

FORMATIVE ASSESSMENT OF HIV RISK AND SIZE ESTIMATION USING CENSUS AND ENUMERATION METHODS AMONG KEY POPULATIONS MOST AT RISK OF HIV IN ZAMBIA

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ABBREVIATIONS AND ACRONYMS

ART	anti-retroviral therapy
CDC	United States Centers for Disease Control and Prevention
CSO	Central Statistics Office
DEC	Drug Enforcement Commission
FGD	focus group discussion
FSW	female sex worker
HIV	human immunodeficiency virus
IBBSS	integrated biological and behavioral surveillance survey
KII	key informant interview
MSM	men who have sex with men
NAC	National AIDS Council
NGO	non-governmental organization
PEPFAR	President's Emergency Plan for AIDS Relief
PWID	people who inject drugs
PWUD	people who use drugs
STI	sexually transmitted infection
SWC	sex work client
TDRC	Tropical Diseases Research Centre
UCSF	University of California, San Francisco
UNAIDS	Joint United Nations Programme on HIV/AIDS
WHO	World Health Organization
ZDHS	Zambia demographic and health survey

EXECUTIVE SUMMARY

Little is known about HIV prevalence and factors associated with risk of HIV among key populations in Zambia, such as female sex workers (FSWs) and sex worker clients (SWCs), men who have sex with men (MSM), and people who use drugs (PWUD) including people who inject drugs (PWID). Limited information also exists about their HIV prevention, care and treatment needs. Lack of or very limited information on the characteristics, size, health-seeking and HIV risk behaviors of key populations in Zambia has limited the capability of public health professionals to design and implement appropriate HIV/STI interventions for these populations. To fill these gaps and gain a better understanding of the prevention, care and treatment needs of these populations in order to develop targeted interventions, the current study conducted formative assessments and population size estimations among four key populations in Zambia: FSWs, SWCs, MSM and PWUD. Specific objectives of the formative assessment were to 1) describe risk factors that contribute to HIV risk behavior among the four priority key populations; 2) describe the context in which they engage in these HIV risk behaviors; 3) describe knowledge, attitudes and practices of service providers and stakeholders with regard to these populations; and 4) to estimate population sizes using census and enumeration methods to better understand the extent to which these populations contribute to the HIV epidemic in Zambia.

The formative assessments and population size estimation were conducted from July 2013 to September 2015 in nine districts in eight provinces of Zambia: Lusaka, Livingstone, Ndola, Solwezi, Kitwe, Kapiri Mposhi, Chipata, Mongu, and Mansa. The formative assessments utilized qualitative methods – focus group discussions (FGDs) and key informant interviews (KIIs) – and were conducted in all nine districts for FSWs, SWCs and service providers, five districts (Lusaka, Livingstone, Solwezi, Kitwe, Ndola and Mansa) for MSM, and four districts (Lusaka, Kitwe, Livingstone and Ndola) for PWUD. A total of 407 individuals participated in the formative assessments. Of these, 196 were FSWs who participated in 65 KIIs and 18 FGDs; 60 SWCs who participated in KIIs; 102 MSM who participated in 38 KIIs and 10 FGDs; 72 PWUD who participated in 28 KIIs and seven FGDs, and 77 service providers who participated in KIIs. Interviews with key population groups and service providers were conducted by trained research assistants in private locations after obtaining consent. Participants received a small reimbursement for transportation costs and their time and light refreshments. Thematic content analysis, a systematic classification process of identifying themes or patterns in text data, was used for data analyses. Identified themes were refined using a constant comparative method in which themes were compared to assess whether the same concept emerged within and across study sites.

Population size estimation focused on FSWs, MSM and PWID. The estimation took place in the same districts as the formative assessments for all populations except PWID; size estimation was not done in Lusaka for PWID. Mapping and enumeration, a modified Delphi technique and a literature review were used to estimate the number of key population in each district. Size estimation via enumeration occurs in two steps: first identification of potential venues where population members are known to congregate and then a direct count of these population members at a number of sites. The Delphi technique extracted and distilled judgements from a group of experts through consensus building. For this study, we elicited population size estimate from KII and FGD participants. Median, range and quartile descriptive statistics were subsequently calculated. A desk exercise consisting of literature review was also conducted of previously published study data on the population and demographic profile of high-risk populations in the region and international data on the prevalence of these populations in regions similar to Zambia's. Rough estimates of the MSM, FSW and PWID population size were inferred by multiplying the number of adult men and/or women in Zambia, obtained from the Zambia Census, by the numbers of MSM, FSW and PWID reported from surrounding regions using published data.

KEY FINDINGS AND RECOMMENDATIONS

Preliminary population size estimates show that key populations – FSWs, MSM and PWID – exist in numbers that potentially impacts the Zambian HIV epidemic.

Zambia previously had limited or no data on the size FSWs, MSM and PWID, three key populations at risk of HIV. Utilizing enumeration and literature review methods, preliminary population size estimates indicates that the number of FSWs in nine districts range from 13,198-23,015 (median: 18,107), the number of MSM in five districts range from 4,211-8,857 (median: 6,534), and the number of PWID in three districts range from 1,652-2909 (median: 2,281). Together with Census data, these estimates yielded a FSW prevalence of 2.2%, an MSM prevalence of 0.89% and a PWID prevalence of 0.41%. These estimates provide necessary information for planning and implementing HIV prevention and care services for key populations. However, the estimates are preliminary and represent only the first phase of population size estimation. Additional estimates will be added upon completion of the planned integrated biological and behavioral surveillance survey (IBBSS) enhancing the robustness of the resulting estimates.

Train health care providers, especially in government health facilities, to provide non-discriminatory, quality, patient-centered, and confidential care to all patients, including key populations.

Members of key populations interviewed reported engaging in behaviors that place them at risk of HIV and other STIs, including unprotected sexual intercourse, dry sex, and needle sharing (for PWID). Despite these high-risk behaviors, many feared accessing HIV/STI prevention services and disclosing their sexual behaviors at government health facilities. Barriers to seeking services, expressed by both key populations and service providers interviewed, include perceived and experienced stigma and discrimination when seeking services, lack of privacy and confidentiality, lack of tailored services, being denied services, negative attitudes of staff, and fear of being reported to law enforcement (for MSM and PWUD). They preferred to pay (if they can afford it) for services at private facilities, NGO-run health facilities and traditional healers because these places were viewed as providing safety, privacy and confidentiality. Moreover, service providers noted that they lacked experience working with and serving key populations.

Recommendations:

- Utilize the World Health Organization’s (WHO) guidelines for key populations when designing and improving programs.
- Make patient privacy, confidentiality and safety a high priority at healthcare facilities.
- Create a clinical environment of comfort, support, encouragement and non-discrimination of key populations.
- Customize clinical care that reflects patient needs and choices.
- Train and sensitize providers to identify and work effectively and respectfully with key populations, including building their capacity in psychosocial and psychological counselling.

Increase and decentralize health care service entry points in order to make HIV prevention and treatment services easily accessible to key populations.

Members of key populations and service providers reported that the lack of sufficient service entry points, especially for ARVs, and rehabilitation for PWUD, hindered key populations’ access to health care. The centralization of ARV dispensing locations fosters stigma and discrimination and lacks privacy; for example, standing in line for ARVs reveals one’s status. Further, both key populations and service providers agree that the lack of sufficient service entry points makes services physically inaccessible (e.g.

travel long distances for care) and slow due to long queues. In the case of PWUD, many desire to quit using drugs but find quitting difficult given the lack of rehabilitation centers.

Recommendations:

- Decentralize ARV dispensing locations by allowing smaller public health clinics, NGOs and private providers to dispense ARVs.
- Create rehabilitation facilities and support groups for PWUD to help them quit and remain drug-free.

Revisit policies that affect FSW, MSM and PWUD access to health services.

MSM and PWUD were well aware that their sexual and drug use behaviors, respectively are illegal in Zambia. They outlined fears of being reported to authorities and arrested if they disclosed their sexual orientation/drug use and accessed services at government health services. Some providers noted that they cannot go beyond the policy framework to provide services to key populations and that the existing laws and policies towards key populations inhibits the reduction of HIV/STIs because key populations do not seek services out of fear of arrest. Service providers also feared being arrested by law enforcement agencies for being complicit if known to be providing services to key population, particularly MSM and PWID, without reporting them to law enforcement agencies. In the case of FSWs, the incorrectly implemented partner notification policy that required her to bring her sex partner to the clinic if she tests positive for a STI before receiving treatment hindered access to STI care and treatment. FSWs often do not know who their partners are or where to locate them and when faced with this requirement, some failed to get treatment or utilized traditional remedies.

Recommendations:

- Consider implementing policies that increase key populations' access to health care services, including harm reduction for PWID, without fear of arrest.
- Where feasible, service providers should advise clients to encourage their partners to seek HIV/STI screening and treatment as per national STI guidelines

Scale up HIV prevention, care and treatment services, including outreach, education and sensitization activities, for key populations and the larger community.

Service providers and key population members across all sites stated there is a need to scale up HIV prevention, care and treatment services for key populations and the larger community. They expressed that key populations have low knowledge of HIV/STI prevention, care, and treatment as well as available health care services. Additionally, alcohol misuse played an important role across all key populations engaging in sex without a condom. Furthermore, FSWs and women who were under the influence of drugs regularly experienced physical and sexual violence. In such instances, condoms were not used. Therefore, health sensitization and education activities should focus on HIV/STI infection, violence and alcohol abuse prevention, and where to seek screening and treatment for STIs.

Recommendations:

- Address alcohol misuse because it serves as a gateway to engagement in unprotected sexual activity.
- Provide education regarding consistent condom use.
- Increase the availability and access to water-based lubricants.
- Identify, counsel and screen FSWs and women who use drugs who are at risk or have experienced physical and sexual violence.

- Recruit and involve key population members as peer educators in prevention, care and treatment activities that focus on their respective population.
- Use social media as a medium for distributing HIV prevention and treatment information.

Empower FSWs by providing them with viable and sustainable alternatives to sex work.

The majority of FSWs interviewed desired to quit the sex work business but indicated that alternative means of making money are unavailable. For many, sex work is their only income source to provide for themselves and their families. FSWs outlined two potential avenues to quitting sex work: providing financial subsidies to start a business; and providing skill-based training to allow them to qualify for jobs. Existing evidence on economic empowerment programs is scant and the results are mixed. However, economic empowerment programs may be viable options to aid FSWs in Zambia when undertaken with care and the goal of sustainability.

Recommendations:

- Involve sex workers at all levels of programming.
- Fund, partner and work within sex worker-led or sex-worker friendly organizations for economic empowerment programming.
- Quitting sex work should not be a condition to participate in programs.

Target harm reduction services at individual PWUD (both injectors and non-injectors) as well as their social networks, particularly addressing the risks associated with needle sharing.

The majority of PWUD interviewed described their social networks were critical in facilitating their initiation to drug use. For example, some PWUD started drug use at young ages due to desires to fit into a particular social group at school. Similarly, the desire to stay connected to the social network, which consisted of other PWUD, inhibited PWUD from quitting. In fact, some reported that their networks discouraged them from quitting. Furthermore, these networks created an environment for HIV transmission. Additionally, due to the high cost of needles, PWUD reported that they shared needles with friends who they knew well and trusted. As much as 10 PWUD would use the same needle before disposing it. They also failed to properly sterilize needles. Needle sharing coupled with poor sterilization of needles increases the risk of transmission of HIV as well as other blood-borne infections, particularly hepatitis C virus.

Recommendations:

- Provide evidence-based drug abuse prevention programs in schools.
- Consider implementing harm reduction programs including needle and syringe exchange program.
- Target both individual and social networks of PWUD (e.g., using peer educators) in harm reduction activities.

CONCLUSION

The formative assessment focused on four key populations at high risk of HIV infection in Zambia: FSWs, SWCs, MSM, and PWUD. Our results show that these populations exist in Zambia, and though many of the recommendations provided in this report are similar for all populations, it is important to note that each have distinct and variable policy, psychological, social, and economic needs. These needs play a significant role in health seeking behaviors, including disclosure of behaviors to health care providers. Understanding each population's unique circumstances is critical to improving and developing

services and programs that adequately meet their HIV prevention, care and treatment needs. Moreover, program planners must pay keen attention to the differences and circumstances within and not solely across each key population. The results from this formative assessment aids in providing rich details of the circumstances of these key populations. Programs must be tailored and adapted for each of the key populations and must take into consideration the nuances within them.

INTRODUCTION

Zambia has a generalized HIV epidemic, with an estimated prevalence of 13 percent among the population aged 15-49 (CSO et al. 2014). HIV prevalence increases by age from four percent among those aged 15-19 years to 23 percent in the 40-44 age groups, before falling slightly among those aged 45-49 years (CSO et al. 2014). The prevalence is higher in women than in men (15 percent compared to 11 percent) and is twice as high in urban areas than in rural areas (18.2 percent compared to 9.1 percent) (CSO et al. 2014). Modeled incidence rates from the Modes of Transmission (MOT) study suggest that 1.6 percent of the population is newly infected each year (NAC 2009).

While population-based household surveys and antenatal surveillance systems provide valuable information about HIV prevalence in Zambia's general population, little is known about HIV prevalence and risk factors among key populations at risk of HIV, such as female sex workers (FSWs) and sex worker clients (SWCs), men who have sex with men (MSM), and people who use (PWUD) or inject (PWID) drugs, as well as their HIV prevention, care and treatment needs. Although some HIV seroprevalence surveys have been conducted among FSWs and SWCs in Zambia (Buvé et al. 2001; FHI360, 2006; FHI360, 2009), data collection was limited geographically. A recent integrated behavioral-biologic surveillance survey among FSWs in five districts in Zambia found that the burden of HIV and other STIs is five times more in FSWs than in the general population (FHI360 & TDRC, 2015). Little information exists on the size of this population and more information is needed on their specific health care needs.

There has been increased focus internationally on the HIV/STI-related needs of MSM and people who inject drugs (PWID). A recent review of 14 countries in sub-Saharan Africa found that "HIV prevalence among MSM are significantly higher than corresponding general populations, that MSM engage in sexual risk behaviors that place them and sexual partners at higher risk, and that issues of discrimination and stigmatization inhibit HIV interventions for MSM" (Muraguri et al. 2012). Some MSM engage in transactional sex (defined in this project by anal intercourse in exchange for money or gifts with a casual partner), and experience widespread violence, stigma, and detention (Smith et al. 2009). Research shows that MSM are an underserved and under-resourced population in many settings; 1 in 10 MSM worldwide have limited access to HIV/AIDS prevention, treatment and care services (Beyrer 2013).

Despite the increased focus internationally, Zambia has limited or no data on MSM and PWID. The National AIDS Council HIV Prevention Response and Modes of Transmission Analysis defined Key Driver # 5 of the Zambian epidemic as "High risk behaviors among sex workers and in male-to-male sexual relationships" (NAC 2009). Furthermore, the same analysis model estimated that of all new HIV cases in 2008, 1 percent were attributable to female sex workers, 1 percent to male-male sexual contact and their female partners, 4 percent to clients of sex workers, and 2 percent to partners of sex worker clients. These estimates show that 8 percent of new HIV cases per year in Zambia are attributable to most-at risk populations (MARPs), and thus more information about these populations is needed (NAC 2009). In reality, the existence and extent of male-male sexual practice, and injection drug use remains largely uninvestigated and therefore undocumented. There is limited published and anecdotal evidence that these populations exist in Zambia.

Lack of or very limited information on the characteristics, size, health-seeking and HIV risk behaviors in Zambia has restricted the capability of public health professionals to design and implement appropriate HIV/STI interventions for these populations. To fill these gaps and gain a better understanding of the prevention, care and treatment needs of these populations and develop targeted interventions, the current study conducted formative assessments and population size estimation among four key populations in Zambia: female sex workers (FSWs), sex work clients (SWCs), men who have sex with men (MSM) and people who use drugs (PWUD). Specific objectives of the formative assessment were to: 1) describe risk factors that contribute to HIV risk behavior among the four key populations; 2) describe the context in which they engage in these HIV risk behaviors; 3) describe knowledge, attitudes and practices of service providers and stakeholders with regard to these populations; and 4) to estimate population sizes using

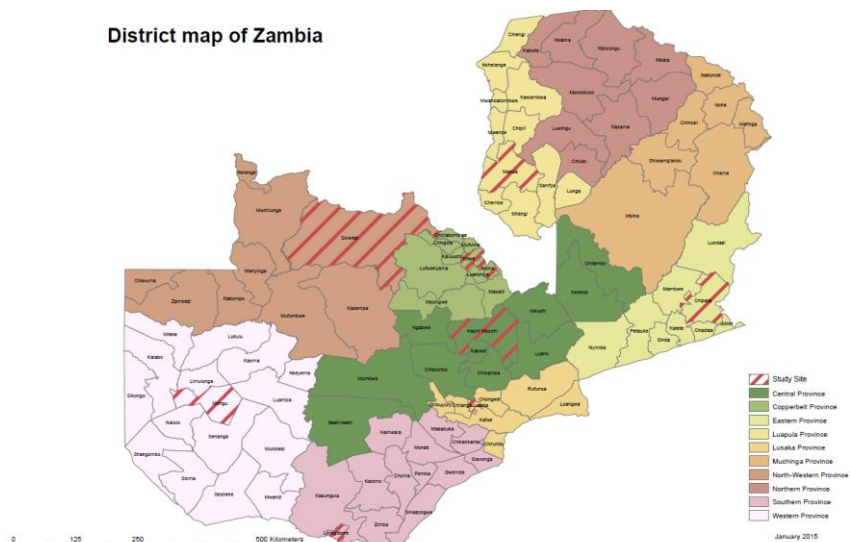
census and enumeration methods to better understand the extent to which these populations contribute to the HIV epidemic in Zambia.

METHODS

The formative assessments and population size estimation were conducted from July 2013 to September 2015 in nine districts in eight of ten provinces of Zambia: Lusaka, Livingstone, Ndola, Solwezi, Kitwe, Kapiri Mposhi, Chipata, Mongu, and Mansa (see district map of Zambia for study site locations). The study districts included large urban centers, provincial centers and border towns where there tends to be higher numbers of these populations.

The formative assessment which utilized qualitative methods – focus group discussions (FGDs) and key informant interviews (KIIs) – were conducted in all nine districts for FSWs, SWCs and service providers, five districts (Lusaka, Livingstone, Solwezi, Kitwe, Ndola and Mansa) for MSM, and four districts (Lusaka, Kitwe, Livingstone and Ndola) for PWUD

(including PWID). Population size estimation which utilized desk review, mapping and enumeration focused on FSWs, MSM and PWID. The estimation took place in the same districts as the qualitative formative assessments for all populations except PWID; size estimation was not done in Lusaka for PWID. Security concerns interrupted population size estimation field activities in Lusaka, resulting in an incomplete enumeration. This report presents the findings from the formative assessments and preliminary population size estimation.



Formative Assessments

Participants

A total of 407 individuals participated in the formative assessments. Of these, 196 were FSWs who participated in 65 KIIs and 18 FGDs; 60 SWCs who participated in KIIs; 102 MSM who participated in 38 KIIs and 10 FGDs; 72 PWUD who participated in 28 KIIs and seven FGDs, and 77 service providers who participated in KIIs. Tables 1-8 in Appendix B provide detailed socio-demographic information of the participants.

Eligible participants were at least 18 years of age, spoke English or other designated local language(s), and provided verbal consent. Participants also had to meet the following eligibility criteria for the respective populations: 1) FSWs - females who have exchanged sex for money or in-kind gifts in the last six months; 2) SWCs - males who exchanged money or in-kind gifts for sex in the last six months; 3) MSM - men who engaged in oral and/or anal sex with other men in the last six months; 4) PWUD - females and males who have used illegal drugs (oral, nasal, injected) in the last six months; and 5) service providers – females and males who provided HIV/STI, sexual health or other support services to key populations or had some special knowledge about one of the key populations. Participants were purposively selected on a diverse set of characteristics including age, level of education, marital status, and socioeconomic status.

Recruitment and Interview Procedures

Prior to interviews with members of key populations, investigators consulted with local stakeholders and organizations. Based on these meetings and with the recommendation and assistance of community-based outreach workers linked to local stakeholder organizations, members of key populations were contacted and recruited for participation in FGDs and KIIs. Recruitment for FGD participants and key informants was facilitated by members of key populations that had access to and knowledge of their peers as well as outreach workers from local stakeholder organizations. A de-brief session was conducted after each KII or FGD, where participants' characteristics were discussed and attempts were made to recruit the next informant based on different characteristics.

Before the interview or discussion, participants were screened using a standard screening form designed for each population to ensure that they met eligibility criteria. FSWs, MSM and PWUD were only allowed to participate in either the KII or FGD. The duration of the KIIs and FGDs were approximately 60 and 90 minutes, respectively. FGDs consisted of 5-10 participants. Participants in each FGD were part of the same sub-population. Trained research assistants used the semi-structured interview guides to facilitate the discussion.

Interviews with key population groups and service providers were conducted in private locations after obtaining consent. Participants received a small reimbursement for transportation costs and their time (ZMW 50.00) which ranged in value during data collection from approximately USD \$5 to \$10) and light refreshments. Condoms, lubricants, and information about HIV prevention were also given to key population participants.

Measures

Eight semi-structured interview guides, one for each population and interview type as well as service providers, were developed. Guides were developed in English, translated into local languages then back-translated to ensure the guides were translated correctly. Guides for the key populations consisted of questions centered on four domains: 1) HIV risk behaviours; 2) condom and lubrication use; 3) alcohol and drug use; and 4) health service access and utilization. Guides for service providers focused on services provided to key populations, opportunities and barriers to delivering HIV/STI services to key populations, and the effect of current policies on health services for key populations.

Research assistant training

Research assistants recruited to interview members of the key populations were either members of or had previous experience working with key populations and had a minimum of a secondary school education. Research assistants participated in a 10-day training to develop skills in mapping, observation, interviewing and focus group facilitation, street safety, and ethical issues.

Analyses

All KIIs and FGDs were audiotaped and translated and transcribed verbatim for analysis. Trained research team members verified all transcripts against the original audiotapes to ensure that the transcriptions and translations were accurate. After transcript validation, transcripts were imported into a qualitative software program, ATLAS.ti (Version 7.5.10) to assist in data analyses. Themes were explored and identified by research staff during team briefings and codes were drafted to explore various themes related to the study objectives. Four research team members coded transcripts; at least 10 percent of all transcripts from each population and each site were coded by at least two members to assess inter-rater reliability. Team meetings were used to discuss and resolve disagreement in coding among coders.

