----------|--|--|--|

SECTION 07: TYPES OF SEX (across all partners)

| Nº | Variable name | Question | Answer & Code | Skip |
|-------|---------------|--|---------------------------------------|------|
| N0701 | ORAL1 | In the past 3 months, did you have oral sex with a man, that is, where a man put his penis in your mouth or you put your penis in his mouth? | Yes 1 No 2 Refuse to answer 999 | |

Now please think about when you had anal sex. You could have anal sex where you were the active partner or passive partner. 'Active' or 'top' means that you put your penis in the behind of another man or woman. 'Passive' or 'bottom' means another man put his penis in your behind. Please take time to give the most accurate answer. Remember this information is strictly confidential.

| Nº | Variable name | Question | Answer & Code | Skip |
|-------|---------------|---|--|-------------------|
| N0702 | MTOPANAL | How often did you have anal sex with men in the last 3 months where you were the <i>active</i> (insertive) partner? | Every time 1 Sometimes 2 Never 3 Refuse to answer 999 | 3, 999 → N0704 |
| N0703 | CONDAN | In general, how often have you used a condom with your male sexual partners during active sexual | Every time 1 Sometimes 2 Never 3 No sex in the last 30 days 4 Refuse to answer 999 | |

| | | | | |
|--------------|-----------------|--|--|----------------------|
| | | act in the last 30 days? | Refuse to answer | |
| N0704 | BOTANAL | How often did you have anal sex in the last 3 months where you were the <i>passive</i> (<i>receptive</i>) partner? | Every time 1 Sometimes (mixing) 2 Never 3 Refuse to answer 999 | 3, 999→ N0706 |
| N0705 | CONDANB | In general, how often have you used a condom with your male partners during passive sexual act in the last 30 days? | Every time 1 Sometimes 2 Never 3 No sex in the last 30 days 4 Refuse to answer 999 | |
| N0706 | FTOPANAL | How often did you have anal sex with women in the last 3 months? | Every time 1 Sometimes 2 Never 3 Refuse to answer 999 | 3, 999→ N0708 |
| N0707 | FANALC | Out of these times, how often did you use condom during anal sex with women in the last 30 days? | Every time 1 Sometimes 2 Never 3 Refuse to answer 999 | |
| N0708 | VAGSEX | How many <i>times</i> did you have vaginal sex with women in the last 3 months? Range 0-999 | Number of times [__ __ __] Don't remember 998 Refuse to answer 999 | 999→ N0801 |

| | | | | | |
|--------------|----------|--|------------------|-----|--|
| N0709 | CONDVAGC | Out of these times, how many times was a condom used during vaginal sex in the last 30 days? | Every time | 1 | |
| | | | Sometimes | 2 | |
| | | | Never | 3 | |
| | | | Refuse to answer | 999 | |

SECTION 08: SEX WORK – GETTING PAID FOR SEX

Now some questions about sex work that is where you give sex in exchange for money, goods or services.

| Nº | Variable name | Question | Answer & Code | Skip |
|------------------------------------|---------------|---|---|-----------------|
| N0801 | SX_EX | Have you ever been paid with money, goods, or services for sex? | Yes 1 No 2 Refuse to answer 999 | 2, 999→N0901 |
| A. SEX WORK CHARACTERISTICS | | | | |
| N0802 | YRSSELSX | For how many years have you been selling sex? <i>Enter “00” if you started selling sex less than a year ago.</i> | Years: __ __ Refuse to answer 999 | |
| N0803 | TRCSX2 | So you started selling sex at what age? | Years: __ __ Refuse to answer 999 | |
| N0804 | SELSX3 | In the last 3 months, have you sold sex for money, goods, or services? | Yes 1 No 2 Refuse to answer 999 | |
| N0805 | DIVSELLA | In which location (district) of Rwanda do you mainly sell sex? | District Out of Rwanda 2 Refuse to answer 999 | |