Thematic content analysis, a research method for the subjective interpretation of the content of text data through the systematic classification process of identifying themes or patterns, was used (Hsieh & Shannon 2005). Specifically, we used an inductive approach to analyses where the research team immersed themselves in the data and allowed themes to emerge from the data. The salience of each

identified theme was assessed by counting the number of transcripts where the theme was present. Following thematic content analysis, emergent themes were refined using a constant comparative method in which themes were compared to assess whether the same concept emerged within and across study sites (Ayers, Kavanaugh, & Knafl 2003; Corbin and Strauss 2008). Triangulation of sources (i.e., using two or more data sources to understand the phenomenon under study) and analytic triangulation (i.e., using multiple analysts to understand different ways of looking at the data) contributed to the rigor of the study (Denzin 1978; Patton 1999).

Population Size Estimation

In conjunction with the formative assessments, we implemented mapping and enumeration, a modified Delphi technique and a literature review to estimate the number of each key population. The estimation took place in the same districts as the qualitative formative assessments for all populations except PWID; size estimation was not done in Lusaka for PWID. Security concerns interrupted population size estimation field activities in Lusaka, resulting in an incomplete enumeration whilst in Mansa, enumeration of MSM could not take place because of the failure to identify and recruit MSM for FGDs, whose data would have been used to identify hotspots for enumeration.

Mapping and enumeration

Size estimation via enumeration occurs in two steps: first a collection of potential venues where population members are known to congregate and then a direct count of these population members at a number of sites (UNAIDS/WHO Working Group on HIV/AIDS/STI Surveillance, 2010). Direct count can either occur via census or enumeration. Census involves efforts to directly count all members of the target population at all venues identified in the key informant interview and focus group discussions. In contrast to census, enumeration attempts to count population members from a sample of venues randomly selected from a compiled list of venues obtained from key informant interviews (KII), stakeholder meetings and/or focus discussion groups (FGDs). Additional information on each identified venue was also collected from stakeholders and key informants, such as type (e.g., night club, lodge, and bars), income level of surrounding neighborhood and day and time at which the venue is most frequently visited by target population members.

Venues were defined as: (1) locations/venues where sex workers meet and interact with clients including bars, clubs, street intersections, entertainment venues, brothels, streets, lodges, restaurants, Inn and residential hotels; (2) areas and neighborhoods where MSM congregate and potentially meet sex partners, such as bars, park, clubs, brothels, streets, resorts, corridors along shopping malls and entertainment venues.

Once the venue list reached saturation (i.e., new venues were no longer being identified), venues were stratified based on the type of venue (e.g., bar, hotel, shopping center, etc.). Once allocated to their respective strata, venues were randomly selected for enumeration to ensure equal representation of income strata (Cai et al. 2013).

To help validate venues and preform direct counts, field staff teams were composed of target population members. Once venues were selected for enumeration, field staff then conducted walk-throughs of the venue. These would consist of 10 to 20 minute observation sessions with the field staff passively viewing the venue, taking note of layout, entrances and flow of person traffic through the venue. Once back at the study office, field staff drew a map of the hotspot from memory. With this map, field staff strategized and planned for how they would conduct enumeration.

The field team members visited the venue at determined peak hours only once. They documented only the number of target population members they directly saw and could identify, in addition to total individuals present. To obtain these counts, two enumerators were engaged per site and per relevant population. One enumerator was assigned to count all individuals belonging to the base population present in the venue (i.e., all adult females for FSW, all adult males for MSM, all adults for PWID), while the other enumerator counted only the key population members. To minimize observer error and in

order to increase accuracy and precision in recording, mechanical tally counters were used throughout the enumeration exercise.

In efforts to minimize double counting of population members who frequent multiple “hotspots”, the field team conducted direct counts within a relatively short time frame of two weeks. Due to logistical constraints, the duration of enumeration was not the same across all sites. While 30 minutes is often a standard, durations ranged between 30 and 90 minutes. To account for this variation, each count was weighted by its respective enumeration length so that each count represented only 30 minute durations.

Modified Delphi

The Delphi technique seeks to extract and distil judgements from a group of experts through consensus building. In relation to key population size estimation, Delphi is typically employed in the final stages of size estimation by convening a community and stakeholder consensus meeting. For this study, we elicited population size estimate from KII and FGD participants. Questions regarding the population of the municipality were added to interviews and discussions administered on the formative assessment instrument; for example, participants were asked about how many MSM they believe to be present within the municipal boundaries. Median, range and quartile descriptive statistics were subsequently calculated.

Literature Review

A desk exercise consisting of literature review was also conducted of previously published study data on the population and demographic profile of high-risk populations in the region and international data on the prevalence of these populations in regions similar to Zambia’s. This synthesis included published population sizes for the general population and estimates of various key populations at higher risk. This method allows for the mapping and enumeration estimates to be contextualized with existing estimates obtained from similar geographic regions (Cáceres et al. 2008; Vandepitte et al. 2006; Aceijas et al. 2006). We inferred rough estimates of the MSM, FSW and PWID population size by multiplying the number of adult men and/or women in, Zambia, obtained from the Zambia Census, by the numbers of MSM, FSW and PWID reported from surrounding regions using published data (CSO 2012).

Study Limitations

Formative Assessments

The study’s findings are based on data from small, non-representative samples of each population group in each site, which limits generalizability. The data for this study were self-reported. As such, the data generated should be assessed being mindful of the likely impact of social desirability, comprehension, and limitations of recall accuracy. Despite these limitations, the validity and reliability of the research findings is enhanced by the triangulation of two methods (e.g. KIIs and FGDs) and comparing results across the various study sites.

Population Size Estimation

The findings from the current population size methods have a number of limitations. First, although every effort was made to construct comprehensive lists of venues for enumeration it is possible that some venues were not mapped. Second, determination of membership in a given key population can at times be challenging if there are no outward signs of membership. That is, it is not always obvious who is a FSW, MSM or PWID from simple observation. Nonetheless, study teams were well drawn from groups with extensive experience working with key populations. Third, some members of key populations may not attend venues (e.g. FSW who meet clients on the internet). With this in mind, the current estimates should be considered to represent only the visible segment of a given key population. Lastly, the current results are based on only three population size estimation methods. Multiple methods are needed to construct the most robust estimates possible. To this end, the current results will be used in conjunction with estimates derived from additional methods at the conclusion of the planned IBBS survey.

Ethical Considerations

The study protocol, instruments, and informed consent forms were reviewed and approved by the Population Council Institutional Review Board, the Tropical Diseases Research Centre Ethics Review Committee in Zambia and the CDC Office of Human Subject Protections. Administrative approval was obtained from the Zambian Ministries for Health and Home Affairs and the Drug Enforcement Commission (DEC). All participants provided oral consent. The investigators chose to conduct oral consent procedures rather than written informed consent because of the potential greater risk involved with written consent procedures given the behaviors of key population members are illegal and stigmatized in Zambia. A written consent form may place the participant at risk since his/her name would be signed on the form.

FINDINGS

Population Size Estimates

Population size estimation focused on FSWs, MSM, and PWID. Mapping and enumeration, a modified Delphi technique and a literature review were used to estimate the number of key population in each district.

Mapping and enumeration

In Zambia, a total of 410 FSW, 143 MSM and 73 PWID venues were identified and subsequently verified by field staff and stakeholders (Table 1). For those sites with more than 30 venues identified, enumeration was utilized. For most sites, the proportion of venue types selected for enumeration was equivalent to the relative proportion of total venues. Three sites did not reach the requisite sample sizes due to security issues that forced site coordinators to suspend enumeration (FSW-Chipata, FSW-Lusaka and PWID-Ndola). For Lusaka, PWID estimates were excluded entirely due to severe security concerns in accessing PWID hotspots.

Population	Site	Venues identified	Venues enumerated	Method
FSW	Chipata	41	26	Enumeration
	Kapiri Mposhi	48	30	Enumeration
	Kitwe	42	30	Enumeration
	Livingstone	60	30	Enumeration
	Lusaka	83	29	Enumeration
	Mansa	23	23	Census
	Mongu	22	22	Census
	Ndola	44	30	Enumeration
	Solwezi	47	30	Enumeration
	Total	410	250	
MSM	Kitwe	30	30	Census
	Livingstone	30	30	Census
	Lusaka	40	30	Enumeration
	Ndola	14	14	Census
	Solwezi	29	29	Census
		Total	143	133
PWID	Kitwe	28	28	Census
	Livingstone	27	27	Census
	Ndola	18	15	Census
		Total	73	70

1. Values are percentages (numbers).
2. Income level of neighborhood surrounding hotspot

For FSW, 13,199 individuals were estimated to be living and working in the nine sites. For MSM, 4,211 individuals were estimated to be living in Kitwe, Livingstone, Lusaka and Solwezi. For PWID, a total of 2,909 individuals were estimated to be in Kitwe, Livingstone and Ndola (Table 2).

Population	Site	Estimated Population Size
FSW	Chipata	793
	Kapiri Mposhi	892
	Kitwe	1,011
	Livingstone	2,993
	Lusaka	3,459
	Mansa	350
	Mongu	365
	Ndola	2,007
	Solwezi	1,329

	Total	13,199
MSM	Kitwe	524
	Livingstone	1643
	Lusaka	993
	Ndola	486
	Solwezi	565
	Total	4,211
PWID	Kitwe	234
	Livingstone	1792
	Ndola	883
	Total	2909

Modified Delphi

Based on responses from all participants in KIIs and FGDs about the perceived number of FSW, MSM and PWID living in Zambia, the median size estimates were 6,100, 2,190 and 1,300, respectively (Table 3). Questions eliciting the Modified Delphi estimates were added to the qualitative instruments after Lusaka data collection had been completed, as such estimates for Lusaka were not obtained.

Population	Site	Median Population Size Estimate
FSW	Chipata	500
	Kapiri Mposhi	400
	Kitwe	850
	Livingstone	850
	Lusaka	N/A
	Mansa	2000
	Mongu	200
	Ndola	400
	Solwezi	900
	Total	6,100
MSM	Kitwe	900
	Livingstone	200
	Lusaka	N/A
	Ndola	1000
	Solwezi	90
	Total	2,190
IDU	Kitwe	600
	Livingstone	200
	Ndola	500
	Total	1,300

Literature Review

In addition to mapping and enumeration, a desk exercise consisting of a literature review was conducted to accompany the estimates derived from mapping and enumeration (Table 4). In order to triangulate estimates, the literature review focused only on municipalities that were included in mapping and enumeration. We used 2010 Zambia National Census data for the denominator of how many males aged 18 years or older existed in the respective municipal areas (CSO 2012). To establish the proportion of MSM in the adult male population (1.2%), we used the lower quartile value of the range of MSM occurrence in Africa as described in the literature (Vandepitte et al. 2006). Lower quartile values were used to avoid overestimation. These data sources yielded an estimate of 8,857 MSM living in the selected sites. Similarly, the number of adult women living in the respective municipalities was taken from Census data and the prevalence of FSW was determined from the literature (2.8%). Together, these data sources yielded an estimated 12,826 FSW. For PWID, the total adult population in the municipalities was used alongside regional prevalences (0.24%) to obtain an estimate of 1,652 PWID living within the selected municipalities (Aceijas et al. 2006).

Table 4. Population size estimates of FSW, MSM and PWID using literature and demographic data, Zambia, 2015

Population	Denominator (Source)	Source of prevalence estimate	Site	N (a)	Estimate of prevalence in population ¹ (b)	Estimate a*b
FSW	Women 18+, Urban (2010 Zambia Census)	Vandepitte et al. 2006	Chipata	27,313	2.8%	765
			Kapiri Mposhi	10,052	2.8%	281
			Kitwe	126,886	2.8%	3553
			Livingstone	35,502	2.8%	994
			Lusaka	458,074	2.8%	12826
			Mansa	17,460	2.8%	489
			Mongu	13,058	2.8%	366
			Ndola	114,801	2.8%	3214
			Solwezi	18,816	2.8%	527
		Total	821,962			23,015
MSM	Men 18+, Urban (2010 Zambia Census)	Carceres et al. 2008	Kitwe	126,480	1.2%	1518
			Livingstone	34,577	1.2%	415
			Lusaka	446,551	1.2%	5359
			Ndola	112,479	1.2%	1350
			Solwezi	17,966	1.2%	216
				Total	738,053	
PWID	Both 18+, Urban (2010 Zambia Census)	Aceijas et al. 2006	Kitwe	253,366	0.24%	760
			Livingstone	70,079	0.24%	210
			Ndola	227,280	0.24%	682
				Total	550,725	

Both the enumeration and literature review methods were combined to obtain the following median population sizes estimates: 18,107 FSW, 6,534 MSM and 2,281 PWID. Together with Census data, these estimates yielded a FSW prevalence of 2.2%, an MSM prevalence of 0.89% and a PWID prevalence of 0.41% (Table 5). Note that Modified Delphi estimates were excluded from the summary statistics as they were not collected for Lusaka.

Table 5. Summary of population size estimates of FSW, MSM and PWID using two methods, Zambia, October 2015

Population	Site	Census ¹	Mapping and Enumeration		Modified Delphi		Desk Review ³		Summary ⁴	
		Base Population ²	Population Size	Population Prevalence	Population Size	Population Prevalence	Population Size	Population Prevalence	Population Size	Population Prevalence
FSW	Chipata	27,313	793	2.9%	500	1.83%	765	2.80%	779	2.85%
	Kapiri Mposhi	10,052	892	8.9%	400	3.98%	281	2.80%	587	5.84%
	Kitwe	126,886	1011	0.8%	850	0.67%	3553	2.80%	2282	1.80%
	Livingstone	35,502	2993	8.4%	850	2.39%	994	2.80%	1994	5.62%
	Lusaka	458,074	3459	0.8%	N/A	N/A	12826	2.80%	8143	1.78%
	Mansa	17,460	350	2.0%	2000	11.45%	489	2.80%	419	2.40%
	Mongu	13,058	365	2.8%	200	1.53%	366	2.80%	365	2.80%
	Ndola	114,801	2007	1.7%	400	0.35%	3214	2.80%	2611	2.27%
	Solwezi	18,816	1329	7.1%	900	4.78%	527	2.80%	928	4.93%
	Total		821,962	13,199	1.61%	6,100	0.74%	23,015	2.80%	18,107
MSM	Kitwe	126,480	524	0.4%	900	0.71%	1518	1.20%	1021	0.81%
	Livingstone	34,577	1643	4.8%	200	0.58%	415	1.20%	1029	2.98%
	Lusaka	446,551	993	0.2%	N/A	N/A	5359	1.20%	3176	0.71%
	Ndola	112,479	486	0.4%	1000	0.89%	1350	1.20%	918	0.82%
	Solwezi	17,966	565	3.1%	90	0.50%	216	1.20%	390	2.17%
	Total		738,053	4,211	0.57%	2,190	0.30%	8,857	1.20%	6,534
PWID	Kitwe	253,366	234	0.1%	600	0.24%	760	0.30%	497	0.20%
	Livingstone	70,079	1792	2.6%	200	0.29%	210	0.30%	1001	1.43%
	Ndola	227,280	883	0.4%	500	0.22%	682	0.30%	782	0.34%
	Total		550,725	2,909	0.53%	1,300	0.24%	1,652	0.30%	2,281

¹Census source: Zambia Central Statistical Office. 2010 Census of Population and Housing: National Descriptive Tables, 2012

²Base population: PWID = urban males and females 18+ y.o.; FSW = urban females 18+ y.o.; MSM = urban males 18+ y.o.

³Desk review source: Vandepitte et al., 2006; Carceres et al., 2008; Aceijas et al., 2006

⁴Summary estimates use Desk Review and Mapping & Enumeration methods only.

FEMALE SEX WORKERS

A total of 196 female sex workers (FSWs) participated in 65 key informant interviews (KIIs) and 18 focus group discussions (FGDs) in nine districts in Zambia: Lusaka, Livingstone, Kapiri Mposhi, Kitwe, Ndola, Solwezi, Mansa, Chipata and Mongu. Participants were aged 19-50 (mean age: 29.4) and for most (70.9 percent), sex work was their primary occupation. A large proportion completed primary (54.1 percent) and secondary school (34.2 percent). Approximately 46 percent was in a relationship, 11 percent was married/living with a partner, and 42 percent was single. Tables 1 and 2 in Appendix A present the socio-demographic characteristics of FSWs by site and type of interview.

Context of Sex Work

FSWs across study sites described an environment where they strongly desired to quit sex work as their entrance into the occupation was driven by not having alternative means of income to support themselves and their families. FSWs acknowledged the increased risk of STIs/HIV associated with sex work, especially due to unprotected sex. FSWs further described an environment where they had autonomy over the prices they charged and who they accepted as clients but did describe distinct circumstances when this was not the case.

Entrance into sex work

The vast majority of FSWs interviewed described resorting to sex work due to poverty; tragic and unfortunate life circumstances left them without alternative options for earning (sufficient) income to support themselves and their families. These life circumstances fell into four categories: 1) parental death; 2) death of a spouse; 3) marriage dissolution; and 4) inability to find (livable wage) employment.

FSWs reported becoming single or double orphans at young ages and subsequently residing with caregivers (such as stepparent, aunts) who ill-treated them, including verbal, physical and sexual abuse, not being provided with school fees, and not receiving food or hygiene products. As a result, they turned to sex work, as young as age 14, to take care of themselves.

I started doing this [sex work] last year when my father passed away ... I didn't have anyone to sponsor me to school ... I didn't have any one to pay my school fees ... I didn't have anyone to help my brothers and sisters at home not even my parents. (FSW KII, age 20, Lusaka)

Death of a spouse was also reported by FSWs to be a reason for entry into sex work. They were left with no source of income or property because in many cases, the family of their spouse took all the property. In almost all cases, FSWs had young children who needed shelter, food, and school fees. In order to care for their children and pay rent, they entered sex work. Their entrance was at times facilitated by friends already engaged in sex work.

When I saw my husband die, where would I start from? How am I going to survive life was becoming unbearable he didn't leave me with anything, that's how I joined [referring to sex work] then so that my children can survive, I don't want my children to die. (FSW KII, age 50, Kapiri Mposhi)

FSWs also reported the dissolution of their marriage and as a result, being left without a source of income to care for young children, as the reason from entering sex work. At times, the dissolution was a result of experiencing abuse. As previously mentioned, friends at times facilitated their entrance into the occupation.

I was once married then the marriage ended, so after my marriage ended, that's when I started doing this kind of work of being a sex worker...because there are no other means for me to feed myself and take care of my child and paying rent for my house. (FSW KII, age 36, Solwezi)

A number of FSWs reported a futile search for employment and with children to care for or to feed themselves, they entered sex work. Other FSWs described having other jobs (e.g. maids) that did not provide sufficient income to support themselves or their families. Therefore, they supplemented their income with sex work.

I think I started this when I was just 20 years old... I came from the village... I came to look for employment here in Livingstone...I had no job... I couldn't find... any employment anywhere... I ended up to even goes to the bus to ask for... jobs like... being a bag lady... but

unfortunately I couldn't find ... we had problems of... financially! Then that's how I started now [referring to sex work] ...then we started with a friend going to...the truck yard. There then that's where we were meeting the guys who can... give us... some money. (FSW KII, age 39, Livingstone)

A small proportion of FSWs interviewed described knowing FSWs who willingly chose the life of sex work despite some being financially stable. The primary reason cited was these FSWs liked the lifestyle that accompanied sex work, including ability to make fast money, enjoying having sexual intercourse, and socializing. They also noted that some FSWs chose to enter sex work after witnessing the lifestyle of friends already practicing the trade.

You alone have just taken that life of being playful [referring to sex work]. There is nothing you lack, but you just go to play. (FSW FGD2, aged 21-32, Kitwe)

Quitting sex work

The vast majority of FSWs strongly desired to quit sex work explaining that they only entered sex work due to a lack of alternatives to support themselves and families (see Entrance into Sex Work section) and due to the fact that their occupation comes at substantial risk for HIV and other STIs. FSWs outlined primarily two paths in which they could successfully quit sex work. The first path was to find an alternative occupation, which can come in the form of the government providing them with financial support to start a business and more jobs being created. They also noted the need for training in order to qualify for jobs. The second path to quitting sex work was marriage. FSWs reported knowing of FSWs who were “lucky” to have found a client who married them. Some FSWs hoped the same would happen to them one day.

... it is not that we also enjoy it being like this [referring to sex work], there is just nothing else to do. So we can be happy if at all even like the donors or the government if they could find us things they can empower us with so that we will be doing something so that we stop... So if they can look on us if there was a donor thing which would look on us to say okay these sex commercial workers they are also people such that they have to be empowered. Some of us we have completed our school like that, completed school but don't have anybody to sponsor you whether at college ..., you search for jobs and there's nothing (FSW FGD2, aged 35-43, Kapiri Mposhi)

Many sex workers become lucky in prostitution maybe even a white man marries you...or a black marries you... If you find clients who like marry...they marry...clients who are really educated...there are many...there is stopping [sex work]. (FSW FGD1, aged 21-34, Solwezi)

HIV Knowledge

FSWs were knowledgeable about the health risks involved with sex work. They noted that sex work came with increased risk of HIV and other STIs primarily due to unprotected sexual intercourse. They recognized the need for condom use to prevent transmission of STIs but several factors, such as being offered more money for unprotected sex and being forced into sex, prevented use of condoms. They also noted that they should be tested frequently for STIs, though some admittedly did not get tested (see Health Services Utilization section for more information).

Maybe he is [HIV] positive he will say ... no I don't want to use a condom ... he will give you money like so ... that's why I've said at first it's risky ... it's a risky job. (FSW KII, age 36, Lusaka)

It's very bad to have sex for money because there you can meet someone who will say me I don't use condoms and me I use condoms, so there are a lot of risks. For the sake of money you can do it saying anyway it is just today so it's just there you meet that person. Again the other person will come and you will say anyway it is just today at the end of the day you can contract a lot of conditions. (FSW KII, age 28, Mongu)

Finding clients

FSWs used a variety of methods to find their clients, including FSW-initiated contact with clients, social media and the internet, and middle men. The most frequently cited venues for finding clients were bars, night clubs, and lodges. Streets, truck yards, illegally operated brothels, and large sporting events were also mentioned. FSWs approached potential clients by asking them to purchase alcohol for them. It was also common for clients to approach FSWs. Over drinks, FSWs and clients discussed and negotiated the price of sex. FSWs with repeat clientele also contacted clients by telephone to determine if they were in need of services. Some FSWs operated mainly by telephone and are not found in the previously listed venues. Other FSWs also assisted FSWs in finding and connecting with clients whereby if the client desires a specific FSW or if an FSW already has a client, she would facilitate the contact between another FSW and client.

Uh, how we meet the clients, we know that there are places that men frequent. That's where to go, like the bars, where the men are found and when you go you have to dress accordingly. You should look attractive and you will just see a man calling you. (FSW FGD1, aged 27-41, Livingstone)

The use of social media and the internet was mentioned by some FSWs as the method by which they found clients. Specifically, popular social media sites included Facebook and WhatsApp. Through these platforms, FSWs interacted with potential clients and if interested, scheduled time and location where to meet them. A few FSWs noted that their encounters with clients were solely over the internet and clients, some located in different countries, wired money to FSWs' bank accounts for payment.

They meet through social networks...Facebook...High five...there's Zopya...WhatsApp...those are...the media... that they use... to... get in touch with people they need. (FSW KII, age 35, Livingstone)

The use of middle men to find clients was frequently mentioned by FSWs. The first type of middle men were individuals such as door bouncers, taxi drivers, receptionists at hotels and lodges, and guards at hotels and lodges who clients approached seeking a FSW. These middle men connected FSWs to clients seeking their services. In exchange, FSWs gave these middle men a commission from their earnings. The second type of middle men were former and older FSWs and older women called "queen mothers," "aunty," and "madams" who clients approached seeking a FSW. The main distinction between the first and second type of middle men is that the second type controlled the FSWs under their supervision by negotiating the prices with and received payment from the clients as well as decided the portion of the payment that goes to the FSW and dictated the number of clients a FSW served per day. FSWs who are young and new to the occupation were typically the ones that these middle men controlled. Some of these middle men owned guest houses where a FSW lived in a room where they also engaged in sex work.

...especially the waiters and the waitresses because that's the way they also make money from the small changes. They will be asked or told like, "Do you know that one seated over there I want you to book me up with her." For others you would not even talk to them they will just tell you that you will go in that vehicle. (FSW KII, age 22, Mansa)

So I would fight to find ladies for them and I would be the one to charge them [referring to clients], and they would give me the money and if they got interested in a girl they would go and work with her and I would be the one to get the money afterwards. If I had charged them two hundred kwacha I would maybe give her seventy kwacha and I would use up whatever would remain. (FSW KII, age 44, Ndola)

Price negotiation

The price FSW charged for various sex acts was dependent on a number of factors, including market conditions, clients' ability to pay, the class of the FSW, the type and length of sex act, and the influence of alcohol. In the majority of sex work interactions that took place in bars and clubs, FSWs described the drinking of alcohol as a precursor to sex work discussions and price negotiation. After several drinks, the client and the FSW negotiated the price based on the sex act and proceeded to the preferred location (e.g. toilet in the bar, car, rented room, etc.) for sex. In the event that a client does not have enough money to pay the rate for services, some FSWs were willing to accept goods and services in exchange for sex. FSWs mentioned accepting goods such as food, cell phones, watches, and clothing. They also allowed clients to pay their rent or their children's school fees. Some FSWs were adamant about only accepting money in exchange for sex.

Like in the bar when you meet...maybe he buys you some beers...lets agree...how much sleeping...okay...250 you will give me...maybe himself will complain that I will not manage 250 but maybe 200 I can manage... (FSW FGD2, aged 20-29, Solwezi)

Sometimes he will just give me the phone and if the phone is equivalent to the price that you have agreed, he will just pay by giving you the phone...It all depends on what the client has, if he suggests that he goes to buy me clothes we will go and buy then have sex. (FSW KII, age 32, Chipata)

FSWs reported that the most important factors that influenced the price they charged a client was the type of sex act, the length of the sex act, and whether condoms are used. Table 3 in Appendix A provides the range charged based on these factors. Across all sites oral and anal sex cost more than vaginal sex, sex without a condom (called "live sex") cost more than sex with a condom, and sex where the FSW spent the night cost more than sex for a short time (approximately 30 minutes). Oral and anal sex also cost more than vaginal sex without a condom. The high cost for oral and anal sex was attributed to cultural taboos associated with such sex acts and they are not "normal" sex. In fact, many FSWs interviewed stated that they did not engage in anal sex but knew of sex workers who did. In Livingstone, FSWs interviewed stated that anal sex was not practiced. In some cases, FSWs only practiced oral and anal sex with non-Zambian clients.

Yeah, it depends coz sometimes you find a man who tells you like if you sleep with me without a condom I will give you one thousand but if you sleep with me with a condom I'll give you like five hundred just like that. And sometimes there are men who will tell you, give me a blow job and I'll give you more. (FSW FGD1, aged 27-41, Livingstone)

FSWs in Lusaka, Livingstone, Solwezi, Chipata, and Kitwe mentioned that there is a class system for FSWs that determined the amount of money charged. FSWs were categorized as either low or high class. A FSW's class was determined by the location she is found. That is, low class FSWs are found in bars serving local Zambian beer and charge a lower amount for services (e.g. K20-K500). High class FSWs are found in upscale clubs and lodges and charge substantially more from their services (e.g. K200-K1000). In Chipata, some FSWs noted there were three classes: low, middle and high. There was no mention of a class system in Ndola, Mansa, Mongu, and Kapiri-Mposhi.

There are those that say at [first business name] there is high class. When a man gets you from there he is going to give you K200 for short time or maybe he can give you K300. When you go there at [second business name] there where they say it is low class, a man will get you short time K50, K40. (FSW FGD2, aged 21-32, Kitwe)

Three stages, there is low class, middle class and high class...They [referring to high class] use the internet...Us middle class use cell phones and the low class they just go into Chibuku bars and Kachasu places...The low class can't manage since they don't know how to read, others don't even know how to write and if it's a phone they only know how to call and can't even write text messages. (FSW KII, aged 28, Chipata)

In some instances, clients did not adhere to the negotiated prices; they did not pay the FSWs after having sex. Alcohol played a key role in the lack of payment because when drunk, FSWs forget or do not realize that they have not been paid. Violence was also a contributing factor in FSWs not being paid. FSWs reported that some clients beat them after sex and refused to pay. In other instances, FSWs were not paid due to clients running away as the FSW got dressed or slept, accusing FSWs of stealing from them, or stating that the alcohol already purchased for the FSW was payment enough.

Some don't give money and when you are too drunk they would steal the money they would have given you when you are asleep. (FSW KII, age 38, Livingstone)

Problems made start doing this and have experienced a lot of challenges where a man would go with you promising you that maybe he will give you maybe five hundred and you would go to the room together after having sex he would refuse to give you the money saying just go away I can't pay you that money there are other more beautiful girls than you. Those are the challenges we face sometimes or even beating you. And others would pick you up promising to go and sleep with you only to dump you by the roadside and that would in the night and far and for you to travel back home it's difficult. (FSW KII, age 28, Chipata)

Market conditions and competition from other FSWs influenced the price charged by FSWs. If there are few clients available during the night or the season, FSWs lowered their prices for sex or accepted any amount the client offered. FSWs explained that their ability to negotiate prices with clients is affected by what other FSWs charge for the same service; if some FSWs charge a small amount, other FSWs were forced to charge the same.

Because there are some men who come and say "I have twenty Kwacha"...and if you take that person saying I've got twenty kwacha then you... all your friend have refused him they know him... they'll know that... they won't accept you to stay there, they'll chase you because you are ruining the prices... (FSW KII, age 23, Solwezi)

HIV Risk and Protective Behaviors

Consistent condom use was the primary way in which some FSWs protected themselves against HIV and other STIs citing personal preference and fear of STIs and HIV as the motivating factors for using condoms consistently. Sex without condoms, also called live sex, was the primary HIV risk behavior mentioned by FSWs citing that more money for live sex, alcohol intoxication, violence from clients, client excuses, and relationship type influenced unprotected sex.

Condom use

Fear of HIV/STIs

Some FSWs interviewed were resolute in their decision to always use condoms during sex with clients. The main reason for consistent condom use was fear of diseases, especially HIV and STIs. For some FSWs, they were the only ones caring for

their children and they could not risk not being around to care for them should they become infected with HIV. These FSWs mentioned that they carried their own condoms and put them on clients as well as returned clients' money if they refused to use condoms.

What I can just add on is if as a sex worker you don't want to have HIV you just use protection. You just have to arm yourself before sleeping with that man because you won't know where a person is coming from. How that person has grown to be where he is now...then you just come and sleep with a person and gives you HIV which is not good, it hurts a lot...So it is better as a person you are ever ready or before you sleep with him you tell him to put on maximum [a brand name for condoms] condom. If he says that he does not want you leave him, you will find others who will put on maximum condom before sleeping with you... (FSW KII, age 19, Ndola)

Personal Preference

Another reason cited for consistent condom use was personal preference; some FSW simply preferred to use condoms as they were sleeping with unknown men.

Then there are those people... the sex workers who are strict when it comes to using condoms... whether the money is a lot or not. (FSW KII, age 39, Livingstone)

Reasons for not using Condom

FSW's ability to earn more

FSWs reported that the primary reason for not using condoms during sex with clients was the ability to make more money. FSWs charged substantially more, at times double the price or more, for sex without a condom. FSWs explained that the increased prices were due to the increased risk for HIV and STIs associated with sex without a condom. At times, when FSWs are in desperate need for money, they accepted any price offered by clients for live sex.

Yes it is there as to how much it will be if a condom is used and without a condom it will be this much because if we used a condom there will be protection from diseases and pregnancies. So for that person to come and tell you that I will sleep with you but with a condom. I will tell him ok maybe with a two hundred kwacha...And without a condom you tell him five hundred and if he asks why it is like that it is because whatever he will leave you with that will be your business to mind. It is up to you if you got pregnant you will not be able to follow him. He would have already paid you after you had agreed. Even if you were to get sick you cannot follow him so it is up to you and that is why there are different charges. (FSW KII, age 20, Ndola)

Client's preference for no condoms

FSWs also reported that clients willingly offered higher prices for 'live' sex (sex without a condom) because the clients made excuses for why they could not use condoms or outright refused to use condoms. Excuses offered by clients included condoms are itchy, cause inflammation, are painful, and do not feel good.

You men have got excuses... this condom is itchy... it's inflammatory... it's holding me... how is it holding... (FSW FGD1, aged 21-32, Kapiri Mposhi)

Intoxication

Alcohol intoxication also played an important role in FSWs engaging in sex without a condom. Some FSWs explained that when they are drunk they agree to unprotected sex, they do not realize that a client has not put on a condom, and they do not realize when a client have removed the condom he was initially wearing.

...and then I do take alcohol so there things like maybe I am drunk ...and I am thinking that he has put on a condom ...only to find that he has removed.(FSW KII, age 25, Kitwe)

...reason maybe she's drunk...she doesn't even know how they will use her...maybe they will use her live [meaning without a condom]. (FSW FGD2, aged 21-32, Kapiri Mposhi)

Violence by clients

A number of FSWs interviewed described a range of violent actions perpetuated by clients that resulted in unprotected sex. Some clients intentionally damaged condoms by poking holes in them. Some clients raped sex workers by beating them and

forcing them to engage in various sexual acts without a condom. A few clients have drugged FSWs and had unprotected sex with them. In many of the latter instances, the FSWs were also not paid.

The risks we go through...like we said especially about men...a man proposes you...you go to that room...it's not every man who is normal...maybe you don't know that that man is a savage...maybe he will handle you roughly...there are men who are very rough...they can end up having you without even using a condom...maybe he even beats you up...maybe it's at his house or its where else...so we pass through a lot of things...you see... (FSW FGD2, aged 20-29, Solwezi)

Type of sex partner

A few FSWs reported that they did not use condoms with their permanent partners, including clients who become boyfriends, because condom use is not for permanent partners.

ah if I say I don't always use condoms I'll be lying... with our boyfriends we don't use condoms because that's your boyfriend. (FSW KII, age 30, Solwezi)

Incorrect knowledge about condoms

In Kapiri-Mposhi, FSWs had incorrect knowledge about condom use during anal sex, resulting in unprotected sex. FSWs reported that it was impossible for a man to penetrate the anus while wearing a condom. They also noted that they never heard of condom use during oral sex.

the vaginal sex... there is using a condom... but anal sex you don't use a condom because there... there it small... how can it manage... so it's to use live [meaning without a condom]. (FSW FGD2, aged 21-32, Kapiri Mposhi)

Health Service Utilization

Factors acting as barriers to accessing health care and disclosing sexual practices

Three factors – personal privacy concerns, fear of results, and stigmatization - emerged as barriers to accessing health care and disclosure of sexual practices among FSWs.

Personal Privacy Concerns

A personal desire to keep their sexual practices a secret served as a barrier to disclosure and accessing care. FSWs reported being shy and feared recognition by clients when visiting health facilities. As such, they sought services outside of the area of their residence or travelled to other towns when in need of health care. They also preferred to seek care at pharmacies or private clinics because these places limited potential exposure. For a few FSWs, the fear of exposure was so great that they ignored serious symptoms rather than seek care.

...we all feel shy because there are a lot of people, maybe someone will recognize me and what not, so they go to [health center outside area] which is on its own, that's where they mostly go. (FSW FGD2, age 20-35, Livingstone)

Maybe you find Mr. [...] or Mr. [...] are the male nurses and you drink together and you are found with such diseases, no ways, it's better you just rot anyway something like that. (FSW FGD1, age 27-42, Livingstone)

Fear of knowing their HIV status

FSWs reported that fear of knowing their HIV status served as a barrier to accessing care. They felt that if a person tested positive and cannot accept her status, she will die faster. Moreover, they feared the possible side effects of taking ARVs.

Why they feel afraid, maybe...uh...some maybe if they went with a man because some don't use condoms and some are just careless maybe, you see, and would have gone out with a man who has died and so would have that fear to go for testing. (FSW KII, age 23, Ndola)

Stigmatization and discrimination

FSWs were reluctant to seek care due to perceived and experienced stigmatization and discrimination in government health facilities. FSWs feared being laughed at, embarrassed, looked down upon and judged by health facility staff. They reported instances of staff pointing fingers at them and talking negatively about them once their behaviors were known. They scolded

them for continuously presenting with the same health conditions, particularly STIs. Further, FSWs living with HIV noted that both the treatment of individuals living with HIV at health facilities and the horrifying side effects of ARVs made them reluctant to seek care. Specifically in Solwezi, FSWs mentioned feeling embarrassed as a result of standing in line to pick up medications and people laughing at them because it is well known that standing in queue is for ARVs.

Like this when you just go...I have a friend...she was sick...she told me...take me there...we went...they started shouting at her...yes...they are telling you to go to school but you go to do prostitution...you see...she felt upset never even sat there...so like there at [public] hospital they just blame...they don't how to receive people...they just quarrel with patients. (FSW FGD2, age 20-34, Solwezi)

Factors acting as facilitators to accessing health care and disclosing sexual practices

Two factors – feeling sick and a responsibility to protect self and others - emerged as facilitators to accessing health care and disclosure of sexual practices among FSWs

Feeling Sick

FSWs reported that they were often compelled to access care and disclose their behaviors due to the symptoms they experienced. Being very ill and experiencing pain were the driving forces behind some FSWs seeking care and disclosing their behaviors because they felt they had no other choice. In Ndola and Kapiri Mposhi, FSWs had no choice but go to public health institutions because they were the centralized ARV distribution sites and treatment was free of charge.

...what I have observed... like sex workers... they wait... first they become very sick and that's when they go to the hospital. (FSW FGD1, age 21-43, Kapiri Mposhi)

Responsibility to protect self and others

FSWs believed they have a responsibility to prevent the spread of HIV and other STIs among themselves and others. This belief motivated many of them to seek health care and disclose their sexual practices to providers. Listed among the responsibilities were knowing their HIV status, taking care of themselves, having regular medical check-ups, accessing and using condoms, and ensuring both partners receive the appropriate treatment when needed.

If you love yourself, you are supposed to be responsible for the things you are doing, like the condoms even if there are people around I still get condoms, because you are protecting your own life. There is no, even if you are scared, there is no other way to help yourself. (FSW FGD2, age 20-35, Livingstone)

Factors acting as facilitators and barriers accessing health care and disclosing sexual practices

Four factors served as both facilitators and barriers to health care service use and disclosure of sexual behaviors among the FSW population: clinical environment, treatment availability and effectiveness, confidentiality and privacy, and misrepresentation of self.

Clinical Environment

In government health facilities, FSWs reported negative attitudes by health providers, long waiting times and over-crowding hindered accessing health services. Specifically, some FSWs mentioned being yelled at by clinical staff who refused them treatment if they did not have the required health card or if it became known they were sex workers. Slow services were noted especially for testing and receiving CD4 count results; the latter could not be done on the same day. In Solwezi, they noted forgetting to go back for their CD4 count results. In Livingstone, some FSWs reported that non-Zambians were denied treatment and told to seek care from their own country.

Yes...mostly at the hospital like the way this sex worker said that you have left a card...they chase...a person who drinks medicine... whose on ARVs they have finished and now hasn't got transport money so that she goes to go collect...she goes to explain that I have forgotten my card or that my card is missing...at Hospitals...for government...they refuse to give them medicine...they chase then badly...but that person they chase like that...it's going to kill them and her will just start living like that...they are ones you hear that a sex worker has died from the brothel... (FSW FGD1, age 20-34, Solwezi)

Some FSWs, specifically in Lusaka, Chipata, Solwezi and Kitwe, reported knowing some government health facilities that provided patient-centered care. These facilities were described as welcoming, providing good care, and having staff who do not stigmatize against FSWs.

When going to get the ARVS there is nothing like “this one is sex worker, this is a worker, this one is a what worker.” We are all one people. (FSW KII, age 23, Lusaka)

Like I can give my own example where I was once sick in [public facility 1] and the nurse that I found had a bad heart. I was severely sick in the stomach and they were thinking I had a pregnancy and that maybe I had taken some medicine and they refused to give me any medication but had even referred me to [public facility 2] as an emergency case now.... the nurses there [referring to public facility 2] attended to me very well carrying out all the tests that were expected to be conducted and my mother was told that what was being suspected that she had taken in some medicine is not true. I was treated until I got better, yes there are some nurses who are good hearted and you would wish that whenever you are not feeling too well to find such nurses on duty to attend to you. (FSW FGD1, age 18-36, Chipata)

In contrast to government health facilities, FSWs reported feeling comfortable disclosing their behaviors and seeking treatment at private health facilities and health facilities run by non-governmental organizations (NGOs). Many factors such as private locations, outreach work, availability of CD4 count machine and advanced medicines facilitated access to health care at these facilities. FSWs also believed that NGOs want to help them because NGO staff encouraged them, educated them, and did not ask too many questions; this was a marked distinction from government health facilities. In Solwezi, FSWs reported that a particular NGO provided them with transport to the health facility and collected their drugs on their behalf. FSWs received faster services at private clinics because they paid for services.

The ones who were good were the [NGO] because once you go there they would test you for everything instead of what you have gone there for. Starting with HIV, you will be tested for STIs. (FSW FGD1, age 18-36, Chipata)

Although the majority of FSWs felt comfortable accessing services at NGOs, a few FSWs in Lusaka did not feel comfortable accessing services at some locations where they felt the organizations tried to get them to stop selling sex.

And they want to reform (FSWs) ... it's not everyone who wants to reform ... if I will reform today whose going to pay my school fees...whose going to take care of my parents ... I don't want to reform. (FSW KII, age 20, Lusaka)

Treatment availability and effectiveness

The availability of services in public health clinics was mixed. Some FSWs reported the unavailability of certain services in government health facilities such as the CD4 count machines, consistent supply of drugs and inadequate staff hindered access to health care. Understaffing and high demand for HIV services led to many being not receiving the required care and on time. FSWs complained of being given a prescription instead of drugs and at times, they reportedly received expired drugs. As an alternative, they sought care at traditional healers, especially for STI treatment. Treatment effectiveness, however, varied by study site and type of health care provider. In Livingstone and Lusaka, FSWs perceived treatment to be effective at government health facilities while FSWs in Kapiri-Mposhi and Mansa reported treatment for STIs from traditional healers was effective. In Kitwe and Chipata, FSWs reported treatment from public clinics was more effective than from traditional healers.

Thought sometimes you may find that mostly the hospitals, they run out of medicine but they will write the prescription that you go and buy some medicine yourself. You can find that may be someone doesn't have not even a coin...no means of...no means of... (FSW KII, age 24, Mongu)

There are some who do go for traditional medicines. Traditional medicines do not heal completely. You will feel better now but later on, you will discover that you will start feeling bad again. So a lot of people mix traditional medicine with conventional medicines. (FSW KII, age 47, Chipata)

In contrast, other FSWs reported that HIV and STI services were readily available and free of charge in public clinics and NGO-run health facilities while at private facilities, services were expensive as payment was required for everything. However, fast services were reported at private clinics, chemists and traditional healers as there were no queues.

No I just wanted to say what respondent 3 has said... mostly the (NGO) help us in most of the things... because you can go to the hospital (public hospital) and you find that there is no medicine... but when you go to (NGO) you find that the medicine is there... so that's we like it there... (FSW FGD1, age 21-43, Kapiri Mposhi)

Despite the availability of health care services, FSWs in Ndola and Kapiri Mposhi reported lacking knowledge and existence of HIV related services, especially those offered at NGOs in their area. This could be attributed to non-existence of or lack of knowledge of NGO service providers. Others reported lacking accurate knowledge on HIV transmission.

Confidentiality and privacy

Confidentiality and privacy was one of the main factors that influenced access to care. In government health facilities, FSWs reported lack of confidentiality; they perceived that the larger community knew their sexual behavior, thereby exposing their identities. In Kapiri-Mposhi specifically, FSWs complained that centrally located public sector ART clinics lacked privacy and exposed them. As a result, they travelled to other districts or clinics outside their residence to seek services where they could not be recognized.

Because Mansa is too small and in Mansa you know the same people. The same ones you will find at the hospital are the ones you will find in the clubs and you will find that they have friends so just that talking and laughing. (FSW KII, age 22, Mansa)

... they [providers at public facilities]shout ... that is a prostitute ... she is suffering from diseases. (FSW KII, age 31, Lusaka)

On the other hand, FSWs reported receiving confidential care at private facilities and traditional healers because they paid for these providers' services. They also noted privacy and confidentiality at NGO-run health facilities.

With the problems, the ones we know here in Kapiri is [NGO name]. That is where we usually start with, yes, with [NGO] when you go, you will reach there and there, it is confidential, right. (FSW KII, age 31, Kapiri Mposhi)

Misrepresentation of self and ill-health

Some FSWs sought health care in public facilities but did not reveal their sexual practices nor the actual illness to clinical staff. This was prominent in Ndola transcripts where they omitted or gave false information about their symptoms when speaking with providers. This omission allowed them to access care but served as a barrier to receiving the correct type of care. It is also important to note that partner notification requirement which encouraged the patient to bring one's partner for treatment when seeking care for STIs hindered access to care. In response, FSWs in Kitwe often reported to clinical staff that their partners were deceased, they were no longer with their partners, or went to another facility and changed the reason why they were seeking care.

Sometimes you do feel uncomfortable, with the people that you have found there. Maybe you would find that the doctor you find there is your Stoup man [meaning a sexual partner]. You will fail to explain because you will be shy. So you just say something and yet you are sick. (FSW FGD1, age 26-37, Ndola)

Needs expressed by female sex workers

To facilitate the accessing of services and the disclosing of behaviors, FSWs across all study sites expressed the need for education and sensitization, and service access points.