| | | | | |
|-------|------------|---|--|--|
| N0806 | PLCMEETA-I | <p>In general, where do you usually <u>meet</u> clients you sell sex to?</p> <p><i>Check all that apply</i></p> | <p>MSM Associations/group meetings 1</p> <p>School / university campus 2</p> <p>Club, bar, hotel, restaurant 3</p> <p>Private place 4</p> <p>Church, mosque, temple 5</p> <p>Military barracks 6</p> <p>Spa/health/fitness center 7</p> <p>At my work place 8</p> <p>Social media 9</p> <p>Street, field, park 10</p> <p>Other 996</p> | |
| N0807 | PLCSXA-F | <p>Where do you usually <i>have sex</i> with your clients?</p> <p><i>Check all that apply</i></p> | <p>My own place 1</p> <p>Someone else's home 2</p> <p>Other private venue 3</p> <p>Commercial venue (hotel, bar, club, etc.) 4</p> <p>Open space (park, field, etc) 5</p> <p>Work place 6</p> <p>Church, mosque, temple 7</p> <p>School, Campus, University 8</p> <p>Other 996</p> <p>Refuse to answer 999</p> | |

| | | | | |
|--------------|--------|--|---------------------------------------|--|
| N0808 | SX_IN | Is sex work your main source of income? | Yes 1 No 2 Refuse to answer 999 | |
| N0809 | CHARG2 | Approximately, how much do you charge for having sex with a client? <i>Give your best estimate.</i> | RWF..... Refuse to answer 999 | |

B. SEX WORK WITH FEMALES

| Nº | Variable name | Question | Answer & Code | Skip |
|--------------|---------------|--|---|------------------------|
| N0810 | FSX_EX | Did you ever have sex with a woman who paid you with money, goods, or services? | Yes 1 No 2 Refuse to answer 999 | 2, 999→N0814 |
| N0811 | FSX_EX_W | In the last 3 months, how many different women paid you something for sex? Range 0-999 | Number of women [___ ___ ___] who paid for sex 999 Refuse to answer | 999→N0814 |
| N0812 | FSX_EX6 | In the last 3 months, how many <i>times</i> did you have sex with all of the women who paid you something? Range 0-999 | Number of times [___ ___ ___] Refuse to answer 999 | 999→N0814 |
| N0813 | FSX_EXCO | How often did you use a condom with your female paying partners? [Read answers, and Circle one answer only] | Every time 1 Sometimes 2 Never 3 Refuse to answer 999 | |

c. SEX WORK WITH MALES

| Nº | Variable name | Question | Answer & Code | Skip |
|--------------|---------------|---|---|--------------------------------|
| N0814 | MSX_EX | Did you ever have anal or oral sex with a man who paid you with money, goods, or services? | Yes 1 No 2 Refuse to answer 999 | 2, 999→ N0901 |
| N0815 | MSX_EX_M | In the last 3 months, how many different men paid you for anal or oral sex? Range 0-999 | Number of men who paid for sex [__ __ __] Refuse to answer 999 | 999→ N0901 |
| N0816 | MSX_EX6 | In the last 3 months, how many <i>times</i> did you have sex with a man who paid you something? | Number of times __ __ __ Refuse to answer 999 | 999→ N0901 |
| N0817 | MSX_EXCO | Out of these times, how often was a condom used? <i>Give your best estimate</i> | Every time 1 Sometimes 2 Never 3 Refuse to answer 999 | |