Education and sensitization

FSWs expressed the need to educate and sensitize FSWs on health related issues such as protective measures for HIV and STIs, male circumcision, condom use and family planning. This education would help them avoid unwanted pregnancies, reduce risk of HIV/STIs, and take care of themselves in general. They also recommended training service providers to understand the needs of FSWs and how to provide patient-centered care.

Okay, the services like family planning and the condoms I think... And also there are those these days that say men who have their fore skin cut don't have AIDS and don't use condoms, so please you should educate the prostitutes, even men. (FSW FGD1, age 27-42, Livingstone)

Service Access Points

FSWs acknowledged that there were many access points for HIV and STIs testing and treatment. However, they reported that health services access points beyond HIV and STIs were lacking. Specifically, they expressed needing cervical cancer screening,

mobile health services, the further decentralization of ART distribution, and places where they can receive free condoms (e.g. public places such as bars, lodges, taxis). Addressing the latter need would curb the issue of shyness when purchasing condoms.

...this is what I have said like uh, for Livingstone we are asking to... contribute condoms in different lodges like there are lodges where, where you can find sex workers if uh, what've already mentioned late. If you go to this side., there are certain lodges there. There are sex workers so we need, we need a, a hospital or a government to help us like protection condoms. (FSW KII, age 29, Livingstone)

CLIENTS OF SEX WORKERS

A total number of 60 key informant interviews (KIIs) with clients of sex workers (SWCs) were conducted in nine districts in Zambia: Lusaka, Livingstone, Kapiri Mposhi, Kitwe, Ndola, Solwezi, Mansa, Chipata and Mongu. The mean age of the participants was 33.5 years (age range: 23-50). Approximately 40 percent were in a relationship, 38 percent were married/living with a partner, and 22 percent were single. The majority completed secondary or post-secondary school (75 percent) and were employed (88 percent) in either the formal or business sectors. Table 4 in Appendix A presents the socio-demographic characteristics of SWCs by site.

Context of buying Sex

SWCs across study settings were knowledgeable about risk behaviors associated with HIV/STIs. They also described an environment where condoms are widely available and accessible, which facilitated protective behaviors. On the other hand, lubricants were not available, which created situations for easier transmission of HIV.

Correct knowledge

A large proportion of SWCs interviewed were knowledgeable about HIV/STIs and associated risk behaviors. SWCs explained that the correct and consistent use of condoms was one of the primary ways to avoid contracting and spreading of diseases. They also noted that having multiple sexual partners increases one's risk of HIV/STIs. Some SWCs also mentioned that regular STI/HIV screening is important in order to know one's status.

Yes, coz these people they involve themselves with a lot of other clients. You might not really know the status of the other person and at all you don't know the person of the sex worker- the status of the sex worker. So in as much as condomising might not be hundred percent safe but at least provide some level of risk protection. (SWC KII, age 23, Kitwe)

Condom availability

SWCs agreed that condoms are widely available and accessible; condoms can be found in clinics, bars, lodges and stores. There were also places where they could access condoms for free. Condoms were the primary method used for protection against HIV/STIs as most felt that abstinence was not a viable choice.

It's very easy. Condoms you can even access them... each bar when you start Kitwe to Kitwe any bar you go to you will find the condoms in the toilets, counter just for free. (SWC KII, age 23, Kitwe)

Lubricant availability

Unlike condoms, SWCs had little or no knowledge about lubricants, including where to access them. Those who knew about them stated that lubricants are expensive and they cannot afford to buy them. They, instead, used different products as lubricant, such as lotion, gel and Vaseline. Some SWCs also noted that FSWs commonly use a variety of substances to make their vagina dry because they believed men enjoy dry sex. Moreover, if paying for a short time with a sex worker, they could not wait for the FSW to become aroused, producing natural lubrication.

Interviewer: okay. How about this lubricant? Is it also easily found?

Participant: no it's not...I don't think many people use it too much...it is not common. (SWC KII, age 27, Solwezi)

No...because the problem they have is that even the old ones want to be tasting like they are virgins so you will find that they will be using a lot of things. You will find that they will smoke "Snuff" which finishes the water in the vagina...but you find that if you are going to have dry sex on that woman who is not wet properly that's when you find she hurts you during friction or you hurt yourself because you became brutal. (SWC KII, age 36, Ndola)

HIV Risk and Protective Behaviors

Although SWCs were knowledgeable about HIV/STIs and condoms were widely available, SWCs described a number of factors that served as barriers and facilitators to condom use. Barriers to condom use included intoxication, the level of trust of a partner, and excuses made by both SWCs and FSWs. Facilitators to condom use included cost of sexual acts and personal preferences/responsibility on the part of both SWCs and FSWs.

Reasons for not using condoms

Intoxication

Alcohol intoxication was the most frequently described factor associated with engagement in high-risk sex by SWCs. SWCs explained that they were more likely to approach and have sex with sex workers because alcohol removed their shyness and guilt surrounding sexual intercourse with sex workers as well as any fears associated with contracting HIV/STIs. While under the influence of alcohol, they often forgot to use condoms or incorrectly put on condoms. A few SWCs in Ndola acknowledged that there is need to reduce alcohol intake in order to protect themselves from making risky decisions.

but when you start drinking... you'll find the heart now it starts beating... because of that one the one you are looking at that one, you'll find that alcohol now, will remove the shyness. Now you start talking with her. You'll even find the woman... also has removed the shyness... she even does her thigh... she does like so... (moves one thigh away from the other). It helps that alcohol... to do sex. (SWC KII, age 42, Lusaka)

sometimes its beer...you know...you don't even realize it...you might have a condom in your hand...you come and realize in the morning when you wake up having the same condom in your hand but you had sex with her...so sometimes because you are drunk...you might have thought of... using a condom...but you were so drunk when you got her...you just reach home...you have a condom in your hand and she is also drunk...you just found yourself you had an unprotected sex when you wake up in the morning. (SWC KII, age 25, Ndola)

SWCs reported that sometimes condoms break during intercourse, especially during vigorous sexual activity. Most times, this is attributable to incorrect use of the condom, especially when under the influence of alcohol.

many people... like okay on my side... what happened to me... I got drunk... I put on a condom... I slept with a woman... in my heart I said... take out another one... and add on... I took out and put another one on top. (SWC KII, age 29, Lusaka)

Excuse for non-condom use on the part of SWCs

SWCs provided a number of reasons for not using condoms, ranging from loss of sexual enjoyment to shyness when purchasing condoms. Some SWCs explained that they did not use condoms because condoms reduced sensation and irritated them; they cannot enjoy sex as a result. The reduced sensation further delays ejaculation which directly influences how much they pay sex workers. If they paid for a short time for sex and they take too long, sex workers either make them stop or make them pay more than the previously agreed upon price. As such, they decide against using condoms. Lack of planning was also a barrier to condom use. For example, if a SWC pays for a whole night with a sex worker, he might have carried condoms but not enough to last the entire night. SWCs in Solwezi and Ndola stated they felt shy buying condoms, especially if they were sold by women. Further, they explained that people judged you negatively when they see you buying condoms.

when you put that thing on...it makes you delay to release (ejaculate) like that...because there is nothing you are doing so you remove it and throw it that side...it is wasting time. (SWC KII, age 40, Kapiri Mposhi)

you know like...uh...priority number one when I want this woman is sex... so condom or no condom what matters most is having sex with them...but of course it will not feel good especially me basically you know you feel comfortable...you don't enjoy the sex... it's not nice when you are using a condom. (SWC KII, age 25, Ndola)

Excuse for non-condom use on the part of FSWs

SWCs explained that they did not use condoms because some sex workers refuse to use condoms. Some FSWs accused them of being HIV positive or feel insulted when they want to use condoms, which leads to unprotected sex. Additionally, some FSWs complained that condoms make them sick or irritates them resulting in ‘condom-less’ sex.

other women [referring to FSW] say... they refuse saying... they say that “the condom is not good” others say it makes my stomach to start burting.” (SWC KII, age 35, Kitwe)

There are some women who also say that they don’t want a condom and that it gives them stomach upsets. (SWC KII, age 36, Mansa)

Trust of partner

SWCs explained that the decision to use condoms depended on whether they trusted the FSW. SWCs did not use condoms with regular or trusted FSWs; they only used condoms with FSWs they did not know very well. Some SWCs felt that they could discern from experience which FSWs required the use of condoms. The physical appearance of the FSW – attractiveness, healthy-looking, complexion, and body temperature – was the criteria used to determine whether or not condoms should be used. Some FSWs removed the condom during sex to prove that they are not HIV positive.

Yes or if at all they are confident that this particular sex worker is okay, then they will go for unprotected sex. (CSW KII, age 51, Chipata)

Using condoms is alright... Because I know the reason... the reason is for you not to get infected by STIs or even HIV... but however it is not only that... I’ve been perfect all along the way... but sometimes...where I’ve come to a situation where I feel this lady is looking very good... and I need her... then in that situation... I’m not going to use a condom... there’ll be no need. (CSW KII, age 45, Lusaka)

Condom Use

Personal responsibility/preference on part of SWC

Some SWCs acknowledged the risk of HIV/STIs and took precautions against infection. They reported always using condoms with female sex workers. They always carried condoms with them and ensured they had condoms in their homes in order to easily access them when needed.

Personally as a client...I do move with condoms...especially when am putting on a jacket or a coat because I... because of... me not wanting to get sick or should I say am more careful even if I sleep with these people...am careful about my health...I can’t put them in the wallet ‘cause I always put my wallet in the back pocket so when I sit on them I feel they can actually... so I put them (pause) its either in the front pocket or jacket or coat... (SWC KII, age 33, Livingstone)

Personal responsibility/preference on part of FSW

Some SWCs noted that condom use was facilitated by FSWs. Some FSWs did not negotiate nor waiver when it came to condoms use. Some FSWs always asked clients if they had condoms before having sex and some carried condoms in their bags and insisted on condom use.

They can never move without a condom. That’s a story to tell or before you go with her she will carry a condom to find ways and means where to get that. (SWC KII, age 32, Solwezi)

They feel okay because they are scared of these diseases and so they keep themselves protected and that is why sometimes they move around with small bags. They are the ones who will give you the condom instead of you buying that they will tell you that they have the male condoms. (SWC KII, age 32, Chipata)

Cost

SWCs explained that there is a large price difference among FSWs for sex with condoms and sex without condoms; sex with condoms was much cheaper than sex without condoms. Thus, the lower price for sex with a condom facilitated condom use. For instance, in Livingstone, sex with a condom cost at most K200 while sex without a condom can be as high as K500.

Health Service Utilization

Factors serving as barriers accessing health care and disclosing sexual practices

Stigmatization and discrimination

Stigma and discrimination, perceived and experienced, at public facilities was the only barrier to health care service use identified by SWCs across all sites. SWCs stated they feared going to public facilities because they are judged, laughed at and looked down upon by health care providers. These reactions have caused them to be shy and they will not discuss their sexual behaviors with providers. They also mentioned that once community members see a person at certain public facilities, they conclude he is HIV positive and start to gossip, point fingers and laugh at them.

...do feel shy...Yes. Things like if people in my neighborhood find me...they start laughing at me. Mm...hmmm they'll start laughing saying I am infected. (SWC KII, age 32, Kitwe)

Factors that served both as facilitators and barriers to accessing health care and disclosing sexual practices

SWCs reported a number of factors that served as both facilitators and barriers to accessing health services and disclosing their sexual behaviors. These factors included privacy and confidentiality, clinical environment, and treatment effectiveness. Whether a factor acted as a barrier or facilitator depended on the type of health facility the individual visited.

Privacy and confidentiality

SWCs discussed confidentiality and privacy as facilitators of accessing services and disclosing their sexual behaviors at private health facilities and NGO-run clinics. SWCs sought care at private clinic without feeling embarrassed they would see people they knew, which emerged as a concern when testing for HIV and receiving other types of HIV/STI services at government health facilities. Some SWCs attributed good services at private facilities to having paid for services.

most of all...what really...anyway I have a problem to deal with my private life...what I consider most is my...my privacy...so that's why...aaa...earlier on I mentioned to say that most of the time I do go to private clinics because of the privacy that you will be accorded (SWC KII, age 25, Ndola)

On the other hand, SWCs reported that privacy and confidentiality was lacking at government health facilities. They described a clinical environment where ART clients were segregated and due to the facilities being centrally located, their identities were exposed because people can easily see them retrieve ARVs and would gossip about them. They also stated that the staff at public facilities were individuals who lived in the same area as them and therefore, fear that services received cannot be kept confidential. They felt embarrassed seeking services from these individuals.

So people don't really feel comfortable you know telling...much as they doctor patient confidentiality agreement. Still people are not comfortable with the idea of telling the government or public clinic their business or how they got the particular disease. (SWC KII, age 23, Kitwe)

So when you go there in those places maybe they respect you in the area and then they find you there and somehow maybe the one attending to you goes to church with your wife so you see that you start thinking that maybe this story will reach the church. (SWC KII, age 36, Mansa)

Clinical environment

SWCs in all sites except Solwezi reported receiving high quality and patient-centered care at private health facilities and at NGO-run clinics. SWCs in Solwezi did not discuss accessing services from NGO-run clinics or private health facilities. SWCs preferred private clinics because the clinical staff were welcoming, friendly, non-judgmental, showed genuine concern for their health, and kept all aspects of their visit confidential. Some remarked that they can contact private providers anytime of the day and receive service. For these reasons, SWCs felt comfortable and free disclosing their sexual behaviors to private providers. Despite the high cost for services at private providers, the quality and timeliness of care acted as facilitators to seeking care at private providers when they have the money.

Similarly, SWCs preferred to and felt comfortable seeking services at NGO-run clinics because the clinical staff helped, encouraged and educated them. They also mentioned receiving a large quantity of medications from these clinics and that the clinical staff did not ask too many personal questions. A few SWCs also appreciated that the staff of NGOs collected medications from the government health facilities on their behalf.

Me... personally yes I have actually been [to NGO name]...I think most of fellow clients...we actually have been there like about four times...me personally am comfortable with [NGO name] (SWC KII, age 33, Livingstone)

In contrast to private facilities and NGOs, SWCs in all study sites felt uncomfortable seeking care at government health facilities and described the clinical environment of these facilities as unwelcoming. They described long queues and waiting times and slow provision of care as barriers to seeking care at public facilities. They specifically highlighted the slow dispensing of ARVs and long waits for CD4 count results as hindrances to accessing services. They also noted that the staff, especially nurses, had negative attitudes and yelled at clients. SWCs felt that they were forced to disclose their behaviors and participate in HIV screening by government health facilities staff. The requirement to disclose their sexual behavior made them feel uncomfortable, feared being judged, and feared arrest as sex work is illegal. A few SWCs noted their disclosure was dependent on the provider seen at public facilities as some providers were welcoming and non-judgmental. Additionally, though services are supposed to be free at these facilities, patients can pay facility staff to receive faster services and to receive necessary medications, such as ARVs. If a patient did not have money, they had to wait significantly longer for service or not receive their medications.

...at the Hospital they're scared because when you go to the Hospital you have to queue in the line...so they would feel scared and embarrassed (SWC KII, age 30, Kitwe)

I think they [SWCs] feel comfortable going to private clinics because there you are not asked a lot of questions... you are not asked to go and look for your partner... or to come with your partner... you will be treated and you will be charged... Because I think they want money... they will not ask you a lot of questions... they won't even like say... "tamunfwa" (meaning you sleep around)... that is why you are even having this disease... yab... now if you go in those government hospitals... there is that you know.. they embarrass you... so a lot of people shun to go into clinics because immediately you present yourself with STIs they say "you don't listen"... something like that... you see? So to wait that kind of embarrassment... they end up to go to private. (SWC KII, age 41, Lusaka)

Perceived STI Treatment effectiveness

SWCs explained that treatment effectiveness motivated them to a particular type of health facility for services. All study sites, except Kitwe Chipata, and Kapiri Mposhi, stated that the treatment received at private facilities was more effective than at public facilities. Further, the faster service time at private facilities aided in their preference to seek service there. Some SWCs in Kitwe, Chipata, and Kapiri Mposhi did not differentiate private from public, noting that treatment, especially STI treatment, was as effective in public facilities as in private facilities and they had confidence in the care received at public facilities. In other instances, SWCs reported visiting different providers for STI treatment; they first started care at the public facility and later visited traditional healers to complete treatment. Some SWCs bypassed treatment at public facilities and sought care from traditional healers directly because they felt the treatment received from traditional healers was more effective. They explained that the treatment received from traditional healers healed the STIs quickly which cannot be said of conventional medicine from government health facilities.

Ab treatment... the things is with such sicknesses a lot of people refuse to go to the hospital saying when you go to the hospital there's not complete cure so most of the time they use traditional medicine. (SWC KII, age 50, Solwezi)

They [referring to SWCs] are told how to take care of themselves and their health [at public facilities]. It is not that they have died they are just positive and thus are taught how to protect themselves and living well. (SWC KII, age 47, Chipata)

Needs expressed by clients of sex workers

Service access points as well as education and sensitization of both providers and clients were the primary needs expressed by SWCs across all study sites that would facilitate accessing services and disclosing of behaviors to health care providers.

Education and sensitization

SWCs talked about the need to train health care staff about providing high quality and patient-centered care in order to reduce the stigmatization and discrimination they experience at public facilities. SWCs felt that with training, the services provided would improve and they would feel comfortable disclosing their sexual behaviors. In addition to training health care staff, some SWCs discussed the need for education and sensitization of men who sleep with sex workers about the risks associated with having unprotected sex, how they can protect themselves against HIV, and the importance of knowing their HIV status. One recommendation to increase sensitization offered by SWCs was the use of drama groups that travel around compounds in each community demonstrating risk and protective behaviors.

I think it should be just educating the healthy workers like...like educate them...the...the...where they should avoid like stigma to those people who are positive and the things...yah...and STIs. (SWC KII, age 24, Solwezi)

there are very few people who've been tested for HIV... and this is because... we lack a lot of information; people they don't even know... they know that HIV is there... they know how HIV is being contracted... but they have very little information. (SWC KII, age 42, Lusaka)

Service Access Points

SWCs mentioned the need for more health service access points because of the challenges associated with the existing services, such as long waiting times and the need to travel long distances for services. They, at times, did not seek care because they did not want to wait a long time in queues. SWCs believed more service access points would reduce long queues and thus, improve access to the services. They also mentioned that a computerized health system would also reduce long waiting times. Other than system level changes, SWCs discussed the need for more condoms and lubricants at various locations, such as bars, in toilets and even taxis.

... increase on the number of facilities that provide such services...to be honest with you...there are a number of people that frequent these clubs and there are a number that get these diseases but there are so limited places where to go to where they provide the service...so also increasing the number of places where they can access these services could also be of great help. (SWC KII, age 25, Ndola)

MEN WHO HAVE SEX WITH MEN

A total of 38 KIIs and 10 FGDs were conducted with 102 members of the MSM community in Lusaka, Livingstone, Solwezi, Kitwe, Ndola and Mansa. The majority (57 percent) of MSM was in a relationship but not living with their partners and 17 percent was married/living with a partner. A large proportion (79 percent) completed secondary school or higher. Occupations varied among MSM; MSM reported being self-employed (25 percent), working in the formal sector (17 percent), working as a sex worker (six percent) and being a student (30 percent). Approximately 22 percent of MSM were unemployed. See tables 4 and 5 in Appendix A for social demographic information for all study participants by site and type of interview.

Context of MSM Lives

Stigmatization and discrimination

MSM in all sites described their lived experience as one filled with stigma and discrimination, resulting in feeling marginalized in their communities. MSM reported experiencing unprovoked verbal harassment from people in their community, including being yelled at, called names, or mocked. Some MSM reported not being treated like human beings, feeling disconnected from the rest of society, and feeling inferior. MSM also expressed frustration over not being able to be open about their sexuality.

Once they expose themselves... they are being marginalized... then being secluded in the community like... they're not human beings. (MSM FGD, age 19-26, Lusaka)

Violence

MSM lived experience was also filled with physical violence. MSM reported having stones thrown at them and being beat-up in their communities. After such attacks, MSM explained they could not report incidences to the police for fear of being jailed or exposed to the rest of their community. As such, MSM lived daily fearing for their safety.

Like we really avoid going to places... Yes some common places like [name of place] I have got a friend there we once went there with my friend and it was an embarrassment, they wanted to, it was a mob, they wanted to beat us, but we ran home. (MSM FGD, age 18-45, Ndola)

HIV Risk and Protective Behaviors

Factors contributing to HIV risk behaviors

Three factors – drug and alcohol intoxication, financial influences and willful engagement in risk - emerged as contributing to HIV risk behaviors among MSM interviewed

Intoxication

MSM discussed that having sex while under the influence of drugs and/or alcohol gave a false sense of being immune to HIV infection and other STIs. Drugs and/or alcohol intoxication led to poor judgment regarding the use of protection. Moreover, MSM reported that sex is more pleasurable when intoxicated. In Ndola, Solwezi and Livingstone, MSM mentioned that certain sexual acts such as rimming (oral-anal contact in order to gain and/or give sexual pleasure) and anal sex are easier to engage in while intoxicated. In the case of male sex workers (MSWs), alcohol was a driving force in encounters as it gives a false sense of confidence for MSWs to approach clients and vice versa.

Because there sometimes whereby you can have fun but when ...you want to have it [sex] but first you go into a pub...you drink then after you get drunk you just do it [have sex]direct...without a condom. (MSM FGD2, age 19-28, Lusaka)

there are at times when you meet in a place where there are no condoms, and you too don't have, and then you love him... Sometimes I'm just too drunk...And if the time has come, you just go like that. (MSM FGD2, age 20-34, Kitwe)

Financial influences

MSM in Lusaka, Solwezi and Livingstone explained that some behaviors that put them at risk of contracting HIV/STIs are related to monetary factors. Sex work, for instance, is an opportunity to make a living for a financially disadvantaged individual. MSWs preferred to engage in riskier sex acts as they bring in more money compared to safer sex acts. A few MSM noted that the high cost of lubricants and preferred condoms also serve as a barrier to using these products during sex.

It is very risky because sometimes there will be a person who will say for me I don't want sex with a condom, I just want it live [no protection] then I will top up this much money... Because all he [MSW] cares about is the money... There are some [MSW] who just move around and all they think of is money just like that, those are also big risks. (MSM KII, age 27, Solwezi)

Conscious risk taking

MSM discussed occasions when they deliberately made choices to not use protection. Some MSM mentioned carelessness as a driving force in not using protection. They attributed this attitude to the wider MSM community, which they perceive as promiscuous, having multiple sex partners, sometimes concurrent, and being unfaithful. Some MSM mentioned wanting the satisfaction of skin-on-skin sex because sex with a condom was not satisfying. Other MSM refused to use protection because they are circumcised and therefore feel that they are now immune to HIV infection. Also, common were unplanned sexual encounters and therefore, protection was unavailable, leading to dry sex without a condom.

if we talk of a man to man having sex it is rare that you find them using a condom... If you talk of ub, anal sex mostly... no they don't use condoms. They only ub, lubricate from there... even the lubricants we don't use them. (MSM FGD2, age 30-31, Solwezi)

Interviewer: Yab... okay. You talked about... some men who might not want to use a condom simply because they're already sick... are there any other reasons why men... some men prefer not to use condoms?

Participant: some people... from my own knowledge... some people... would think probably because they got circumcised. They might not get any disease... which is wrong because that's wrong information... yab. (MSM KII, age 28, Livingstone)

Factors contributing to HIV risk and protective behaviors

Four factors – availability and accessibility of condoms and lubricants, fear, relationship type and trust, and lack of knowledge and misconceptions, emerged as contributing to both HIV risk and protective behaviors.

Availability & Accessibility of condoms & lubricants

MSM in all sites mentioned that lubricants are not as readily available as condoms, and where they are available, they are usually inaccessible to MSM. In Solwezi, Kitwe and Ndola, MSM reported that drug store attendants inquire on the intended use of lubricants from the buyer before agreeing to sell it to them. This inquiry leads to fear of exposure and arrest since same sex sexual activity is illegal in Zambia. As a result, MSM boycotted trying to access lubricants and turned to household do it yourself (DIY) lubes (e.g. saliva, cooking oil, Vaseline, soap, petroleum jelly, lotion, margarine, and glycerin) or have dry sex.

It's not easy [to find lubricants] because I think ninety percent of us just use oil, like baby oil, jelly, Vaseline. (MSM FGD2, age 20-23, Ndola)

lube is also difficult to find even the ones that work at the Clinic when you tell them that you want lube they will ask you that "what is it for?" (MSM FGD1, aged 19-22, Kitwe)

On the other hand, MSM in all sites mentioned that condoms are readily available and accessible. In most cases, they are available free of charge at clinics which encourages use and thus, protection from HIV/STIs.

It's very easy to access condoms. Yeab. They are selling and there're also those that they... give for free. In bars and in make shift shops and also groceries. (MSM KII, age 28, Solwezi)

Fear of contracting HIV/STIs

MSM in all sites mentioned the fear of contracting HIV/STIs as a reason why they use protection during sex as well as the reason for avoiding multiple sexual partners.

Getting HIV AIDS... that is the number one risk ... That is the one we are scared of that is why we use condoms. (MSM KII, age 27, Solwezi)

In Livingstone, MSM talked about fear of exposure due to not meeting societal expectations of being married and fathering children. Therefore, they engage in a double life where they have multiple (both male and female) sex partners putting themselves at high risk of contracting and spreading HIV/STIs. As previously mentioned, the fear of exposure when accessing lubricants prevents their use.

Let me give you an example of me. Like aab, I do have some female partners, I get to have sex with girls once in a while and those girls are just a beard, or a cover up, a charade, to the public so that people don't get to think that this is what I do. So, it's done just because of the pressure from society because that's what you are expected to do. So, yab. These are the relationships that as an MSM you get to have on the side just for your families sake, your family sake... for works sake because people get to ask you questions like why? is anything wrong with you? (MSM KII, age 21, Livingstone)

Relationship type and trust

MSM in all sites noted that the level of trust between sexual partners determined whether condoms are used. When MSM did not know the sex partner well, they always used protection. Yet, some MSM made a decision on whether to use condoms based on the partner's appearance; if the partner is good looking, they would not use condoms. In a relationship setting, however, protection is not used. In fact, at times unprotected sex will be practiced as proof of trust and love between partners. Some MSM reported not using protection once both partners test HIV negative.

it just happens with some like if you trust him you can't use condoms ... like if you know that person very well, not a person you don't know. Because the person you don't know well is the same as a prostitute so you can use a condom, now if it is a person who you know well, you have been with them for long, you can't use a condom because you know them. (MSM KII, age 27 Solwezi)

mostly in short relationship you have to use a condom... Because you don't know you can't know that person. (MSM KII age 31, Livingstone)

Power dynamics in relationships also played a role in decision to use condoms. In the context of sex work, the client offering a lot of money can persuade the MSW to not use protection. Similarly, the dominant partner (normally the top or insertive partner) in the relationship can pressure the bottom or receptive partner into having unprotected sex.

Ok I talked of in the situation whereby someone is looking for money... from the other partner... And then the other partner decides since he is paying he would not use the condom... so instead he does it direct. So in that situation we don't know ... there could be that transmission of HIV... or the STIs ... and then when you don't use the condom you are not protected. (MSM, KII age 37, Ndola)

Lack of knowledge & misconceptions

In Lusaka, Kitwe, Solwezi and Livingstone, MSM mentioned that they placed themselves at risk for contracting HIV due to lack of knowledge on facts about HIV/STI transmission and prevention. They explained that some MSM believe HIV originates in women and therefore, they are immune to HIV infection if they only have sex with men.

...they [MSM] haven't been educated ...because they just think like you can only contract AIDS from a woman and from a man to a woman... so they thought like man to man it's not something you can...you can contract AIDS from... because there was less sensitization over this... but from what they've explained like they use live sex... and then that's why there's the high contraction of AIDS.(MSM FGD1, age 19-26, Lusaka)

Interviewer: Do you think that men who sleep with men are at a higher risk of contracting HIV than those that we call as straight?

Respondent: Yes there is a difference, those people who sleep with women. Yes it is easy for them to get HIV. (MSM KII, age 20, Mansa)

Some MSM did not know of the existence of lubricants besides do it yourself (DIY) ones. Therefore, they engage in dry sex or use DIY lubes, which have a higher likelihood of rupturing condoms. Similarly, some MSM lacked knowledge about the role condoms play in preventing STIs and therefore, consider condom use a waste of time. Still others perceived that certain sex acts were safe from contracting STIs, such as rimming (using one's tongue on the anal rim of another person in order to gain and/or give sexual pleasure) and oral sex.

On the other hand, some MSM reported applying their knowledge about HIV/STI transmission and protection by being consistently prepared for an unplanned sexual encounter by carrying condoms and always engaging in safe sex. Additionally, certain misconceptions played a role in using protection. For example, MSM in all sites mentioned that they use protection because unprotected sex results in sperm collecting in the receptive partner's stomach, where it remains and if not cleansed out will lead to the rotting of the stomach or cancer.

... I use a condom always with someone I don't know... and it's very rare for me to have many partners cause AIDS is real... I'm scared. (MSM KII, age 28, Lusaka)

let say you are not using condom... and then he comes into you... His semen remains in your stomach... It can be a problem... Different problems, you can't know. It's in the stomach. Or maybe you just develop stomach pains, like that. So it's good to use a condom, when you are having sex. (MSM KII, age 20, Ndola)

Health Service Utilization

Factors serving as barriers to accessing health care and disclosing sexual practices or orientation

Two major factors emerged as barriers to accessing health care services and disclosing of MSM behaviors and sexual orientation to health care providers among MSM. These factors included stigmatization and discrimination and fear of prosecution. The factors were all interconnected and were more relevant to government health facilities.

Stigmatization and discrimination

MSM in all sites mentioned experiencing a range of discriminatory actions in health care facilities that when coupled with their aforementioned community environment hinder access to health care. MSM outlined fears of being judged, looked down upon, laughed at and humiliated as reasons for not disclosing their sexual orientation and not accessing services at government health facilities. MSM also reported being denied service if their service needs were specific to being MSM. Apart from fear, the existence of stigma in government health facilities led to shyness on the part of MSM; being shy to discuss symptoms, especially specific areas where an infection is found (i.e. the anal area).

they wouldn't go to the government institutions because of the stigma... You don't want people knowing that you sleep with men. (MSM KII, age 26, Solwezi)

...they [referring to providers in government clinics] will announce to everyone... all those in the clinic will know that you are gay... and nurses or doctors will come to you... and say maybe let me attend to this one... they will isolate you... then you find that others are dying due to discrimination... (MSM FGD1, age 19-26, Lusaka)

Fear of prosecution due to behavior

MSM were well aware that their sexual practices are currently illegal in Zambia. They outlined fears of being reported to authorities and arrested if they disclosed their sexual orientation and accessed services at government health services. These fears did not exist when accessing health services at private providers; MSM reported willingness to disclose to private providers.

They fear, maybe if I go to the clinic how may I go and explain to the doctors, they think like "how am I going to explain this? moreover this is not even allowed in our country, how am I even going to access the what's this, maybe after everything I might be taken to the police", because of fear that's why they can't even go there. (MSM FGD 1, age 18-45, Ndola)

Factors serving as facilitators to accessing health care and disclosing sexual practices or orientation

Responsibility to protect self and others was the only factor that served as a facilitator to accessing health care for MSM and disclosing sexual orientation and behaviors to health service providers.

Responsibility to protect self and other

Some MSM were aware of their risk for HIV/STI and acknowledged their individual role in the prevention of the spread of HIV/STI. MSM noted that the desire to protect themselves and others from HIV/STI was a motivating factor for regularly accessing health services. This theme was present in Lusaka, Kitwe and Ndola but was not mentioned in Solwezi and Livingstone.

you can protect yourself, you have to take your partner to a HIV testing so that you know he's status, even yourself... first checking your status ... And not having too much sexual partners. (MSM FGD2, age 20-34, Kitwe)

Factors serving as both barriers and facilitators to accessing health care and disclosing sexual practices or orientation

Four factors serve as both barriers and facilitators to disclosure and health care access. These included confidentiality and privacy, misrepresentation of self, treatment availability and effectiveness, and clinical environment.

Confidentiality & privacy

The lack of patient-doctor confidentiality was the biggest barrier to disclosure and accessing services at government health facilities, where 'the secret is not kept.' MSM reported that in most instances the public can gain access to information that is supposed to be personal and confidential because government facility staff leak information. In Ndola, Kitwe and Solwezi, MSM reported feeling forced to seek health services in neighboring towns to ensure privacy.

I would not be comfortable am scared of the embarrassment, embarrassment it's like when you go to the hospital... they will write the diseases that you have... last time... there was my friend who was my neighbor... my neighbor had the guts to go check in the... in that same file to check what am suffering from and took the news to the compound so that me I could be embarrassed. (MSM FGD1, age 21-32, Kitwe)

In contrast, MSM in all sites reported that they felt safe, free and are afforded secrecy in private facilities including traditional health facilities. This level of security was guaranteed as they paid for services. Moreover, the security and privacy afforded at private health facilities facilitated accessing services as well as disclosure of sexual behaviors and orientation. However, the high cost of services and treatment served as a barrier to accessing services at private health facilities and at times, negatively influenced continuity of care and treatment. Nonetheless, if they can afford it, MSM overwhelmingly preferred to seek treatment at private health facilities.

Counselors that are there [referring to private facilities]...as counselors I think they maintain the total privacy of a person... They do not disclose. (MSM KII, age 28, Livingstone)

Well for some may be ignorant and for some they may not want to publish everything whereby you go and start telling someone "you know I sleep with men," "I'm going through this problem" and what not. So you find that... if that person has got money they can go privately and get treated but if they don't (have money) they're at a very very bad side. (MSM KII, age 40, Lusaka)

Misrepresentation of self

MSM in Lusaka, Kitwe, Ndola and Solwezi mentioned omitting information about symptoms they have (e.g. infection in the anus) and giving false information about their sexual behaviors and orientation (e.g. lying that one contracted an STI from a woman rather than a man) when accessing services at government health facilities. They felt that this was a necessary course of action in order to be able to access services at public facilities and protect themselves from stigma, discrimination, arrest and legal prosecution given their behaviors are illegal in Zambia. They, however, acknowledged that the act of omission and provision of false information may lead to the reception of inadequate, inappropriate and ineffective treatment.

Because they [ask], 'you have come for testing?', yes, 'what is it, you are being naughty?'... you will be like yes, but we are really being

naughty, 'how many do you have?', I just make up these fake stories of having girlfriends and such...but it's the opposite. (MSM KII, age 21, Kitwe)

this has brought about a very complicated disease...he's failing to explain what he's feeling... what is paining... you find that they'll just explain something else... maybe then when they drink that medicine... maybe it won't even heal... it will just lessen the pain... (MSM FGD1, age 19-26, Lusaka)

Treatment availability and effectiveness

MSM in Kitwe, Ndola and Solwezi reported that the treatment received at traditional doctors and some private facilities was effective, further facilitating accessing of services and disclosure of sexual behaviors and orientation to private providers. In contrast, MSM in Ndola and Livingstone reported that there is a lack of or insufficient medication and some of the available drugs are ineffective at government health facilities, resulting in a boycott of western medicine. Some MSMs across all study sites reported receiving good quality care at certain public facilities where they are known by the service provider and at other facilities as long as they do not identify as MSM.

at the hospitals uhm, medicine is not usually found, you see, maybe there will be no medicine in the hospitals for syphilis so it is very difficult... so now that is what causes to go the African doctors. (MSM FGD1, age 21 -29, Solwezi)

Clinical environment

In Lusaka, Ndola, Kitwe and Livingstone, MSM described public facilities as consisting of unprofessional staff who unnecessarily pry into their sexual behaviors, refuse to provide them with treatment, impose their religious beliefs upon them, have a judgmental attitude and are unwelcoming towards MSM. This unwelcoming environment results in MSM not accessing services or disclosing their sexual orientation or behaviors to providers. MSM in Ndola and Kitwe also mentioned that although they do not feel free and comfortable accessing services or disclosing their sexual orientation at government health facilities, there were instances where they had no choice if they were to receive appropriate and necessary treatment (e.g. when illness is now 'painful').

I cannot tell them at all, because the last time I went for HIV test the first question that I was asked is "are you gay or Straight?" And I was like, do I look like someone who is gay?!..What they did to me I can't go there. But I shouted at them" (MSM FGD2, age 20-23, Ndola)

On the other hand, MSM in all sites described certain private health facilities as encouraging, non-judgmental and accepting of them, facilitating access to health services and disclosure of behaviors and orientation. Of these facilities, NGO clinics are reported as being the most comfortable environment for MSM as compared to traditional and private facilities.

you can go to a private hospital, it's safe there and you can tell them everything as it is safe there (MSM FGD1, age 18-45, Ndola)

Interviewer: Okay what might make it easier for MSM to use these services?

Respondent: I think private clinics would be okay. Yes, private clinics are better. (MSM KII, age 22, Mongu)

Needs that will facilitate seeking health care

Privacy, legalization of the behavior and equal rights, education and sensitization, and HIV/STI access points were the needs expressed by MSM across all sites that would facilitate the accessing of health services.

Privacy

MSM highlighted the need for anonymity, safety and privacy when accessing services at government health facilities. This would facilitate the accessing of services and alleviate the fear of exposure of their sexual orientation and behaviors.

what really matters it's security... they are scared that no when I tell this person ...I don't know how this person how confidential, how confidential he is... he might disclose... that no maybe he can just say that I'm coming then he just like goes out... "I'm having a gay in the office!" (MSM KII, age 20, Kitwe)

Legalization of behavior and equal rights

Implementation of non-discriminatory policies in government health facilities, providing equal rights to MSM, and legalizing their behavior were major needs expressed by MSM that would facilitate the accessing of health services and disclosure of behaviors and orientation.

What would be needed is to have equal rights... When the rights are equal, a homosexual... that is when there would be prolonging of life or people having the freedom. Now if we don't have that the nurse is going to tell me that no, with this and this, you will be arrested, no, with this and that it is twenty five years. It is what causes many that are sick not to go to the hospital. (MSM FGD1, age 21-29, Solwezi)

Education and sensitization

The need for sensitization and education of health personnel as well as the general public about homosexuality in order to increase their tolerance and acceptance of MSM were also major needs expressed by MSM that will encourage service access and disclosure. Additionally, MSM stated needing education on safe sex practices, HIV/STI risk behaviors and services that are available to them.

that's why they should be also more programs like teaching them about HIV and AIDS and other stuffs because maybe they might think that uh, since I'm not sleeping with a woman ... I can't have HIV and AIDS ...but they are forgetting that even ... the same intercourse that is there that really causes... (MSM KII, age 20, Kitwe)

I would say more workshops have to be there to encourage people like us. Yes because there are some people like us who don't know much. (MSM KII, age 20, Mansa)

HIV/STIs service access points

MSM reported that there is need for other places for care (e.g. satellite sites for HIV testing). The need for MSM-and male-friendly services was prevalent throughout all interviews. MSM stated that services should be geared towards them but not specifically labeled as MSM facilities. Furthermore, MSM reported a need for lubricants and condom distribution points as they were lacking.

you can open up a clinic for those people where they can find friendly nurses and doctors to talk to... be free and explain whatever they are going through and whatever they have so they can be treated" (MSM KII, age 28, Livingstone)

Actually there are no such services [for MSM]...health services at the moment... since this practice is illegal in this country. There is no health services that can come on board to support these people. (MSM FGD1, age 19-26, Lusaka)

PEOPLE WHO USE DRUGS

A total of 72 people who use drugs (PWUD), including people who inject drugs (PWID) participated in 28 KIIs and seven FGDs in Lusaka, Kitwe, Livingstone, and Ndola districts of Zambia. The mean age of the participants was 27.6 years (age range: 18-44) and the majority was either in a relationship (40 percent) or married/living with a partner (38.3 percent). A large proportion completed primary (40 percent) or secondary (35 percent) school. A majority was employed (65.2 percent) while 19 percent was unemployed and 15 percent reported being student. See tables 6 and 7 in Appendix A for sociodemographic characteristics for all participants by site and type of interview.

Context of Drug Use

PWUD across study sites described the context in which they engaged in drug use, including the different factors influencing their initiation and quitting of drug use, how they acquire and when they use drugs, and how they dispose of used needles.

Initiation to drug use

The majority of PWUD interviewed reported that friends, both close friends and individuals who they associated with in a group setting, such as at school, introduced them to drugs. Some PWUD started to use drugs to fit in with their social group or for the thrill.

I was influenced through a friend... and... I was... I started with cocaine...(PWUD KII, aged 27, Livingstone)

It started a long time ago. I think I was in grade 8 or something. A friend of mine brought it over and told me "if you take this you'll be able to focus more at school". We tried it, it was for fun at the beginning. This just went on, we tried experimenting with other things also... we tried... I remember there was a time we tried. Umm, some... some glue. We tried some Petrol eventually rolled over into other exotic things like first time I tried Cocaine. I think that was in grade 11. (PWUD KII, aged 33, Ndola)

Acquiring drugs

PWUD reported acquiring drugs from a number of sources. They primarily acquired drugs from the streets (i.e. drug dealers) and drug stores (i.e. pharmacies and chemists). Some reported buying from medical doctors who they bribed. In Kitwe, most PWUD interviewed reported acquiring drugs, such as attans (a psychiatric drug) from psychiatric patients who sell them cheaply; as low as K1.

there are those guys, those people who like ah, who just like to pretend as if they are mad...they go to the hospital and go and get, [then they start selling]...even just there at the hospital, if you talk to someone they can sell some to you, that's how it goes.(PWUD KII, aged 30, Kitwe)

Types and cost of drugs use

Table 9 in Appendix A presents the different types of drugs used by PWUD and the cost for each type of drug. PWUD reported using a variety of drugs to drink, smoke, sniff or inject. Commonly used drugs for smoking or sniffing included cocaine and marijuana. Heroin, cocaine and morphine were drugs used when injecting. Psychiatric (e.g. attan, ecstasy, valium), other prescription (e.g. codeine) and over the counter medications (e.g. Benylin cough syrup) were also commonly used by PWUD to get high.

Cocaine is used in so many ways like the one I know where you get it and put it on a spoon and burn it and then it comes into a liquid form then you get it and you inject...Yeab, you inject it as liquid when it is in liquid form. (PWID FGD2, age 22-32, Livingstone)

Crack you smoke it... Heroin you inject it... you smoke it... but you use Marijuana to smoke a rock...well... Umm... I would talk of Benylin and Codeine... it's in a syrup form... whereby you just kind of like... you drink it... (PWID FGD2, age 19-25, Kitwe)

The cost for drugs varied by the quantity of drugs purchased and the type of drugs. For example, a sniff of cocaine cost K50 while a small sachet cost K350. Drugs that are injected cost more than drugs that are smoked or sniffed. Drug quality also played a role in drug price with poorer quality costing less than higher quality drugs. Some PWUD reported that higher quality drugs came from South Africa and South America. Cash was the main form of payment when buying drugs. However, when they did not have money, some PWUD reported trading goods, including car parts (e.g. tires, rims), clothes, phones, food stuffs and laptops, for drugs. Women who used drugs exchanged sex for drugs when they did not have money.

The difference between injectable ones and pills is that they are cheap. Pills cost one kwacha, fifty ngwee and two kwacha. When we talk about injectable then we are talking about Cocaine and Heroin, those things are expensive. An injection of Cocaine at the moment can even cost fifty pin, Heroin can be twenty-five, if you know the person. Otherwise an injection of Cocaine even reaches hundred pin and fifty pin for Heroin if you are not known. (PWUD FGD1, age 25-34, Ndola)

Give me the drug I need to smoke I am broke I'll leave the phone and will pick it later It's done in many ways others come with cash...A lot of others hold on to my phone I'll pick it up later. Others buy with cash and they would go with their vehicles...Even clothes you can find that he has a nice shoe and says I'll pick it up later He just wants to go and smoke. (PWUD KII, age 44, Livingstone)

Frequency of drug use

The frequency of drug use across PWUD varied depending on addiction level as well as access to the drug and money. During the weekend (Friday, Saturday and Sunday) and during the festive season were popular times for PWUD to use drugs because drugs are usually available due to high demand. These were also times when PWUD were relaxed. On other days, drugs were cheaper because of low demand. Other PWUD mentioned daily drug use and others explained that when highly addicted, the frequency of drug use increased to three times a day or even every hour. In Livingstone, PWUD reported that drug use was dependent on the availability of money to purchase drugs.

Interviewer: ok. Now are there particular days for..days in a month that people are most likely to use drugs?

Participant: Yes...most especially weekends...like err Saturday...Friday, Saturday...and Sunday. (PWUD KII, aged 22, Livingstone)

There are others who are strong... when they take [referring to drugs] in the morning... then they will take again in the evening... maybe once in a day... some of us we are weak... so it's three times a day... so it depends with the way you are. (PWUD FGD1, age 28-39, Lusaka)

Obtaining and disposing needles

People who inject drugs (PWID) reported purchasing needles from chemists (pharmacies), private clinics, and from places where they purchased their drugs. They also reported paying hospital staff for needles or stealing from family members who work in hospitals. When they could not afford needles or did not have a needle, PWID used needles they found at the venue where they meet to inject and taking used needles from hospitals.

Mostly you just get [needles and syringes] from nurses or clinic officer... (PWID FGD2, age 19-25, Kitwe)

Mostly if you check like in the chemists around Livingstone, they do sell the syringes. Yes...mostly it's where they buy from. (PWID FGD1, age 22-23, Livingstone)

PWID reported that safe disposal of needles was a challenge. Needles were disposed at any place such as simply throwing it outside, in a ditch, or in the bin. Others did not know where they disposed needles as the needles would just disappear. In Lusaka, PWID reported that needles were burned.