SECTION 09: CONDOM AND LUBRICANTS

The following questions are about condom use

| Nº | Variable name | Question | Answer & Code | Skip |
|-------|---------------|---|--|---------------|
| N0901 | COND_M | Have you <i>ever</i> used a male condom during sex? | Yes 1 No 2 Refuse to answer 999 | 2→ N0906 |
| N0902 | COND_30D | In the last 30 days, did you consistently use condoms every time you had oral, anal or vaginal sex? | Yes 1 No 2 Refuse to answer 999 | 1, 999→ N0904 |
| N0903 | NOCON_DOM | The last time you didn't use a condom, why didn't you? | I didn't have one 1 Forgot to use it 2 I don't like to use them 3 I didn't feel at risk 4 Too expensive 5 My partner refused 6 My partner told me he tested HIV-negative 7 I believed partner was HIV-negative 8 I knew my partner's HIV results 9 I was paid more not to use condom 10 | |

| | | | | |
|--------------|--------------|--|--|------------------------------------|
| | | | I did not think about it 11 Other 996 Refuse to answer 999 | |
| N0904 | CONDO GET | Where do you usually get condoms? | MSM Association/group 1 meeting s Shop 2 Club or fitness center 3 Pharmacy 4 Friends 5 Bar, hotel & restaurant 6 Health facilities 7 School and university 8 Place of work 9 Other 996 Refuse to answer 999 | |
| N0905 | SHOTCO N | In the last 12 months, have you ever run short of condoms because they were not available at the place you normally get them? | Yes 1 No 2 Refuse to answer 999 | |
| N0906 | CONDFS EX | Have you <i>ever</i> used a female condom during sex? | Yes 1 No 2 Refuse to answer 999 | |
| N0907 | LUBE | Have you ever used lubricants during anal sex? | Yes, have used 1 No, have never used 2 Refuse to answer 999 | 2→N0911 999→N1001 |

| | | | | | |
|--------------|----------------|--|--|-----|---------|
| N0908 | LUBEGE T | Where do you usually get lubricants? | Shop | 1 | |
| | | | Club or fitness center | 2 | |
| | | | Pharmacy | 3 | |
| | | | Friends | 4 | |
| | | | Bar, hotel & restaurant | 5 | |
| | | | Health facilities | 6 | |
| | | | School and university | 7 | |
| | | | Place of work | 8 | |
| | | | Other | 996 | |
| | | | Refuse to answer | 999 | |
| N0909 | LUBETYP E X | Which lubricants do you commonly use? <i>Check all that apply</i> | Yes | No | N/ R |
| | | | Saliva | 1 | 2 999 |
| | | | Petroleum jelly or vaseline (sleeping baby, samona) | 1 | 2 999 |
| | | | Hand lotion | 1 | 2 999 |
| | | | Vaginal gel | 1 | 2 999 |
| | | | Baby oil | 1 | 2 999 |
| | | | KY Jelly | 1 | 2 999 |
| | | | Butter, bleu band, ghee, cooking oil | 1 | 2 999 |
| | | | Water | 1 | 2 999 |
| | | | Water based lubricants | 1 | 2 999 |

| | | | | | |
|--------------|--------------|---|---|-------------------------------------|------------------|
| | | | Eggs Other | 1 2 999 | |
| N0910 | LUBEOF T | Out of the last 5 times you had anal sex, how many times have you used lubricants? Range 0-5 | Number Refuse to answer | 1 999 | 999→N1001 |
| N0911 | LUBERE AS | What is the main reason you have not used lubricants? | Haven't thought about it Don't like lubricants Too expensive Partner objects Can't get it Other Refuse to answer | 1 2 3 4 5 996 999 | |

SECTION 10: KNOWLEDGE, OPINIONS, AND ATTITUDES TOWARDS HIV/AIDS

| Nº | Variable name | Question | Answer & Code | Skip |
|-------|---------------|--|---|------|
| N1001 | RSKANAL | What <i>kind</i> of anal sex do you think is more dangerous to get HIV? | Active (top) anal sex 1 Passive (bottom) anal sex 2 Both have same risk 3 Both without risk 4 Don't know 997 | |
| N1002 | CONDUSE | We are going to compare the importance of using condom during vaginal sex and anal sex: how do you compare both? | More important during vaginal sex than anal sex 1 Equally important for both vaginal and anal sex 2 More important during anal sex than vaginal sex 3 Don't know 997 | |
| N1003 | COMPARE1 | Compared to sex with women, do you think it is more or less likely to get HIV through sex with men? | More likely by sex with women 1 More likely by sex with men 2 Same risk 3 Don't know 997 | |
| N1004 | KNOWLEDG | Do you agree with this statement: " <i>I am not as careful about HIV and sex now because there is better treatment</i> " | Agree 1 Don't agree 2 Don't know 997 | |