They throw them away in a ditch...Then the owner of the [name place] when he sees they are too much in the ditch he will burn them...Because they are scared that if 'spacers' (D.E.C) find them they can arrest us...So they are not found in the [name place] by evening they burn them... (PWUD KII, age 26, Lusaka)

Quitting drugs

PWUD reported that quitting drug use was difficult because of their social networks and the health care environment. A number of PWUD failed to quit drugs because their social network consisted of other PWUD, who discouraged their desire to

quit. PWUD also wanted to stay connected to their friends and found it difficult to break away. Across all sites, attempts at quitting drugs proved futile due to the lack of rehabilitation centers available in Zambia.

I tried to stop for 6months...after getting back to the people that I used to hang out with... the environment... yes... I started taking drugs again... and then now it was hard for me to quit... (PWID FGD2, aged 19-25, Kitwe)

HIV Risk and Protective Behaviors

PWUD engaged in behaviors that placed them at risk for HIV and other STIs, including using unsterilized needles and sharing needles with others. PWUD also acknowledged that drug use influenced their sexual behaviors.

Needle sharing

Needle sharing amongst friends was among PWID across all study sites. In some instances, as much as 10 PWID used the same needle before disposing it. PWID described a number of reasons for the needle sharing. Lack of money was the primary reason for sharing needles. Needles were expensive and some PWID could not afford their own equipment; it was therefore cheaper to share needles. Trust was another reason for needle sharing; PWID reported that they only shared needles with friends who they knew well and trusted. Other times, impatience due to the need to get high and already being intoxicated resulted in needle sharing.

Participant 5: we've got no options... coz it's that kind of a situation where... you probably don't have any... you have one needle... and yet Participant 4: wants... so you've got no options but to use the same [needle]. (PWID FGD2, aged 19-25, Kitwe)

It depends on availability... whether you've got the needles or not... that will determine everything... but I mean now those people are scared of dying getting... contracting AIDS or something so some of them are a bit skeptical but there are careless guys around that would just go straight they wouldn't care whose been using the needle or who uses it after as long as they get high. (PWID KII, aged 33, Ndola)

PWID discussed not taking adequate steps to sterilize the equipment when exchanging needles and therefore, increasing their risk of HIV. PWID attempted to sterilize needles by rinsing them in methylated spirit (a mixture of ethyl alcohol and methyl alcohol), dipping them in hot water, or wiping the needle with a cloth before the next person used it. Though they trusted their friends, they recognized they were unaware of their friends' HIV status.

We can share the same injection here... After injecting that's when they would wash the front of the syringe... They use the same injection. Sometimes they can put a new one however you cannot always know because the needles look new... they would wash them with methylated spirit... sometimes they would not but just do like this with a white cloth. (PWUD KII, aged 32, Livingstone)

On the other hand, some PWID were adamant about not sharing needles under any circumstances given the risk of HIV and not knowing their friends' HIV status. Instead, they owned their own needles and used it repeatedly or just once. PWID in Kitwe reported that education levels and area of residence influenced needle sharing. In urban settings, needle sharing was rare as they could afford to buy new needles from chemists and pharmacies. More educated PWID were aware of the risks associated with sharing needles and were less likely to share needles.

No there is no exchange of needles, but there instances where a person uses the same needle a lot of times because of lack of money. But if you always have money, they dispose-off after injecting you with it. (PWUD FGD1, aged 25-34, Ndola)

Sexual behavior and reasons for not using condoms

PWUD primarily discussed sexual behaviors in the context of drug use. In general, PWUD reported that drug use increased their sexual desires; few reported that it inhibited sexual desires. Due to drug use, they often practiced unprotected sex. When they did use condoms, PWUD in Livingstone and Lusaka reported it was for protection from HIV. PWUD in Livingstone also noted that sex workers who they occasionally visited insisted on condom use.

ab...in my view...I can see as if they use condos because ladies differ...There are ladies you cannot know how she is...But you will want to ab...first let me use a condom...you will not want to get into her direct...you will want to wear a condom...(PWUD KII age 26, Lusaka)

Intoxication

PWUD reported the use of certain drugs, such as marijuana, cocaine and heroin, stimulated sexual behavior and they engaged in risky sexual behaviors when intoxicated, such as not using condoms. They often regretted these actions. A few PWUD mentioned that condoms made too much noise during sexual intercourse and therefore, they removed the condom during sex.

cause when they get high...what happens is that...a person will be careless...yah...they don't use condoms or what...yah they just do it...cause they are high...but when they are sober they still regret... (PWUD KII, aged 23, Kitwe)

Sexual violence

A number of PWUD reported that when under the influence of drugs, sexual violence against women was common. Some men took advantage of women who were high on drugs by having sexual intercourse with them; sometimes multiple men would have sex with one woman. At times, force was used in these encounters. Most times, the women do not recall what occurred. During these encounters, condoms were not used.

Participant 5: this guy met this girl... now...this girl smokes too much... so when he with this girl... he was saying that... that girl they agreed that... now... we were four... [laughs]...we all went into the girl... [laughs]...

Facilitator: when you say we all went into the girl... what do you mean?

Participant 3: they had a foursome...

Facilitator: you slept with her?

Facilitator: at that time was she high or not... Participant 5?

Participant 5: [laughs]...

Participant 4: was high... [laughs]...

Participant 4: [laughs]... no... me I was just normal... but I swear... there was nothing that I did... [laughs]

Facilitator: how was the girl... was she high or not?

Participant 4: extremely...

Facilitator: high

Participant 5: black out... [Cross talk]... power cut... (PWID FGD2, aged 19-25, Kitwe)

Exchanging sex for drugs

PWUD across study sites noted that women who use drugs were vulnerable to HIV/STIs. When women did not have money to pay for drugs, they exchanged their bodies through sexual intercourse to obtain drugs. In these situations, condoms were rarely used. A small portion of women in Livingstone reported that they did not exchange sex for drugs because they become violent when intoxicated and their sexual desires are suppressed.

okay, HIV and STIs, you, sometimes you become vulnerable, if you are a drug addict. You are much more vulnerable than some others who haven't taken drugs...like the lady drug users...are much much more vulnerable...yeah, because mostly some of them they won't have the money...so sometimes they would want to use their bodies to, to support their habit, unlike the men. (PWUD KII, aged 38, Kitwe)

A girl can go let's say to a drug dealer and say no I don't have money in fact let me just say a man who knows that, that one does drugs... P...she can go there and say don't you have the stuff whatever...then when that one says I have got but how are you doing it, give me the money and then it will be found that the girl has got no money... then that girl will say I'll exchange sex and dru...sex to drugs. (PWID FGD2, aged 22-32, Livingstone)

Health Care Utilization

Factors serving as barriers to accessing health care and disclosing drug use and/or sexual behaviors

Four factors emerged as barriers to accessing health care services and disclosing of drug use behaviors to health care providers among PWUD. These factors included fear of legal prosecution, perceived or experienced stigmatization and discrimination,

preference for home remedies, and personal desires to keep drug use a secret. The factors were often interconnected and were more relevant to government health facilities. There were few differences by study site.

Legal Prosecution

The fear of legal prosecution due to engaging in an illegal behavior was among the most frequently stated barrier to seeking care and disclosing behaviors to health care providers. This theme was specific to government health facilities located in all study sites. PWUD perceived that if they disclosed that they used drugs to health care providers, providers will report them to the Drug Enforcement Commission (DEC) and they would be arrested. In some cases, PWUD perceived that health care providers were intentionally focused on getting PWUD arrested. The fear of prosecution extended to accessing care, even in life-threatening situations (e.g. drug overdose). PWUD reported accessing care involved receiving a blood test, which would reveal drugs in their system and therefore, they risked being arrested. Moreover, PWUD in Kitwe reported that in cases of overdose, they rather use traditional remedies, such as milk, rather than seek care at a government health facility because they would be arrested.

have you ever seen a thief go to the police and say that I am a thief? [Laughs]...same as in that [disclosing their drug use behaviors to service providers], because you'll be scared to be questioned, so it's because...there is DEC [Drug Enforcement Commission], we are scared of those people. (PWUD KII, age 30, Kitwe)

...he [a drug user] wouldn't want them [health care providers] to know ...hence having the fear. You know when he goes to the hospital they will be just like yes these are the problems and we are looking for drug users and you are one of them so we are arresting you in advance. So with all these, they become afraid. (PWUD FGD2, age 22-32, Livingstone)

Home Remedies

Even in times of drug overdose, PWUD were hesitant to seek care and preferred the use of home remedies. This theme only appeared in Kitwe transcripts. PWUD reported using milk, lots of water, and shake shake (Zambian local beer) as an effective treatment for drug overdose. Only one DU disagreed with their effectiveness. As noted previously, the use of home remedies is closely linked to the fear of legal prosecution. If PWUD overdosed, they preferred using these remedies than risk being arrested.

mostly if it is an overdose...people don't go to the hospital because they are scared that they will arrest me...so they would rather take milk...they just drink milk then it neutralizes it just like that...(PWUD KII, age 23, Kitwe)

Personal Privacy Concerns

A personal desire to keep their use of drugs a secret served as a barrier to disclosure and accessing care, even when very sick. They noted that shyness and fear influenced their reluctance. The fear of being arrested and fear of losing family and friends if their drug use was to become known prevented them from accessing care and disclosing their behaviors. So entrenched was their desire to keep their behaviors secret, that PWUD in Livingstone noted accessing drugs and care in places outside their region in order to keep it from their family, friends and neighbors.

Yab most times we are not free...[to disclose]...they are not free because they are also afraid because let me say for the drugs, it's something which is a secret...Yes because what your friend is doing you are the only ones that are supposed to know that and not everyone is supposed to know that. (PWUD FGD2, age 22-32, Livingstone)

Stigmatization and discrimination

Stigma and discrimination, perceived and learned about from other PWUD, hindered disclosure and access to care. PWUD reported that fear of being judged, embarrassed, looked down upon by doctors, and fingers being pointed by them as stigmatizing and discriminatory behaviors that prevented them from seeking care and revealing their behaviors to clinical staff in government health facilities. It is also important to note that fear of stigmatization and discrimination extended beyond the clinical setting and into the community. The stigmatization and discrimination PWUD have witnessed that their community show to other PWUD who have quit or whose behavior was exposed contributes to other PWUD reluctance to seek care.

we are different people... how we think... some like I said earlier... they feel embarrassed...They feel embarrassed to talk... I don't know if they think that they will be ashamed and laughed at...(PWUD KII, age 38, Ndola)

yah, some it's stigma...because they know maybe if for example the confidentiality is not kept by the clinic...people will look at them differently. (PWUD KII, age 25, Kitwe)

Factors serving as both facilitators and barriers to accessing health care and disclosing drug use and/or sexual behaviors

Three factors – clinical environment, treatment effectiveness, and confidentiality and privacy - served as both facilitators and barriers to disclosure and health care seeking. Whether a given factor served as a facilitator or a barrier was dependent on the type of health care facility – public, private, traditional healers or NGOs – the PWUD were referencing. There were some noted differences by study sites.

Clinical Environment

The clinical environment served as both a facilitator and barrier to disclosure and care. The degree to which the clinical environment influenced PWUD' behaviors varied by type of provider. PWUD reported an unwelcoming clinical environment in government health facilities, where clinical staff's negative attitudes and long waiting times hindered accessing care and disclosing their behaviors. Specifically, PWUD reported clinical staff yelling and shouting at them to stop using drugs, not being treated but reported to the police, and waiting for too long to receive care in government health facilities.

Interviewer: So when you think of other places like Hospitals what things can cause them [drug users] not to be going there?

Participant: Sometimes Doctors do have bad language. 'Where were you all this time when you've hurt yourself like this' they start shouting at you, you know but... they become rough sometimes...even nurse...they just have bad language. (PWUD KII, age 23, Livingstone)

In contrast, PWUD noted that the clinical environments of private health facilities and non-governmental organizations (NGOs) made them feel comfortable and secure, facilitating access and disclosure. Specifically for NGOs in Lusaka, Ndola and Livingstone, they noted faster service, feeling that they received encouragement and education that helps them, and feeling comfortable and free to disclose their behaviors. PWUD in Kitwe reported not knowing any NGOs that supported people who use drugs.

For private health facilities, they noted feeling that they were carefully attended to, services were friendly and that they can seek care from the doctor at any time. Because of the comfort felt in private facilities, PWUD felt they had the freedom to disclose their drug use and as a result of disclosing, they would receive proper medications.

it's more like you want to get advise someone will just tell you to say no, don't do, it has to be like this in a soft way, but when you go to [private facility], quite alright, it will be expensive to private clinics but apart from it being expensive, they'll take good care of you, that caring, they have that caring...they, they don't even have problems, them when you just share to tell them to say okay me I'm having this and this, then you've come open to them, ...they'll tell you oh, for what this and this you're going through, you have to do A B C D. (PWUD KII, age 23, Kitwe)

Perceived Treatment Availability and Effectiveness

Treatment effectiveness was among the most frequently mentioned theme by PWUD that influenced access to care and disclosure. Perceived treatment effectiveness varied by type of provider. In government health facilities, PWUD mostly agreed that the treatment was affordable (i.e. free), available, and effective. They noted that HIV tests and treatment were readily available at public facilities and they received appropriate treatment for drug overdose, despite the fears associated with seeking services at government health facilities. A few PWUD, however, mentioned that government health facilities at times lack HIV drugs and that their treatments for STIs do not work. They also noted that the reception of good care was dependent on the individual provider treating them and at times, they felt compelled to disclose their behaviors in order to receive appropriate care.

Yah if you go and talk to any government Doctor or private Doctor I mean they'll give you means of rehabilitation [referring to overdose] definitely. (PWUD KII, age 23, Livingstone)

The clinics again... the doctors know that this person is taking drugs... so sometimes when they know this they know how to give the

medicine one time ... so that the pain... can stop paining. (PWUD KII, age 33, Lusaka)

The perceived effectiveness of treatment received from traditional healers was mixed. Some PWUD reported that the treatment received from traditional healers, especially for STIs and overdose, was effective and at times, more effective than the treatment received at public facilities. Other PWUD reported the treatment received from traditional healers only helps their health condition for a short time before it restarts and some have received expired medications. Some PWUD also noted that traditional healers are fake. These latter beliefs were particularly prominent in Kitwe transcripts.

...look for any old, mature woman, who knows a lot about medicines [referring to traditional healer], and explain your problem [referring to STIs] to her and she will tell you that the problem you have according to your explanation... (PWUD KII, age 29, Ndola)

The few PWUD that discussed treatment effectiveness in private health facilities noted that the treatments received were effective. In fact, they reported that private providers were as or more knowledgeable than public providers and that the treatments for STIs received from private providers were the same as those received from public providers.

Confidentiality and Privacy

The degree to which PWUD perceived that health care providers protect patients' privacy and confidentiality contributed to whether or not PWUD sought care and/or disclosed their behaviors to providers. In government health facilities, PWUD perceived a lack of confidentiality and privacy, which is closely linked to their perceptions that they would be reported to DEC by providers and will be arrested if drugs are found in their system or they disclosed their behaviors. As a result, they were hesitant to seek care at public facilities.

now on these public clinics... Umm...you can just see yourself in the news... you have not even come out of the hospital and the news is all over... (PWID FGD2, age 19-25, Kitwe)

so we shun those places... you are afraid of telling them... okay look excuse me!... I took drugs... please help me... I'm dying you know?... they would actually call the cops... patient and doctor confidentiality is not there. (PWUD KII, age 28, Lusaka)

On the other hand, PWUD preferred going to private health facilities, if they can afford them, because these facilities are known for protecting patients' privacy and confidentiality by virtue of being paid.

....most privates there are confidential... (PWID FGD2, age 19-25, Kitwe)

Needs expressed by people who use drugs

Additional health services as well as education and sensitization were the primary needs expressed by PWUD that would facilitate the accessing services and disclosing of behaviors to health care providers. These needs were expressed by PWUD across all study sites.

Additional Services

PWUD discussed the need for more HIV/STI and drug abuse services to facilitate accessing of services. PWUD acknowledged that there were a variety of access points specifically for HIV testing, including clinics, door-to-door outreach, and NGOs who put up tents on football grounds. However, other types of services, especially services related to quitting drug use, were missing and needed. Additional services mentioned by PWUD included telephone hotline services that provide counseling and information about HIV/STIs, rehabilitation centers, alcoholic anonymous groups, counseling centers, and more clinical facilities. In Kitwe, specifically, NGOs that provide support to PWUD are needed as PWUD reported not knowing any support organizations.

Have a ... national toll free line. So that people could call, sometime you know... you wouldn't want to use the drug but it's just sometimes you just need someone to talk to... to share the information with somebody else... so... if we'd had somebody anonymously talking to you, we are able to phone... I'm pretty sure...people might come out... a little bit more (PWUD KII, age 33, Ndola)

Participant 4: I have never heard of rehab center in Kitwe...

Participant 1: I usually see it in movies... where you just go... whereby this one is drug addict... you just sit and you start talking... it's like they are just given like a program there...I think you know what am talking about... alcoholics anonymous... (PWID FGD2, age 19-25, Kitwe)

Education and Sensitization

PWUD discussed the need for education and sensitization of PWUD, service providers, and their wider community about HIV/AIDS and issues facing PWUD. They reported that such education and sensitization would facilitate access to health services. For service providers, they stated that education and sensitization would result in the provision of compassionate care and being treated as a regular human being despite their behaviors. For themselves and their communities, they recommended education and sensitization about HIV/STI infections, risk behaviors associated with infections, how they can protect themselves against infection, and community awareness about the addiction of drug use.

In Zambia, mm, this practice is mostly done in a hidden, it's not openly talked about... so you'll find that even if you've got a problem, you don't know to go, so I'd like maybe, people to sensitize the people...you know, yab, like they do it for HIV and AIDS, they really, it really helps...you know, now with drug using, maybe these drugs, they don't talk about marijuana, but you'll find that these other drugs are not being talked about, meaning, people are still in the blind spot, they don't know where to go, they don't know how to stop, they don't know how to, you know, they just find themselves in they situation where they, they are users. (PWUD KII, age 23, Kitwe)

HEALTH CARE SERVICE PROVIDERS

A total of 77 health care and other service providers from all nine study sites participated in key informant interviews (KII) focused on their knowledge, beliefs and attitudes regarding the needs of female sex workers (FSWs), men who have sex with men (MSM), and drug users (PWUD). The mean age of the providers was 44.5 (range: 24-75), 53 percent were male, and a large majority completed post-secondary school (84 percent). A small proportion (5 percent) reported they were former members of key populations. A majority (53 percent) has worked as a service provider for ten years or more. Service providers interviewed worked at government hospitals and clinics (43 percent), private clinics (26 percent), NGOs/CBOs (27 percent), and faith-based organizations (4 percent). A large proportion of clinics and organizations (53 percent) provided services to all key populations while only five percent did not provide services to any key population. Of the key populations, organizations overwhelmingly provided services to FSWs (94 percent).

Services Provided

Overall, the majority of service providers interviewed explained that because the patients who come to access their services do not disclose that they are members of key populations and service providers do not have a way of finding out if the patient is indeed a member of key population, service providers cannot say for certain whether or not they have served FSWs, MSM or PWUD. Providers stressed that their services are for the general public, which can be and likely are accessed by members of key populations.

A range of health services are available to the general public and therefore, members of key populations. Services provided included voluntary testing and counseling for HIV, HIV treatment (e.g. ARVs), STI testing and treatment, TB screening, prevention of mother to child transmission services, services for people living with HIV, maternal and child health services, family planning, gender-based violence services, cervical cancer screening, and provision of condoms. Providers also referred patients to other clinics for HIV treatment and in the case of PWUD, to rehabilitation centers. Many organizations and clinics also engaged in outreach activities in the surrounding communities about HIV/STI prevention and treatment.

Structural-level Facilitators, Barriers and Needs

Laws and Policies

Service providers described that Zambian law and constitution, which states that engagement in sex work, drug use and same-sex sexual activity is illegal, inhibits the accessing of services by key populations. Providers in Livingstone, Ndola, Mansa and Mongu noted that they cannot go beyond the legal framework when providing services to patients because they use the law as institutional guidance. They further stated that the existing laws and policies towards key populations prevent the reduction of HIV/STIs because key populations do not seek services out of fear of arrest. Providers noted that, in fact, key populations are arrested more than the general population, with MSM and PWUD treated harsher while FSWs treated lighter in the eyes of the law. Due to this fact, key populations perceive that providers will report them to law enforcement and they will be arrested when seeking care. For example, PWUD believed that Drug Enforcement Commission (DEC) will arrest them when referred to rehabilitation centers. Providers stated that these were misconceptions; they do not report members of key populations to law and drug enforcement agencies.

The law itself maybe a barrier to seek a service hence they [referring to key populations] continue infecting others in the community or getting the infections in the community because they cannot come here so that they are treated for whatever it is that they have so the law maybe a barrier. (Female provider, Mongu)

... they would be fearing to come out in the open they will be fearing to come and access services at the clinic because ... they will think that if they discover that am a drug abuser maybe they will report me to the DEC... drug enforcement commission ... and then like for the homosexuals... if they come out in the open they may start thinking that maybe we can start telling the community... because it's... it's an acceptable here in Zambia... or even here in this community it's unacceptable so they'll they will have that... that stigma... they won't... they won't come out in the open. (Male provider, Solwezi)

Due to the law, some providers in Lusaka felt providing services to key populations is also placing their organization at risk because law makers see the provision of services as promoting and encouraging illegal behavior. Providers in Solwezi, Ndola and Chipata also described that society as a whole may think that the provision of services to key populations is promoting their behaviors. As such, some providers are not comfortable serving key populations.

*so such laws are affecting our organization and we've been talking to the law makers that... if you have to remove the sex workers from the street... remove the clients also... the buyers because they are there because the buyers are there... any business is driven by demand. So some of the laws I think they really need to look at them... because they are really affecting our organization. It's the same with MSMs... we even get worried because we say okay we'll allow the ... MSMs to come to our organization... we might be ... misunderstood by the law makers... because we are seen helping these people they'll think we are promoting, we are encouraging [the behavior] **(Female provider, Lusaka)***

*... the males having...having sex again it's against the law even starting to help them I don't know then we will be breaking the law it's almost like we are encouraging, but if we provide it like we are providing just a general...yah I think that will be helpful to them, but specifically targeting... then it means we will be hiding the information from the government ...but for drug users even them again the fact the fact that they're using drugs me as a health pr..pr..I'm interested in their health but then ub, at the same time I'm a citizen who is supposed to follow the law. So I don't know if it will be in the best interest of the nation to start providing a service...coz then I have to do it in secrecy. hiding it from my government. **(Male provider, Livingstone)***

A very small proportion of providers interviewed advocated for either legalization of key population behaviors or flexibility in the policies in order for key populations to seek health services because everyone has the right to health.