| | | | | | |
|--------------|---------|---|--|-----|----|
| | | <i>for AIDS"</i> | | | |
| N1005 | PROTHIV | What can we do to protect ourselves against HIV/AIDS? Multiple answers are allowed [Do not suggest answers, circle '1' each time an answer is given] | | Yes | No |

- A) We cannot avoid HIV/AIDS virus 1 2
- B) Using a condom 1 2
- C) Having very few partners 1 2
- D) Being faithful to a non-HIV infected partner 1 2
- E) Avoiding casual sex 1 2
- F) Abstinence from any sexual intercourse 1 2
- G) Avoiding used soiled sharp objects 1 2
- H) Avoiding blood transfusion 1 2
- I) Avoiding intravenous drug use 1 2
- J) Other 1 2

| | | | | | | |
|-------|----------|--|--|----|-----|-----|
| N1006 | INFECHIV | <p>Do you think that person can be infected by HIV/AIDS in the following ways:</p> <p>[read modalities]</p> | Yes | NO | DK | |
| | | | 1 | 2 | 997 | |
| | | | a) Sharing a meal with a person infected with HIV? | 1 | 2 | 997 |
| | | | b) Being bitten by a mosquito? | 1 | 2 | 997 |
| | | | c) Sharing a needle (for injection) that was used for another person? | 1 | 2 | 997 |
| | | | d) Through sorcery? | 1 | 2 | 997 |
| | | | e) Shaking hands with an infected person? | 1 | 2 | 997 |

| | | | | | |
|--------------|----------|---|------------|-----|--|
| N1007 | TRANSHIV | Can a healthy looking person transmit HIV to someone else? | Yes | 1 | |
| | | | No | 2 | |
| | | | Don't know | 997 | |

SECTION 11: HIV TESTING

| Nº | Variable name | Question | Answer & Code | Skip |
|-------|---------------|--|--|---------|
| N1101 | TEST | Have you ever had an HIV test? | Yes 1 No 2 | 2→N1110 |
| N1102 | HIV_RES | When did you have your most recent HIV test? Range: 1985-current year [Record both year and month] | Month __ __ Year _ _ _ _ | |
| N1103 | RES | For which main reason did you have HIV test? [Do not suggest answers] | Marriage 1 Requested by sexual partner 2 Requested by the service 3 Requested by the school 4 Trip abroad 5 Knowing my HIV status 6 Peer pressure 7 Other 996 | |

| | | | | |
|-------|----------|---|---|-------------|
| N1104 | REASTEST | What was the result? | Negative 1 Positive 2 Doubtful 3 Didn't get result 4 | 1,999→N1108 |
| N1105 | TAKE_ARV | If you have been tested positive did you go for anti-retroviral treatment? | Yes 1 No 2 | 2→N1108 |
| N1106 | ELLRESA | Do you currently take antiretroviral drugs for your HIV infection? <i>(Skip if recruit is not HIV-positive)</i> | Yes 1 No 2 | |
| N1107 | TALHIVST | After you received your positive results, how long did it take to be enrolled into HIV care and treatment ? | Within two weeks 1 Within one month 2 More than one month 3 | |
| N1108 | ARVS | Who did you tell about your HIV test result? <i>(disclosure)</i> | No one 1 Sex partner 2 Family members 3 Friends 4 Health care provider 5 Other 996 | |

| | | | | | |
|--------------|-----------|--|---|-------------|--|
| N1109 | TIME_ENRO | How often do you talk about your HIV status with your partners before having sex?" | Always Sometimes Never | 1 2 3 | |
| N1110 | AGRETEST | Pre-test HIV counseling | Agreed to HIV testing Refused HIV testing Pre-test counseling not conducted | 1 2 3 | |

SECTION 12: MALE CIRCUMCISION

| Nº | Variable name | Question | Answer & Code | Skip |
|-------|---------------|--|---|---------|
| N1201 | HEARCIRM | Have you heard about male circumcision? | Yes 1 No 2 | |
| N1202 | CIRCUM | Some men are circumcised. Are you circumcised? | Yes 1 No 2 | 2→N1206 |
| N1203 | AGECIRC | How old were you when you became circumcised? | Age at Circumcision: __ __ years Does not know 997 | |
| N1204 | WHOCIRC | Who circumcised you? | Traditional 1 practitioner 2 Health professional 997 Does not know | |
| N1205 | REAS_CIRC | Is there any reason why you were circumcised? | Tradition/religion 1 Health/hygiene 2 Sexual satisfaction 3 Facilitate to put on 4 a condom STI/AIDS prevention 5 Other 996 Don't know 997 | |
| N1206 | GETCIRC | Would you like to get circumcised? | Yes 1 No 2 | 2→N1208 |

| | | | | |
|-------|----------|--|--|--|
| N1207 | RETOCIRC | If yes, what is the main reason you would you like to be circumcised? | Tradition/religion 1 Health/hygiene 2 Sexual satisfaction 3 Facilitates to put on a condom 4 STI/AIDS prevention 5 Other 996 | |
| N1208 | RENOTCIR | If not, what is the main reason why you do not want to be circumcised? | Operation done poorly 1 Ashamed of showing my sex to someone else 2 Fear consequences of the operation 3 Refusal to transform my body 4 Forbidden by our religion/tradition 5 Other 996 | |
| N1209 | CIRPRHIV | You may have heard that male circumcision can prevent HIV infection. Do you think circumcised men do not need to use condoms to protect themselves against HIV when having sex with a man? | I agree 1 I do not agree 2 Does not know 997 | |

| | | | | | |
|--------------|----------|---|----------------|-----|--|
| N1210 | CIRNOCON | Do you think circumcised men do not need to use condoms to protect themselves against HIV when having sex with a woman? | I agree | 1 | |
| | | | I do not agree | 2 | |
| | | | Does not know | 997 | |

SECTION 13: SEXUALLY TRANSMITTED INFECTIONS

| Nº | Variable name | Question | Answer & Code | Skip |
|-------|---------------|---|---|------|
| N1301 | GEN_DIS | Have you had a genital discharge or burning sensations when passing urine in the past 12 months? | Yes 1 No 2 Refuse to answer 999 | |
| N1302 | GEN_ULC | Have you had a genital ulcer in the past 12 months? | Yes 1 No 2 Refuse to answer 999 | |
| N1303 | ANAL_ULC | Have you had an anal ulcer or sore in the past 12 months? | Yes 1 No 2 Refuse to answer 999 | |
| N1304 | ANAL_DIS | Have you had anal discharge in the past 12 months? | Yes 1 No 2 Refuse to answer 999 | |
| N1305 | ANAL_WAR | Have you had anal warts in the past 12 months? | Yes 1 No 2 Don't know 997 Refuse to answer 999 | |
| N1306 | PHA_DIS | Have you had a throat disease in the past 12 months? | Yes 1 No 2 Refuse to answer 999 | |

To be considered while programming: Section 14 is to be answered by only those who reported having had any STI (i.e.: those who said at least one “Yes” in Section 13).