*I said that sex work is illegal so it goes also for injection drug users men who have sex with men... there citizens who are entitled they have rights to education... equally they have rights to health so if the...if the country decriminalised the sex work and MSM and injection drug users then they'll come from hiding ...(laughs)...and be able access health services not only to from NGOs but from the public health sector as well they will not be hiding...**(Male provider, Solwezi)***

*there should be something factored in the constitution... that will make men who have sex with men... feel free to access services in institutions ...**(Male provider, Chipata)***

Besides the current laws towards key populations, providers in Solwezi, Chipata, Mansa, and Mongu discussed the impact of partner notification policies on MSM and FSWs accessing services. According to policy, a patient is encouraged to bring their sex partner to receive treatment if he/she tests positive for a STI. However, there appears to be variance in the implementation of the policy; a few providers noted that this must be done before the patient can receive treatment. FSWs, however, are unable to contact their sex partners and therefore risk being re-infected and their untreated partners spreading STIs. Once told to bring their partners, FSWs do not return for treatment. Similarly, MSM cannot bring in their partners because the behavior is illegal.

*at the hospital... there are a lot of reasons why they [referring to FSWs] fail to go there... because usually when they go to the hospital they usually tell them to bring their partners... so for them to go and call who they had sex with becomes difficult... sometimes maybe they had sex with 3 to 4 people... at one time... they fail to point out who transmitted that STI... so when it becomes hard... they come to the traditional healers... **(Male provider, Solwezi)***

*the only ... challenge we... faced is that... that partner who might have infected this one... because if you tell him... is possible to also attend to your colleague... who ever gave you this infection he'll decline he won't be able to give you more information as to whether... where he got the infection from... because ina... as we provide STIs services we would love to capture all the... the... sources of infection for us to control it... but we are not able to... when it comes to men who have sex with men coming with their... their partners... that is not possible. **(Male provider, Chipata)***

Service entry points and accessibility

The lack of sufficient service entry points for ARVs and rehabilitation hindered key populations' access to health care. Services providers, especially in Kapiri Mposhi, expressed a need for more ARV dispensing institutions outside of government institutions. ARV dispensing institutions are centralized in specific locations, resulting in long waits and queues that discourage patients from collecting ARVs. Further, some NGOs/CBOs and some private facilities are not able to provide ARVs to their patients. Therefore, they must refer their patients to the government institutions and patients may not follow

through with the referral. In addition to more ART dispensing institutions, providers across sites expressed a need for more rehabilitation centers for PWUD.

I've seen that we haven't done much for the, for the drug users and uh, I think we need to improve on that one... rehab centers, yeah, that is, that is key. And uh, also looking at because we don't understand where most of these people are coming from so if we could have like for the drug guys, if we could have a rehab center. (Male provider, Ndola)

government clinics are crowded... they have so many people... so it will be difficult for this person [referring to FSW]... to stand on the queue the whole day... in order for... for her to access the services that she needs especially CD4 count... so because of that crowd they fear to go there... they are discouraged... they cannot attend the services that they want... so they will stay away... apart from that... because of the crowdedness in the clinics... if she has an STI... she would rather go to the chemist... buy one or two tablets... or capsules that she saw a friend take... by so doing... most of them have created a lot of resistance to the drugs that we... we are actually giving them... some get better when we have changed... from one drug to... the other... so those are some of the biggest challenges that we are facing when we are attending to sex workers. (Male provider, Chipata)

Linked to the centralization of ARV dispensing institutions and lack of rehabilitation centers, providers described the difficulty in physically accessing health care services as a barrier to care. Key populations have to travel long distances to health care facilities, which is a deterrent to accessing services because they often do not have transport. One NGO worker described that they have a high retention of FSWs in care because they provide transportation reimbursement.

Like in Kapiri... accessing ART... you find the... the provision of ART it's almost like one centre... so it really requires somebody who is really committed and as seen the necessity ...manage to access... because even just CD4 count... people would have to... wake up maybe as early as 3 o'clock to go and... so already... and then we want them to access ART... so you find it's already a barrier... I mean not only for sex workers but... worse the sex workers because you find during the day they are sleeping... and then in the night that's when maybe late in the afternoon that's when... they wake up and... so I think access to... I mean availability of services to them... I think it's a bit limited... looking at the nature of their morbidity... so I think that is the major... major... major problem that they have... and if there was a way they could be like... we know were these brothels are... so if there was clinic nearby and maybe its ran 24 hours... were they can easily access even their ARTs. (Female provider, Kapiri Mposhi)

I think the challenge um mostly like what we do with female sex workers uh, when we meet them we give them something for transport refund so I'm sure even them that's what they would get like if you meet them without the same thing I think the challenge would be low turnout. We have high retention rates with female sex workers because of what we give them. So what we have actually noticed is without that you will have a lot of challenges. (Female provider, Mongu)

A few providers recommended the creation of safe spaces for key populations, where they can access all services in one space without needing referral to other clinics. Some suggested the creation of online services or toll free numbers where key populations can comfortably remain anonymous while seeking services.

you find again specifically these are people [referring to key population] at risk... so they needed more attention they needed policies that would help them to access maybe 24hours... but if a sex worker works in the night seeking treatment... they just be thrown they will be told ... this is not an emergency... come tomorrow... so there is no deliberate policy that caters for them especially in terms of ... STI's and the risk I mean the risk behaviours and all those. (Female provider, Kapiri Mposhi)

Clinic-level Facilitators, Barriers and Needs

Lack of Experience and Need for Training

Service providers in Solwezi, Chipata and Mongu reported that they lacked experience working with and serving key populations. At least half of the providers interviewed in these sites expressed a lack of experience as barrier to service provision. Noted by all providers interviewed, this lack of experience was primarily a result of key populations not disclosing their sexual behaviors to providers (see *Non-disclosure* section below for more information). Additionally, providers did not ask or recorded information regarding a person's status as MSM, FSW or DU, which is a noted barrier to adequately capturing information about risk and providing comprehensive care. Therefore, providers were largely unaware of whether they have actually provided services to members of key populations, especially MSM and PWUD. A noted exception was providers in Lusaka; they felt that their staff had the capacity and cultural competency to work with key populations.

the sex workers at this clinic.... when they come to this clinic.... we don't find out whether they are sex workers or not.... Of course we'll ask their occupation....they'll tell us what they want to tell us..... We are not going to find out whether they are sex workers or what.
(Female provider, Lusaka)

No we haven't got any experience of drug users here. **(Service provider, Chipata)**

Although only service providers in three sites noted lack of experience with key populations, service providers across all study sites expressed the need for specialized training on key populations in order to provide them with patient-centered care. Specifically, service providers discussed needing training in two main areas: 1) identifying and working effectively with key populations; and 2) building capacity in psychosocial and psychological counselling. For example, providers in Solwezi, Kitwe and Ndola stated they lacked the ability to effectively communicate with PWUD because PWUD at times came to the clinic intoxicated. They did not know how to properly handle the situation when a patient is under the influence of drugs or alcohol. Providers also discussed needing information, education and communication (IEC) materials to provide to key population members who seek services.

we need ...to build our capacity... on how to counsel and attend to... MSMs... because I'll share this... immediately somebody walks in and then everybody knows that this is an MSM and because of the laws in the country and the beliefs and the cultures and everything it becomes a big challenge... on how to handle MSMs. **(Female provider, Lusaka)**

I think I... would want a course were am so conversant to like deal with them [referring to key populations] ... to even the counseling am sure it's not the same as this it will be that training which will like help me to like understand them know how to deal with them and ... just help me to have that understanding. **(Female provider, Kitwe)**

Lack of Resources

Services providers noted that a lack of resources, mainly human and financial resources, impedes their ability to provide services to their patients. The lack of resources also served as barrier to adding additional services for key populations. Providers across sites complained they were understaffed and therefore, needed more staff to provide more services. Likewise, they reported having limited funding; financial assistance would aid in supporting the organizations by allowing them to offer needed services and retaining patients.

sometimes it could be just manpower or limited infrastructure for privacy, we may need privacy to talk to such a person but then you may find there is a queue and the patients outside will be complaining meanwhile I would have...I would need much time to talk to that client but that cannot allow meaning manpower is also a challenge, yes **(Female provider, Mansa)**

Apart from the training um...I'll need, like on the part of financial... finances... I will need that incase of anything you know you still need finances in doing whatever you are doing **(Male provider, Kitwe)**

Provider Attitudes towards Key Populations

Approximately one-third of service providers acknowledged that provider beliefs, attitudes and behaviors served as both barriers and facilitators to key populations accessing services. Providers across study sites stated that providers' negative attitudes and beliefs hindered the provision of quality care to members of key populations. Specifically, they described situations where providers forced their religious beliefs onto key populations and judged key population members as engaging in immoral behavior due to sociality, cultural and religious values and beliefs. In Livingstone and Chipata, service providers described clinical environments where health care workers violated key population members' confidentiality and privacy.

Yes, so our... you know our health staff not being very kind and so, so these are the kind of issues that probably hinder some of these people from accessing the, the service. **(Male provider, Ndola)**

Interviewer: What if at your clinic you had experience to work with female sex workers, would you manage working with them especially if they mention to you that they are female sex workers?

Respondent: No... I wouldn't want to treat them or help the female workers because they are ones that destroy their own lives ...

Interviewer: How do they destroy their own lives?

Respondent:... yes they do... through what they are doing... what are they for...

Interviewer: What is the biggest problem that would make you not help them?

Respondent: the biggest problem is that female sex workers break the laws of Zambia and a sex worker is not a good person at all... just like a thief... no one likes a thief at all. **(Service provider, Chipata)**

On the other hand, a small number of providers specifically reported that neither they nor their staff discriminated against key population members because key population members are a part of the community and have the right to health. Therefore, they provided services to anyone seeking care, regardless of the law and their behavior.

*...in a hospital setting we don't have a criminal, we only have clients who have come to seek for services so any type of intimidation or anything that would cause barriers is not welcome in our institution. If they come to you there yes...our ethics are such that if the information came to me by virtue of my position I cannot share it with law enforcement agencies unless it puts the national security at risk, otherwise I cannot go and testify in court based on the information that I was given by a patient who trusted me as a doctor as a nurse or indeed any clinician **(Male provider, Livingstone)***

Patient-Level Facilitators, Barriers and Needs

Non-disclosure, Stigma and Discrimination

Non-disclosure of their sexual orientation, sexual behaviors and drug use by key populations was the most frequently cited barrier to the provision of care to key populations. Providers explained that they are unable to identify key population members because they are shy and prefer to remain anonymous. Without this identification, providers are unable to provide the specialized care that may be needed.

Overwhelmingly, providers described that the stigma and discrimination [and the law as previously mentioned] experienced by key populations was the driving factor behind non-disclosure. Providers explained that members of key populations are marginalized in the community and they feared that they would encounter stigma and discrimination when seeking health services. This fear was specifically in regards to services at government clinics. Some providers were keen to point out that these fears were not reality. Further, providers noted that key populations do not seek care at health services in their area because they are ashamed that people they know will see them. There is a clear preference for private clinics and traditional healers among key populations due to the privacy and confidentiality as well as lack of stigma and discrimination they are afforded that these facilities.

*I think the problem is that the law of the land, we have had a few cases where we suspect and when we probe we find out people are not open to tell you that they are having intercourse with same sex. Okay but we've had cases where as we assess we see the risk factors and we have identified a few individuals but really it's not as open as you expect I think people don't come openly **(Male provider, Ndola)***

*The stigmatization... they feel when they come and expose themselves here they will be stigmatized... yes and again they feel maybe because it's not widely accepted in our country they feel once I go there and explain to the clinicians there that am doing sex with my fellow man... it means I will be arrested... so they will not come freely fearing that maybe I may be arrested... and the other thing they feel maybe if I tell them that am the person who have sex to a man they feel maybe they will take me as if am a lunatic or what and what... so it's difficult to capture them... **(Service provider, Chipata)***

Education of Key Populations and the Community

Service providers across all sites stated there is a need to scale up HIV prevention services, including outreach activities, for key populations. They explained that key populations lack knowledge of HIV/STI prevention and treatment as well as available health care services. Therefore, health sensitization and education activities should focus on condom use, HIV/STI infection prevention, where to seek treatment for untreated STIs and IEC materials focused on dangers associated with sharing needles. They also expressed the need for counseling for key populations.

*I think like for... for... for the said population they need a lot of education ... they need a lot of education on... on the dangers of being a sex worker even on the dangers of... the diseases such as HIV and STIs... and even how to protect themselves because... they are prone to being attacked by... because they serve maybe different types of people. **(Male provider, Solwezi)***

A few providers in Livingstone, Chipata, Kitwe, Kapiri Mposhi and Mansa stated that sensitization and education must be targeted towards the larger community as community members discriminate against key population. Sensitization and education in community should focus both on HIV prevention and treatment as well as tolerance towards key populations.

Aam...aam...aam... the only challenge that the organization has faced is the general perception that may come from the general public especially that if they know... that [organization] is attending to men who have sex with men ... the public that is not yet educated...
(Male provider, Chipata)

CONCLUSIONS AND RECOMMENDATIONS

The formative assessment focused on four key populations at high risk of HIV infection in Zambia: FSWs, SWCs, MSM, and PWID. Our results show that these populations exist in Zambia, and it is important to note that each have distinct and variable policy, psychological, social, and economic needs. These needs play a significant role in health seeking behaviors, including disclosure of behaviors to health care providers. Understanding each population's unique circumstances is critical to improving and developing services and programs that adequately meet their HIV prevention, care and treatment needs. Moreover, programmers must pay keen attention to the differences and circumstances *within* and not solely across each key population (for instance classes of FSWs; receptive vs. insertive MSM; people who use but do not inject drugs vs. injection drug uses). The results from this formative assessment aid in providing rich details of the circumstances of these key populations. Here, we provide cross-cutting recommendations for programming targeting the four key populations with the understanding that programs must be tailored and adapted for each of the key populations and must take into consideration the nuances within them.

Preliminary population size estimates show that key populations – FSWs, MSM and PWID – exist in numbers that potentially impacts the Zambian HIV epidemic.

Accurate estimates of key populations at risk for HIV is essential for understanding the magnitude of the HIV epidemic and for providing countries with necessary information to carry out HIV program activities, including planning and implementing HIV prevention, care and treatment program (WHO, 2010). Zambia previously had limited or no data on the size of FSWs, MSM and PWUD, three key populations at risk of HIV. Utilizing mapping, enumeration and desk review, preliminary population size estimates indicates that the number of FSWs in nine districts range from 13,199-23,015 (median: 18,107), the number of MSM in five districts range from 4,211-8,857 (median: 6,534), and the number of PWID in three districts range from 1,652-2909 (median: 2,281). Together with Census data, these estimates yielded a FSW prevalence of 2.2%, an MSM prevalence of 0.89% and a PWID prevalence of 0.41%. These estimates provide necessary information for planning and implementing HIV prevention and care services for key populations. However, the estimates are preliminary and represent only the first phase of population size estimation. Additional estimates will be added upon completion of the planned integrated bio-behavioral surveillance survey (IBBSS) enhancing the robustness of the resulting estimates. Stakeholder input and feedback to these preliminary results will be elicited before arriving at final population size estimates.

Train health care providers, especially in government health facilities, to provide non-discriminatory, quality, patient-centered, and confidential care to all patients, including key populations.

Members of key populations interviewed reported engaging in behaviors that place them at risk of HIV and other STIs, including unprotected sexual intercourse, dry sex, and needle sharing (for PWID). Despite these high-risk behaviors, many feared accessing HIV/STI prevention services and disclosing their sexual behaviors at government health facilities. Barriers to seeking services, expressed by both key populations and service providers interviewed, include perceived and experienced stigma and discrimination when seeking services, lack of privacy and confidentiality, lack of tailored services, being denied services, negative attitudes of staff, and fear of being reported to law enforcement (for MSM and PWUD). They preferred to pay (if they can afford it) for services at private facilities, NGO-run health facilities and traditional healers because these places were viewed as providing safety, privacy and confidentiality. Moreover, service providers noted that they lacked experience working with and serving key populations.

Recommendations:

- *Utilize the World Health Organization's (WHO) guidelines for key populations when designing and improving programs.* In 2014, the WHO released consolidated guidelines on HIV prevention, diagnosis, treatment and care for key populations (World Health Organization, 2014). Among the aims of the guidelines are to provide a comprehensive package of evidence-based HIV-related recommendations for key populations and to improve access, coverage and uptake of effective and acceptable services by these populations. Programs should follow these guidelines.

- *Make patient privacy, confidentiality and safety a high priority at healthcare facilities.* Both enforcing privacy and confidentiality policies (e.g. providers do not discuss patient information with others) and ensuring the physical environment of the clinic (e.g. visible and auditory privacy) will encourage key populations to seek care and disclose their behaviors.
- *Create a clinical environment of comfort, support, encouragement and non-discrimination of key populations.* Key populations consistently remarked that the providers at NGOs and private clinics were welcoming, caring, supportive, and non-judgmental. Creating and enforcing non-discriminatory policies will build key populations' confidence in the services at government health facilities. Similarly, training should outline the key principles of patient-centered care.
- *Customize clinical care that reflects patient needs and choices.* The prevention, care and treatment needs of key populations are different from the general population, and services must be tailored to reflect these differences. For example, requiring that a FSW bring their sex partner for treatment before she can receive treatment is unrealistic and hinders her care. This requirement also goes against the STI management guidelines which encourage rather than force clients to bring their partners to access health care.
- *Train and sensitize providers to identify and work effectively and respectfully with key populations, including building their capacity in psychosocial and psychological counselling.* Designing clinical forms that capture the sexual behaviors of patients will allow service providers to identify potential members of key populations and provide the appropriate care for them. Providers also recognized that members of key populations face unique circumstances that require additional counselling skills in order to provide key population appropriate and quality care.

Increase and decentralize health care service entry points in order to make HIV prevention and treatment services easily accessible to key populations.

Members of key populations and service providers reported that the lack of sufficient service entry points, especially for ARVs, and rehabilitation for PWUD, hindered key populations' access to health care. They expressed the need for more ARV dispensing institutions outside of government institutions such as NGOs and private facilities. The centralization of ARV dispensing locations fosters stigma and discrimination and lacks privacy; for example, standing in line for ARVs reveals one's status. Further, both key populations and service providers agree that the lack of sufficient service entry points makes services physically inaccessible (e.g. travel long distances for care) and slow due to the long queues. In the case of PWUD, many desire to quit using drugs but find quitting difficult given the lack of rehabilitation centers.

Recommendations:

- *Increase and decentralize ARV dispensing locations.* Building the capacity of and sensitize smaller public health clinics to dispense ARVs and allowing NGOs and private providers to dispense ARVs will make HIV treatment services accessible to both key populations and the general population as well as reduce stigma and discrimination. It will be important to also explore the potential to dispense ARVs at community-based drop-in centers that are key population-friendly.
- *Create rehabilitation facilities and support groups for PWUD.* PWUD who desire to quit using drugs require support systems to help them quit and to remain drug-free. PWUD noted that they returned to drugs after quitting because their social networks consist of drug users. Therefore, rehabilitation facilities will assist them with initially quitting while support groups will aid them in remaining drug-free.

Revisit policies that affect FSW, MSM and PWUD access to health services.

MSM and PWUD were well aware that their sexual and drug use behaviors, respectively are illegal in Zambia. They outlined fears of being reported to authorities and arrested if they disclosed their sexual orientation/drug use and accessed services at government health services. Some providers noted that they cannot go beyond the policy framework to provide services to key populations and that the existing laws and policies towards key populations inhibits the reduction of HIV/STIs because key populations do not seek services out of fear of arrest. Service providers also feared being arrested by law enforcement agencies for being complicit if known to be providing services to key population, particularly MSM and PWID, without reporting them to law enforcement agencies. In the case of FSWs, the incorrectly implemented partner notification policy that required her to bring her sex partner to the clinic if she tests positive for a STI before receiving treatment hindered access to STI care and treatment. FSWs often do not know who their partners are or where to locate them and when faced with this requirement, some failed to get treatment or utilized traditional remedies.

Recommendations:

- *Consider implementing policies that increase key populations' access to health care services.* Efforts should be made to encourage members of key populations to seek health services without fear of arrest. These efforts might include creating and implementing policies that allow service providers to ask the necessary information on sexual behaviors, sexual orientation and drug use in order to provide optimal clinical care; and creating provisions for government health facilities to provide services to these populations without legal ramifications; and creating services to provide sterile needles and syringes with harm reduction counseling.
- *Where feasible, service providers should advise clients to encourage their partners to seek HIV/STI screening and treatment as per national STI guidelines.* The national STI guidelines of Zambia do not mandate but encourage clients to advise their partners to seek STI screening and treatment. However, both services providers and members of key populations discussed instances in which clients were required to bring their sex partners to the clinic before they could receive treatment. As such, the incorrect implementation of the national guidelines should be immediately addressed. Training services providers of providers on the guidelines and informing clients of their rights when seeking STI services is needed.

Scale up HIV prevention, care and treatment services, including outreach, education and sensitization activities, for key populations and the larger community.

Service providers and key population members across all sites stated there is a need to scale up HIV prevention, care and treatment services for key populations and the larger community. They expressed that key populations have low knowledge of HIV/STI prevention, care, and treatment as well as available health care services. Additionally, alcohol misuse played an important role across all key populations engaging in sex without a condom. Furthermore, FSWs and women who were under the influence of drugs regularly experienced physical and sexual violence. In such instances, condoms were not used. Therefore, health sensitization and education activities should focus on HIV/STI infection, violence and alcohol abuse prevention, and where to seek screening and treatment for STIs.

Recommendations:

- *Address alcohol misuse.* Across key populations, alcohol misuse served as a gateway to engagement in unprotected sexual activity. For example, being drunk allowed some MSM and FSWs to have sex, which was often unprotected. Education and sensitization about alcohol use and misuse is urgently needed.
- *Provide education regarding consistent condom use.* Despite knowing that condoms protect against HIV and some STIs, members of key populations often did not use them or used them inconsistently. However, there were some individuals who were adamant about consistent condom use and took steps to ensure that they use them. These steps, which can be included in outreach activities, include always carrying condoms on one's person, having condoms available in the home or brothel, and refusing to accept more money for unprotected sex (in the case of FSWs). Education and sensitization activities might include discussing ways in which to make sex pleasurable while using condoms as many discussed not liking condoms.
- *Increase the availability and access to water-based lubricants.* Key populations reported that condoms were widely available, often times free at clinics and NGOs. However, lubricants were not easily found. Instead, they used household products such as Vaseline, cooking oil, and lotions, as lubricants. Thus, the availability and access to water-based lubricants are essential to increasing safer sexual behaviors.
- *Identify, counsel and screen FSWs and women who use drugs who are at risk or have experienced physical and sexual violence.* FSWs discussed physical and sexual violence as a regular occurrence due to their occupation. Women who use drugs also reported being raped while under the influence of alcohol or drugs. Sexual violence can have psychological, emotional, and physical effects on a survivor. Therefore, it is important that the right help and support, including screening and counseling, is available to FSWs and women who use drugs in order for them to adequately deal with the effects of sexual violence.
- *Recruit and involve key population members in prevention, care and treatment activities that focus on their respective population.* Across key population interviews, there were a few individuals who mentioned that they actively discussed safer sexual

practices and drug use behaviors with their peers. Recruiting peers in prevention, care and treatment can be one of the most powerful behavior change strategies as they know where to find their peers and how to influence them for positive health behaviors.