SECTION 14: STI TREATMENT

| Nº | Variable name | Question | Answer & Code | Skip |
|-------|---------------|--|--|----------|
| N1401 | DIS_STO | The last time you had a genital or anal discharge, ulcer, or wart, did you stop having sex while you had this problem? | Yes 1 No 2 Refuse to answer 999 | |
| N1402 | GET_TREAT | The last time you had a genital or anal discharge, ulcer, or wart, did you go for treatment? | Yes 1 No 2 Refuse to answer 999 | 2→ N1501 |
| N1403 | TREATDIS | Where did you get treatment for this problem? | Pharmacy 1 Private Clinic 2 Hospital 3 Health center 4 Herbalist, traditional healer 5 Witchcraft 6 My peer MSM 8 Nowhere | |
| N1404 | TIMETREA | How quickly did you go for treatment? | Within one week 1 Within one month 2 After one month 3 | |

| | | | | |
|--------------|--------|---|--|--|
| N1405 | HCARE | The last time you had a sexually transmitted infection; did you feel comfortable to get treatment from health care staff? | I felt comfortable 1 I felt uncomfortable 2 | |
| N1406 | STIGMA | The last time you were treated for a sexually transmitted disease did you feel stigmatized by the health care staff? | Yes 1 No 2 | |

SECTION 15: HEALTH SEEKING BEHAVIORS

| Nº | Variable name | Question | Answer & Code | Skip |
|-------|---------------|---|---|----------|
| N1501 | SEEDR_12 | Have you seen a doctor in the last 12 months? | Yes 1 No 2 | 1→ N1601 |
| N1502 | NOTSEEDR | Why have you not sought the doctor? | I 'm afraid that the others discover that I am MSM 1 2 I was not sick during the past 12 months 1 2 I am treating myself/I buy the drugs from the pharmacy 1 2 I have not enough time to consult the health professional 1 2 I had not medical insurance 1 2 The health center is far from my current residence 1 2 Other 1 2 | |

SECTION 16: EXPOSURE TO HIV PREVENTION PROGRAMS

| Nº | Variable name | Question | Answer & Code | Skip |
|-------|---------------|--|--|-------------|
| N1601 | HIVINFO | During the last six months have you heard or seen message/information on HIV or AIDS? | Yes 1 No 2 | 2→ N1701 |
| N1602 | SHIVINFO | From which source have you heard or seen information about HIV/AIDS? Do not read the list Circle '1' each time an answer is given. Many answers are possible | YES NO Radio 1 2 Television 1 2 Religious leaders 1 2 Street board/ 1 2 posters/leaflets Video film/ mobile 1 2 cinema Friends 1 2 Family members/ 1 2 parents Peer educators 1 2 /colleagues At school 1 2 From my workplace 1 2 Healthcare providers 1 2 Other 1 2 | |

| | | | | | |
|--------------|---------|---|---|-----|---------------------------|
| N1603 | BCHANGE | Did you change your behaviors following what you heard or seen on HIV/AIDS? | Yes | 1 | 2→ N1701 |
| | | | No | 2 | |
| N1604 | HOWCHA | How did you change your behaviors? | | YES | NO |
| | | | Limit the number of sexual partners | 1 | 2 |
| | | | Being faithful to one faithful partner | 1 | 2 |
| | | | Avoid sexual intercourse with occasional sexual partners | 1 | 2 |
| | | | Avoid sexual intercourse with sex workers | 1 | 2 |
| | | | Use a condom when having sex with occasional sex workers/partners | 1 | 2 |
| | | | abstain from having sex | 1 | 2 |
| | | | avoid injections | 1 | 2 |
| | | | Other | | |