- *Design and target scale-up efforts to SWCs.* SWCs interviewed were very knowledgeable about HIV/STIs and associated risk behaviors. However, high knowledge did not translate to safe sexual practices for many of them. While prevention, care and treatment efforts have focused on FSWs, few have focused on SWCs. Innovative methods to reach SWCs and encourage behavior change are urgently needed. For example, programs can work closely with FSWs to reach their clients because clients noted that FSWs do influence their behaviors.
- *Use social media as a medium for distributing HIV prevention information.* Both FSWs and MSM discussed meeting sexual partners via social media sites. As such, social media sites can be used to facilitate HIV prevention because it is one of the few methods in which to reach members of key populations who are often unreached, unknown and underserved.

Empower FSWs by providing them with viable and sustainable alternatives to sex work

The majority of FSWs interviewed desired to quit the sex work business but indicated that alternative means of making money are unavailable. For many, sex work is their only income source to provide for themselves and their children. FSWs outlined two potential avenues to quitting sex work: providing financial subsidies to start a business; and providing skill-based training to allow them to qualify for jobs. Although FSWs have outlined these as options, the existing scientific evidence shows that economic empowerment programs for sex workers have had mixed results. In general, existing evidence on economic empowerment programs is scant and the results are mixed (Global Network of Sex Work Projects (NSWP), 2015; FHI 360, 2014; Witte, et al. 2015; Tsai, et al. 2011). Nonetheless, we draw upon the few successful programs to provide recommendations on critical components of empowerment programs that contribute to their success (Global Network of Sex Work Projects (NSWP), 2015; FHI 360, 2014). Economic empowerment programs may be viable options to aid FSWs in Zambia when undertaken with care and the goal of sustainability.

Recommendations:

- *Involve sex workers at all levels of programming.* From conceptualization to implementation, sex workers should be involved in all aspects so they can inform how best to meet their needs. Fellow sex workers are likely to be more open to participating in the program and making life changes when information is received from peers who understand their daily lives.
- *Fund, partner and work within sex worker-led or sex-worker friendly organizations for programming.* In tandem with the first recommendation, programs should partner with and fund existing organizations that are trusted by the FSW population. Funding for such organizations should be sustained to enable FSWs to benefit from the program, improving the chances of success.
- *Quitting sex work should not be a condition to participate in programs.* Although the majority of FSWs interviewed desire to quit sex work, it is important that programs recognize that stages of quitting vary and the needs of each FSW will differ. As such, programs should not make quitting the trade a condition in order to participate.

Target harm reduction services at individual PWUD (both injectors and non-injectors) as well as their social networks, particularly addressing the risks associated with needle sharing.

The majority of PWUD interviewed described their social networks were critical in facilitating their initiation to drug use. For example, some PWUD started drug use at young ages due to desires to fit into a particular social group at school. Similarly, the desire to stay connected to the social network, which consisted of other PWUD, inhibited PWUD from quitting. In fact, some reported that their networks discouraged them from quitting. Furthermore, these networks created an environment for HIV transmission. Additionally, due to the high cost of needles, PWUD reported that they shared needles with friends who they knew well and trusted. As much as 10 PWUD would use the same needle before disposing it. They also failed to properly sterilize needles. Needle sharing coupled with poor sterilization of needles increases the risk of transmission of HIV as well as other blood-borne infections, particularly hepatitis C virus.

Recommendations:

- *Provide evidence-based drug abuse prevention programs in schools.* A number of PWUD noted that they initiated drug use when they were students, influenced by peers. As such, schools are an important environment in which to provide drug abuse prevention programs.
- *Consider implementing harm reduction programs including needle and syringe exchange program.* Harm reduction incorporates a spectrum of strategies from safer and managed use to abstinence for PWUD. These strategies also address conditions of use. Given the frequency of needle sharing among PWID in Zambia, one harm reduction strategy that is applicable to this population is needle and syringe exchange programs.
- *Target both individual and social networks of PWUD (e.g., using peer educators) in harm reduction activities.* The influence of the social networks in initiating drug use and preventing abstinence from use calls for harm reduction activities focused on the network. One strategy is to engage PWUD themselves in the creation of harm reduction activities as they are the primary agents of knowing how to reduce the harms associated with their drug use. Furthermore, PWUD know their networks best and can share information and support each other in strategies to eventually quit.

REFERENCES

- Aceijas, C. et al. 2006. Estimates of injecting drug users at the national and local level in developing and transitional countries, and gender and age distribution. *Sexually Transmitted Infections* 82 (Suppl 3): iii10–iii17.
- Ayres, L., Kavanaugh, K., Knafl, KA. (2003). Within-case and across-case approaches to qualitative data analysis. *Qualitative Health Research* 13:871-883.
- Beyrer, C. et.al. Global epidemiology of HIV infection in men who have sex with men. *Lancet*. 2012 Jul 28; 380(9839): 367–377.
- Buvé, A. et al. 2001. Multicentre study on factors determining differences in rate of spread of HIV in sub-Saharan Africa: methods and prevalence of HIV infection. *AIDS* 15: S5–S14.
- Cáceres, C.F. et al. 2008. Epidemiology of male same-sex behaviour and associated sexual health indicators in low- and middle-income countries: 2003–2007 estimates,” *Sexually Transmitted Infections* 84 (Suppl 1): i49–i56.
- Cai, R. et al. 2013. Prevalence and risk factors of syphilis infection among female sex workers in Shenzhen, China: an observational study (2009–2012). *Tropical Medicine & International Health* 18(12): 1531–1538.
- Central Statistical Office (CSO). 2012. 2010 Census of population and housing: National descriptive tables. Lusaka: CSO.
- Central Statistical Office/Zambia, Ministry of Health/Zambia, and ICF International. 2014. Zambia Demographic and Health Survey 2013-14. Rockville, Maryland, USA: Central Statistical Office/Zambia, Ministry of Health/Zambia, and ICF International.
- Corbin, J. & Strauss, A. 2008. *Basics of Qualitative Research: Grounded Theory Procedures and Techniques* (3rd edition). Thousand Oaks, CA: Sage.
- Denzin, N. K. 1978. *The Research Act: A Theoretical Introduction to Sociological Methods*. New York: McGraw-Hill.
- FHI360. 2006. Round 3 Behavioural Surveillance Survey 2006: Female Sex Workers in Border and Transportation Routes With Trend Analysis 2000-2006. Lusaka: FHI360.
- FHI360. 2009. Round 4 Behavioural Surveillance Survey 2009: Female Sex Workers in Border and Transportation Routes With Trend Analysis 2000-2009. Lusaka: FHI360.
- FHI 360. 2014. *Economic Strengthening for Female Sex Workers: A Review of the Literature*. Durham, NC 27701 USA.
- FHI360 & TDRC. 2016. *Integrated Biological and Behavioural Surveillance Survey (IBBSS) among Female Sex Workers and Behavioural Surveillance Survey (BSS) among Male Long Distance Truck Drivers in Five Corridors of Hope Project District Sites in Zambia, 2015*. Lusaka: FHI 360.
- Giles, Jim. 2005. Wisdom of the crowd. *Nature* 438: 281.
- Global Network of Sex Work Projects. 2015. *Economic Empowerment Programmes for Sex Workers* available at <http://www.nswp.org/resource/economic-empowerment-programmes-sex-workers-africaregional-report>.
- Hsieh, H.F. & Shannon, S.E. 2005. Three Approaches to Qualitative Content Analysis. *Qualitative Health Research* 15(9):1277 – 1288.

- Muraguri, N., Temmerman, M., Geibel, S. 2012. A decade of research involving men who have sex with men in sub-Saharan Africa: current knowledge and future directions. *SAHARA J* 9(3):137-47.
- National HIV/AIDS/STI/TB Council (NAC)/Ministry of Health (Zambia). 2009. Behavioural Surveillance Survey Zambia—Female Sex Workers in Border and Transportation Routes with Trend Analysis 2000–2009. Lusaka: NAC.
- Patton, M.Q. 1999. "Enhancing the quality and credibility of qualitative analysis." *Health Services Research* 34 (5): 1189-1208.
- Smith, A.D. et al. 2009. Men who have sex with men and HIV/AIDS in sub-Saharan Africa. *The Lancet* 374 (9687): 416 – 422.
- Tsai, L. C. et al. 2011. Piloting a savings-led microfinance intervention with women engaging in sex work in Mongolia: Further innovation for HIV risk reduction. *The Open Women's Health Journal* 5:26–32.
- UNAIDS/WHO Working Group on HIV/AIDS/STI Surveillance. 2010. Guidelines on Estimating the Size of Populations Most at Risk to HIV. Available at: who.int/hiv/pub/surveillance/final_estimating_populations_en.pdf, Accessed 19 December 2013.
- Vandepitte, J. et al. 2006. Estimates of the number of female sex workers in different regions of the world. *Sexually Transmitted Infections* 82 (Suppl 3): iii18–25.
- Witte, S.S. et al. 2015. Efficacy of a Savings-Led Microfinance Intervention to Reduce Sexual Risk for HIV Among Women Engaged in Sex Work: A Randomized Clinical Trial. *American Journal Public Health* 105(3): e95–e102.
- Zambia National HIV/AIDS/STI/TB Council. 2009. Zambia HIV Prevention Response and Modes of Transmission Analysis. Lusaka: NAC.

APPENDICES

Appendix A: Study Team

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Appendix B

Table 1.: Socio-demographic characteristics of Female Sex Workers (FSWs) who were interviewed as key informants

	LUSAKA	LIVINGSTONE	KAPIRI-MPOSHI	KITWE	NDOLA	SOLWEZI	MANSA	CHIPATA	MONGU	TOTAL
	8 KIIs	7 KIIs	7 KIIs	7 KIIs	7 KIIs	7 KIIs	7 KIIs	7 KIIs	8 KIIs	65 KIIs
Age, mean (range)	31.6 (20-36)	34.0 (28-48)	38.0 (19-50)	29.4 (25-42)	25.1 (19-44)	26.0 (22-36)	26.4 (21-38)	32.6 (20-47)	26.5 (22-34)	30.0 (19-50)
Education										
Never been to school	-	1	1	1	0	1	-	1	1	6 (9.2)
Primary	2	3	2	3	5	6	4	4	5	34 (52.3)
Secondary	5	1	4	3	2	0	2	2	1	20 (30.8)
Post-Secondary	1	2	0	0	0	0	1	-	1	5 (7.7)
Employment status										
Sex worker	4	4	1	6	3	5	4	3	6	36 (55.4)
Formal	-	0	1	0	1	2	3	1	-	8 (12.3)
Business	3	3	5	1	3	0	-	2	-	17 (26.2)
Student/other	1	0	0	0	0	0	-	1	2	4 (6.2)
Marital status										
Single	1	1	3	4	0	4	3	4	4	24 (36.9)
In a relationship	6	4	3	1	7	2	4	2	3	32 (49.2)
Married/living with partner	1	2	1	2	0	1	-	1	1	9 (13.8)

Table 2.: Socio-demographic characteristics of Female Sex Workers (FSWs) who were interviewed in focus group discussions

	LUSAKA	LIVINGSTONE	KAPIRI-MPOSHI	KITWE	NDOLA	SOLWEZI	MANSA	CHIPATA	MONGU	TOTAL
	1 FGD (n=10)	2 FGDs (n=20)	2 FGDs (n=15)	2 FGDs (n=11)	2 FGDs (n=16)	2 FGDs (n=13)	2 FGDs (n=11)	2 FGDs (n=19)	3 FGDs (n=16)	18 FGDs (n=131)
Age, mean (range)	30.7 (23-35)	30.4 (20-41)	31.3 (21-43)	25.0 (21-32)	31.6 (23-39)	26.0 (20-34)	26.6 (19-35)	30.5 (18-39)	28.6 (21-48)	29.0 (18-48)
Education										
Never been to school	-	1	0	0	0	0	-	3	4	8 (6.1)
Primary	3	9	6	7	6	8	10	15	8	72 (55.0)
Secondary	7	7	8	4	10	5	1	1	4	47 (35.9)
Post-Secondary	-	3	1	0	0	0	-	-	-	4 (3.1)
Employment status										
Sex worker	10	19	7	11	7	13	11	14	11	103 (78.6)
Formal	-	0	0	0	1	0	-	1	1	3 (2.3)
Business	-	1	8	0	8	0	-	1	2	20 (15.3)
Student/Other	-	0	0	0	0	0	-	3	2	5 (3.8)
Marital status										
Single	2	10	8	5	8	2	8	6	10	59 (45.0)
In a relationship	8	8	6	6	8	7	2	11	3	59 (45.0)
Married/living with partner	-	2	1	0	0	4	1	2	3	13 (9.9)

Table 3.: Price charged by type and length of sex act, use of protection and class of sex worker

Cost	
Sexual positions	
Vaginal	K50-K1000
Oral	K200-K2000
Anal	K150-K1000
Length of sex (vaginal)	
Short time	K50-K500
Long time (e.g. overnight)	K150-K700
Use of protection	
With a condom	K20-K500
<i>Short time</i>	<i>K30-K200</i>
<i>Long time</i>	<i>K100-K300</i>
Without a condom	K100-K1000
<i>Short time</i>	<i>K50-K500</i>
<i>Long time</i>	<i>K200-K700</i>
Class of Sex Worker	
Low class	K20-K500
High class	K200-K1000

Table 4.: Socio-demographic characteristics of Clients of Sex Workers (SWCs) who were interviewed

	LUSAKA	LIVINGSTONE	KAPIRI-MPOSHI	KITWE	NDOLA	SOLWEZI	MANSA	CHIPATA	MONGU	Total
	5 KIIs	7 KIIs	7 KIIs	7 KIIs	7 KIIs	7 KIIs	7 KIIs	6 KIIs	7 KIIs	60 KIIs
Age, mean (range)	38.8 (29-45)	36.3 (26-49)	37.9 (32-46)	30.1 (23-38)	34.9 (25-48)	31.3 (24-50)	30.3 (24-34)	31.2 (25-51)	31.1 (23-52)	33.5 (23-50)
Education										
Primary	1	1	2	2	1	3	2	1	2	15 (25.0)
Secondary	3	2	3	3	4	1	2	4	2	24 (40.0)
Post-secondary	1	4	2	2	2	3	3	1	3	21 (35.0)
Employment status										
Business	3	2	2	1	3	2	-	-	1	14 (23.3)
Unemployed	-	-	-	-	-	2	-	-	1	3 (5.0)
Formal	2	5	5	4	4	3	7	4	5	39 (65)
Student	-	-	-	2	-	-	-	2	-	4 (6.7)
Marital status										
Single	1	1	3	3	2	0	1	1	1	13 (21.7)
In a relationship	1	1	2	2	3	5	4	1	5	24 (40.0)
Married/living with partner	3	5	2	2	2	2	2	4	1	23 (38.3)

Table 5.: Socio-demographic characteristics of Men Who Have Sex With Men (MSM) who were interviewed as key informants

	LUSAKA	LIVINGSTONE	KITWE	NDOLA	SOLWEZI	MANSA	TOTAL
	8 KIIs	7 KIIs	7 KIIs	7 KIIs	7 KIIs	2 KIIs	38 KIIs
Age, mean (range)	31.0 (25-40)	28.6 (21-36)	25 (20-36)	28.9 (18-37)	25.6 (20-34)	21.0 (20-22)	26.7 (18-40)
Education							
Primary	-	2	0	3	2	1	8 (21.1)
Secondary	5	1	7	2	3	1	19 (50.0)
Post-Secondary	3	4	0	2	2	-	11 (28.9)
Employment Status							
Formal	5	2	3		2		12 (31.6)
Unemployed/other	1	1	0	1	4	1	8 (21.1)
Self-employed/business	1	3	2	6	1		13 (34.2)
Student	1	1	2		0	1	5 (13.2)
Marital status							
Single/no partner	2	3	0	2	0	-	7 (18.4)
Not living with partner	5	2	6	4	5	2	24 (63.2)
Married/living with partner	1	2	1	1	2	-	7 (18.4)

Table 6.: Socio-demographic characteristics of Men Who Have Sex With Men (MSM) who were interviewed in focus group discussions

	LUSAKA	LIVINGSTONE	KITWE	NDOLA	SOLWEZI	TOTAL
	2 FGDs (n=15)	2 FGDs (n=12)	2 FGDs (n=14)	2 FGDs (n=12)	2 FGDs (n=11)	10 FGDs (n=64)
Age, mean (range)	21.7 (19-28)	27.3 (22-33)	26.1 (20-34)	24.8 (18-45)	27.1 (21-31)	25.4 (18-45)
Education						
Primary	1	3	4	1	6	15 (23.4)
Secondary	12	5	6	8	3	34 (53.1)
Post-Secondary	2	4	4	3	2	15 (23.4)
Employment Status						
Sex worker	-		1	1	2	4 (6.3)
Formal	-	2	4	4	1	11 (17.2)
Unemployed/other	3	2	5	1	3	14 (21.9)
Self-employed/business	1	5	2	3	5	16 (25)
Student	11	3	2	3	0	19 (29.7)
Marital status						
Single/no partner	3	5	3	5	2	18 (28.1)
Not living with partner	12	6	9	5	7	39 (60.9)
Married/living with partner	-	1	2	2	2	7 (10.9)

Table 7.: Socio-demographic characteristics of Drug Users (PWUD) who were interviewed as key informants

	LUSAKA	LIVINGSTONE	KITWE	NDOLA	TOTAL
	7 KIIs	7 KIIs	7 KIIs	7 KIIs	28 KIIs
Age, mean (range)	27.3 (23-29)	23.9 (22-32)	26.0 (20-38)	33.1 (29-38)	27.6 (22-38)
Education					
Primary	2	3	0	4	9 (32.1)
Secondary	4	4	3	3	14 (50)
Post-Secondary	1	-	4	0	5 (17.9)
Employment Status					
Student	-	1	2	-	3 (10.7)
Formal/Business	2	2	1	3	8 (28.6)
Other	3	3	2	3	11 (39.3)
Unemployed	2	1	2	1	6 (21.4)
Marital status					
Single	3	1	2	3	9 (32.1)
In a relationship	2	6	5	4	17 (60.7)
Married/living with partner	2	-	-	-	2 (7.1)

Table 8.: Socio-demographic characteristics of Drug Users (PWUD) who were interviewed in focus group discussions

	LUSAKA	LIVINGSTONE	KITWE	NDOLA	TOTAL
	1 FGD (n=5)	2 FGDs (n=16)	2 FGDs (n=11)	2 FGDs (n=12)	7 FGDs (n=44)
Age, mean (range)	33.6 (29-39)	26.1 (19-44)	21.2 (19-25)	29.7 (18-38)	27.7 (18-44)
Education					
Primary	-	8	3	8	19 (43.2)
Secondary	4	6	6	3	19 (43.2)
Post-Secondary	1	2	2	1	6 (13.6)
Employment Status					
Student	-	3	2	3	8 (18.2)
Formal/Business	1	2	-	4	7 (15.9)
Other	4	9	4	4	21 (47.7)
Unemployed	-	2	5	1	8 (18.2)
Marital status					
Single	1	2	2	2	7 (15.9)
In a relationship	2	5	8	2	17 (38.6)
Married/living with partner	2	9	1	8	20 (45.5)

Table 9.: Cost of drugs by type of drug

Drug Type	Price Range¹
Cocaine	K20 –K1,000
<i>Cooked Rock</i>	<i>K50</i>
Marijuana (also known as volo, dobo, dagga)	K1-K450
Heroin	K25-K350
Morphine	K200-K250
Ecstasy	K50-K100
Attan (psychiatry drug)	K1-K50
Lin (Benylin cough syrup)	K30-K75
Blue Ivy	K55
Jenkem (fermented mixture of ripened sewage)	K50
Valium (also known as Mpilishi)	K5-K50
Codeine	K35
Green Tourmaline	K20
Mahatan	K5
Stura	K5
Kuba	K2
Ngwalala	K2
¹ Price range is dependent on the amount of drugs purchased	

Table 10.: Socio-demographic characteristics of service providers interviewed

	LUSAKA (n=5)	LIVINGSTONE (n=17)	KAPIRI-MPOSHI (n=8)	KITWE (n=7)	NDOLA (n=9)	SOLWEZI (n=7)	CHIPATA (n=8)	MANSA (n=8)	MONGU (n=8)	TOTAL (n=77)
Age, mean (range)	51 (35-64)	26.1 (27-65)	53 (41-71)	45.2 (26-58)	40.9 (28-58)	44 (30-62)	46.1 (24-75)	49.6 (28-73)	45.6 (29-75)	44.6 (24-75)
Gender										
Male	3	11	3	2	4	5	3	6	4	41 (53.2)
Female	2	6	5	5	5	2	2	2	4	33 (42.9)
Education										
Never School	-	2	-	-	-	-	-	-	2	4 (5.2)
Primary	-	1	-	-	-	1	1	-	-	3 (3.9)
Secondary	-	-	1	-	1	1	1	1	-	5 (6.5)
Post Secondary	5	14	7	7	8	5	6	7	6	65 (84.4)
Former Key Population										
Yes	-	3	-	-	-	-	1	-	-	4 (5.2)
No	5	11	8	7	9	7	7	8	8	70 (90.9)
Missing	-	3	-	-	-	-	-	-	-	3 (3.9)
Type of Organization										
Government	1	8	4	4	5	3	2	3	3	33 (42.9)
Private clinic	-	3	1	1	2	3	3	3	4	20 (26.0)
NGO/CBO	4	4	3	2	1	1	3	2	1	21 (27.3)
FBO	-	2	-	-	1	-	-	-	-	3 (3.9)
Years at organization										
0-4 years	1	7	1	2	2	3	2	1	1	20 (26)
5-9 years	1	6	3	-	-	1	2	3	-	16 (20.8)
10+ years	3	4	4	5	7	3	4	4	7	41 (53.2)
Population Served										
All Key Pops	4	10	-	3	8	3	6	6	1	41 (53.2)
FSW & PWUD	-	2	-	-	-	-	1	2	1	6 (7.8)
FSW & MSM	1	-	-	-	-	-	-	-	1	2 (2.6)
FSW	-	5	7	2	1	3	-	-	5	23 (29.9)
DU	-	-	-	1	-	-	-	-	-	1 (1.3)
None	-	-	1	1	-	1	1	-	-	4 (5.2)