SECTION 17: SEXUAL VIOLENCE AND STIGMA

| Nº | Variable name | Question | Answer & Code | Skip |
|-------|---------------|--|---|-----------------|
| N1701 | FORCE | Have you ever been forced to have sex against your will? | Yes 1 No 2 Refuse to answer 999 | |
| N1702 | VIO | Did you ever suffer any violence or abuse because you have sex with other men? | Yes 1 No 2 Refuse to answer 999 | 2,999→ N1705 |
| N1703 | VIOTYP | What sort of violence or abuse was that? <i>Check all that apply</i> | Physical (beaten) 1 Verbal (threats, insults) 2 Moral (isolation, exclusion) 3 Sexual (forced to have sexual contact) 4 Other 996 Refuse to answer 999 | |
| N1704 | WHOVIOA-G | Who abused you this way? <i>Check all that apply</i> | Family members 1 Sex partner 2 Friends, other people I know 3 'Authority figure' (religious leader, military, teacher, police) 4 | |

| | | | | |
|---------------|---------|--|--|--|
| | | | Health care worker 5 Strangers 6 Other 996 Refuse to answer 999 | |
| N1705 | BLACKMM | Have you ever been blackmailed by someone because you have sex with other men? | Yes 1 No 2 Refuse to answer 999 | |
| N01706 | LASTCOM | Last comments | | |

THIS SECTION IS ASKED BY COUPON MANAGERS AT THE EXIT

SECTION 19: NETWORK SIZE QUESTIONNAIRE (EXIT INTERVIEW)

| <p><i>Coupon manager: ask the following section to recruits at their exit of the 1st visit. Explain the eligibility criteria to the recruit, before proceeding to the next section.</i></p> | | | | |
|---|----------------------|--|--|-------------|
| Nº | Variable name | Question | Answer & Code | Skip |
| CM1901 | MSM_KNOW | <p>Now think about the kind of people we are looking for in this survey: men who have sex with men. About how many MSM do you know and they know you by sight or name?</p> <p><i>CM: Probe and make sure you get the recruit's best guess</i></p> | <p>AAA Number <input style="width: 30px; height: 15px; border: 1px solid black; margin-right: 10px;" type="text"/> [__ __ __]</p> | |
| CM1902 | MEN_LIVR | <p>Of these AAA, how many MSM do you know who live in Rwanda?</p> <p><i>CM: Probe and make sure you get the recruit's best guess</i></p> | <p>BBB Number <input style="width: 30px; height: 15px; border: 1px solid black; margin-right: 10px;" type="text"/> [__ __ __] Maximum: AAA</p> | |
| CM1903 | MEN_18AG | <p>Of these BBB, how many of these men are 18 years or older?</p> | <p>CCC Number <input style="width: 30px; height: 15px; border: 1px solid black; margin-right: 10px;" type="text"/> [__ __ __] Maximum: BBB</p> | |

| | | | | |
|---------------|---|--|---|--|
| | | <i>CM: Probe and make sure you get the recruit's best guess</i> | | |
| CM1904 | MENSE_30D | Of these CCC, how many of these men have you seen in the last 30 days? <i>CM: Probe and make sure you get the recruit's best guess</i> | DDD Number <input type="text"/> <input type="text"/> <input type="text"/> Maximum: CCC | |
| CM1905 | INTCOMP | Interview completed? | Yes <input type="text"/> 1 No <input type="text"/> 2 | |
| CM1906 | INTNOCOM | ? <i>[Use only this question if interview is aborted]</i> | Fear of being seen <input type="text"/> 1 or 'caught' Questions <input type="text"/> 2 uncomfortable <input type="text"/> 3 No time <input type="text"/> 4 Don't feel like it <input type="text"/> 5 Ineligible <input type="text"/> 996 Other <input type="text"/> Refuse to answer <input type="text"/> 999 | |
| CM1907 | MAN_COM | Open text field for Coupon Manager Comments | | |
| CM1908 | END | End time of interview | <input type="text"/> <input type="text"/> <input type="text"/> H H MM | |
| | <i>Thank you for your time. This is the end of the interview. Then you will give your some blood for HIV testing and then proceed to the coupon manager to receive your reimbursement.</i> | | | |

